Project Report

Roadway Safety Signing Audit (RSSA) Project
County of Nevada, California

Final
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Prepared for:

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INTRODUCTION

Nevada County desired to address roadway safety along ten key corridors that provide vital access and connectivity throughout western portions of the County. The approximately 50-miles of roadway are generally located in the vicinity of SR-49 and, for the most part, form a "loop" of roadway segments. Through the award of a Highway Safety Improvement Program (HSIP) grant, this project was intended to proactively address roadway safety, with an emphasis on signing, along these critical transportation facilities. The Roadway Safety Signing Audit (RSSA) process provides the County with the opportunity to avoid "spot treatments" which have a tendency to miss similar conditions that may exist elsewhere in the network. Other similar situations likely have an equal potential for collisions which may not have occurred yet. Accordingly, this comprehensive RSSA process is intended to identify these similar locations and recommend similar safety solutions. This report documents the RSSA tasks, outcomes, and recommendations.

DATA COLLECTION METHODOLOGY

At the onset of the project, the following data was obtained from the County for use in this study and is included as **Appendix A** to this report:

- Crash data for the years 2001-2013
- Corridor Speed Zone Studies

The following additional activities were performed to complete the collection of the necessary information to complete this study. All data collection activities were completed in June 2014.

- **Signs, Horizontal Curves, and Retroreflectivity**
  Sign locations and other key attributes for each of the study segments were collected by driving the approximately 50-mile corridor once in both directions using an IP-S2 High Definition Mobile Scanner mounted in a scan vehicle. The scan data was collected in a method consistent with GIS level accuracy and does not provide survey-grade data quality. Simultaneously, ball-bank data was collected using a Rieker Curve Advisory Reporting System (CARS) mounted in the scan vehicle. Under a separate effort, retroreflectivity data was manually collected using a handheld Roadvista Model 922 Retro-reflectometer to record and check compliance with California Manual on Uniform Traffic Control Devices (CMUTCD) minimum retroreflectivity requirements.

  The following fifteen sign attributes were collected and extracted from the mobile scan data:

  1. GPS coordinates (CCS83, Zone 2) sub foot accuracy
  2. Sign type (CMUTCD designation or other specified by Nevada County)
  3. Sign colors
  4. Sign category (per CMUTCD)
  5. Sign size (per CMUTCD standard specifications)
  6. Sign orientation using 8-point compass direction (of face of sign)
  7. Sign position as seen by traveling motorist
  8. Sign mount (post, multi-post, overhead, fence, other)
  9. Sign condition (bent, graffiti, holes, faded, etc.)
  10. Sign photo snapshots from mobile scan
  11. Post type

12. Post number (quantity of posts for sign structure)
13. Post shared with other signs (YES or NO)
14. Post condition (good, bent, needs replacement, etc.)
15. Sign distance from edge of traveled way

The retroreflectivity data collected included:

1. Location (GPS coordinates)
2. Sign inventory number
3. Observed retroreflectivity measurements

Raw data obtained from the CARS system included:

1. PC and PT Lat/Longs
2. Curve radius and length
3. Recommended advisory speed
4. Required chevron sign spacing

- **Site Observations by Registered Engineer**
  The primary purpose of this effort was to observe existing conditions and data collected using other methods. A portion of this effort was completed at night.

EXISTING CONDITIONS

The ten study segments included in this study are depicted in **Figure 1**. As shown, the study was essentially divided into three groups: "eastern", "western", and "isolated". **Table 1** summarizes the existing number and type of signs that were documented along each of the study segments.

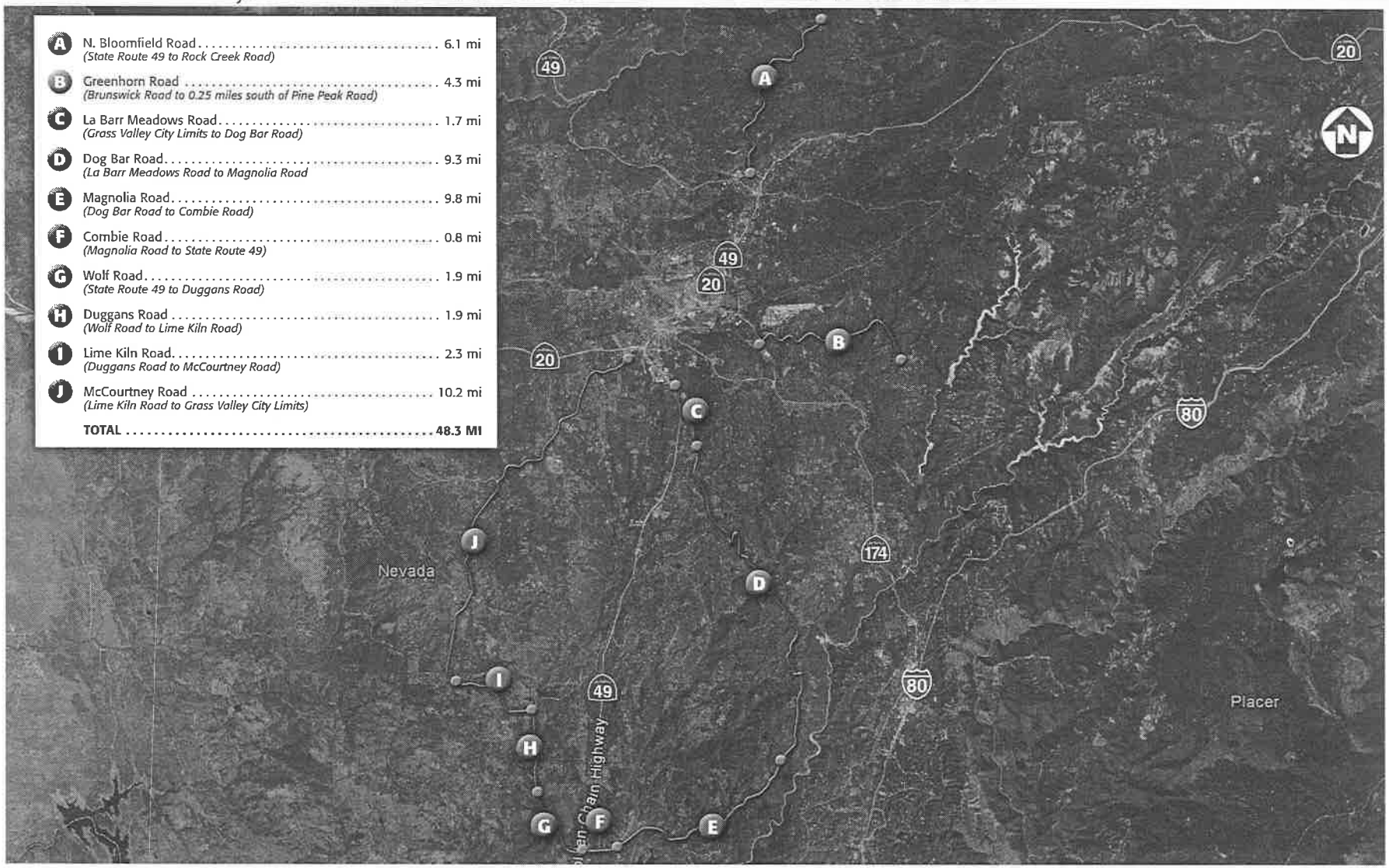
Table 1 – Summary of Existing Conditions

