Sun City Anthem Drive/Anthem Parkway

Sight Visibility and Speed Review

KHA Project No. 092266011.1
COH CMTS No. 132-09-TE-001

December 2008

Kimley-Horn and Associates, Inc.

SUN CITY ANTHEM DRIVE / ANTHEM PARKWAY

SIGHT VISIBILITY AND SPEED REVIEW

FINAL REPORT

KHA Project No. 092266011.1
COH CMTS No. 132-09-TE-001

Prepared for:

THE CITY OF HENDERSON
A Place To Call Home

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1.0 INTRODUCTION

The City of Henderson initiated an intersection sight visibility and speed review along the Sun City Anthem Drive / Anthem Parkway loop in response to resident concerns. The purpose of this study is to evaluate the 45 mph posted speed limit along the Sun City Anthem Drive / Anthem Parkway loop by collecting speed data at ten (10) locations and reviewing intersection sight distance at twenty-four (24) intersections identified by the City of Henderson.

The intersection sight distance conclusions and recommendations outlined in this report are based on the review of observable field conditions and aerial photography provided by the City of Henderson. The review of historical construction drawings, "as-built" drawings or current topographic surveys was not completed as part of this project. All field measurements are approximate and were made by hand without the use of survey equipment.

2.0 SPEED, VOLUME AND CLASSIFICATION DATA

Vehicle speed, volume and classification data was collected at ten (10) locations along the Sun City Anthem Drive / Anthem Parkway loop. The data was collected by Silver State Traffic Data Collection, LLC using pneumatic road tubes and JAMAR count equipment. The data collection locations are listed below and illustrated graphically on **Exhibits 1** and **2** in **Appendix A** and **B**, respectively.

- Location #1 - Sun City Anthem Drive between Langston Hughes Street and Williamsport Street
- Location #2 - Sun City Anthem Drive between Preston Park Street and Scotts Valley Drive
- Location #3 - Sun City Anthem Drive between Prichard Avenue and Gettysburg Avenue
- Location #4 - Sun City Anthem Drive between Colvin Run Drive and Thunder Bay Avenue
- Location #5 - Sun City Anthem Drive between Hayden Creek Terrace and Olivia Heights Avenue
- Location #6 - Sun City Anthem Drive between Foxtail Creek Avenue and Bicentennial Parkway
- Location #7 - Anthem Parkway between Dewar Highland Street and Wild Iris Terrace / Solera Moon Drive
- Location #8 - Anthem Parkway between Laurel Heights Lane and Somersworth Drive
- Location #9 - Anthem Parkway between Red Valley Avenue and Atchley Drive
- Location #10 - Anthem Parkway between Alexandria Drive and Sun City Anthem Drive

These ten collection locations were selected to evenly distribute the data along the Sun City Anthem Drive / Anthem Parkway loop. The data collection equipment was placed approximately halfway between the adjacent upstream and downstream intersections to minimize the influence of turning traffic in an attempt to collect free-flow vehicle speeds.

Data was collected over a four (4) day period beginning at 12:00 AM on Wednesday, November 19, 2008 and ending at 12:00 PM on Saturday, November 22, 2008. Data was collected for ninety-six (96) consecutives hours at each of the ten locations, with the exception of Location #6. The road tubes at Location #6 were moved north of their original location on Thursday, November 20, 2008 in response to a citizen complaint. The northbound road tubes were moved at approximately 10:00 PM. The southbound road tubes were moved at approximately 10:30 PM. Both relocations required approximately twenty minutes and the JAMAR count equipment was left running during the relocations so the data collection would be continuous. The lack of data during these twenty minute relocation periods is not expected to significantly influence the summary statistics for the speed, volume and classification data at Location #6.

2.1 Speed Data

The speed data collected at each of the ten locations is summarized graphically on **Exhibit 1** in **Appendix A**. The Exhibit provides the 85th percentile speed, time mean speed, 10 mph pace and the percentage of vehicles traveling at speeds greater than 45 mph. These statistics are provided by direction of travel for each collection day and as a summary of the entire four day data collection period. Hourly speed data in 5 mph increments for each count location is provided on the CD in **Appendix F**.

The 85th percentile speed is the speed below which 85 percent of the observed vehicles traveled and above which 15 percent of the vehicles traveled. The 85th percentile speed is one of the factors used in the evaluation of posted speed limits. The time mean speed is the arithmetic mean of the sum of all the observed spot vehicle speeds divided by the total number of observations. The 10 mph pace is the 10 mph speed range that contains the largest number of observations.

The following observations were made when comparing the speed data for each collection day by direction of travel and location.

- The 85th percentile speed by location and direction varies by collection day between 0 and 1 mph for all collection locations with the exception of Location #6 which varies between 0 and 4 mph in the southbound direction.
- The time mean speed by location and direction varies by collection day between 0 and 1 mph for all collection locations with the exception of Location #6 which varies between 0 and 3 mph in the southbound direction and location #4 which varies between 0 and 2 mph in the southbound direction.
- The 10 mph pace did not vary between collection days when comparing the same location and direction of travel, with the exception of the Wednesday, November 19, 2008 data in the southbound direction at Location #6.

The following observations were made when comparing the summarized speed data for the entire four day collection period by direction of travel and location. A total of twenty (20) summary values were compared (ten data collection locations with two directions of travel at each location).

- The lowest 85th percentile speed is 39 mph and was recorded in the southbound direction at Location #9.
- The highest 85th percentile speed is 60 mph and was recorded in the westbound direction at Location #7.
- 6 of the 20 summary 85th percentile speeds were at or below 45 mph.
- 14 of the 20 summary 85th percentile speeds were greater than 45 mph.
- 5 of the 20 summary 85th percentile speeds were between 46 and 50 mph.
- 5 of the 20 summary 85th percentile speeds were between 51 and 55 mph.
- 4 of the 20 summary 85th percentile speeds were greater than 55 mph.
- The percent of vehicles exceeding the 45 mph posted speed limit varied from a low of 0.8% in the southbound direction of travel at Location #9 to a high of 91.1% in the westbound direction of travel a Location #7.

The speed data shows a high level of consistency between collection days and indicates that the day of week does not significantly influence 85th percentile speeds by location. Nine of the ten data collection locations had 85th percentile speeds in excess of 50 mph in one or both directions. The prevailing 85th percentile speeds are discussed in relation to the measured intersection sight distance in **Section 4.0**.

2.2 Volume and Classification Data

The volume and classification data collected at each of the ten locations is summarized graphically on **Exhibit 2** in **Appendix B**. Every recorded vehicle was classified automatically into one of thirteen categories by the data collection equipment. Ten of the thirteen categories include multi-axle/tire vehicles or buses. For the purposes of this study, these ten categories were consolidated into one category (Buses/Heavy Vehicles). The "Cars and Trailers" and "2 Axle Long" categories were also combined into one category (Cars/Light Trucks). The "Motorcycles" category was reported as recorded. **Exhibit 2** provides a summary of the daily volume and corresponding classification percentage for each of the four collection days. **Exhibit 2** also includes a summary of each count location which provides the total volume and corresponding classification percentage by direction of travel for the entire four day collection period. Hourly classification and volume data for all thirteen classification categories at each count location is provided on the CD in **Appendix F**.

The following observations were made when comparing the classification data for each collection day by direction of travel and location.

- The percentage of Cars/Light Trucks by location and direction varies by collection day between 0.4 percent and 2.9 percent for all collection locations.
- The percentage of Buses/Heavy Vehicles by location and direction varies by collection day between 0.5 percent and 2.9 percent for all collection locations.
- The percentage of Motorcycles by location and direction varies by collection day between 0.0 percent and 0.8 percent for all collection locations.
- The daily Cars/Light Truck volume was lowest on Saturday for all collection locations and directions of travel with the exception of the northbound direction at Location #6 on Wednesday and the westbound direction at Location #1 on Thursday.
- The daily Buses/Heavy Vehicles volume was lowest on Saturday for all collection locations and directions of travel, with the exception westbound direction at Location #1 on Thursday.
- The daily Bike volume was lowest on the weekdays for all collection locations and directions of travel, with the exception of the southbound direction at Location #5 and Location #10 which were lowest on Saturday.

The following observations were made when comparing the summarized classification data for the entire four day collection period by direction of travel and location. A total of twenty (20) summary values were compared (ten data collection locations with two directions of travel at each location).

- The total percentage of Cars/Light Trucks varies between 89.0 percent and 97.8 percent
- The total percentage of Buses/Heavy Vehicles varies between 1.9 percent and 10.7 percent
- The total percentage of Motorcycles varies between 0.0% and 0.8%

The classification data shows a high level of consistency between collection days and category percentages. The data shows that passenger cars and light trucks represent close to or in excess of 90% of the total traffic for all collection locations. This result supports the use of the passenger car design values from the *AASHTO - Geometric Design of Highways and Streets* manual when evaluating intersection sight distance. Vehicle classification is discussed in relation to intersection sight distance in **Section 4.0**.

3.0 INTERSECTION SIGHT DISTANCE REVIEW

The procedures and distance requirements identified in the 2004 *Policy on Geometric Design of Highways and Streets* (Green Book) by the American Association of State Highway and Transportation Officials were used as the basis for the intersection sight distance review.

The Green Book states: *"Specified areas along intersection approach legs and across their included corners should be clear of obstructions that might block a driver's view of potentially conflicting vehicles. These specified areas are known as clear sight triangles. The dimensions of the legs of the sight triangles depend on the design speeds of the intersecting roadways and the type of traffic control used at the intersection. These dimensions are based on observed driver behavior and are documented by space-time profiles and speed choices of drivers on intersection approaches. Two types of clear sight triangles are considered in intersection design, approach sight triangles, and departure sight triangles."*

The Sun City Anthem Drive / Anthem Parkway sight visibility review focused on departure sight triangles for stopped drivers on the minor-road approach. Left turn movements from the major road approach were also reviewed at a number of intersections. The intersection sight distance review was based on both calculated and observed values.

3.1 Calculated Intersection Sight Distance

The recommended dimensions of the departure sight triangles vary with the geometrics and type of traffic control at an intersection, along with the type of maneuver being analyzed. This study focused on the following two cases, as defined in the Green Book:

- Case B – Intersections with stop control on the minor road
  - Case B1 – Left turn from the minor road
  - Case B2 – Right turn from the minor road
  - Case B3 – Crossing maneuver from the minor road
- Case F – Left turns from the major road

Intersection sight distance for stop-controlled intersections is greater than the required stopping sight distance. This increased distance helps improve intersection operations by allowing minor-road vehicles to complete their maneuver without requiring major road vehicles to slow significantly or stop. Since the minor-road approach is stop controlled, minor-road vehicles can wait until it is safe to proceed. Stopping sight distance was not calculated or analyzed as part of this study.

The City of Henderson identified twenty-four (24) intersections, along with specific movements at each intersection, for study.

1. Sun City Anthem Drive / Anthem Parkway (*Case B1 and B2)*
2. Sun City Anthem Drive / Fieldbrook Street (*Case B1, B2, B3 and F)*
3. Sun City Anthem Drive / Langston Hughes Street (*Case B1, B2, B3 and F)*
4. Sun City Anthem Drive / Williamsport Street (*Case B1, B2 and F)*
5. Sun City Anthem Drive / Heritage Springs Drive (*Case B1 and B2)*
6. Sun City Anthem Drive / Preston Park Street (*Case B1 and B2)*
7. Sun City Anthem Drive / Scotts Valley Drive (*Case B1, B2 and F)*
8. Sun City Anthem Drive / Prichard Avenue (*Case B1 and B2)*
9. Sun City Anthem Drive / Gettysburg Avenue (*Case B1 and B2)*
10. Sun City Anthem Drive / Hampton Road (*Case B2)*
11. Sun City Anthem Drive / Colvin Run Drive (*Case B1, B2 and F)*
12. Sun City Anthem Drive / Thunder Bay Avenue (*Case B1, B2, B3 and F)*
13. Sun City Anthem Drive / Hayden Creek Terrace (*Case B1, B2, B3 and F)*
14. Sun City Anthem Drive / Olivia Heights Avenue (*Case B1, B2 and B3)*
15. Sun City Anthem Drive / Foxtail Creek Avenue (*Case B1, B2, B3 and F)*
16. Anthem Parkway / Schaeffer Hills Drive (*Case B1 and B2)*
17. Anthem Parkway / Wild Iris Terrace / Solera Moon Drive (*Case B1, B2, B3 and F)*
18. Anthem Parkway / Laurel Heights Lane (*Case B1, B2 and F)*
19. Anthem Parkway / Somersworth Drive (*Case B1 and B2)*
20. Anthem Parkway / Alyssa Jade Drive (*Case B1, B2 and F)*
21. Anthem Parkway / Merrimack Valley Avenue (*Case B1, B2 and F)*
22. Anthem Parkway / Red Valley Avenue (*Case B1, B2 and F)*
23. Anthem Parkway / Atchley Drive (*Case B1, B2, B3 and F)*
24. Anthem Parkway / Alexandria Drive (*Case B1, B2 and F)*

Intersection sight distance was calculated for each Case (B1, B2, B3 and F) using design speeds of 35 mph, 40 mph and 45 mph. The review of historical construction drawings, "as-built" drawings and current topographic surveys was not completed as part of this project so the ultimate design speed of the roadway is not known. For the purposes of this review, the design speed was assumed to equal the posted speed limit of 45 mph. The calculated intersection sight distance is based on the intersection sight distance equation and calculated time gap and design speed scenario for each Case. Time gaps were calculated for each intersection by Case using the Green Book recommendations for multi-lane roadways. All minor roads were assumed to have approach grades of less than 3 percent. The median widths were reviewed at each intersection and converted to equivalent travel lanes. None of the intersection medians were analyzed with median storage for two-stage movements. Continuous left turn (Case B1) and crossing (Case B3) movements were assumed. A detailed summary of the calculated time gap, intersection sight distance values and Green Book page and table reference is provided in **Appendix C**.

3.2 Intersection Sight Distance Exhibits

Intersection sight distance exhibits were developed for each of the twenty-four study intersections using the calculated intersection sight distance values for each Case and design speed scenario discussed in **Section 3.1**. These exhibits were created using aerial photography provided by the City of Henderson. The aerial photographs are scaled but were not rectified to a known horizontal or vertical control point. All measurements and point locations shown on the exhibits are approximate. The purpose of these exhibits is to illustrate general roadside features that may create a sight obstruction (landscaping, above-ground utilities, property walls, signing, etc) and to illustrate the horizontal alignment of the study intersections in relation to the calculated intersection sight distance for each identified Case. The intersection sight distance was measured from the decision point on the minor-road approach along the centerline in the controlling approach lane for each applicable Case. The decision point is intended to represent the location of the driver's eye at a stopped condition on the minor approach for Cases B1, B2 and B3 on the major approach for Case F. The decision point is illustrated on the Exhibits at 14.5-feet and 8-feet from the edge of the major road traveled way (projected lip of gutter) for Cases B1, B2 and B3 and in the major road left turn lane 8-feet behind the median nose adjacent to the left turn lane.

> The Green Book states *"The vertex (decision point) of the departure sight triangle on the minor road should be 14.5 feet from the edge of the major-road traveled way. This represents the typical position of the minor-road driver's eye when a vehicle is stopped relatively close to the major road. Field observations of vehicle stopping positions found that, where necessary, drivers will stop with the front of their vehicle 6.5 feet or less from the edge of the major-road traveled way. Measurements of passenger cars indicate that the distance from the front of the vehicle to the driver's eye for the current passenger car population is nearly always 8 feet or less."*

The Intersection sight distance Exhibits are provided in **Appendix D** for each study area intersection, starting at Sun City Anthem Drive / Anthem Parkway (**Exhibit A**) and moving counterclockwise around the loop to Anthem Parkway / Alexandria Drive (**Exhibit X**). Recommendations based on the Exhibits are discussed in **Section 4.0**.

3.3 Intersection Sight Distance Photographs

The exhibits discussed in **Section 3.2** illustrate potential horizontal sight visibility obstructions. These exhibits do not provide information related to the vertical alignment of the intersecting roadways or relative elevations associated with potential sight obstructions within the driver's line of sight. In an attempt to better understand both the horizontal and vertical components sight visibility photographs were staged at each study intersection. These photographs are intended to generally show the limiting horizontal and vertical sight distance for the Case (B1, B2, B3 and F) and design speed scenarios discussed in **Section 3.1**. The photographs were taken from a height of approximately 3.5 feet above the roadway surface using a tri-pod mounted camera. This location is intended to approximate the driver's eye height. Photographs were taken from two locations on the minor-road approach for Cases B1, B2 and B3. These locations are intended to replicate the driver decision point discussed in **Section 3.2** and were approximately 8-feet and 14.5-feet from the edge of the traveled way of the major road (Sun City Anthem Drive and Anthem Parkway). Photographs were also taken from one location on the major road for Case F. These photographs were taken in the left turn lane approximately 8 feet behind the median nose adjacent to the left turn lane.

The sight visibility photographs were taken looking toward a 36-inch orange traffic cone placed in the center of the controlling approach lane at the sight visibility distances calculated in **Section 3.1** and illustrated on the Exhibits in **Appendix D**. In addition to the calculated distances, an ultimate intersection sight distance was identified in the field and photographed. The ultimate distance was limited to the calculated 55 mph intersection sight distance for Cases B1, B2, B3 and Case F if no obstructions were present. If obstructions were present, an approximate distance was determined by varying the location of the 36-inch cone. The purpose of determining the ultimate sight distance was to identify limiting obstructions. The ultimate sight distance can be misleading as median and road-side landscaping created barriers in some locations but not others. The ultimate sight distance was typically measured as the nearest location to the decision point at which the 36-inch cone could no longer be identified by the photographer. In some cases, the cone could be seen upstream of the location identified as the ultimate sight distance. All field measurements were approximate and made by hand without the use of survey equipment. If a more accurate measurement of intersection sight distance is required a detailed survey is recommended.

A number of factors impact the clarity and interpretation of the intersection sight distance photographs. At intersections where the line of sight was partially obscured by landscaping or other features the photographer may have been able to see the cone with the naked eye from the camera elevation but could not see the cone through the camera viewfinder. In addition, multiple focal points at intersections with line of sight obstructions caused pixilation of the digital photographs that blurred the cone location when it was clearly visible to the photographer. Notes taken in the field where used to identify cone locations that were not readily identifiable in the review of the photographs.