	ID	Corridor	Limits	Approx. Distance (miles)	# Signs Total	# Reg.	# Warn.	# Other
	A	North Bloomfield Rd	SR-49 to Rock Creek Rd	6.1	91	18	71	2
	B	Greenhorn Rd	Brunswick Rd to ¼-mile S of Pine Peak Rd	4.3	45	11	31	3
East	C	La Barr Meadows Rd	Grass Valley City limits to Dog Bar Rd	1.7	34	7	23	4
East	D	Dog Bar Rd	La Barr Meadows Rd to Magnolia Rd	9.3	149	25	97	27
East	E	Magnolia Rd	Dog Bar Rd to Combie Rd	9.8	119	27	83	9
East	F	Combie Rd	Magnolia Rd to SR-49	0.8	38	32	4	2
West	G	Wolf Rd	SR-49 to Duggans Rd	1.9	68	8	56	4
West	H	Duggans Rd	Wolf Rd to Lime Kiln Rd	1.9	27	6	19	2
West	I	Lime Kiln Rd	Duggans Rd to McCourtney Rd	2.3	51	6	39	6
West	J	McCourtney Rd	Lime Kiln Rd to Grass Valley City Limits	10.2	276	88	170	18
Totals:				***48.3***	***898***	***228***	***593***	***77***

FINAL PROJECT REPORT

ROADWAY SAFETY SIGNING AUDIT PROJECT

FIGURE 1 – RSSA Project Area



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DATA PROCESSING AND EVALUATION

The mobile LiDAR process used on this project collected survey accurate point cloud data and 360-degree field of view photos every eight meters. Accuracies for both horizontal and vertical coordinates are within two inches. This process significantly reduced the amount of time spent on the roadways, thereby increasing safety and decreasing inconvenience to the motoring public. The mobile LiDAR scanner was mounted to the bed of a pickup truck which traveled both lanes of the entire project collecting data in a single day. Additionally, the mobile LiDAR scan provides a richness of the data that single point data cannot provide. Coupled with the installation of Rieker's new Curve Advisory Reporting System (CARS) (an electronic, integrated ball bank indicator) to the mobile LiDAR vehicle, robust curve data was efficiently collected by making two passes (one in each direction) at prevailing speeds along each of the roadway corridors. In comparison to the manual ball bank indicator method, the CARS method required one pass at any speed without the need to stop at points along each curve or to make multiple passes. This approach once again significantly reduced the amount of time spent on the roadways. Finally, a handheld Roadvista Model 922 Retroreflectometer was used to manually collect retroreflectivity measurements for each of the identified devices. To ensure one section of wear on the signs does not compromise the measurements, three readings were taken on each sign.

The evaluation of the corridors' signing was generally approached using the logic summarized in **Table 2**.

Table 2 – Summary of Sign Evaluation Criteria

Screening	Attribute	Criteria	Outcome
Phase I – Cosmetic Features	Sign Condition	Is sign damaged?	Sign was indicated for replacement if 1 of these 4 criteria was triggered.
	Sign Dimensions	Is sign large enough?	
	Sign Retroreflectivity	Is retroreflectivity adequate?	
	Post Condition	Is post damaged?	
Phase II - Placement	Lateral Placement	Is sign located far enough from ETW?	Sign was indicated for replacement depending on these criteria.
	Advance Placement	Is sign located appropriately?	
	Use	Is sign appropriate for condition?	

With the understanding that the focus of this RSSA is on improving safety by addressing signing, the majority of the evaluation of existing and potentially necessary signing focused on warning signing for horizontal curves. The CMUTCD provides specific direction on if or when certain warning devices are to be used. It was from this perspective that the corridors' horizontal curves were evaluated to determine appropriate signing. The CMUTCD-required features were then compared against the existing devices to make a determination of the number of signs that needed to be removed, relocated, replaced, or left unaffected. More specifically, the CARS data (provided as **Appendix B**) was used along with the proximity of horizontal curves to each other to assess the advisory speeds and curve warning devices required. To a lesser degree, other warning signing, such as advance intersection signs, were largely considered to be adequate as currently signed.

RECOMMENDATIONS

Table 3 provides a summary of the outcome of the sign evaluations for each of the study corridors. An Opinion of Probable Construction Cost (OPCC) is also provided to enable the County to appropriately prioritize the recommended signing enhancements. At the request of the County, two project phases have been specified; Phase 1 includes those actions that do not require the installation of new sign posts, while Phase 2 reflects the activities involving the installation of new posts in the ground.