The Intersection sight distance photographs are combined with the intersection sight distance Exhibits provided in **Appendix D** for each study area intersection, starting at Sun City Anthem Drive / Anthem Parkway (**Exhibit A**) and moving counterclockwise around the loop to Anthem Parkway / Alexandria Drive (**Exhibit X**). Recommendations based on the photographs are discussed in **Section 4.0**. All of the photographs taken during the field review are provided on the CD in **Appendix F**. The photographs are organized by intersection and when viewed with the intersection Exhibits can be identified using the following general naming convention:

T appr-***X***-***Y***-***Z***

T – Orientation of minor approach direction at the study intersection
X – Viewing direction of the photograph
Y – Intersection sight distance Case (B1, B2, B3, F or Ult)
Z - Decision point location (8-feet or 14.5-feet)

4.0 CONCLUSIONS AND RECOMMENDATIONS

An evaluation of driver demographics was not completed with this study. However, it is anticipated that a high proportion of drivers on the Sun City Anthem Drive / Anthem Parkway loop are in excess of fifty-five years of age based on the presence of age-restricted residential communities in the Anthem area. The Green Book states: *"Although opinions among experts are not unanimous, there is a general agreement that advancing age has a deleterious effect on an individual's perceptual, mental, and motor skills. These skills are critical factors in vehicle operation"*. The Green Book notes that older drivers are involved in a disproportionate number of crashes where complex decisions are required, and goes on to list six maneuvers that tend to have higher crash frequencies among older drivers. Making a left turn across traffic was one of these six maneuvers. The Green Book lists a number of counter measures that may help to minimize problems experienced by older drivers. These counter measures include: improving sight distance by modifying designs and removing obstructions at intersections and interchanges; assessing sight triangles for adequacy of sight distance; and enforcing speed limits. The City of Henderson should consider the impacts of driver demographics to the recommendations made in this study.

Based on the results of the speed study, the posted speed limit is recommended to remain at 45 mph. Only six of the twenty data collection location/direction of travel combinations had 85th percentile speeds at or below 45 mph. The 85th percentile speed is typically considered to represent the comfortable driving speed for a particular roadway segment. A reduction in the posted speed limit may not cause motorists to drive at a reduced speed. To accommodate the 45 mph posted speed limit significant landscape modifications will be required at the majority of the twenty-four study intersections. Further study is also required at a number of intersections where intersection sight distance is limited. Obstructions caused by the horizontal/vertical geometry of the intersecting roadways may be a limiting factor at these intersections and require alternative strategies to landscape removal. These strategies may include a change in traffic control, a reduction in the posted speed limit and/or installation of advance warning signs or implementation of access restrictions to minimize intersection sight distance requirements.

The majority of all vehicles on the minor-road approach were observed to stop at or near the 8-foot decision point location. Based on this observation, the study recommendations are based on the 8-foot decision point exhibits and photographs. In general, intersection sight distance was less for the 14.5-foot decision point than the 8-foot decision point.

The following recommendations are based on the intersection sight distance exhibits and field photographs. These recommendations are summarized in tabular form in **Appendix E**.

The Henderson Police Department should provide speed enforcement along the Sun City Anthem Drive / Anthem Parkway loop. The data collected with this project indicates 85th percentile speeds in excess of the 45 mph posted speed limit at 14 of the 20 data collection location/direction of travel combinations. Speed enforcement should be provided on an on-going basis for the posted speed limit along the loop. Based on the results of this study, the posted speed limit may vary by location. The City of Henderson should work with the Henderson Police Department to determine an appropriate speed threshold for enforcement.

The City of Henderson should develop a public information announcement in advance of the landscape removal efforts, speed limit reductions and/or the speed enforcement campaign. The public information announcement should identify the date of the speed limit reductions (if any) and warn of increased speed enforcement activities and the enforcement threshold. In addition, the announcement should provide the rationale behind the recommended landscape removal.

Landscaping should be removed within the sight visibility zones identified on the intersection exhibits. The Green Book states *"The profiles of the intersecting roadways should be designed to provide the recommended sight distance for drivers on the intersection approaches. Within a sight triangle, any object at a height above the elevation of the adjacent roadways that would obstruct the driver's view should be removed or lowered, if practical."* The Sun City Anthem Drive / Anthem Parkway loop provides unique landscape challenges when reviewing intersection sight visibility. The existing landscape is a mix a low-lying ground cover, shrubs, tall grasses and trees. Depending on the geometry of the intersection, low-lying ground cover may block the visibility of vehicles approaching the crest of a vertical curve. A cluster of shrubs and/or trees that may not individually restrict visibility may create a screening effect when viewed at an acute angle or on horizontal curves. In some areas clusters of landscaping may limit visibility to small segments within the sight triangle. These small obstructions can block the view of an approaching vehicle depending on when and for how long the minor-road driver views the approach prior to commencing their turning maneuver. These low-lying bushes/shrubs can also block vehicle headlights creating additional challenges in identifying approaching vehicles in low or no light conditions. In some areas, abundant landscaping is present that does not currently restrict visibility, however, without proper maintenance by personnel knowledgeable of sight visibility requirements, landscaping in sight visibility zones has the potential, with continued growth, to restrict visibility.

The scope of this study did not include review of existing landscape material. The City should consider the type of landscaping and its potential to become an obstruction before removal. Due to the sight visibility restrictions created by the existing landscape, other obstructions may exist or sight visibility may actually be limited by the roadway geometrics that were not identified in the initial review. The City should assess the available sight distance during the landscape removal process to ensure that adequate intersection sight distance does exist. Landscape modifications are anticipated to yield the following results:

- **The following intersection approaches appear to have adequate intersection sight distance for a posted speed limit of *45 mph without* existing landscape modifications.**

1. Sun City Anthem Drive at Preston Park Drive (South Approach) for opposing Eastbound direction of travel on Sun City Anthem Drive
2. Sun City Anthem Drive at Scotts Valley Drive (Northwest Approach) for opposing Southwest direction of travel on Sun City Anthem Drive
3. Sun City Anthem Drive at Hampton Road (Northeast Approach) for opposing Northwest direction of travel on Sun City Anthem Drive
4. Sun City Anthem Drive at Colvin Run Drive (Northeast Approach) for opposing Northwest direction of travel on Sun City Anthem Drive
5. Sun City Anthem Drive at Olivia Heights Avenue (West Approach) for opposing Northbound and Southbound direction of travel on Sun City Anthem Drive
6. Sun City Anthem Drive at Foxtail Creek Avenue (East Approach) for opposing Southbound direction of travel on Sun City Anthem Drive
7. Sun City Anthem Drive at Foxtail Creek Avenue (West Approach) for opposing Northbound and Southbound directions of travel on Sun City Anthem Drive
8. Anthem Parkway at Schaeffer Hills Drive (North Approach) for opposing Eastbound direction of travel on Anthem Parkway
9. Anthem Parkway at Wild Iris Terrace (Northwest Approach) for opposing Southwest direction of travel on Anthem Parkway
10. Anthem Parkway at Solera Moon Drive (Southeast Approach) for opposing Northeast direction of travel on Anthem Parkway
11. Anthem Parkway at Laurel Heights Lane (Northwest Approach) for opposing Southwest direction of travel on Anthem Parkway
12. Anthem Parkway at Alyssa Jade Drive (North Approach) for opposing Eastbound direction of travel on Anthem Parkway
13. Anthem Parkway at Red Valley Drive (East Approach) for opposing Southbound direction of travel on Anthem Parkway
14. Anthem Parkway at Atchley Drive (East Approach) for opposing Northbound direction of travel on Anthem Parkway
15. Anthem Parkway at Atchley Drive (West Approach) for opposing Northbound and Southbound directions of travel on Anthem Parkway

- **The following left turn movements from the major road (Sun City Anthem Drive and Anthem Parkway) appear to have adequate intersection sight distance for the posted speed limit of *45 mph without* existing landscape modifications.**

1. Sun City Anthem Drive at Fieldbrook Street - Southeast approach looking at Northwest approach
2. Sun City Anthem Drive at Fieldbrook Street - Northwest approach looking at Southeast approach
3. Sun City Anthem Drive at Langston Hughes Street - East approach looking at West approach
4. Sun City Anthem Drive at Langston Hughes Street - West approach looking at East approach
5. Sun City Anthem Drive at Scotts Valley Drive - Northeast approach looking at Southwest approach
6. Sun City Anthem Drive at Thunder Bay Avenue - North approach looking at South approach
7. Sun City Anthem Drive at Thunder Bay Avenue - South approach looking at North approach
8. Sun City Anthem Drive at Hayden Creek Terrace - North approach looking at South approach
9. Sun City Anthem Drive at Hayden Creek Terrace - South approach looking at North approach
10. Sun City Anthem Drive at Foxtail Creek Avenue - North approach looking at South approach
11. Sun City Anthem Drive at Foxtail Creek Avenue - South approach looking at North approach
12. Anthem Parkway at Wild Iris Terrace/Solera Moon Drive - Southwest approach looking at Northeast approach

13. Anthem Parkway at Wild Iris Terrace/Solera Moon Drive - Northeast approach looking at Southwest approach

14. Anthem Parkway at Atchley Drive - North approach looking at South approach

15. Anthem Parkway at Atchley Drive - South approach looking at North approach

- **The following intersection approaches are anticipated to have adequate intersection sight distance for a posted speed limit of *45 mph with* landscape modifications within the sight visibility zones.** The intersection sight visibility zones should be reviewed after the landscape modifications have been completed. Removal/modification of landscaping may reveal obstructions that were not visible during the initial review.

1. Sun City Anthem Drive at Anthem Parkway (West Approach) for opposing Northbound and Southbound directions of travel on Sun City Anthem Drive

2. Sun City Anthem Drive at Langston Hughes Street (North Approach) for opposing Eastbound and Westbound directions of travel on Sun City Anthem Drive

3. Sun City Anthem Drive at Langston Hughes Street (South Approach) for opposing Eastbound direction of travel on Sun City Anthem Drive

4. Sun City Anthem Drive at Heritage Springs Drive (South Approach) for opposing Eastbound direction of travel on Sun City Anthem Drive

5. Sun City Anthem Drive at Preston Park Drive (South Approach) for opposing Westbound direction of travel on Sun City Anthem Drive

6. Sun City Anthem Drive at Scotts Valley Drive (Northwest Approach) for opposing Northeast direction of travel on Sun City Anthem Drive

7. Sun City Anthem Drive at Prichard Avenue (East Approach) for opposing Northbound direction of travel on Sun City Anthem Drive

8. Sun City Anthem Drive at Gettysburg Avenue (East Approach) for opposing Northbound and Southbound directions of travel on Sun City Anthem Drive

9. Sun City Anthem Drive at Colvin Run Drive (Northeast Approach) for opposing Southeast direction of travel on Sun City Anthem Drive

10. Sun City Anthem Drive at Olivia Heights Avenue (East Approach) for opposing Southbound direction of travel on Sun City Anthem Drive

11. Anthem Parkway at Wild Iris Terrace (Northwest Approach) for opposing Northeast direction of travel on Anthem Parkway

12. Anthem Parkway at Solera Moon Drive (Southeast Approach) for opposing Southwest direction of travel on Anthem Parkway

13. Anthem Parkway at Somersworth Drive (Southeast Approach) for opposing Southwest direction of travel on Anthem Parkway

14. Anthem Parkway at Merrimack Valley Avenue (Southeast Approach) for opposing Southwest direction of travel on Anthem Parkway

15. Anthem Parkway at Atchley Drive (East Approach) for opposing Southbound direction of travel on Anthem Parkway

16. Anthem Parkway at Alexandria Drive (West Approach) for opposing Northbound direction of travel on Anthem Parkway

- **The following left turn movements from the major road (Sun City Anthem Drive and Anthem Parkway) appear to have adequate intersection sight distance for a posted speed limit of *45 mph with* landscape modifications.**

1. Sun City Anthem Drive at Scotts Valley Drive - Southwest approach looking at Northeast approach

2. Sun City Anthem Drive at Colvin Run Drive - Northwest approach looking at Southeast approach

3. Anthem Parkway at Laurel Heights Lane - Southwest approach looking at Northeast approach

- **The following intersection approaches are anticipated to have adequate intersection sight distance for a posted speed limit of *40 mph with* landscape modifications within the sight visibility zones.** The intersection sight visibility zones should be reviewed after the landscape modifications have been completed. Removal/modification of landscaping may reveal obstructions that were not visible during the initial review or may increase the anticipated intersection sight distance and associated speed.

  1. Sun City Anthem Drive at Prichard Avenue (East Approach) for opposing Southbound direction of travel on Sun City Anthem Drive

  2. Anthem Parkway at Alyssa Jade Drive (North Approach) for opposing Westbound direction of travel on Anthem Parkway

  3. Anthem Parkway at Merrimack Valley Avenue (Southeast Approach) for opposing Northeast direction of travel on Anthem Parkway

- **The following left turn movements from the major road (Sun City Anthem Drive and Anthem Parkway) appear to have adequate intersection sight distance for a posted speed limit of *40 mph with* landscape modifications.**

  1. Anthem Parkway at Merrimack Valley Avenue - Northeast approach looking at Southwest approach

- **The following intersection approaches are anticipated to have adequate intersection sight distance for a posted speed limit of *35 mph with* landscape modifications within the sight visibility zones.** The intersection sight visibility zones should be reviewed after the landscape modifications have been completed. Removal/modification of landscaping may reveal obstructions that were not visible during the initial review or may increase the anticipated intersection sight distance and associated speed.

  1. Sun City Anthem Drive at Olivia Heights Avenue (East Approach) for opposing Northbound direction of travel on Sun City Anthem Drive

  2. Anthem Parkway at Schaeffer Hills Drive (North Approach) for opposing Westbound direction of travel on Anthem Parkway

  3. Anthem Parkway at Somersworth Drive (Southeast Approach) for opposing Northeast direction of travel on Anthem Parkway

  4. Anthem Parkway at Red Valley Drive (East Approach) for opposing Northbound direction of travel on Anthem Parkway

- **The following left turn movements from the major road (Sun City Anthem Drive and Anthem Parkway) appear to have adequate intersection sight distance for a posted speed limit of *35 mph with* landscape modifications.**

  1. Anthem Parkway at Red Valley Avenue - North approach looking at South approach

The following intersections are recommended for further study by the City of Henderson. Obstructions caused by the horizontal/vertical geometry of the intersecting roadways may be a limiting factor at these intersections and require alternative strategies to landscape removal. These strategies may include a change in traffic control, a reduction in the posted speed limit and/or installation of advance warning signs. If a suitable alternative cannot be identified, the City should consider the implementation of access restrictions to eliminate the controlling intersection sight distance movements and minimize intersection sight distance requirements.

1. Sun City Anthem Drive at Fieldbrook Street (Northeast and Southwest Approaches) for opposing Northwest and Southwest directions of travel on Sun City Anthem Drive
   - *Significant landscape removal may be required*
   - *Property walls, utilities and other permanent structures may control available sight distance*
   - *Horizontal/vertical curve may control available sight distance*
   - Investigate all-way stop installation and stopping sight distance on Sun City Anthem Drive
   - Review construction drawings and/or as-built plans for horizontal/vertical geometry

2. Sun City Anthem Drive at Langston Hughes Street (South Approach) for opposing Westbound direction of travel on Sun City Anthem Drive
   - *Significant landscape removal may be required*
   - *Property walls, utilities and other permanent structures may control available sight distance*
   - *Horizontal/vertical curve may control available sight distance*
   - Investigate all-way stop installation and stopping sight distance on Sun City Anthem Drive
   - Review construction drawings and/or as-built plans for horizontal/vertical geometry

3. Sun City Anthem Drive at Williamsport Street (South Approach) for opposing Eastbound and Westbound directions of travel on Sun City Anthem Drive
   - *Significant landscape removal may be required*
   - *Property walls, utilities and other permanent structures may control available sight distance*
   - *Horizontal/vertical curve may control available sight distance*
   - Investigate all-way stop installation and stopping sight distance on Sun City Anthem Drive
   - Review construction drawings and/or as-built plans for horizontal/vertical geometry

4. Sun City Anthem Drive at Heritage Springs Drive (South Approach) for opposing Westbound direction of travel on Sun City Anthem Drive
   - *Significant landscape removal may be required*
   - *Property walls, utilities and other permanent structures may control available sight distance*
   - *Horizontal/vertical curve may control available sight distance*
   - Investigate all-way stop installation and stopping sight distance on Sun City Anthem Drive
   - Review construction drawings and/or as-built plans for horizontal/vertical geometry

5. Sun City Anthem Drive at Scotts Valley Drive (Southeast Approach) for opposing Southwest and Northeast directions of travel on Sun City Anthem Drive
   - *Significant landscape removal may be required*
   - *Property walls, utilities and other permanent structures may control available sight distance*
   - *Horizontal/vertical curve may control available sight distance*
   - Investigate all-way stop installation and stopping sight distance on Sun City Anthem Drive
   - Review construction drawings and/or as-built plans for horizontal/vertical geometry

6. Sun City Anthem Drive at Thunder Bay Avenue (East and West Approaches) for opposing Northbound and Southbound directions of travel on Sun City Anthem Drive
   - *Significant landscape removal may be required*
   - *Horizontal/vertical curve may control available sight distance*
   - Investigate all-way stop installation and stopping sight distance on Sun City Anthem Drive
   - Review construction drawings and/or as-built plans for horizontal/vertical geometry

7. Sun City Anthem Drive at Hayden Creek Terrace (East and West Approaches) for opposing Northbound and Southbound directions of travel on Sun City Anthem Drive
   - *Significant landscape removal may be required*
   - *Horizontal/vertical curve may control available sight distance*
   - Investigate all-way stop installation and stopping sight distance on Sun City Anthem Drive
   - Review construction drawings and/or as-built plans for horizontal/vertical geometry

8. Sun City Anthem Drive at Foxtail Creek Avenue (East Approach) for opposing Northbound direction of travel on Sun City Anthem Drive
   - *Significant landscape removal may be required*
   - *Property walls, utilities and other permanent structures may control available sight distance*
   - *Horizontal/vertical curve may control available sight distance*
   - Investigate all-way stop installation and stopping sight distance on Sun City Anthem Drive
   - Review construction drawings and/or as-built plans for horizontal/vertical geometry

9. Anthem Parkway at Laurel Heights Lane (Northwest Approach) for opposing Northeast direction of travel on Anthem Parkway
   - *Significant landscape removal may be required*
   - *Horizontal/vertical curve may control available sight distance*
   - Investigate all-way stop installation and stopping sight distance on Sun City Anthem Drive
   - Review construction drawings and/or as-built plans for horizontal/vertical geometry

10. Anthem Parkway at Alexandria Drive (West Approach) for opposing Southbound direction of travel on Anthem Parkway
    - *Horizontal/vertical curve may control available sight distance*
    - Investigate all-way stop installation and stopping sight distance on Sun City Anthem Drive
    - Review construction drawings and/or as-built plans for horizontal/vertical geometry

The following left turn movements from the major road (Sun City Anthem Drive and Anthem Parkway) are recommended for further study by the City of Henderson. Obstructions caused by the horizontal/vertical geometry along the major road may be a limiting factor for these left turn movements and may require alternative strategies to landscape removal. These strategies may include a change in traffic control, a reduction in the posted speed limit and/or installation of advance warning signs. If a suitable alternative cannot be identified, the City should consider the implementation of access restrictions to eliminate the left turn movement.

1. Sun City Anthem Drive at Williamsport Street - East approach looking at West approach
   - *Significant landscape removal may be required*
   - *Horizontal/vertical curve may control available sight distance*
   - Investigate all-way stop installation and stopping sight distance on Sun City Anthem Drive
   - Review construction drawings and/or as-built plans for horizontal/vertical geometry

2. Anthem Parkway at Alexandria Drive - South approach looking at North approach
   - *Significant landscape removal may be required*
   - *Horizontal/vertical curve may control available sight distance*
   - Investigate all-way stop installation and stopping sight distance on Sun City Anthem Drive
   - Review construction drawings and/or as-built plans for horizontal/vertical geometry
   - Investigate reconstructing left turn storage bay

APPENDIX A

SPEED DATA SUMMARY

EXHIBIT 1: SPEED DATA SUMARY

LEGEND

1 — SPEED COLLECTION LOCATION

● SIGHT VISIBILITY STUDY INTERSECTION

NORTH

NTS

1	EASTBOUND Speed Data				WESTBOUND Speed Data			
	85th Percentile Speed	Mean Speed (Avg)	10 MPH Pace	% Vehicles >45 MPH	85th Percentile Speed	Mean Speed (Avg)	10 MPH Pace	% Vehicles >45 MPH
Wed 11/19/2008	45	41	36-45	13.0%	55	50	46-55	79.0%
Thur 11/20/2008	45	41	36-45	11.0%	55	50	46-55	78.3%
Fri 11/21/2008	45	41	36-45	11.5%	55	50	46-55	79.2%
Sat 11/22/2008	45	41	36-45	11.9%	55	50	46-55	78.5%
Summary	45	41	36-45	11.8%	55	50	46-55	78.8%

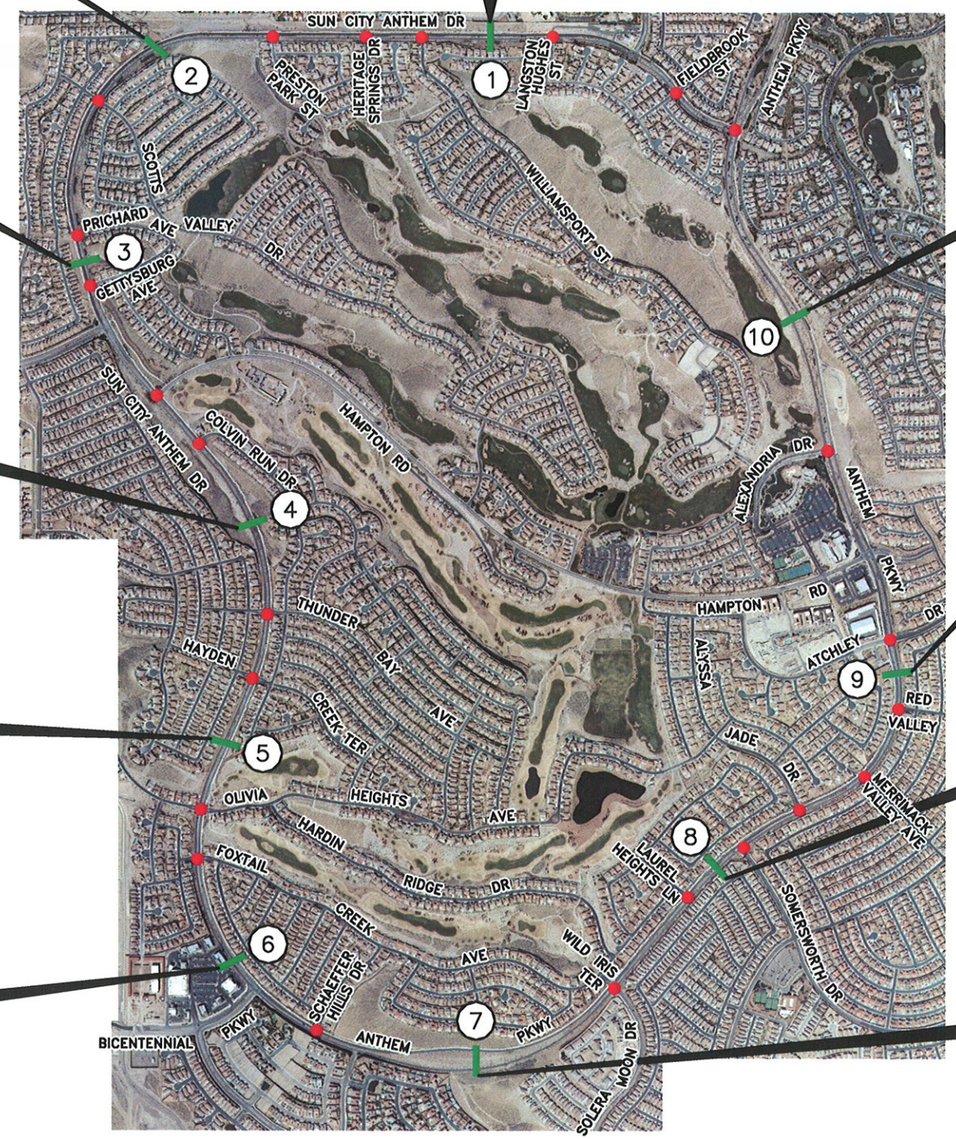
2	EASTBOUND Speed Data				WESTBOUND Speed Data			
	85th Percentile Speed	Mean Speed (Avg)	10 MPH Pace	% Vehicles >45 MPH	85th Percentile Speed	Mean Speed (Avg)	10 MPH Pace	% Vehicles >45 MPH
Wed 11/19/2008	43	38	36-45	3.2%	52	46	41-50	55.9%
Thur 11/20/2008	42	38	36-45	2.5%	51	46	41-50	53.5%
Fri 11/21/2008	43	38	36-45	2.6%	52	46	41-50	55.4%
Sat 11/22/2008	43	38	36-45	2.9%	51	46	41-50	54.3%
Summary	43	38	36-45	2.8%	52	46	41-50	54.8%

3	NORTHBOUND Speed Data				SOUTHBOUND Speed Data			
	85th Percentile Speed	Mean Speed (Avg)	10 MPH Pace	% Vehicles >45 MPH	85th Percentile Speed	Mean Speed (Avg)	10 MPH Pace	% Vehicles >45 MPH
Wed 11/19/2008	53	46	41-50	54.4%	48	43	36-45	25.5%
Thur 11/20/2008	53	46	41-50	52.8%	48	42	36-45	22.6%
Fri 11/21/2008	52	46	41-50	54.4%	48	43	36-45	26.3%
Sat 11/22/2008	53	46	41-50	55.8%	49	43	36-45	28.5%
Summary	53	46	41-50	54.3%	48	43	36-45	25.7%

4	NORTHBOUND Speed Data				SOUTHBOUND Speed Data			
	85th Percentile Speed	Mean Speed (Avg)	10 MPH Pace	% Vehicles >45 MPH	85th Percentile Speed	Mean Speed (Avg)	10 MPH Pace	% Vehicles >45 MPH
Wed 11/19/2008	54	48	46-55	69.5%	49	44	41-50	36.1%
Thur 11/20/2008	54	48	46-55	68.9%	49	43	41-50	32.0%
Fri 11/21/2008	54	48	46-55	69.8%	49	44	41-50	36.0%
Sat 11/22/2008	54	48	46-55	69.4%	50	45	41-50	40.5%
Summary	54	48	46-55	69.4%	49	44	41-50	36.0%

5	NORTHBOUND Speed Data				SOUTHBOUND Speed Data			
	85th Percentile Speed	Mean Speed (Avg)	10 MPH Pace	% Vehicles >45 MPH	85th Percentile Speed	Mean Speed (Avg)	10 MPH Pace	% Vehicles >45 MPH
Wed 11/19/2008	46	40	36-45	13.1%	58	51	46-55	85.4%
Thur 11/20/2008	45	40	36-45	12.5%	58	51	46-55	85.5%
Fri 11/21/2008	45	40	36-45	13.8%	58	52	46-55	86.6%
Sat 11/22/2008	45	40	36-45	13.6%	59	52	46-55	87.3%
Summary	45	40	36-45	13.3%	59	52	46-55	86.2%

6	NORTHBOUND Speed Data				SOUTHBOUND Speed Data			
	85th Percentile Speed	Mean Speed (Avg)	10 MPH Pace	% Vehicles >45 MPH	85th Percentile Speed	Mean Speed (Avg)	10 MPH Pace	% Vehicles >45 MPH
Wed 11/19/2008	59	51	46-55	79.9%	48	41	36-45	22.1%
Thur 11/20/2008	59	51	46-55	79.4%	51	44	41-50	47.2%
Fri 11/21/2008	59	51	46-55	80.5%	51	44	41-50	47.2%
Sat 11/22/2008	59	51	46-55	78.9%	52	44	41-50	49.6%
Summary	59	51	46-55	79.7%	50	43	41-50	41.2%



10	NORTHBOUND Speed Data				SOUTHBOUND Speed Data			
	85th Percentile Speed	Mean Speed (Avg)	10 MPH Pace	% Vehicles >45 MPH	85th Percentile Speed	Mean Speed (Avg)	10 MPH Pace	% Vehicles >45 MPH
Wed 11/19/2008	44	39	36-45	5.6%	52	47	41-50	64.5%
Thur 11/20/2008	44	39	36-45	5.7%	52	47	41-50	65.2%
Fri 11/21/2008	44	39	36-45	5.7%	52	47	41-50	66.6%
Sat 11/22/2008	44	39	36-45	5.8%	53	47	41-50	67.2%
Summary	44	39	36-45	5.7%	52	47	41-50	65.8%

9	NORTHBOUND Speed Data				SOUTHBOUND Speed Data			
	85th Percentile Speed	Mean Speed (Avg)	10 MPH Pace	% Vehicles >45 MPH	85th Percentile Speed	Mean Speed (Avg)	10 MPH Pace	% Vehicles >45 MPH
Wed 11/19/2008	47	38	36-45	21.3%	39	32	31-40	0.9%
Thur 11/20/2008	48	38	36-45	22.9%	39	33	31-40	0.8%
Fri 11/21/2008	48	38	36-45	22.4%	39	33	31-40	0.7%
Sat 11/22/2008	48	38	36-45	22.9%	40	33	31-40	1.0%
Summary	48	38	36-45	22.3%	39	33	31-40	0.8%

8	NORTHBOUND Speed Data				SOUTHBOUND Speed Data			
	85th Percentile Speed	Mean Speed (Avg)	10 MPH Pace	% Vehicles >45 MPH	85th Percentile Speed	Mean Speed (Avg)	10 MPH Pace	% Vehicles >45 MPH
Wed 11/19/2008	46	40	36-45	15.1%	58	51	46-55	80.3%
Thur 11/20/2008	46	40	36-45	15.1%	58	51	46-55	79.6%
Fri 11/21/2008	46	40	36-45	15.7%	59	51	46-55	80.1%
Sat 11/22/2008	46	40	36-45	15.1%	59	51	46-55	79.0%
Summary	46	40	36-45	15.3%	58	51	46-55	79.8%

7	EASTBOUND Speed Data				WESTBOUND Speed Data			
	85th Percentile Speed	Mean Speed (Avg)	10 MPH Pace	% Vehicles >45 MPH	85th Percentile Speed	Mean Speed (Avg)	10 MPH Pace	% Vehicles >45 MPH
Wed 11/19/2008	45	39	36-45	12.3%	60	53	51-60	90.8%
Thur 11/20/2008	45	40	36-45	13.5%	60	53	51-60	91.2%
Fri 11/21/2008	45	39	36-45	13.1%	60	53	51-60	91.6%
Sat 11/22/2008	45	40	36-45	14.8%	60	53	51-60	90.6%
Summary	45	39	36-45	13.4%	60	53	51-60	91.1%

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APPENDIX B

CLASSIFICATION AND VOLUME SUMMARY

EXHIBIT 2: CLASSIFICATION AND VOLUME SUMMARY

LEGEND

(1) SPEED COLLECTION LOCATION

● SIGHT VISIBILITY STUDY INTERSECTION

NORTH

NTS

2	EASTBOUND Classification and Volume Data						WESTBOUND Classification and Volume Data					
	% Cars/Light Trucks	Volume Cars/Trucks	% Buses/Heavy Vehicles	Volume Heavy Vehicles	% Motorbikes	Volume Motorbikes	% Cars/Light Trucks	Volume Cars/Trucks	% Buses/Heavy Vehicles	Volume Heavy Vehicles	% Motorbikes	Volume Motorbikes
Wed 11/19/2008	96.5%	4,692	2.9%	141	0.6%	29	94.3%	5,144	5.3%	295	0.4%	20
Thur 11/20/2008	97.3%	4,512	2.2%	104	0.5%	22	93.2%	4,872	6.3%	332	0.5%	24
Fri 11/21/2008	96.8%	4,911	2.6%	132	0.6%	31	93.2%	5,286	5.8%	327	1.0%	57
Sat 11/22/2008	97.6%	4,263	1.8%	77	0.6%	27	94.9%	4,574	3.9%	192	1.2%	57
Summary	97.0%	18,378	2.4%	454	0.6%	109	93.8%	19,876	5.5%	1,146	0.7%	158

1	EASTBOUND Classification and Volume Data						WESTBOUND Classification and Volume Data					
	% Cars/Light Trucks	Volume Cars/Trucks	% Buses/Heavy Vehicles	Volume Heavy Vehicles	% Motorbikes	Volume Motorbikes	% Cars/Light Trucks	Volume Cars/Trucks	% Buses/Heavy Vehicles	Volume Heavy Vehicles	% Motorbikes	Volume Motorbikes
Wed 11/19/2008	97.6%	5,278	2.0%	109	0.4%	23	91.9%	4,538	7.5%	367	0.6%	32
Thur 11/20/2008	97.7%	5,109	2.0%	107	0.3%	14	93.8%	4,461	5.6%	271	0.6%	28
Fri 11/21/2008	97.6%	5,557	1.9%	108	0.5%	30	92.3%	5,656	7.1%	438	0.6%	34
Sat 11/22/2008	98.0%	4,728	1.5%	73	0.5%	25	94.1%	4,867	5.4%	280	0.5%	28
Summary	97.7%	20,672	1.9%	397	0.4%	92	92.9%	19,522	6.5%	1,356	0.6%	122

3	NORTHBOUND Classification and Volume Data						SOUTHBOUND Classification and Volume Data					
	% Cars/Light Trucks	Volume Cars/Trucks	% Buses/Heavy Vehicles	Volume Heavy Vehicles	% Motorbikes	Volume Motorbikes	% Cars/Light Trucks	Volume Cars/Trucks	% Buses/Heavy Vehicles	Volume Heavy Vehicles	% Motorbikes	Volume Motorbikes
Wed 11/19/2008	92.5%	3,898	7.1%	296	0.4%	18	89.0%	4,222	11.0%	522	0.0%	0
Thur 11/20/2008	92.3%	3,743	7.4%	299	0.3%	12	89.0%	4,069	11.0%	500	0.0%	0
Fri 11/21/2008	92.8%	4,097	6.9%	302	0.3%	15	89.5%	4,464	10.5%	526	0.0%	1
Sat 11/22/2008	94.0%	3,566	5.6%	212	0.4%	14	90.6%	3,804	9.4%	394	0.0%	1
Summary	92.9%	15,304	6.7%	1,109	0.4%	59	89.5%	16,559	10.5%	1,942	0.0%	2

10	NORTHBOUND Classification and Volume Data						SOUTHBOUND Classification and Volume Data					
	% Cars/Light Trucks	Volume Cars/Trucks	% Buses/Heavy Vehicles	Volume Heavy Vehicles	% Motorbikes	Volume Motorbikes	% Cars/Light Trucks	Volume Cars/Trucks	% Buses/Heavy Vehicles	Volume Heavy Vehicles	% Motorbikes	Volume Motorbikes
Wed 11/19/2008	94.5%	8,020	4.7%	402	0.8%	65	92.9%	7,824	6.7%	564	0.4%	30
Thur 11/20/2008	95.1%	8,027	4.1%	348	0.8%	70	93.0%	7,785	6.6%	553	0.4%	32
Fri 11/21/2008	94.6%	8,286	4.5%	392	0.9%	75	93.3%	7,998	6.3%	535	0.4%	38
Sat 11/22/2008	96.1%	7,278	3.0%	231	0.9%	67	94.9%	7,233	4.7%	364	0.4%	29
Summary	95.0%	31,611	4.2%	1,373	0.8%	277	93.5%	30,840	6.1%	2,016	0.4%	129

4	NORTHBOUND Classification and Volume Data						SOUTHBOUND Classification and Volume Data					
	% Cars/Light Trucks	Volume Cars/Trucks	% Buses/Heavy Vehicles	Volume Heavy Vehicles	% Motorbikes	Volume Motorbikes	% Cars/Light Trucks	Volume Cars/Trucks	% Buses/Heavy Vehicles	Volume Heavy Vehicles	% Motorbikes	Volume Motorbikes
Wed 11/19/2008	94.2%	5,708	5.4%	322	0.4%	24	93.9%	5,903	5.7%	363	0.4%	23
Thur 11/20/2008	94.4%	5,668	5.2%	316	0.4%	23	94.6%	5,922	4.9%	308	0.5%	30
Fri 11/21/2008	93.8%	5,993	5.5%	354	0.7%	44	94.3%	6,208	5.1%	337	0.6%	41
Sat 11/22/2008	95.6%	5,108	3.9%	211	0.5%	28	95.8%	5,264	3.5%	197	0.7%	36
Summary	94.4%	22,477	5.1%	1,203	0.5%	119	94.6%	23,297	4.9%	1,205	0.5%	130