Table 3 – Summary of Corridor Signing Recommendations

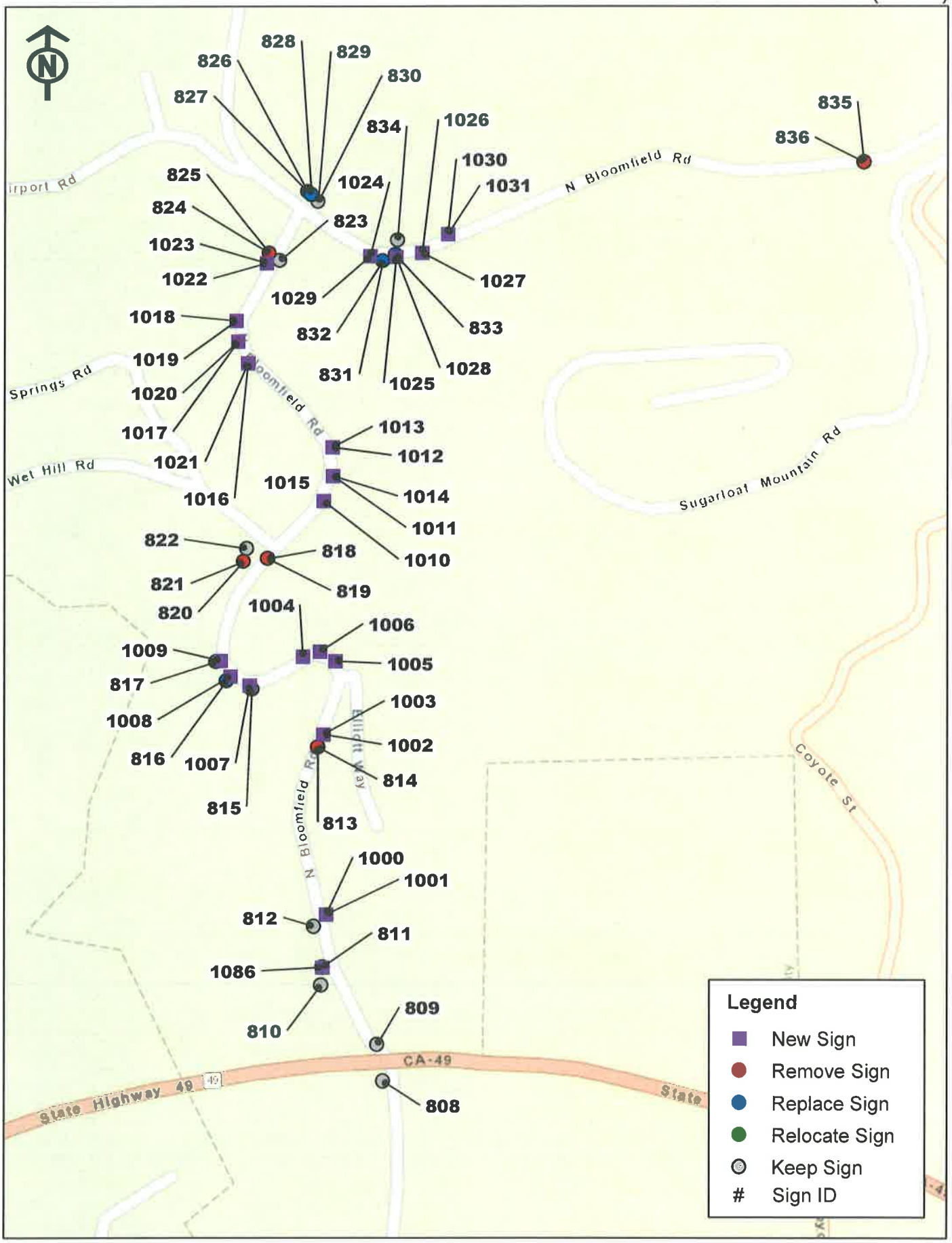
	ID	Corridor	# No Change	Phase 1			Phase 2			Total
				# Remove	# Replace	Cost ($)	# Relocate	# New	Cost ($)	Cost ($)
	A	North Bloomfield Rd	24	49	16	$13,750	2	88	$35,800	$49,550
	B	Greenhorn Rd	14	20	10	$7,000	1	27	$11,100	$18,100
East	C	La Barr Meadows Rd	10	12	12	$6,600	0	0	$0	$6,600
East	D	Dog Bar Rd	63	54	31	$20,500	1	137	$55,100	$75,600
East	E	Magnolia Rd	59	35	24	$14,850	1	62	$25,100	$39,950
East	F	Combie Rd	25	1	11	$4,550	1	9	$3,900	$8,450
West	G	Wolf Rd	15	43	10	$10,450	0	28	$11,200	$21,650
West	H	Duggans Rd	11	8	8	$4,400	0	3	$1,200	$5,600
West	I	Lime Kiln Rd	16	13	22	$10,750	0	11	$4,400	$15,150
West	J	McCourtney Rd	111	83	77	$43,250	5	38	$16,700	$59,950
		Totals:	***348***	***318***	***221***	***$136,100***	***11***	***403***	***$164,500***	***$300,600***

Note: All new, relocated, and the majority of the replaced signs are assumed to be installed on new posts. In six (6) instances, replaced signs are installed on existing posts. See Appendix C for a complete inventory.

The recommendations summarized in **Table 3** are depicted in figures that have been developed for each of the study corridors. **Appendix C** provides corridor-specific layouts of the signs, including key attributes and their designation as having no change, being removed, being relocated, or if they are new. **Appendix C** also includes detailed summaries of the signs by corridors, as well as inventories of the number and types of signs that will need to be obtained for installation.