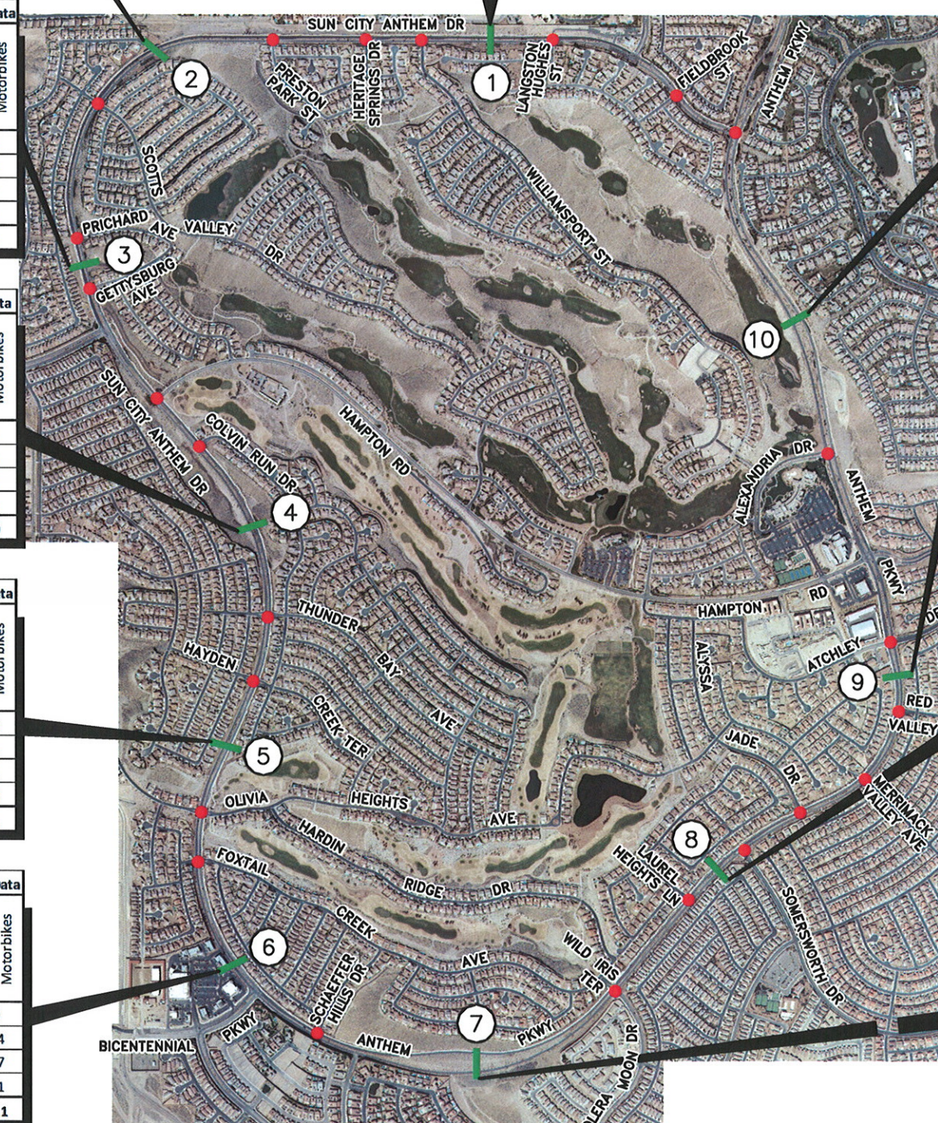
9	NORTHBOUND Classification and Volume Data						SOUTHBOUND Classification and Volume Data					
	% Cars/Light Trucks	Volume Cars/Trucks	% Buses/Heavy Vehicles	Volume Heavy Vehicles	% Motorbikes	Volume Motorbikes	% Cars/Light Trucks	Volume Cars/Trucks	% Buses/Heavy Vehicles	Volume Heavy Vehicles	% Motorbikes	Volume Motorbikes
Wed 11/19/2008	93.9%	8,380	5.3%	480	0.8%	68	92.6%	7,021	6.4%	479	1.0%	76
Thur 11/20/2008	94.2%	8,283	5.2%	459	0.6%	51	93.0%	7,018	6.4%	488	0.6%	42
Fri 11/21/2008	93.7%	8,382	5.5%	494	0.8%	72	93.3%	7,106	5.8%	448	0.9%	65
Sat 11/22/2008	94.8%	7,373	4.4%	339	0.8%	61	94.5%	6,541	4.8%	333	0.7%	49
Summary	94.1%	32,418	5.2%	1,772	0.7%	252	93.4%	27,686	5.8%	1,748	0.8%	232

5	NORTHBOUND Classification and Volume Data						SOUTHBOUND Classification and Volume Data					
	% Cars/Light Trucks	Volume Cars/Trucks	% Buses/Heavy Vehicles	Volume Heavy Vehicles	% Motorbikes	Volume Motorbikes	% Cars/Light Trucks	Volume Cars/Trucks	% Buses/Heavy Vehicles	Volume Heavy Vehicles	% Motorbikes	Volume Motorbikes
Wed 11/19/2008	94.2%	5,072	5.3%	285	0.5%	29	89.8%	5,290	9.9%	578	0.3%	20
Thur 11/20/2008	94.7%	5,074	4.9%	261	0.4%	23	90.3%	5,253	9.3%	545	0.4%	21
Fri 11/21/2008	94.1%	5,318	5.2%	295	0.7%	38	91.5%	5,406	8.0%	474	0.5%	31
Sat 11/22/2008	96.2%	4,605	3.3%	155	0.6%	27	92.3%	4,707	7.3%	375	0.4%	19
Summary	94.8%	20,069	4.6%	996	0.6%	117	90.9%	20,656	8.7%	1,972	0.4%	91

8	NORTHBOUND Classification and Volume Data						SOUTHBOUND Classification and Volume Data					
	% Cars/Light Trucks	Volume Cars/Trucks	% Buses/Heavy Vehicles	Volume Heavy Vehicles	% Motorbikes	Volume Motorbikes	% Cars/Light Trucks	Volume Cars/Trucks	% Buses/Heavy Vehicles	Volume Heavy Vehicles	% Motorbikes	Volume Motorbikes
Wed 11/19/2008	97.1%	4,123	2.6%	108	0.3%	13	87.8%	3,465	11.8%	467	0.4%	14
Thur 11/20/2008	97.9%	4,074	2.0%	85	0.1%	5	88.5%	3,482	11.4%	448	0.1%	3
Fri 11/21/2008	97.9%	4,272	1.8%	75	0.3%	13	89.2%	3,637	10.4%	425	0.4%	15
Sat 11/22/2008	98.2%	3,649	1.4%	52	0.4%	16	90.7%	3,262	8.9%	321	0.4%	14
Summary	97.8%	16,118	1.9%	320	0.3%	47	89.0%	13,846	10.7%	1,661	0.3%	46

6	NORTHBOUND Classification and Volume Data						SOUTHBOUND Classification and Volume Data					
	% Cars/Light Trucks	Volume Cars/Trucks	% Buses/Heavy Vehicles	Volume Heavy Vehicles	% Motorbikes	Volume Motorbikes	% Cars/Light Trucks	Volume Cars/Trucks	% Buses/Heavy Vehicles	Volume Heavy Vehicles	% Motorbikes	Volume Motorbikes
Wed 11/19/2008	93.4%	3,444	6.1%	223	0.5%	20	94.4%	5,306	5.4%	303	0.2%	9
Thur 11/20/2008	94.4%	4,225	5.1%	225	0.5%	23	93.1%	5,092	6.3%	342	0.6%	34
Fri 11/21/2008	93.8%	5,052	5.5%	295	0.7%	37	92.7%	5,281	6.7%	381	0.6%	37
Sat 11/22/2008	96.0%	4,390	3.4%	155	0.6%	27	94.7%	4,628	4.5%	217	0.8%	41
Summary	94.5%	17,111	4.9%	898	0.6%	107	93.7%	20,311	5.7%	1,243	0.6%	121

7	EASTBOUND Classification and Volume Data						WESTBOUND Classification and Volume Data					
	% Cars/Light Trucks	Volume Cars/Trucks	% Buses/Heavy Vehicles	Volume Heavy Vehicles	% Motorbikes	Volume Motorbikes	% Cars/Light Trucks	Volume Cars/Trucks	% Buses/Heavy Vehicles	Volume Heavy Vehicles	% Motorbikes	Volume Motorbikes
Wed 11/19/2008	97.0%	3,465	2.6%	93	0.4%	14	92.9%	3,097	7.0%	232	0.1%	3
Thur 11/20/2008	97.5%	3,453	2.2%	78	0.3%	10	93.3%	3,137	6.6%	222	0.1%	2
Fri 11/21/2008	96.9%	3,545	2.4%	88	0.7%	25	93.7%	3,202	6.2%	213	0.1%	2
Sat 11/22/2008	97.9%	3,037	1.5%	46	0.6%	20	95.1%	2,873	4.8%	145	0.1%	4
Summary	97.3%	13,500	2.2%	305	0.5%	69	93.7%	12,309	6.2%	812	0.1%	11



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APPENDIX C

INTERSECTION SIGHT DISTANCE CALCULATIONS

Project Name: Anthem Speed Study

KHA Project No.: 92266011
Date: 11/18/2008

Reference: 2004 AASHTO Greenbook

Intersection Control page 654		Intersection Sight Distance (ISD)	Time Gap (t_g) - Base Passenger Car
Case B1:	Left turn from minor road	Exhibit 9-55 page 661	Exhibit 9-54 page 660 - 7.5s
Case B2:	Right turn from minor road	Exhibit 9-58 page 664	Exhibit 9-57 page 664 - 6.5s
Case B3:	Crossing maneuver from minor road	Exhibit 9-58 page 664	Exhibit 9-57 page 664 - 6.5s
Case F:	Left turn from major road	Exhibit 9-67 page 675	Exhibit 9-66 page 674 - 6.5s

ISD Calculation = $1.47*v*t_g$

Control Definitions:

Case B1 (1 movement):	Vehicle turning left does not stop in the median
Case B1 (2 movements):	Vehicle turning left stops in the median
Case B3:	ISD calculated using the time gap

ISD Standard Distance Exhibits

Control	$ISD_{(35mph)}$ (ft)	$ISD_{(40mph)}$ (ft)	$ISD_{(45mph)}$ (ft)
Case B1	386	441	552
Case B2	335	383	430
Case B3	335	383	430
Case F	283	324	364

Major Roadway: Anthem Parkway
Minor Roadway: Sun City Anthem Drive (could stop in median)

Control	Time Gap (s)	$ISD_{(35mph)}$ (ft)	$ISD_{(40mph)}$ (ft)	$ISD_{(45mph)}$ (ft)	$ISD_{(85\%)}$ (ft)
Case B1 (1 movement)	9.5	489	559	629	
Case B2	6.5	335	383	430	

Major Roadway: Sun City Anthem Drive
Minor Roadway: Fieldbrook Street

		(35mph)	(40mph)	(45mph)	(85%)
Case B1	9.0	464	530	596	
Case B2	6.5	335	383	430	
Case B3	8.5	438	500	563	
Case F	6.5	335	383	430	

Major Roadway: Sun City Anthem Drive
Minor Roadway: Langston Hughes Street

Control	Time Gap (s)	$ISD_{(35mph)}$ (ft)	$ISD_{(40mph)}$ (ft)	$ISD_{(45mph)}$ (ft)	$ISD_{(85\%)}$ (ft)
Case B1	9.0	464	530	596	
Case B2	6.5	335	383	430	
Case B3	8.5	438	500	563	
Case F	6.5	335	383	430	

Major Roadway: Sun City Anthem Drive
Minor Roadway: Williamsport Street

Control	Time Gap (s)	$ISD_{(35mph)}$ (ft)	$ISD_{(40mph)}$ (ft)	$ISD_{(45mph)}$ (ft)	$ISD_{(85\%)}$ (ft)
Case B1	9.0	464	530	596	
Case B2	6.5	335	383	430	
Case F	6.5	335	383	430	

Major Roadway: Sun City Anthem Drive
Minor Roadway: Heritage Springs Drive

Control	Time Gap (s)	$ISD_{(35mph)}$ (ft)	$ISD_{(40mph)}$ (ft)	$ISD_{(45mph)}$ (ft)	$ISD_{(85\%)}$ (ft)
Case B1	9.0	464	530	596	
Case B2	6.5	335	383	430	

Major Roadway: Sun City Anthem Drive
Minor Roadway: Preston Park Street

Control	Time Gap (s)	$ISD_{(35mph)}$ (ft)	$ISD_{(40mph)}$ (ft)	$ISD_{(45mph)}$ (ft)	$ISD_{(85\%)}$ (ft)
Case B1	9.0	464	530	596	
Case B2	6.5	335	383	430	

Major Roadway: Sun City Anthem Drive
Minor Roadway: Scotts Valley Drive

Control	Time Gap (s)	$ISD_{(35mph)}$ (ft)	$ISD_{(40mph)}$ (ft)	$ISD_{(45mph)}$ (ft)	$ISD_{(85\%)}$ (ft)
Case B1	9.0	464	530	596	
Case B2	6.5	335	383	430	
Case B3	8.5	438	500	563	
Case F	6.5	335	383	430	

Major Roadway: Sun City Anthem Drive
Minor Roadway: Prichard Avenue

Control	Time Gap (s)	$ISD_{(35mph)}$ (ft)	$ISD_{(40mph)}$ (ft)	$ISD_{(45mph)}$ (ft)	$ISD_{(85\%)}$ (ft)
Case B1	9.0	464	530	596	
Case B2	6.5	335	383	430	

Major Roadway: Sun City Anthem Drive
Minor Roadway: Gettysburg Avenue (could stop in median)

Control	Time Gap (s)	$ISD_{(35mph)}$ (ft)	$ISD_{(40mph)}$ (ft)	$ISD_{(45mph)}$ (ft)	$ISD_{(85\%)}$ (ft)
Case B1 (1 movement)	9.0	464	530	596	
Case B2	6.5	335	383	430	

Major Roadway: Sun City Anthem Drive
Minor Roadway: Hampton Road

Control	Time Gap (s)	$ISD_{(35mph)}$ (ft)	$ISD_{(40mph)}$ (ft)	$ISD_{(45mph)}$ (ft)	$ISD_{(85\%)}$ (ft)
Case B2	6.5	335	383	430	

Major Roadway: Sun City Anthem Drive
Minor Roadway: Colvin Run Drive

Control	Time Gap (s)	$ISD_{(35mph)}$ (ft)	$ISD_{(40mph)}$ (ft)	$ISD_{(45mph)}$ (ft)	$ISD_{(85\%)}$ (ft)
Case B1	9.0	464	530	596	
Case B2	6.5	335	383	430	
Case F	6.5	335	383	430	

Major Roadway: Sun City Anthem Drive
Minor Roadway: Thunder Bay Avenue

Control	Time Gap (s)	$ISD_{(35mph)}$ (ft)	$ISD_{(40mph)}$ (ft)	$ISD_{(45mph)}$ (ft)	$ISD_{(85\%)}$ (ft)
Case B1	9.0	464	530	596	
Case B2	6.5	335	383	430	
Case B3	8.5	438	500	563	
Case F	6.5	335	383	430	

Major Roadway: Sun City Anthem Drive
Minor Roadway: Hayden Creek Terrace

Control	Time Gap (s)	$ISD_{(35mph)}$ (ft)	$ISD_{(40mph)}$ (ft)	$ISD_{(45mph)}$ (ft)	$ISD_{(85\%)}$ (ft)
Case B1	9.0	464	530	596	
Case B2	6.5	335	383	430	
Case B3	8.5	438	500	563	
Case F	6.5	335	383	430	

Major Roadway: Sun City Anthem Drive
Minor Roadway: Olivia Heights Avenue

Control	Time Gap (s)	$ISD_{(35mph)}$ (ft)	$ISD_{(40mph)}$ (ft)	$ISD_{(45mph)}$ (ft)	$ISD_{(85\%)}$ (ft)
Case B1	9.0	464	530	596	
Case B2	6.5	335	383	430	
Case B3	8.5	438	500	563	

Major Roadway: Sun City Anthem Drive
Minor Roadway: Foxtail Creek Avenue

Control	Time Gap (s)	$ISD_{(35mph)}$ (ft)	$ISD_{(40mph)}$ (ft)	$ISD_{(45mph)}$ (ft)	$ISD_{(85\%)}$ (ft)
Case B1	9.0	464	530	596	
Case B2	6.5	335	383	430	
Case B3	8.5	438	500	563	
Case F	6.5	335	383	430	

Major Roadway: Anthem Parkway
Minor Roadway: Schaeffer Hills Drive

Control	Time Gap (s)	$ISD_{(35mph)}$ (ft)	$ISD_{(40mph)}$ (ft)	$ISD_{(45mph)}$ (ft)	$ISD_{(85\%)}$ (ft)
Case B1	9.0	464	530	596	
Case B2	6.5	335	383	430	

Major Roadway: Anthem Parkway
Minor Roadway: Wild Iris Terrace (Solera Moon Drive)

Control	Time Gap (s)	$ISD_{(35mph)}$ (ft)	$ISD_{(40mph)}$ (ft)	$ISD_{(45mph)}$ (ft)	$ISD_{(85\%)}$ (ft)
Case B1	9.0	464	530	596	
Case B2	6.5	335	383	430	
Case B3	8.5	438	500	563	
Case F	6.5	335	383	430	

Major Roadway: Anthem Parkway
Minor Roadway: Laurel Heights Lane

Control	Time Gap (s)	$ISD_{(35mph)}$ (ft)	$ISD_{(40mph)}$ (ft)	$ISD_{(45mph)}$ (ft)	$ISD_{(85\%)}$ (ft)
Case B1	9.0	464	530	596	
Case B2	6.5	335	383	430	
Case F	6.5	335	383	430	

Major Roadway: Anthem Parkway
Minor Roadway: Somersworth Drive

Control	Time Gap (s)	$ISD_{(35mph)}$ (ft)	$ISD_{(40mph)}$ (ft)	$ISD_{(45mph)}$ (ft)	$ISD_{(85\%)}$ (ft)
Case B1	9.0	464	530	596	
Case B2	6.5	335	383	430	

Major Roadway: Anthem Parkway
Minor Roadway: Alyssa Jade Drive

Control	Time Gap (s)	$ISD_{(35mph)}$ (ft)	$ISD_{(40mph)}$ (ft)	$ISD_{(45mph)}$ (ft)	$ISD_{(85\%)}$ (ft)
Case B1	9.0	464	530	596	
Case B2	6.5	335	383	430	
Case F	6.5	335	383	430	

Major Roadway: Anthem Parkway
Minor Roadway: Merrimack Valley Avenue

Control	Time Gap (s)	$ISD_{(35mph)}$ (ft)	$ISD_{(40mph)}$ (ft)	$ISD_{(45mph)}$ (ft)	$ISD_{(85\%)}$ (ft)
Case B1	9.0	464	530	596	
Case B2	6.5	335	383	430	
Case F	6.5	335	383	430	

Major Roadway: Anthem Parkway
Minor Roadway: Red Valley Avenue

Control	Time Gap (s)	$ISD_{(35mph)}$ (ft)	$ISD_{(40mph)}$ (ft)	$ISD_{(45mph)}$ (ft)	$ISD_{(85\%)}$ (ft)
Case B1	9.0	464	530	596	
Case B2	6.5	335	383	430	
Case F	6.5	335	383	430	

Major Roadway: Anthem Parkway
Minor Roadway: Atchley Drive

Control	Time Gap (s)	$ISD_{(35mph)}$ (ft)	$ISD_{(40mph)}$ (ft)	$ISD_{(45mph)}$ (ft)	$ISD_{(85\%)}$ (ft)
Case B1	9.5	489	559	629	
Case B2	6.5	335	383	430	
Case B3	9.0	464	530	596	
Case F	6.5	335	383	430	

Major Roadway: Anthem Parkway
Minor Roadway: Alexandria Drive (could stop in median)

Control	Time Gap (s)	$ISD_{(35mph)}$ (ft)	$ISD_{(40mph)}$ (ft)	$ISD_{(45mph)}$ (ft)	$ISD_{(85\%)}$ (ft)
Case B1 (1 movement)	9.5	489	559	629	
Case B2	6.5	335	383	430	
Case F	7.0	361	412	464	

APPENDIX D

INTERSECTION SIGHT VISIBILITY EXHIBITS (8-FT)

INTERSECTION SIGHT VISIBILITY EXHIBITS (14.5-FT)

LEGEND

X CAMERA LOCATION 8 FT

ISD OBJECT DISTANCE CASE B1
35 mph: 489ft
40 mph: 559ft
45 mph: 629ft
(mph)

(ft) ULTIMATE SIGHT DISTANCE

ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft
(mph)

(ft) ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT A-1

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LEGEND

X CAMERA LOCATION 14.5 FT

ISD OBJECT DISTANCE CASE B1 (mph)
35 mph: 489ft
40 mph: 559ft
45 mph: 629ft

ULTIMATE SIGHT DISTANCE (ft)

ISD OBJECT DISTANCE CASE B2 (mph)
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

ULTIMATE SIGHT DISTANCE (ft)

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT A-2

Kimley-Horn and Associates, Inc.