Part 2, Chapters 2A (General), 2B (Regulatory Signs), and 2C (Warning Signs and Object Markers) of the CMUTCD provide guidance pertaining to the use and installation of signs. The requirements of these chapters were instrumental in the evaluation of the adequacy of the existing signs and the recommendations that were developed for the relocation or addition of new signs. For the purposes of this project, the CMUTCD is understood to guide the installation of all signing equipment. The contractor will be required to comply with all CMUTCD requirements with the following being most applicable to the nature of the improvements specified by this report:

- Section 2A.19 (Lateral Offset)
- Section 2C.05 (Placement of Warning Signs)
- Table 2B-1 (Regulatory Sign and Plaque Sizes)
- Table 2C-2 (Warning Sign and Plaque Sizes)
- Table 2C-3 (Minimum Size of Supplemental Warning Plaques)
- Table 2C-4 (Guidelines for Advance Placement of Warning Signs)
- Figure 2C-2 (Example of Warning Signs for a Turn)


N
828
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830
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836
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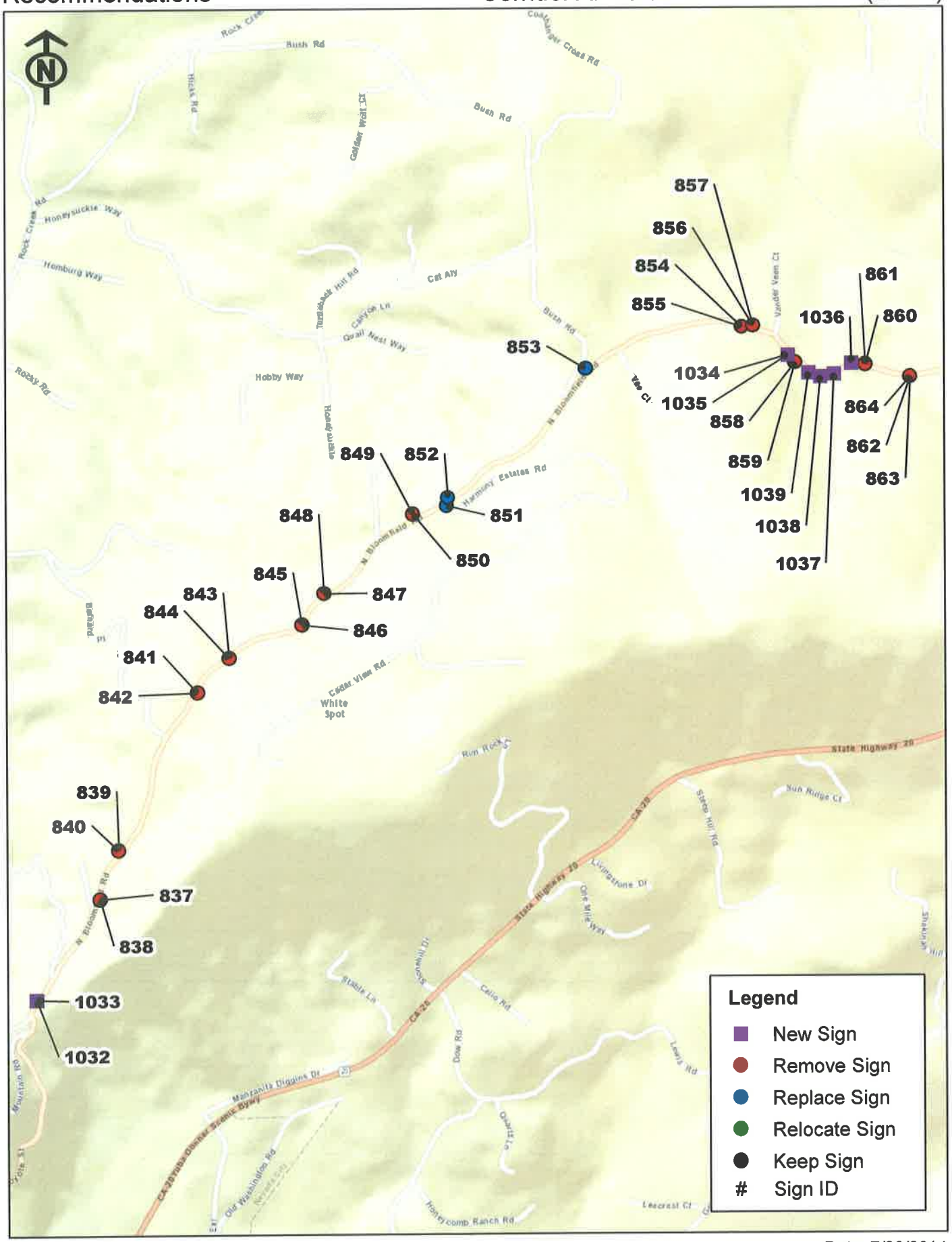
N Bloomfield Rd
irport Rd
825
1024
824
823
1023
1022
1027
1029
1018
833
832
1019
831
1025
1028
Springs Rd
1020
Bloomfield Rd
1017
1013
1012
1021
Wet Hill Rd
1015
1014
1016
Sugarloaf Mountain Rd
1011
822
818
1010
821
819
820
1004
1006
1009
1005
817
1003
1008
1002
816
1007
814
Coyote St
815
813
N Bloomfield Rd
1000
1001
812
811
1086
809
810
CA-49
State Highway 49
808
Legend
New Sign
Remove Sign
Replace Sign
Relocate Sign
Keep Sign
Sign ID



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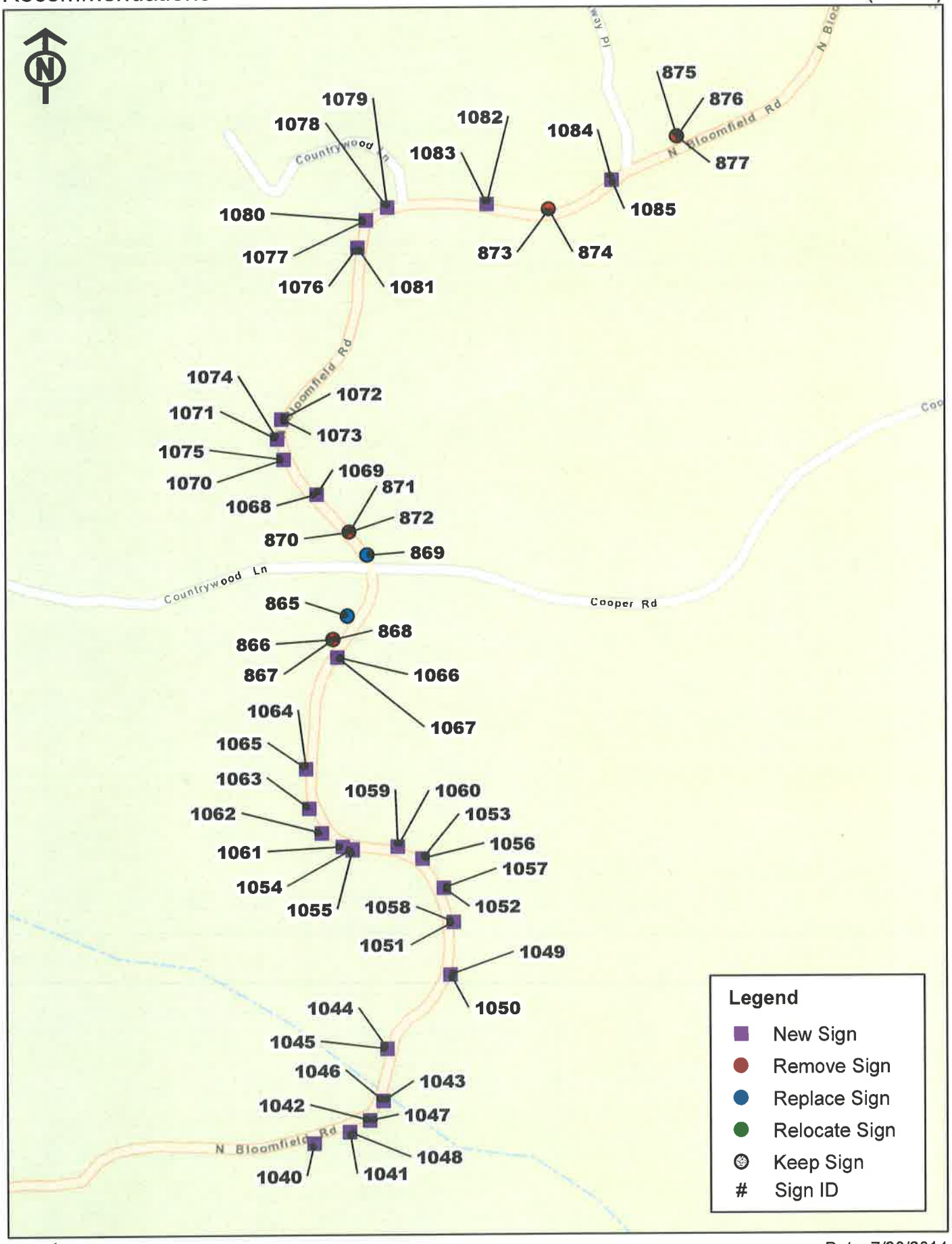
Date: 7/23/2014

Corridor A: North Bloomfield Road (3 of 4)



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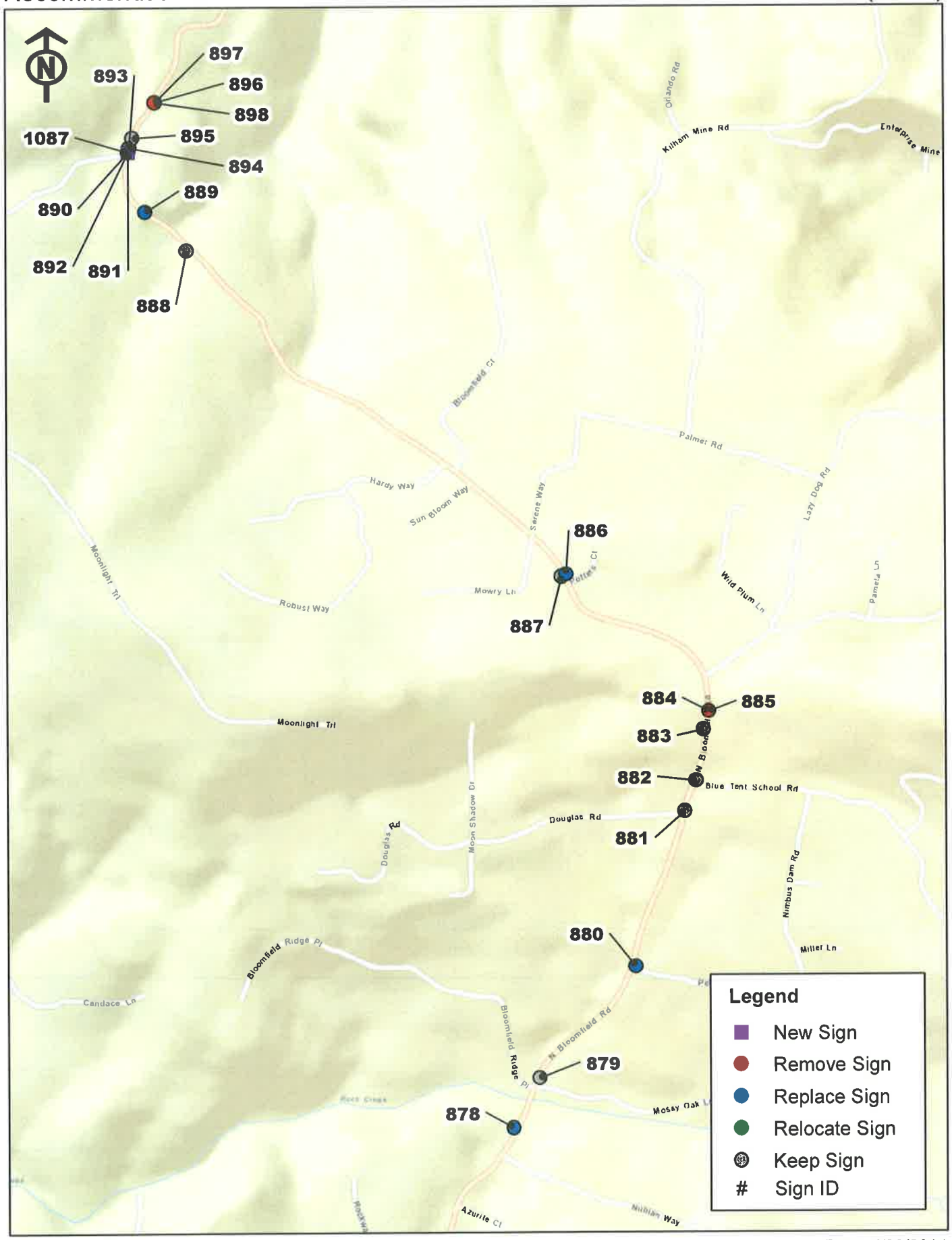