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40mph AND 45mph CONES VISIBLE

ANTHEM PKWY

35mph CONE VISIBLE

TURNING MOVEMENT B1

SUN CITY ANTHEM DR

ANTHEM PKWY

ALL CONES VISIBLE

TURNING MOVEMENT B2

SUN CITY ANTHEM DR

ANTHEM PARKWAY /
SUN CITY ANTHEM DRIVE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT A-3

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NO CONES VISIBLE

ANTHEM PKWY

NO CONES VISIBLE

TURNING MOVEMENT B1

SUN CITY ANTHEM DR

NO CONES VISIBLE

ANTHEM PKWY

TURNING MOVEMENT B2

SUN CITY ANTHEM DR

ANTHEM PARKWAY /
SUN CITY ANTHEM DRIVE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

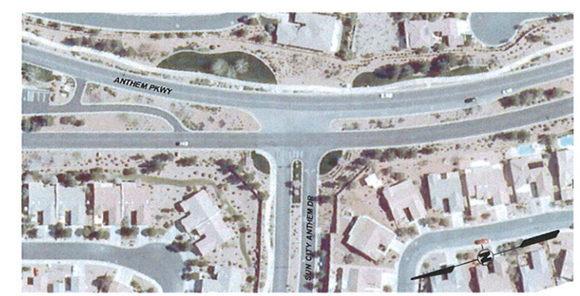

EXHIBIT A-4

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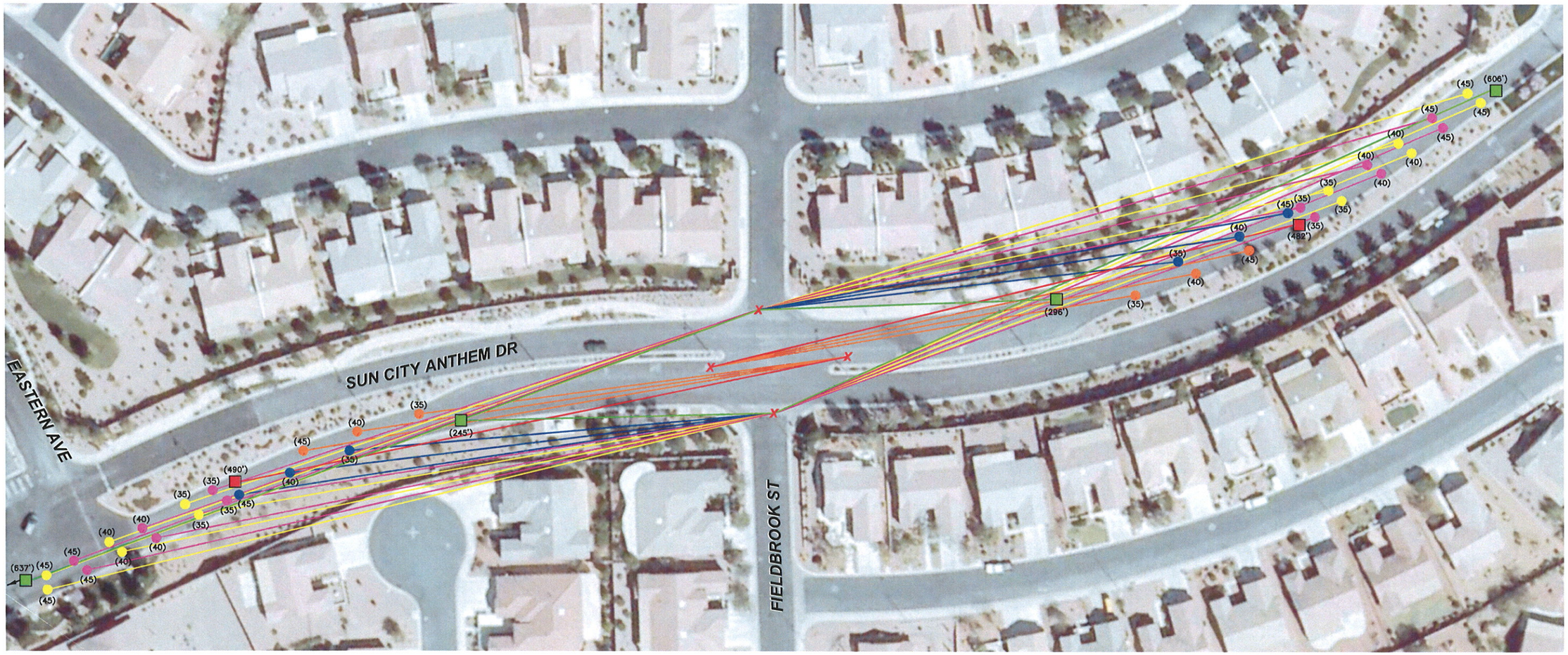

LEGEND

X	CAMERA LOCATION 8 FT		
(mph)	ISD OBJECT DISTANCE CASE B1 35 mph: 464ft 40 mph: 530ft 45 mph: 596ft	(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE B2 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft	(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE B3 35 mph: 438ft 40 mph: 500ft 45 mph: 563ft	(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE F 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft	(ft)	ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT B-1

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LEGEND

X CAMERA LOCATION 14.5 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B3
35 mph: 438ft
40 mph: 500ft
45 mph: 563ft

(ft) ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT B-2

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Path: K:\LAV_PublicTrans\092266011 – COH Speed and Sight Vis Study\CAD\266011ISD-1_14ft.dwg (December 12, 2008)

ALL CONES VISIBLE

SUN CITY ANTHEM DR

NO CONES VISIBLE

TURNING MOVEMENT B1

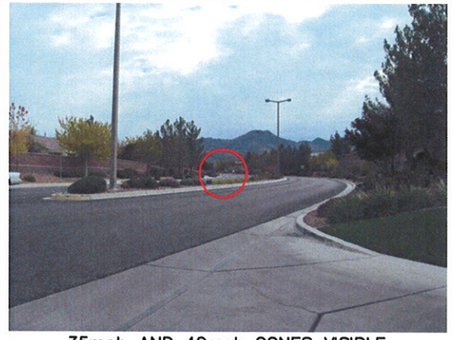
FIELDBROOK ST

NO CONES VISIBLE

SUN CITY ANTHEM DR

TURNING MOVEMENT B2

FIELDBROOK ST



35mph AND 40mph CONES VISIBLE

SUN CITY ANTHEM DR

NO CONES VISIBLE

MOVEMENT B3

FIELDBROOK ST

SUN CITY ANTHEM DRIVE /
FIELDBROOK STREET
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

TURNING MOVEMENT B1

NO CONES VISIBLE

SUN CITY ANTHEM DR

35mph AND 40mph CONES VISIBLE

FIELDBROOK ST

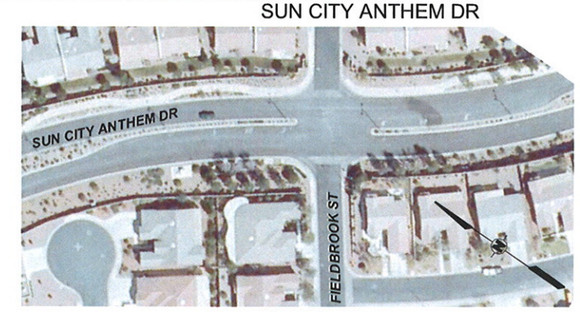


EXHIBIT B-3

Kimley-Horn and Associates, Inc.

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TURNING MOVEMENT B2

NO CONES VISIBLE

SUN CITY ANTHEM DR

FIELDBROOK ST

MOVEMENT B3

NO CONES VISIBLE

SUN CITY ANTHEM DR

ALL CONES VISIBLE

FIELDBROOK ST

TURNING MOVEMENT F

ALL CONES VISIBLE

SUN CITY ANTHEM DR

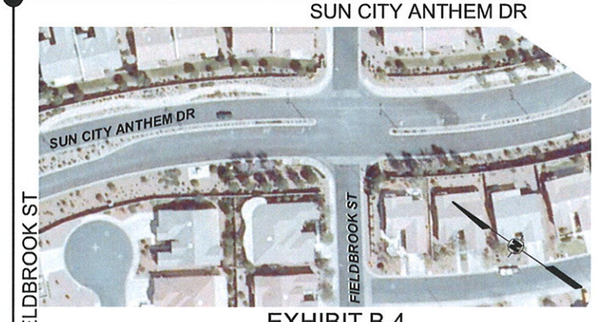
FIELDBROOK ST

SUN CITY ANTHEM DRIVE /
FIELDBROOK STREET
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

ALL CONES VISIBLE

TURNING MOVEMENT F

SUN CITY ANTHEM DR



FIELDBROOK ST

EXHIBIT B-4

Kimley-Horn and Associates, Inc.

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35mph AND 40mph CONES VISIBLE

SUN CITY ANTHEM DR

NO CONES VISIBLE

TURNING MOVEMENT B1

FIELDBROOK ST

NO CONES VISIBLE

SUN CITY ANTHEM DR

TURNING MOVEMENT B2

FIELDBROOK ST

ALL CONES VISIBLE

SUN CITY ANTHEM DR

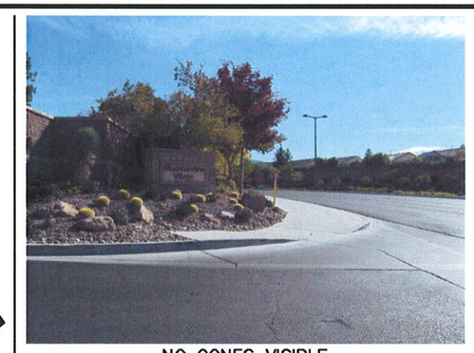
NO CONES VISIBLE

MOVEMENT B3

FIELDBROOK ST

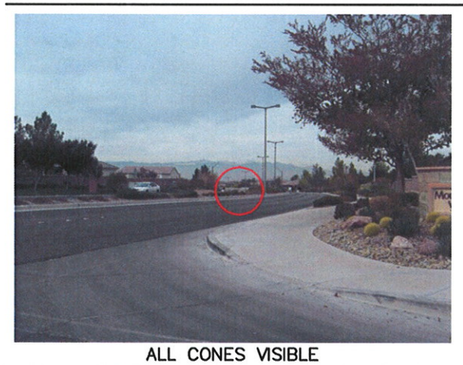
SUN CITY ANTHEM DRIVE /
FIELDBROOK STREET
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

TURNING MOVEMENT B1



NO CONES VISIBLE

SUN CITY ANTHEM DR



ALL CONES VISIBLE

FIELDBROOK ST

EXHIBIT B-5

Kimley-Horn and Associates, Inc.

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TURNING MOVEMENT B2

NO CONES VISIBLE

SUN CITY ANTHEM DR

FIELDBROOK ST

MOVEMENT B3

NO CONES VISIBLE

SUN CITY ANTHEM DR

35mph AND 40mph CONES VISIBLE

FIELDBROOK ST

SUN CITY ANTHEM DRIVE /
FIELDBROOK STREET
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT B-6

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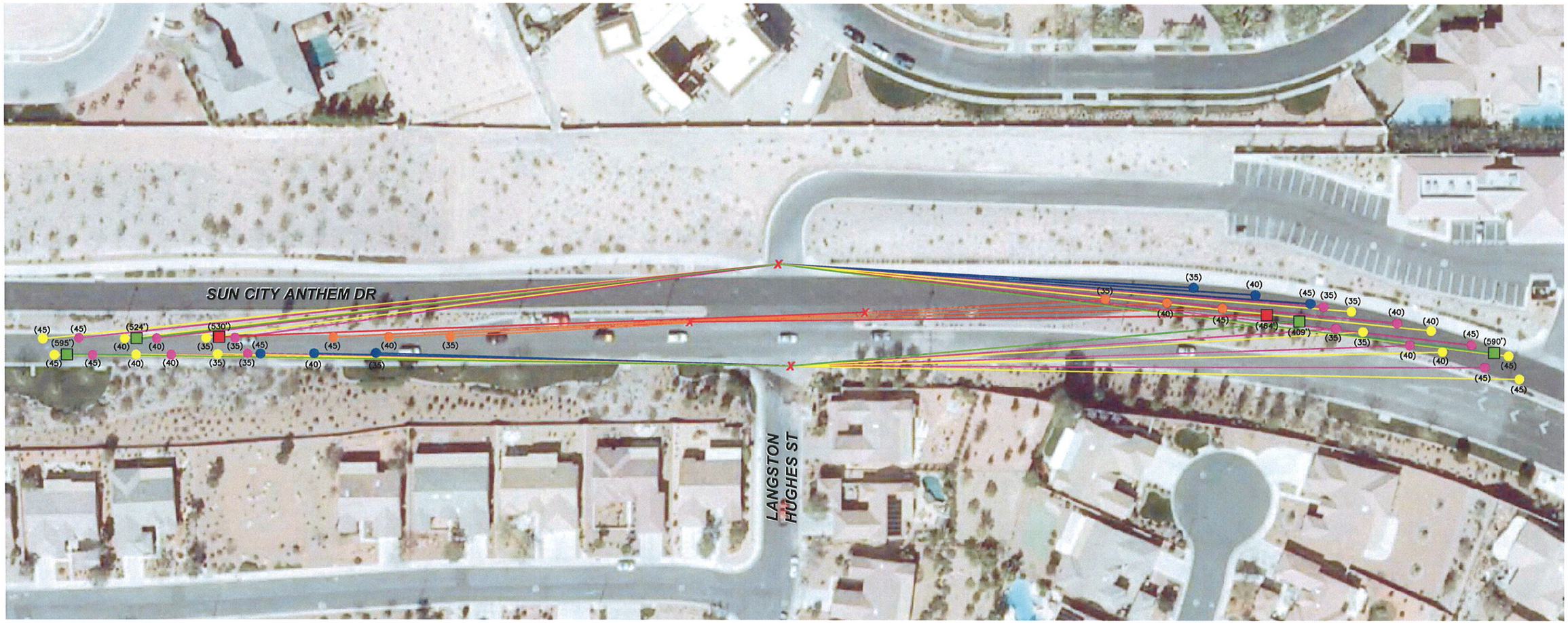

LEGEND

X	CAMERA LOCATION 8 FT
(mph)	ISD OBJECT DISTANCE CASE B1 35 mph: 464ft 40 mph: 530ft 45 mph: 596ft
(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE B2 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft
(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE B3 35 mph: 438ft 40 mph: 500ft 45 mph: 563ft
(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE F 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft
(ft)	ULTIMATE SIGHT DISTANCE

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

N

EXHIBIT C-1

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LEGEND

X CAMERA LOCATION 14.5 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B3
35 mph: 438ft
40 mph: 500ft
45 mph: 563ft

(ft) ULTIMATE SIGHT DISTANCE

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

N

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT C-2

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Path: K:\LAV_PublicTrans\092266011 – COH Speed and Sight Vis Study\CAD\266011ISD-1_14ft.dwg (December 12, 2008)

NO CONES VISIBLE

SUN CITY ANTHEM DR

35mph AND 40mph CONES VISIBLE

TURNING MOVEMENT B1

LANGSTON HUGHES ST

ALL CONES VISIBLE

SUN CITY ANTHEM DR

TURNING MOVEMENT B2

LANGSTON HUGHES ST

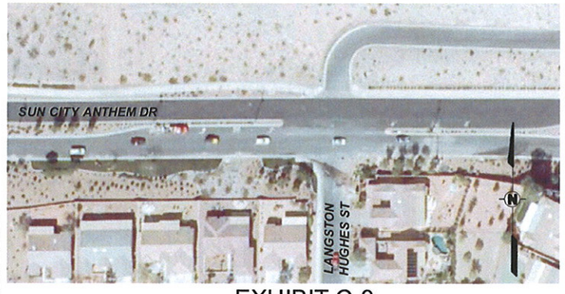
TURNING MOVEMENT B1

35mph AND 40mph CONES VISIBLE

SUN CITY ANTHEM DR

NO CONES VISIBLE

LANGSTON HUGHES ST



SUN CITY ANTHEM DRIVE /
LANGSTON HUGHES STREET
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT C-3

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TURNING MOVEMENT B2

ALL CONES VISIBLE

SUN CITY ANTHEM DR

LANGSTON HUGHES ST

TURNING MOVEMENT F

ALL CONES VISIBLE

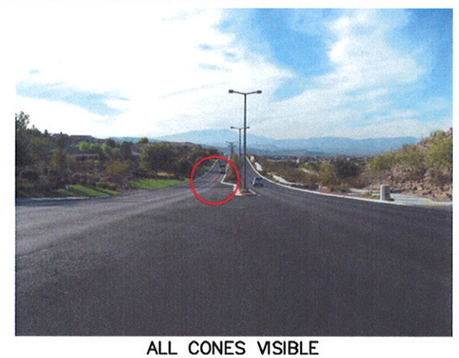
SUN CITY ANTHEM DR

LANGSTON HUGHES ST

SUN CITY ANTHEM DRIVE / LANGSTON HUGHES STREET

8' CAMERA LOCATION

INTERSECTION SITE PHOTOS



ALL CONES VISIBLE

LANGSTON HUGHES ST

TURNING MOVEMENT F

SUN CITY ANTHEM DR

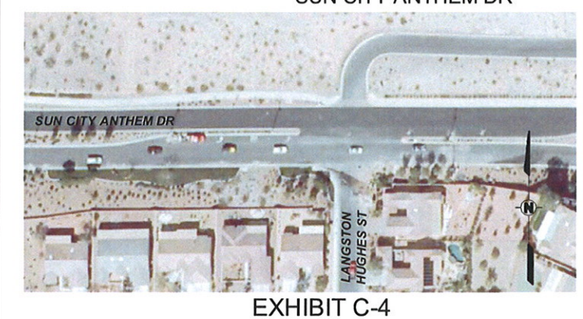


EXHIBIT C-4

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NO CONES VISIBLE

SUN CITY ANTHEM DR

35mph AND 40mph CONES VISIBLE

TURNING MOVEMENT B1

LANGSTON HUGHES ST

ALL CONES VISIBLE

SUN CITY ANTHEM DR

TURNING MOVEMENT B2

LANGSTON HUGHES ST

ALL CONES VISIBLE

TURNING MOVEMENT B1

NO CONES VISIBLE

SUN CITY ANTHEM DR

LANGSTON HUGHES ST

SUN CITY ANTHEM DRIVE /
LANGSTON HUGHES STREET
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT C-5

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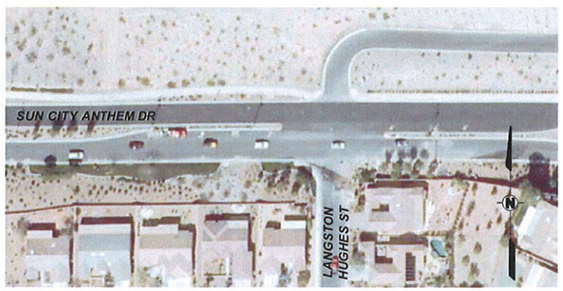
TURNING MOVEMENT B2

ALL CONES VISIBLE

SUN CITY ANTHEM DR

LANGSTON HUGHES ST



SUN CITY ANTHEM DRIVE /
LANGSTON HUGHES STREET
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT C-6

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LEGEND

X	CAMERA LOCATION 8 FT
(mph)	ISD OBJECT DISTANCE CASE B1 35 mph: 464ft 40 mph: 530ft 45 mph: 596ft
(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE B2 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft
(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE F 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft
(ft)	ULTIMATE SIGHT DISTANCE

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

N

EXHIBIT D-1

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LEGEND

X CAMERA LOCATION 14.5 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

N

EXHIBIT D-2

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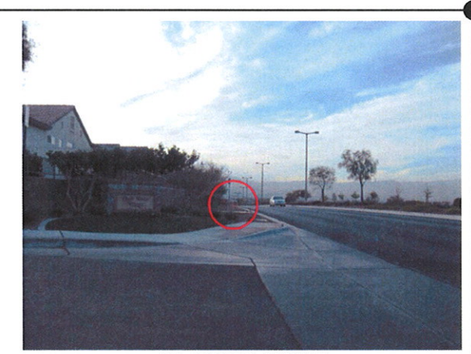
NO CONES VISIBLE

SUN CITY ANTHEM DR

35mph CONE VISIBLE

TURNING MOVEMENT B1

WILLIAMSPORT ST



ALL CONES VISIBLE

SUN CITY ANTHEM DR

TURNING MOVEMENT B2

WILLIAMSPORT ST

TURNING MOVEMENT F

SUN CITY ANTHEM DR

NO CONES VISIBLE

WILLIAMSPORT ST

SUN CITY ANTHEM DRIVE /
WILLIAMSPORT STREET
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT D-3

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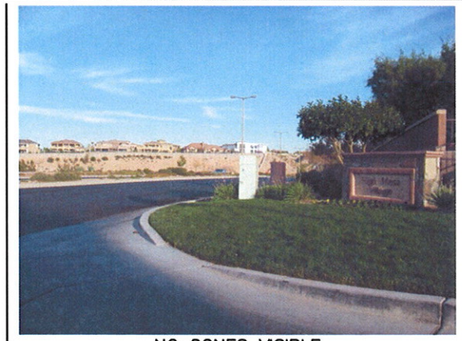

NO CONES VISIBLE

SUN CITY ANTHEM DR

NO CONES VISIBLE

TURNING MOVEMENT B1

WILLIAMSPORT ST

SUN CITY ANTHEM DR

NO CONES VISIBLE

TURNING MOVEMENT B2

WILLIAMSPORT ST

SUN CITY ANTHEM DRIVE /
WILLIAMSPORT STREET
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT D-4

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LEGEND

X	CAMERA LOCATION 8 FT
(mph)	ISD OBJECT DISTANCE CASE B1 35 mph: 464ft 40 mph: 530ft 45 mph: 596ft
(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE B2 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft
(ft)	ULTIMATE SIGHT DISTANCE

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

N

EXHIBIT E-1

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LEGEND

X CAMERA LOCATION 14.5 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

N

EXHIBIT E-2

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NO CONES VISIBLE

SUN CITY ANTHEM DR

ALL CONES VISIBLE

TURNING MOVEMENT B1

HERITAGE SPRINGS DR

ALL CONES VISIBLE

SUN CITY ANTHEM DR

TURNING MOVEMENT B2

HERITAGE SPRINGS DR

SUN CITY ANTHEM DRIVE /
HERITAGE SPRINGS DRIVE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT E-3

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NO CONES VISIBLE

SUN CITY ANTHEM DR

NO CONES VISIBLE

TURNING MOVEMENT B1

HERITAGE SPRINGS DR

NO CONES VISIBLE

SUN CITY ANTHEM DR

TURNING MOVEMENT B2

HERITAGE SPRINGS DR

SUN CITY ANTHEM DRIVE /
HERITAGE SPRINGS DRIVE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT E-4

Kimley-Horn and Associates, Inc.

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LEGEND

X	CAMERA LOCATION 8 FT
(mph)	ISD OBJECT DISTANCE CASE B1 35 mph: 464ft 40 mph: 530ft 45 mph: 596ft
(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE B2 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft
(ft)	ULTIMATE SIGHT DISTANCE

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

N

EXHIBIT F-1

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LEGEND

X CAMERA LOCATION 14.5 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

N

EXHIBIT F-2

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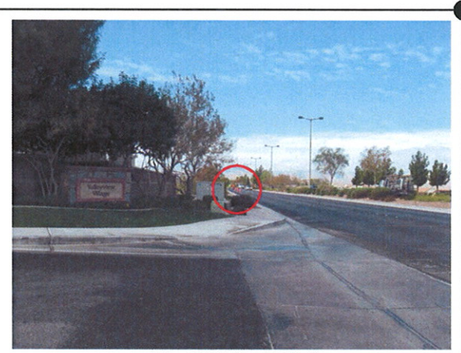
NO CONES VISIBLE

SUN CITY ANTHEM DR

ALL CONES VISIBLE

TURNING MOVEMENT B1

PRESTON PARK DR



ALL CONES VISIBLE

SUN CITY ANTHEM DR

TURNING MOVEMENT B2

PRESTON PARK DR

SUN CITY ANTHEM DRIVE /
PRESTON PARK DRIVE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT F-3

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NO CONES VISIBLE

SUN CITY ANTHEM DR

NO CONES VISIBLE

TURNING MOVEMENT B1

PRESTON PARK DR

NO CONES VISIBLE

SUN CITY ANTHEM DR

TURNING MOVEMENT B2

PRESTON PARK DR

SUN CITY ANTHEM DRIVE /
PRESTON PARK DRIVE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT F-4

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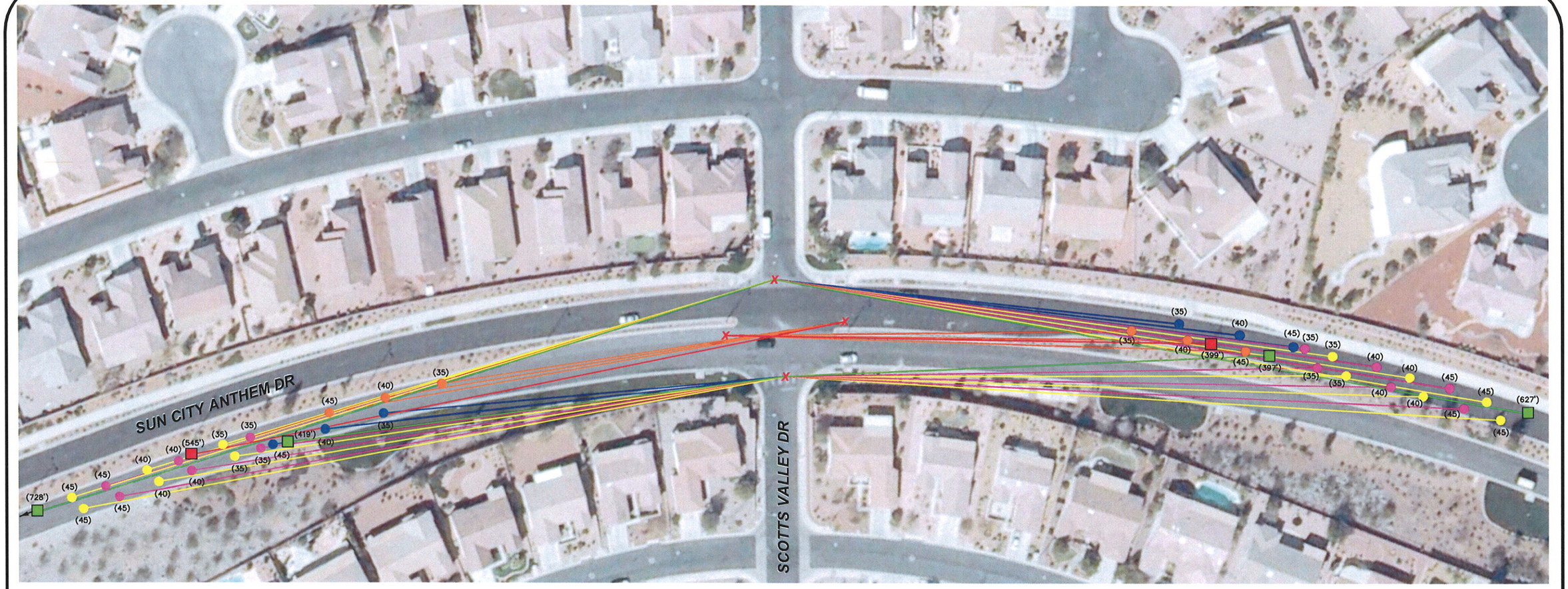

LEGEND

X	CAMERA LOCATION 8 FT
(mph)	ISD OBJECT DISTANCE CASE B1 35 mph: 464ft 40 mph: 530ft 45 mph: 596ft
(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE B2 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft
(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE B3 35 mph: 438ft 40 mph: 500ft 45 mph: 563ft
(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE F 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft
(ft)	ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT G-1

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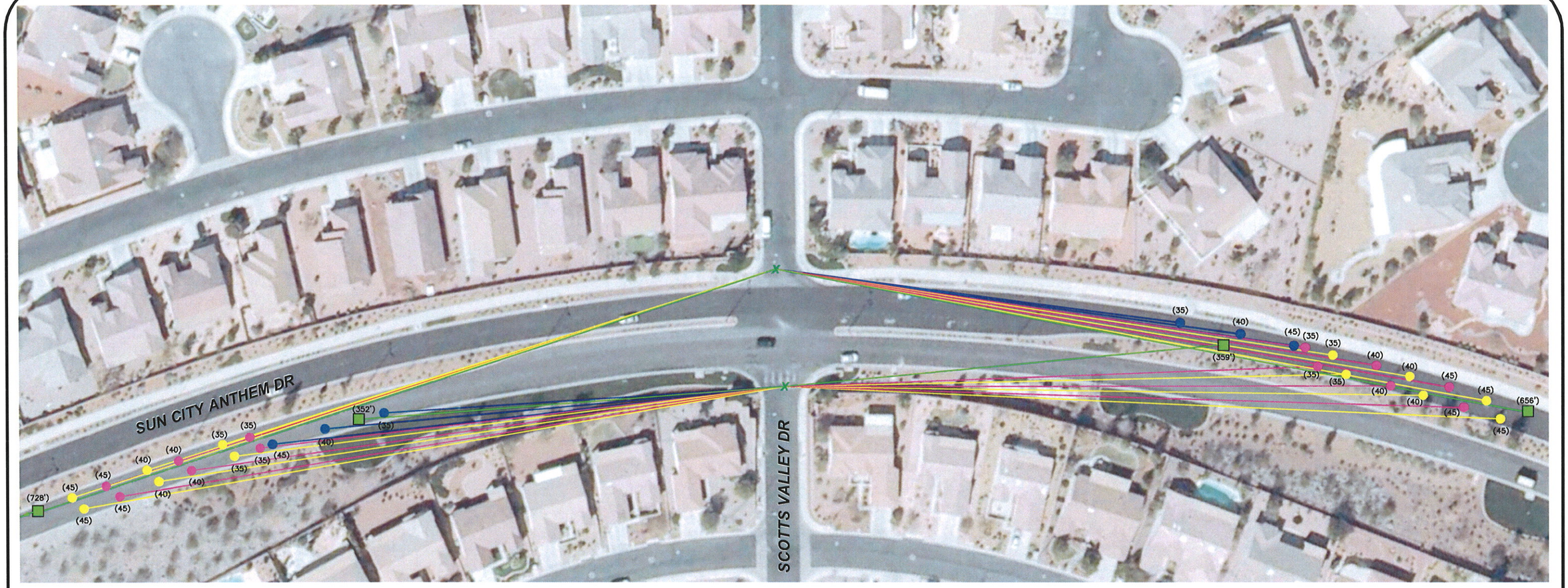

LEGEND

X CAMERA LOCATION 14.5 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B3
35 mph: 438ft
40 mph: 500ft
45 mph: 563ft

(ft) ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT G-2

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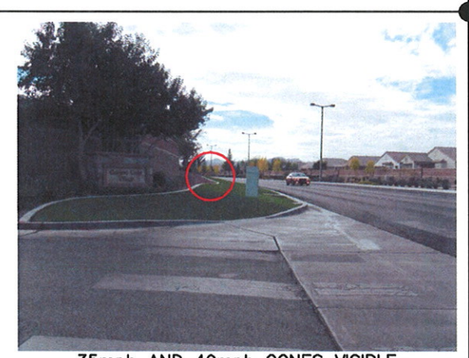
NO CONES VISIBLE

SUN CITY ANTHEM DR

NO CONES VISIBLE

TURNING MOVEMENT B1

SCOTTS VALLEY DR



35mph AND 40mph CONES VISIBLE

SUN CITY ANTHEM DR

TURNING MOVEMENT B2

SCOTTS VALLEY DR

NO CONES VISIBLE

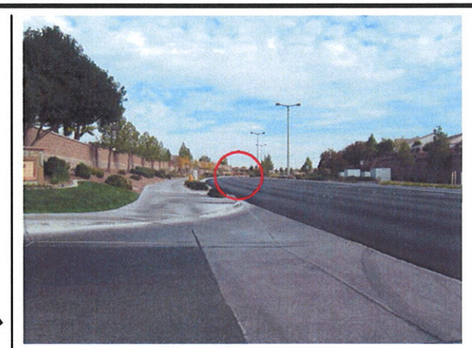
SUN CITY ANTHEM DR

NO CONES VISIBLE

MOVEMENT B3

SCOTTS VALLEY DR

TURNING MOVEMENT B1

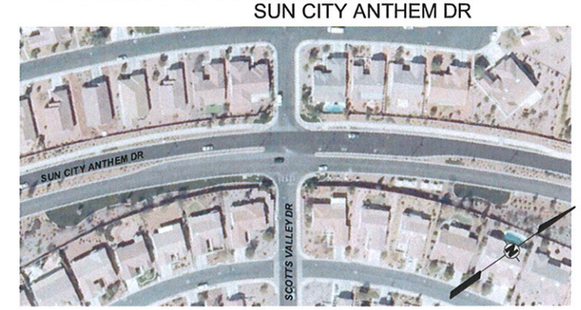


ALL CONES VISIBLE

SUN CITY ANTHEM DR

45mph CONE VISIBLE

SCOTTS VALLEY DR



SUN CITY ANTHEM DRIVE /
SCOTTS VALLEY DRIVE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT G-3

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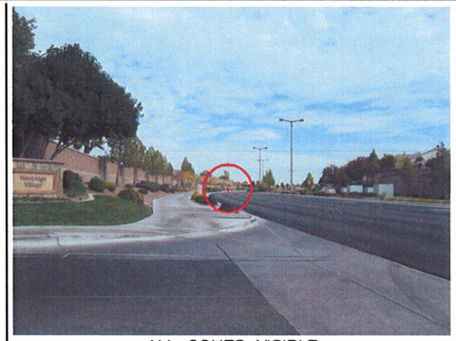
TURNING MOVEMENT B2

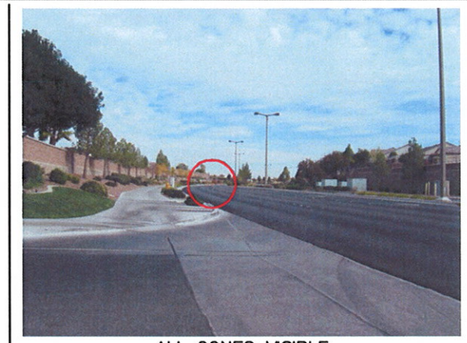


ALL CONES VISIBLE

SUN CITY ANTHEM DR

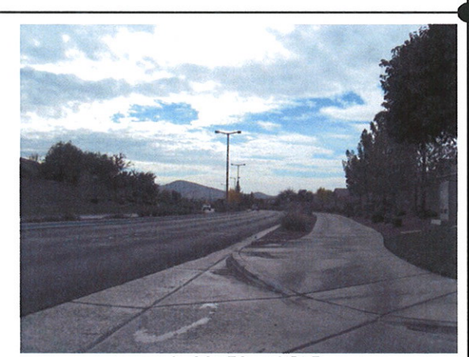
SCOTTS VALLEY DR

MOVEMENT B3



ALL CONES VISIBLE

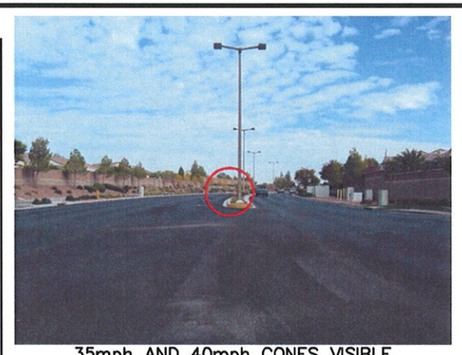
SUN CITY ANTHEM DR



NO CONES VISIBLE

SCOTTS VALLEY DR

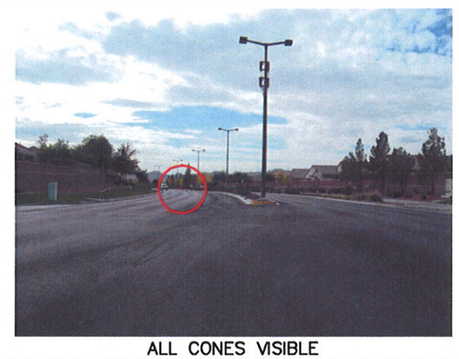
TURNING MOVEMENT F



35mph AND 40mph CONES VISIBLE

SUN CITY ANTHEM DR

SCOTTS VALLEY DR



ALL CONES VISIBLE

TURNING MOVEMENT F

SUN CITY ANTHEM DR

SCOTTS VALLEY DR

SUN CITY ANTHEM DRIVE /
SCOTTS VALLEY DRIVE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT G-4

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NO CONES VISIBLE

SUN CITY ANTHEM DR

TURNING MOVEMENT B1

NO CONES VISIBLE

SCOTTS VALLEY DR

35mph CONE VISIBLE

SCOTTS VALLEY DR

SUN CITY ANTHEM DR

TURNING MOVEMENT B2

NO CONES VISIBLE

SUN CITY ANTHEM DR

MOVEMENT B3

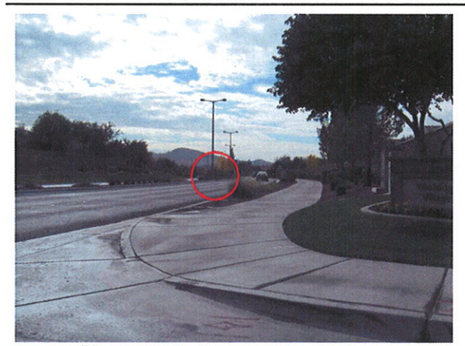
NO CONES VISIBLE

SCOTTS VALLEY DR

TURNING MOVEMENT B1

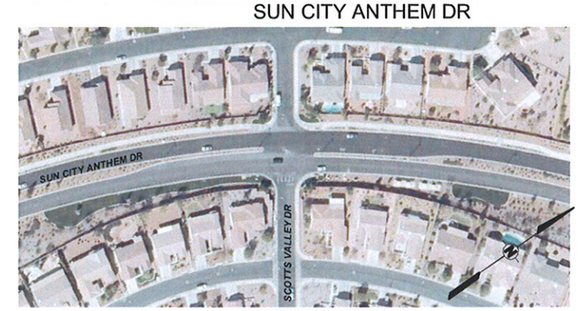
ALL CONES VISIBLE

SUN CITY ANTHEM DR



35mph AND 40mph CONE VISIBLE

SCOTTS VALLEY DR



SUN CITY ANTHEM DRIVE /
SCOTTS VALLEY DRIVE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT G-5

Kimley-Horn and Associates, Inc. © 2008

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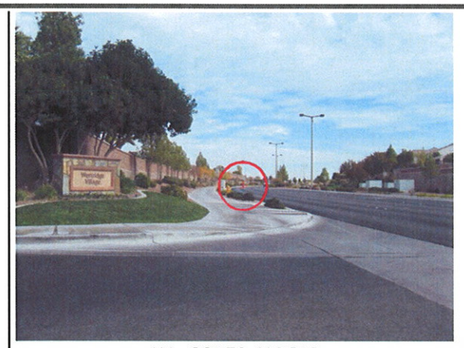
TURNING MOVEMENT B2