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Date: 7/23/2014

Corridor A: North Bloomfield Rd
Summary of Signing Assessment and Recommendations

Object ID	Category	Code	Code Description	FINAL ACTION
808	REGULATORY	R10-12	LEFT TURN YIELD ON GREEN	KEEP
809	REGULATORY	R10-12	LEFT TURN YIELD ON GREEN	KEEP
810	REGULATORY	R26(CA)	NO PARKING ANY TIME	KEEP
811	REGULATORY	R99-19	NO PARKING HERE TO CORNER	REPLACE
812	WARNING	W3-3	SIGNAL AHEAD	KEEP
813	WARNING	W1-3-L	REVERSE TURN LEFT	REMOVE
814	WARNING	W13-1-15	ADVISORY SPEED 15	REMOVE
815	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	KEEP
816	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	REPLACE
817	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	KEEP
818	WARNING	W13-1-20	ADVISORY SPEED 20	REMOVE
819	WARNING	W1-3-L	REVERSE TURN LEFT	REMOVE
820	WARNING	W1-3-L	REVERSE TURN LEFT	REMOVE
821	WARNING	W13-1-15	ADVISORY SPEED 15	REMOVE
822	REGULATORY	R28(CA)-R	NO PARKING ANY TIME ARROW RIGHT	KEEP
823	WARNING	W2-4	T INTERSECTION	KEEP
824	WARNING	W1-3-L	REVERSE TURN LEFT	REMOVE
825	WARNING	W13-1-20	ADVISORY SPEED 20	REMOVE
826	WARNING	W1-7	ADVISORY ARROW BIDIRECTIONAL	REPLACE
827	WARNING	OM1-3	OBJECT MARKER BLANK DIAMOND	KEEP
828	GUIDE	G99-29	MALAKOFF DIGGINS STATE HISTORIC PARK 11 MILES	REPLACE
829	REGULATORY	R1-1	STOP	KEEP
830	WARNING	W99-21	TRAFFIC FROM LEFT DOES NOT STOP	KEEP
831	WARNING	W99-22	CAUTION STEEP WINDING ROAD 5 MILES AHEAD	REPLACE
832	WARNING	W99-23	TRUCKS NOT ADVISED 5 MILES AHEAD	KEEP
833	REGULATORY	R2-1-30	SPEED LIMIT 30	REPLACE
834	WARNING	W3-1	STOP AHEAD	KEEP
835	WARNING	W1-1-L	CURVE LEFT	REMOVE
836	WARNING	W13-1-25	ADVISORY SPEED 25	REMOVE
837	WARNING	W1-2-R	CURVE SLIGHT RIGHT	REMOVE
838	WARNING	W13-1-20	ADVISORY SPEED 20	REMOVE
839	WARNING	W1-1-L	CURVE LEFT	REMOVE
840	WARNING	W13-1-20	ADVISORY SPEED 20	REMOVE

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Corridor A: North Bloomfield Rd
Summary of Signing Assessment and Recommendations

Object ID	Category	Code	Code Description	FINAL ACTION
841	WARNING	W8-5	SLIPPERY WHEN WET	REMOVE
842	WARNING	W13-1-20	ADVISORY SPEED 20	REMOVE
843	WARNING	W1-1-L	CURVE LEFT	REMOVE
844	WARNING	W13-1-20	ADVISORY SPEED 20	REMOVE
845	WARNING	W1-1-R	CURVE RIGHT	REMOVE
846	WARNING	W13-1-20	ADVISORY SPEED 20	REMOVE
847	WARNING	W1-1-L	CURVE LEFT	REMOVE
848	WARNING	W13-1-20	ADVISORY SPEED 20	REMOVE
849	WARNING	W1-1-L	CURVE LEFT	REMOVE
850	WARNING	W13-1-20	ADVISORY SPEED 20	REMOVE
851	REGULATORY	R2-1-30	SPEED LIMIT 30	REPLACE
852	REGULATORY	R2-1-30	SPEED LIMIT 30	REPLACE
853	GUIDE	G99-30	BUSH RD NEXT RIGHT	REPLACE
854	WARNING	W1-1-R	CURVE RIGHT	REMOVE
855	WARNING	W13-1-25	ADVISORY SPEED 25	REMOVE
856	WARNING	W1-1-L	CURVE LEFT	REMOVE
857	WARNING	W13-1-20	ADVISORY SPEED 20	REMOVE
858	WARNING	W1-4-L	REVERSE CURVE LEFT	REMOVE
859	WARNING	W13-1-20	ADVISORY SPEED 20	RELOCATE
860	WARNING	W1-3-L	REVERSE TURN LEFT	REMOVE
861	WARNING	W13-1-20	ADVISORY SPEED 20	REMOVE
862	WARNING	W1-5	CURVES WINDY ROAD	REMOVE
863	WARNING	W13-1-20	ADVISORY SPEED 20	RELOCATE
864	WARNING	W99-11	NEXT .5 MILES	REMOVE
865	REGULATORY	R2-1-30	SPEED LIMIT 30	REPLACE
866	WARNING	W1-5	CURVES WINDY ROAD	REMOVE
867	WARNING	W13-1-20	ADVISORY SPEED 20	REMOVE
868	WARNING	W99-11	NEXT .5 MILES	REMOVE
869	REGULATORY	R2-1-30	SPEED LIMIT 30	REPLACE
870	WARNING	W1-5	CURVES WINDY ROAD	REMOVE
871	WARNING	W13-1-20	ADVISORY SPEED 20	REMOVE
872	WARNING	W99-11	NEXT .5 MILES	REMOVE
873	WARNING	W99-24	CAUTION HIDDEN DRIVEWAY PLEASE SLOW DOWN	REMOVE

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Corridor A: North Bloomfield Rd
Summary of Signing Assessment and Recommendations