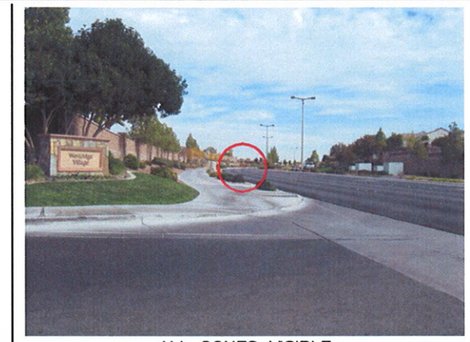


ALL CONES VISIBLE

SUN CITY ANTHEM DR

SCOTTS VALLEY DR

MOVEMENT B3



ALL CONES VISIBLE

SUN CITY ANTHEM DR

ALL CONES VISIBLE

SCOTTS VALLEY DR

SUN CITY ANTHEM DRIVE /
SCOTTS VALLEY DRIVE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

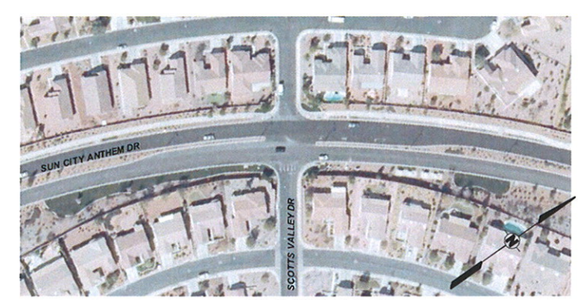


EXHIBIT G-6

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LEGEND

X CAMERA LOCATION 8 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT H-1

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LEGEND

X CAMERA LOCATION 14.5 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT H-2

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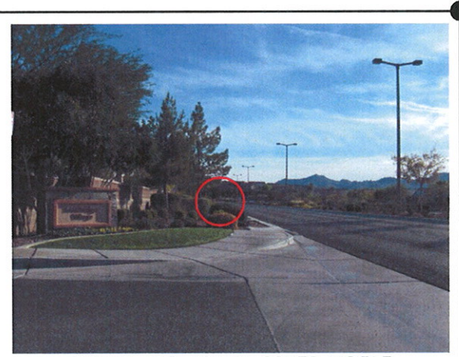
40mph CONES VISIBLE

SUN CITY ANTHEM DR



35mph AND 40mph CONES VISIBLE

TURNING MOVEMENT B1

PRICHARD AVE

ALL CONES VISIBLE

SUN CITY ANTHEM DR

TURNING MOVEMENT B2

PRICHARD AVE

SUN CITY ANTHEM DRIVE /
PRICHARD AVENUE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT H-3

Kimley-Horn © 2008 and Associates, Inc.

Path: K:\LAV_PublicTrans\092266011 – COH Speed and Sight Vis Study\CAD\266011PHOTO–Prichard.dwg (December 15, 2008)

NO CONES VISIBLE

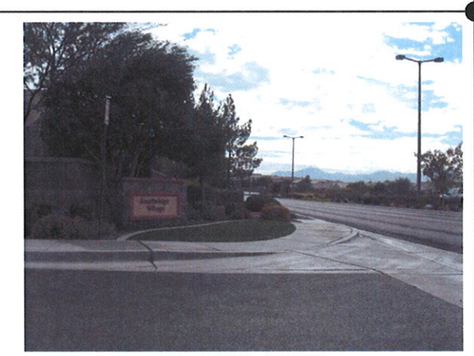
SUN CITY ANTHEM DR

NO CONES VISIBLE

TURNING MOVEMENT B1

PRICHARD AVE

SUN CITY ANTHEM DR



NO CONES VISIBLE

TURNING MOVEMENT B2

PRICHARD AVE

SUN CITY ANTHEM DRIVE /
PRICHARD AVENUE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT H-4

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Path: K:\LAV_PublicTrans\092266011 – COH Speed and Sight Vis Study\CAD\266011PHOTO–Prichard.dwg (December 12, 2008)

LEGEND

X	CAMERA LOCATION 8 FT
(mph)	ISD OBJECT DISTANCE CASE B1 35 mph: 464ft 40 mph: 530ft 45 mph: 596ft
(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE B2 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft
(ft)	ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT I-1

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LEGEND

X CAMERA LOCATION 14.5 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT I-2

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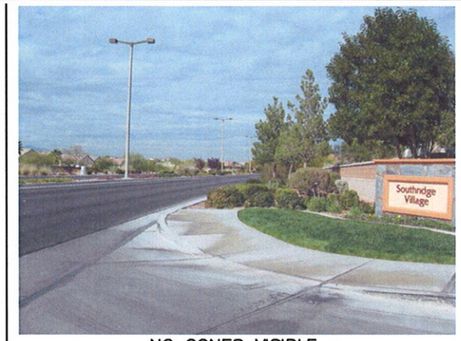

NO CONES VISIBLE

SUN CITY ANTHEM DR

NO CONES VISIBLE

TURNING MOVEMENT B1

GETTYSBURG AVE

ALL CONES VISIBLE

SUN CITY ANTHEM DR

TURNING MOVEMENT B2

GETTYSBURG AVE

EXHIBIT I-3

SUN CITY ANTHEM DRIVE /
GETTYSBURG AVENUE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

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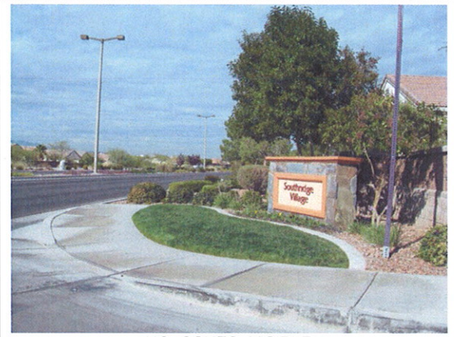


NO CONES VISIBLE

SUN CITY ANTHEM DR

45mph CONE VISIBLE

TURNING MOVEMENT B1

GETTYSBURG AVE

SUN CITY ANTHEM DR

35mph CONE VISIBLE

TURNING MOVEMENT B2

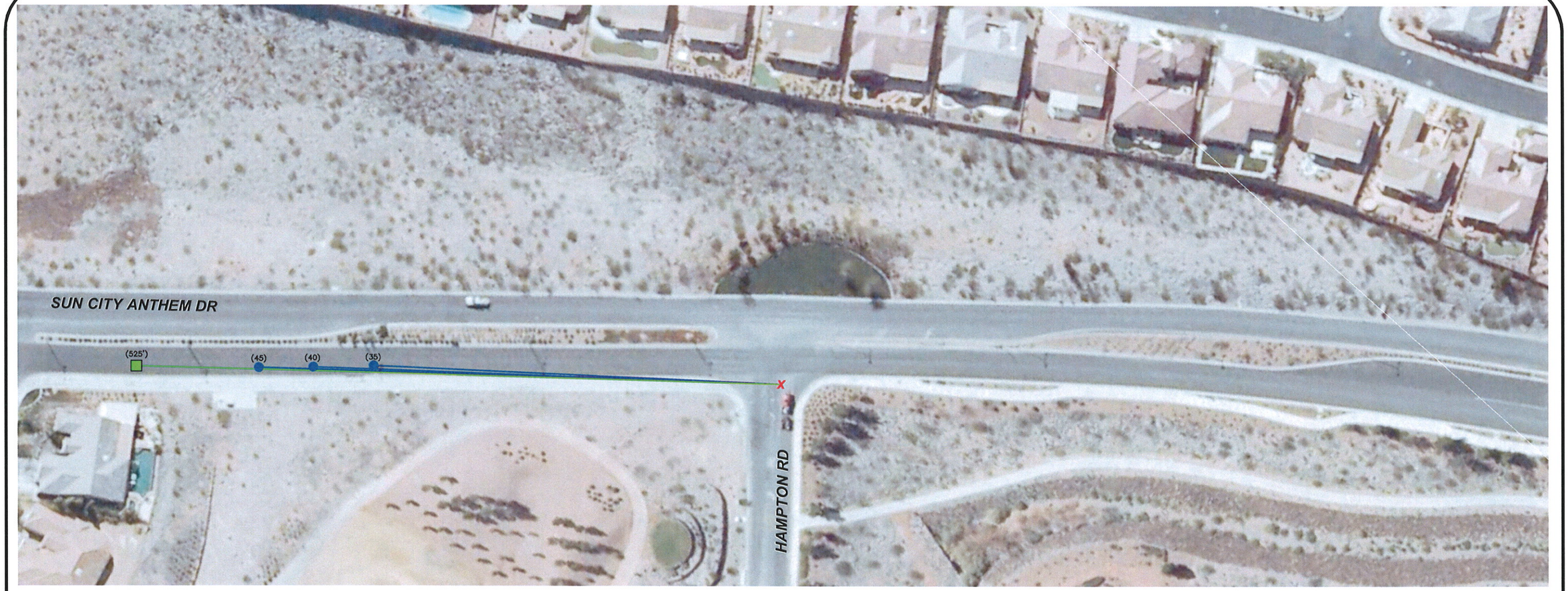
GETTYSBURG AVE

SUN CITY ANTHEM DRIVE /
GETTYSBURG AVENUE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT I-4

Kimley-Horn and Associates, Inc.

Path: K:\LAV_PublicTrans\092266011 – COH Speed and Sight Vis Study\CAD\266011PHOTO-Gettysburg.dwg (December 12, 2008)



LEGEND

X CAMERA LOCATION 8 FT

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT J-1

Kimley-Horn and Associates, Inc.

Path: K:\LAV_PublicTrans\092266011 – COH Speed and Sight Vis Study\CAD\266011ISD-3.dwg (December 12, 2008)

LEGEND

X CAMERA LOCATION 14.5 FT

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT J-2

Kimley-Horn and Associates, Inc.

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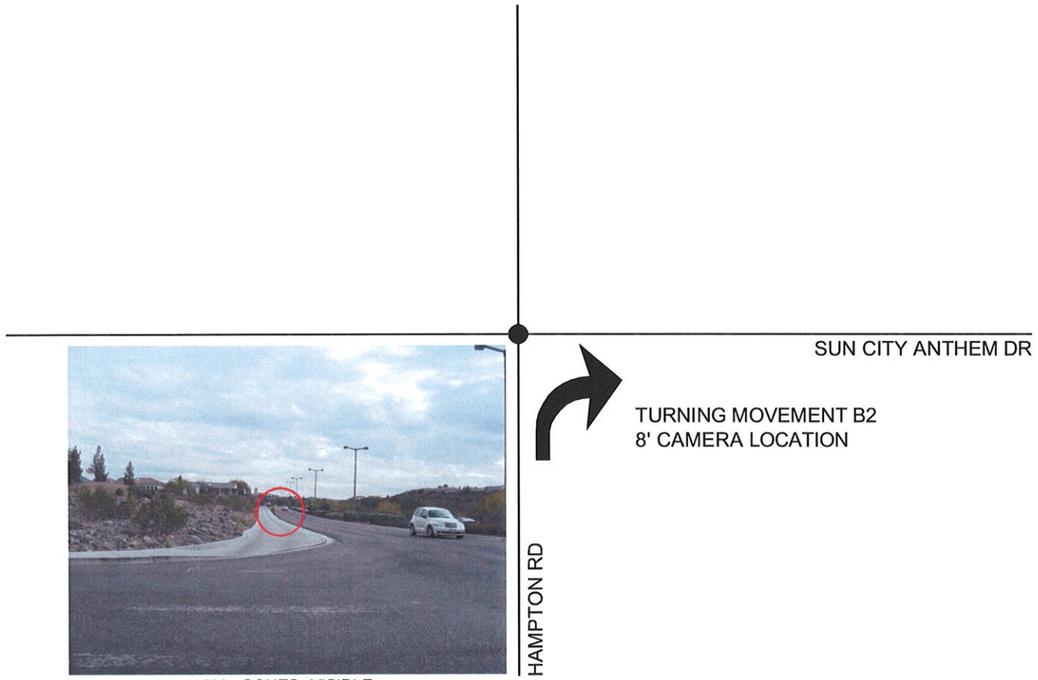
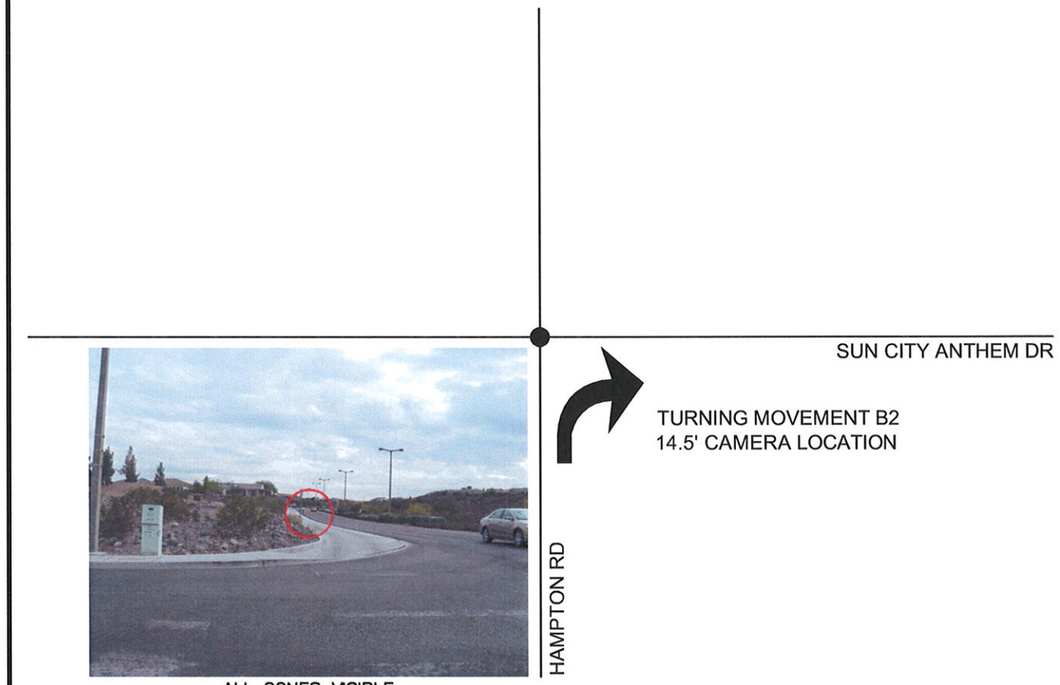


ALL CONES VISIBLE



ALL CONES VISIBLE

SUN CITY ANTHEM DRIVE /
HAMPTON ROAD
8' AND 14.5' CAMERA LOCATIONS
INTERSECTION SITE PHOTOS

EXHIBIT J-3

Kimley-Horn and Associates, Inc.

Path: K:\LAV_PublicTrans\092266011 – COH Speed and Sight Vis Study\CAD\266011PHOTO–Hampton.dwg (December 12, 2008)

LEGEND

X CAMERA LOCATION 8 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE F
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT K-1

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LEGEND

X CAMERA LOCATION 14.5 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT K-2

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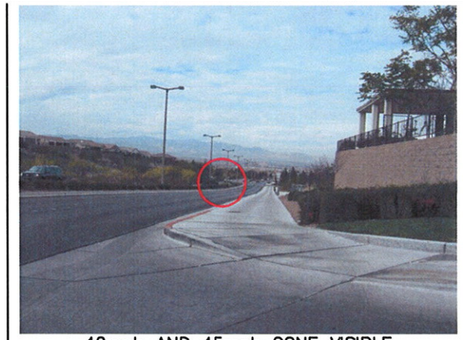

40mph AND 45mph CONE VISIBLE

SUN CITY ANTHEM DR

TURNING MOVEMENT B1

ALL CONES VISIBLE

COLVIN RUN DR

SUN CITY ANTHEM DR

TURNING MOVEMENT B2

ALL CONES VISIBLE

COLVIN RUN DR

TURNING MOVEMENT F

SUN CITY ANTHEM DR

ALL CONES VISIBLE

COLVIN RUN DR

SUN CITY ANTHEM DRIVE /
COLVIN RUN DRIVE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT K-3

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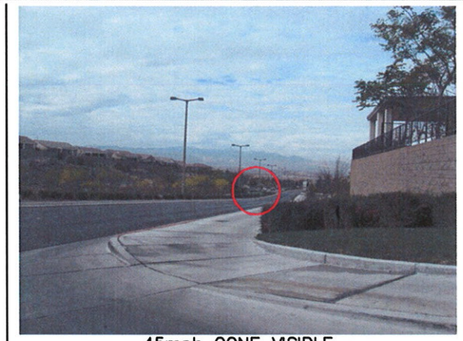
Path: K:\LAV_PublicTrans\092266011 – COH Speed and Sight Vis Study\CAD\266011PHOTO–Colvin Run.dwg (December 12, 2008)



45mph CONE VISIBLE

SUN CITY ANTHEM DR

ALL CONES VISIBLE

TURNING MOVEMENT B1

COLVIN RUN DR

SUN CITY ANTHEM DR

ALL CONES VISIBLE

TURNING MOVEMENT B2

COLVIN RUN DR

SUN CITY ANTHEM DRIVE /
COLVIN RUN DRIVE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

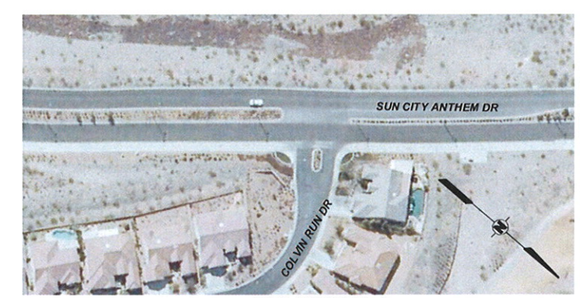


EXHIBIT K-4

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Path: K:\LAV_PublicTrans\092266011 – COH Speed and Sight Vis Study\CAD\266011PHOTO–Colvin Run.dwg (December 12, 2008)

LEGEND

X	CAMERA LOCATION 8 FT		
(mph)	ISD OBJECT DISTANCE CASE B1 35 mph: 464ft 40 mph: 530ft 45 mph: 596ft	(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE B2 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft	(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE B3 35 mph: 438ft 40 mph: 500ft 45 mph: 563ft	(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE F 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft	(ft)	ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT L-1

Kimley-Horn and Associates, Inc.