Object ID	Category	Code	Code Description	FINAL ACTION
874	REGULATORY	R2-1-20	SPEED LIMIT 20	REMOVE
875	WARNING	W1-5	CURVES WINDY ROAD	REMOVE
876	WARNING	W13-1-20	ADVISORY SPEED 20	REMOVE
877	WARNING	W99-11	NEXT .5 MILES	REMOVE
878	REGULATORY	R2-1-30	SPEED LIMIT 30	REPLACE
879	REGULATORY	R2-1-35	SPEED LIMIT 35	KEEP
880	WARNING	OM1-1	OBJECT MARKER DIAMOND WITH REFLECTORS	REPLACE
881	WARNING	W2-2-R	CROSS ROAD RIGHT ONLY	KEEP
882	WARNING	W11-8	FIRE TRUCK	KEEP
883	WARNING	W2-2-L	CROSS ROAD LEFT ONLY	KEEP
884	WARNING	W1-1-L	CURVE LEFT	REMOVE
885	WARNING	W13-1-25	ADVISORY SPEED 25	REMOVE
886	REGULATORY	R2-1-35	SPEED LIMIT 35	REPLACE
887	REGULATORY	R2-1-35	SPEED LIMIT 35	KEEP
888	REGULATORY	R2-1-35	SPEED LIMIT 35	KEEP
889	WARNING	W5-1	ROAD NARROWS	REPLACE
890	WARNING	W7-1	HILL	KEEP
891	REGULATORY	R99-20	NO TRUCKS OVER 4 TONS	KEEP
892	WARNING	W99-25	USE LOW GEAR	REPLACE
893	WARNING	W99-26	ROAD NOT MAINTAINED IN WINTER	KEEP
894	WARNING	W99-27	TRUCKS NOT ADVISED	KEEP
895	WARNING	W8-5	SLIPPERY WHEN WET	KEEP
896	WARNING	W1-5	CURVES WINDY ROAD	REMOVE
897	WARNING	W13-1-10	ADVISORY SPEED 10	REMOVE
898	WARNING	W99-8	NEXT 1.3 MILES	REMOVE
1000	WARNING	W1-1-R	TURN RIGHT	NEW
1001	WARNING	W13-1-30	ADVISORY SPEED 30	NEW
1002	WARNING	W1-5	WINDING ROAD	NEW
1003	WARNING	W7-3a	NEXT XX MILES	NEW
1004	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1005	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1006	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1007	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW

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Corridor A: North Bloomfield Rd
Summary of Signing Assessment and Recommendations

Object ID	Category	Code	Code Description	FINAL ACTION
1008	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1009	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1010	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	NEW
1011	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	NEW
1012	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	NEW
1013	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1014	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1015	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1016	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1017	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1018	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1019	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	NEW
1020	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	NEW
1021	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	NEW
1022	WARNING	W1-5	WINDING ROAD	NEW
1023	WARNING	W7-3a	NEXT XX MILES	NEW
1024	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	NEW
1025	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	NEW
1026	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	NEW
1027	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1028	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1029	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1030	WARNING	W1-1-R	TURN RIGHT	NEW
1031	WARNING	W13-1-20	ADVISORY SPEED 20	NEW
1032	WARNING	W1-1-R	TURN RIGHT	NEW
1033	WARNING	W13-1-30	ADVISORY SPEED 30	NEW
1034	WARNING	W1-1-L	TURN LEFT	NEW
1035	WARNING	W13-1-25	ADVISORY SPEED 25	NEW
1036	WARNING	W1-1-R	TURN RIGHT	NEW
1037	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1038	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1039	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1040	WARNING	W1-1-L	TURN LEFT	NEW

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Corridor A: North Bloomfield Rd
Summary of Signing Assessment and Recommendations

Object ID	Category	Code	Code Description	FINAL ACTION
1041	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	NEW
1042	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	NEW
1043	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	NEW
1044	WARNING	W1-1-R	TURN RIGHT	NEW
1045	WARNING	W13-1-20	ADVISORY SPEED 20	NEW
1046	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1047	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1048	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1049	WARNING	W1-1-L	TURN LEFT	NEW
1050	WARNING	W13-1-20	ADVISORY SPEED 20	NEW
1051	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	NEW
1052	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	NEW
1053	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	NEW
1054	WARNING	W1-1-R	TURN RIGHT	NEW
1055	WARNING	W13-1-20	ADVISORY SPEED 20	NEW
1056	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1057	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1058	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1059	WARNING	W1-1-R	TURN RIGHT	NEW
1060	WARNING	W13-1-20	ADVISORY SPEED 20	NEW
1061	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1062	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1063	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1064	WARNING	W1-1-L	TURN LEFT	NEW
1065	WARNING	W13-1-25	ADVISORY SPEED 25	NEW
1066	WARNING	W1-1-L	TURN LEFT	NEW
1067	WARNING	W13-1-25	ADVISORY SPEED 25	NEW
1068	WARNING	W1-5	WINDING ROAD	NEW
1069	WARNING	W7-3a	NEXT XX MILES	NEW
1070	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1071	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1072	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1073	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	NEW

Corridor A: North Bloomfield Rd
Summary of Signing Assessment and Recommendations

Object ID	Category	Code	Code Description	FINAL ACTION
1074	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	NEW
1075	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	NEW
1076	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1077	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1078	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1079	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	NEW
1080	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	NEW
1081	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	NEW
1082	WARNING	W1-5	WINDING ROAD	NEW
1083	WARNING	W7-3a	NEXT XX MILES	NEW
1084	WARNING	W1-1-R	TURN RIGHT	NEW
1085	WARNING	W13-1-25	ADVISORY SPEED 25	NEW
1086	REGULATORY	R28(CA)	NO PARKING WITH LEFT ARROW	NEW
1087	WARNING	W7-2bP	TRUCKS USE LOWER GEAR	NEW

Corridor A: North Bloomfield Rd
New and Replaced Signage Details and Quantities

Total Number of New Signs to be Installed: 88

	Code	Code Description	Quantity
Regulatory	R28(CA)	NO PARKING WITH LEFT ARROW	1
Curve Warning Signs	W1-1-L	TURN LEFT	5
	W1-1-R	TURN RIGHT	8
	W13-1-20	ADVISORY SPEED 20	5
	W13-1-25	ADVISORY SPEED 25	4
	W13-1-30	ADVISORY SPEED 30	2
	W1-5	WINDING ROAD	4
	W1-8-L	CHEVRON ALIGNMENT LEFT	21
	W1-8-R	CHEVRON ALIGNMENT RIGHT	33
Other Signs	W7-2bP	TRUCKS USE LOWER GEAR	1
	W7-3a	NEXT XX MILES	4
		Total:	***88***

Total Number of Signs to be Replaced: 16

	Code	Code Description	Quantity
Regulatory	R2-1-30*	SPEED LIMIT 30*	6
	R2-1-35	SPEED LIMIT 35	1
	R99-19	NO PARKING HERE TO CORNER	1
Curve Warning Signs	W1-7	ADVISORY ARROW BIDIRECTIONAL	1
	W1-8-L	CHEVRON ALIGNMENT LEFT	1
	W5-1	ROAD NARROWS	1
	W99-22	CAUTION STEEP WINDING ROAD 5 MILES AHEAD	1
	W99-25**	USE LOW GEAR**	1
Other Signs	G99-29	MALAKOFF DIGGINS STATE HISTORIC PARK 11 MILES	1
	G99-30	BUSH RD NEXT RIGHT	1
	OM1-1	OBJECT MARKER DIAMOND WITH REFLECTORS	1
		Total:	***16***

**This sign will be replaced with a R2-1-35 (SPEED LIMIT 35) sign.*
***This sign will be replaced with a standard W7-2bP sign as noted above.*

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Corridor B: Greenhorn Rd
Summary of Signing Assessment and Recommendations

Object ID	Category	Code	Code Description	FINAL ACTION
763	REGULATORY	R1-1	STOP	KEEP
764	REGULATORY	R1-3P	ALL WAY	KEEP
765	REGULATORY	R2-1-35	SPEED LIMIT 35	KEEP
766	REGULATORY	R28(CA)-L	NO PARKING ANY TIME ARROW LEFT	KEEP
767	REGULATORY	R28(CA)-R	NO PARKING ANY TIME ARROW RIGHT	KEEP
768	WARNING	W1-1-L	CURVE LEFT	KEEP
769	WARNING	W13-1-25	ADVISORY SPEED 25	REMOVE
770	WARNING	W1-1-R	CURVE RIGHT	REPLACE
771	WARNING	W13-1-25	ADVISORY SPEED 25	REMOVE
772	REGULATORY	R2-1-35	SPEED LIMIT 35	KEEP
773	REGULATORY	R2-1-35	SPEED LIMIT 35	KEEP
774	WARNING	W1-5	CURVES WINDY ROAD	REMOVE
775	WARNING	W13-1-20	ADVISORY SPEED 20	REMOVE
776	WARNING	W1-5	CURVES WINDY ROAD	REMOVE
777	WARNING	W13-1-20	ADVISORY SPEED 20	REMOVE
778	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	REMOVE
779	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	REMOVE
780	WARNING	W1-5	CURVES WINDY ROAD	REMOVE
781	WARNING	W13-1-20	ADVISORY SPEED 20	RELOCATE
782	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	REPLACE
783	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	REMOVE
784	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	REPLACE
785	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	REMOVE
786	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	REPLACE
787	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	REMOVE
788	REGULATORY	R2-1-35	SPEED LIMIT 35	REPLACE
789	WARNING	W1-5	CURVES WINDY ROAD	REMOVE
790	WARNING	W13-1-20	ADVISORY SPEED 20	REMOVE
791	WARNING	W43(CA)	ICY	REMOVE
792	WARNING	W99-20	NEXT 1.7 MILES	REMOVE
793	REGULATORY	R2-1-35	SPEED LIMIT 35	REPLACE
794	REGULATORY	R2-1-35	SPEED LIMIT 35	REPLACE
795	WARNING	W2-2-R	CROSS ROAD RIGHT ONLY	KEEP

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Corridor B: Greenhorn Rd
Summary of Signing Assessment and Recommendations

Object ID	Category	Code	Code Description	FINAL ACTION
796	WARNING	W13-1-15	ADVISORY SPEED 15	KEEP
797	WARNING	OM3-L	OBSTRUCTION LEFT	REPLACE
798	WARNING	OM3-R	OBSTRUCTION RIGHT	KEEP
799	WARNING	OM3-L	OBSTRUCTION LEFT	REPLACE
800	WARNING	W43(CA)	ICY	REMOVE
801	WARNING	W99-20	NEXT 1.7 MILES	REMOVE
802	REGULATORY	R2-1-35	SPEED LIMIT 35	REPLACE
803	WARNING	W1-2-R	CURVE SLIGHT RIGHT	REMOVE
804	WARNING	W13-1-20	ADVISORY SPEED 20	REMOVE
805	GUIDE	G99-26	PROHIBITED BEYOND THIS POINT	KEEP
806	GUIDE	G99-27	END COUNTY MAINTAINED ROAD	KEEP
807	GUIDE	G99-28	ROAD MAINTAINED BY PROPERTY OWNERS	KEEP
1088	WARNING	W13-1-30	ADVISORY SPEED 30	NEW
1089	WARNING	W13-1-30	ADVISORY SPEED 30	NEW
1090	WARNING	W1-1-R	TURN RIGHT	NEW
1091	WARNING	W13-1-15	ADVISORY SPEED 15	NEW
1092	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1093	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1094	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1095	WARNING	W1-1-L	TURN LEFT	NEW
1096	WARNING	W13-1-15	ADVISORY SPEED 15	NEW
1097	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	NEW
1098	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	NEW
1099	WARNING	W1-8-L	CHEVRON ALIGNMENT LEFT	NEW
1100	WARNING	W1-3-R	REVERSE TURN RIGHT	NEW
1101	WARNING	W13-1-15	ADVISORY SPEED 15	NEW
1102	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1103	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1104	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1105	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1106	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1107	WARNING	W1-8-R	CHEVRON ALIGNMENT RIGHT	NEW
1108	WARNING	W1-3-L	REVERSE TURN LEFT	NEW

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