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LEGEND

X CAMERA LOCATION 14.5 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B3
35 mph: 438ft
40 mph: 500ft
45 mph: 563ft

(ft) ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT L-2

Kimley-Horn and Associates, Inc.

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NO CONES VISIBLE

SUN CITY ANTHEM DR

35mph AND 40mph CONES VISIBLE

TURNING MOVEMENT B1

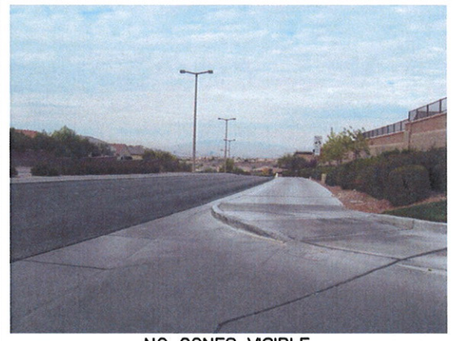
THUNDER BAY AVE

ALL CONES VISIBLE

SUN CITY ANTHEM DR

TURNING MOVEMENT B2

THUNDER BAY AVE



NO CONES VISIBLE

SUN CITY ANTHEM DR

35mph AND 40mph CONES VISIBLE

MOVEMENT B3

THUNDER BAY AVE

SUN CITY ANTHEM DRIVE /
THUNDER BAY AVENUE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

TURNING MOVEMENT B1

NO CONES VISIBLE

SUN CITY ANTHEM DR

NO CONES VISIBLE

THUNDER BAY AVE

EXHIBIT L-3

Kimley-Horn and Associates, Inc.

Path: K:\LAV_PublicTrans\092266011 – COH Speed and Sight Vis Study\CAD\266011PHOTO–Thunder Bay.dwg (December 12, 2008)

TURNING MOVEMENT B2

35mph CONE VISIBLE

SUN CITY ANTHEM DR

THUNDER BAY AVE

MOVEMENT B3

NO CONES VISIBLE

SUN CITY ANTHEM DR

NO CONES VISIBLE

THUNDER BAY AVE

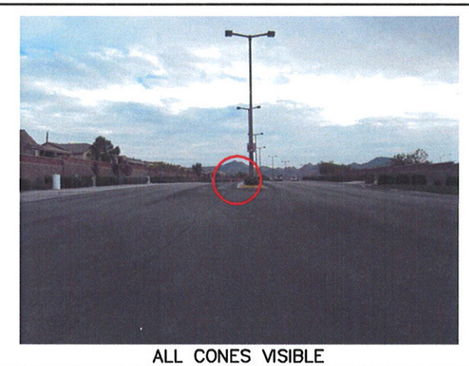
TURNING MOVEMENT F

ALL CONES VISIBLE

SUN CITY ANTHEM DR

THUNDER BAY AVE

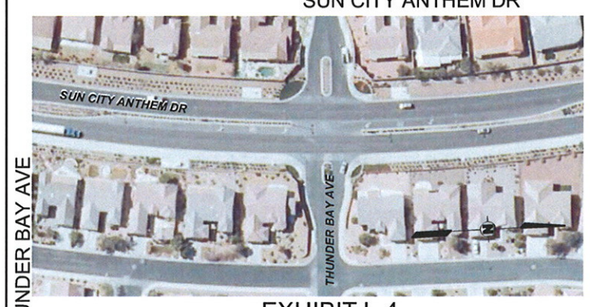
SUN CITY ANTHEM DRIVE /
THUNDER BAY AVENUE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS



ALL CONES VISIBLE

TURNING MOVEMENT F

SUN CITY ANTHEM DR



THUNDER BAY AVE

EXHIBIT L-4

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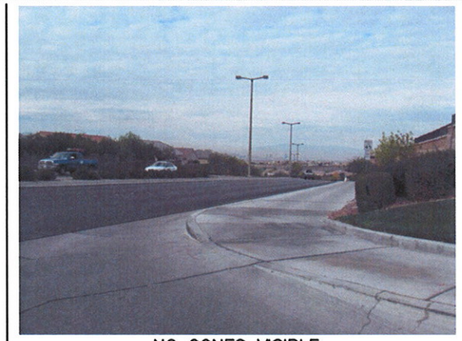
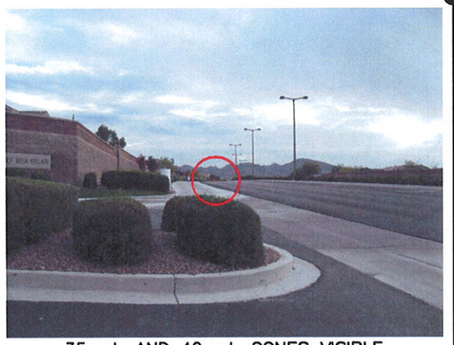


NO CONES VISIBLE

SUN CITY ANTHEM DR



35mph AND 40mph CONES VISIBLE

TURNING MOVEMENT B1

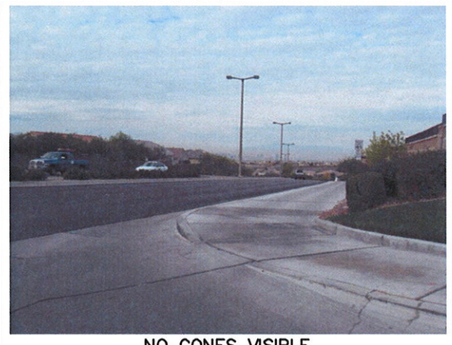
THUNDER BAY AVE

ALL CONES VISIBLE

SUN CITY ANTHEM DR

TURNING MOVEMENT B2

THUNDER BAY AVE



NO CONES VISIBLE

SUN CITY ANTHEM DR

35mph AND 40mph CONES VISIBLE

MOVEMENT B3

THUNDER BAY AVE

SUN CITY ANTHEM DRIVE /
THUNDER BAY AVENUE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

TURNING MOVEMENT B1

NO CONES VISIBLE

SUN CITY ANTHEM DR

NO CONES VISIBLE

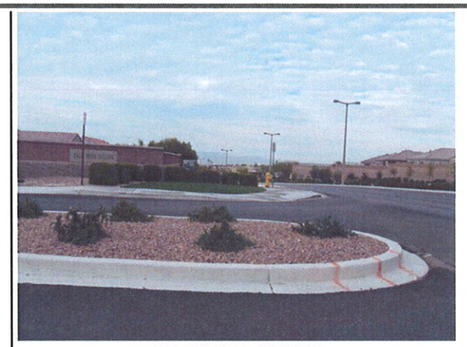
THUNDER BAY AVE

EXHIBIT L-5

Kimley-Horn and Associates, Inc.

Path: K:\LAV_PublicTrans\092266011 – COH Speed and Sight Vis Study\CAD\266011PHOTO–Thunder Bay.dwg (December 12, 2008)

TURNING MOVEMENT B2



NO CONES VISIBLE

SUN CITY ANTHEM DR

THUNDER BAY AVE

MOVEMENT B3

NO CONES VISIBLE

SUN CITY ANTHEM DR

NO CONES VISIBLE

THUNDER BAY AVE

SUN CITY ANTHEM DRIVE /
THUNDER BAY AVENUE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

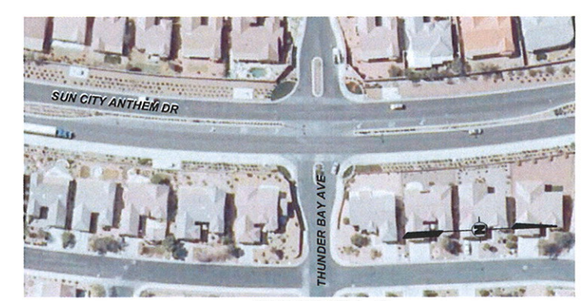


EXHIBIT L-6

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LEGEND

X	CAMERA LOCATION 8 FT
(mph)	ISD OBJECT DISTANCE CASE B1 35 mph: 464ft 40 mph: 530ft 45 mph: 596ft
(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE B2 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft
(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE B3 35 mph: 438ft 40 mph: 500ft 45 mph: 563ft
(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE F 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft
(ft)	ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT M-1

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Path: K:\LAV_PublicTrans\092266011 – COH Speed and Sight Vis Study\CAD\266011ISD-4.dwg (December 12, 2008)

LEGEND

X CAMERA LOCATION 14.5 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B3
35 mph: 438ft
40 mph: 500ft
45 mph: 563ft

(ft) ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT M-2

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Path: K:\LAV_PublicTrans\092266011 – COH Speed and Sight Vis Study\CAD\266011ISD-4_14ft.dwg (December 12, 2008)

NO CONES VISIBLE

SUN CITY ANTHEM DR

35mph AND 40mph CONES VISIBLE

TURNING MOVEMENT B1

HAYDEN CREEK TER

SUN CITY ANTHEM DR

ALL CONES VISIBLE

TURNING MOVEMENT B2

HAYDEN CREEK TER

NO CONES VISIBLE

SUN CITY ANTHEM DR

35mph AND 40mph CONES VISIBLE

MOVEMENT B3

HAYDEN CREEK TER

SUN CITY ANTHEM DRIVE /
HAYDEN CREEK TERRACE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

TURNING MOVEMENT B1

NO CONES VISIBLE

SUN CITY ANTHEM DR

NO CONES VISIBLE

HAYDEN CREEK TER

EXHIBIT M-3

Kimley-Horn and Associates, Inc.

Path: K:\LAV_PublicTrans\092266011 – COH Speed and Sight Vis Study\CAD\266011PHOTO–Hayden Creek.dwg (December 12, 2008)

TURNING MOVEMENT B2

35mph CONE VISIBLE

SUN CITY ANTHEM DR

HAYDEN CREEK TER

MOVEMENT B3

NO CONES VISIBLE

SUN CITY ANTHEM DR

NO CONES VISIBLE

HAYDEN CREEK TER

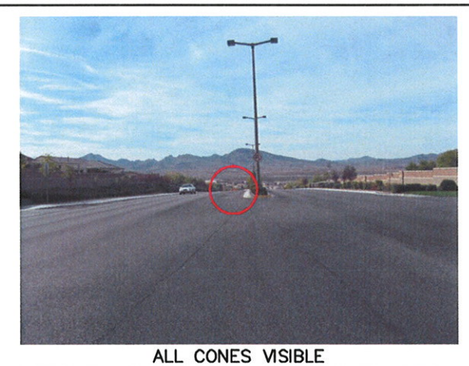
TURNING MOVEMENT F

ALL CONES VISIBLE

SUN CITY ANTHEM DR

HAYDEN CREEK TER

SUN CITY ANTHEM DRIVE /
HAYDEN CREEK TERRACE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS



ALL CONES VISIBLE

TURNING MOVEMENT F

SUN CITY ANTHEM DR

HAYDEN CREEK TER

EXHIBIT M-4

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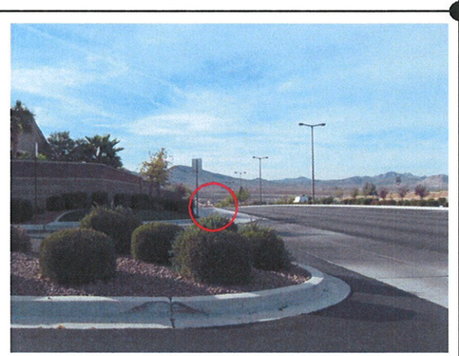
Path: K:\LAV_PublicTrans\092266011 – COH Speed and Sight Vis Study\CAD\266011PHOTO–Hayden Creek.dwg (December 12, 2008)

NO CONES VISIBLE

SUN CITY ANTHEM DR



35mph AND 40mph CONES VISIBLE

TURNING MOVEMENT B1

HAYDEN CREEK TER

ALL CONES VISIBLE

SUN CITY ANTHEM DR

TURNING MOVEMENT B2

HAYDEN CREEK TER

NO CONES VISIBLE

SUN CITY ANTHEM DR

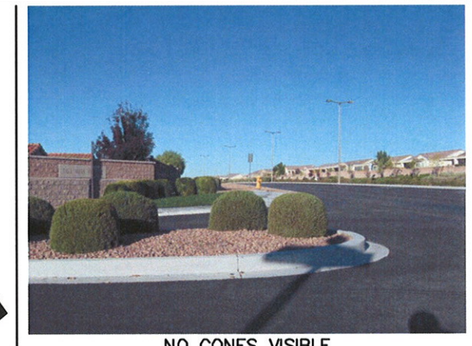
35mph AND 40mph CONES VISIBLE

MOVEMENT B3

HAYDEN CREEK TER

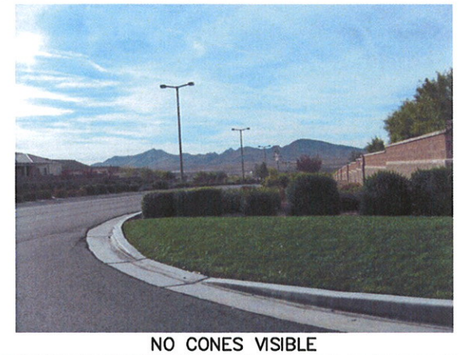
SUN CITY ANTHEM DRIVE /
HAYDEN CREEK TERRACE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

TURNING MOVEMENT B1



NO CONES VISIBLE

SUN CITY ANTHEM DR



NO CONES VISIBLE

HAYDEN CREEK TER

EXHIBIT M-5

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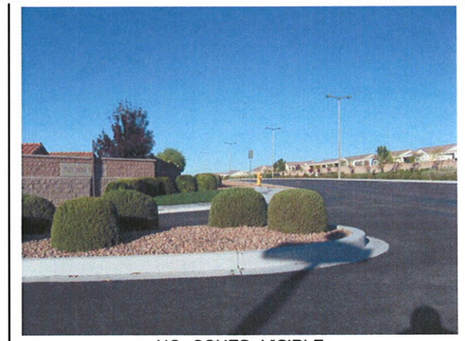
TURNING MOVEMENT B2

35mph CONE VISIBLE

SUN CITY ANTHEM DR

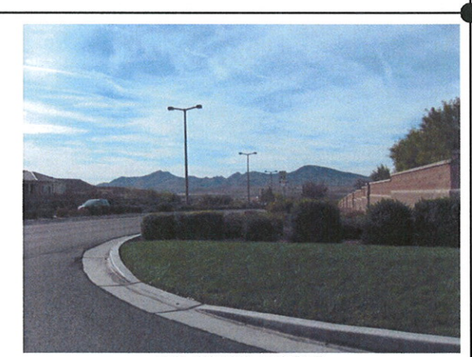
HAYDEN CREEK TER

MOVEMENT B3



NO CONES VISIBLE

SUN CITY ANTHEM DR



NO CONES VISIBLE

HAYDEN CREEK TER

SUN CITY ANTHEM DRIVE /
HAYDEN CREEK TERRACE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT M-6

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LEGEND

X	CAMERA LOCATION 8 FT	
(mph)	ISD OBJECT DISTANCE CASE B1 35 mph: 464ft 40 mph: 530ft 45 mph: 596ft	(ft) ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE B2 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft	(ft) ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE B3 35 mph: 438ft 40 mph: 500ft 45 mph: 563ft	(ft) ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT N-1

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LEGEND

X CAMERA LOCATION 14.5 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B3
35 mph: 438ft
40 mph: 500ft
45 mph: 563ft

(ft) ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT N-2

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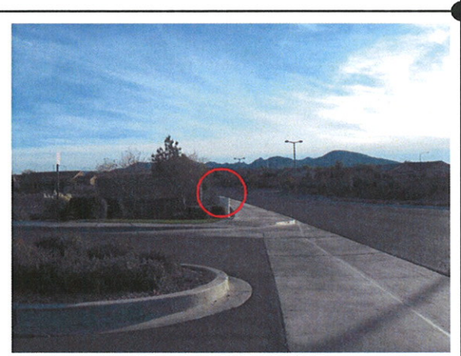
NO CONES VISIBLE

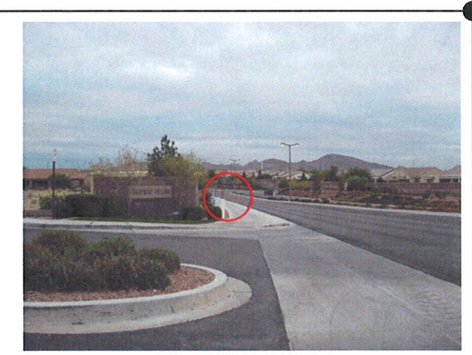
SUN CITY ANTHEM DR



35mph CONE VISIBLE

TURNING MOVEMENT B1

OLIVIA HEIGHTS AVE



ALL CONES VISIBLE

SUN CITY ANTHEM DR

TURNING MOVEMENT B2

OLIVIA HEIGHTS AVE

NO CONES VISIBLE

SUN CITY ANTHEM DR

35mph AND 40mph CONES VISIBLE

MOVEMENT B3

OLIVIA HEIGHTS AVE

SUN CITY ANTHEM DRIVE /
OLIVIA HEIGHTS AVENUE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

TURNING MOVEMENT B1

ALL CONES VISIBLE

SUN CITY ANTHEM DR

ALL CONES VISIBLE

OLIVIA HEIGHTS AVE

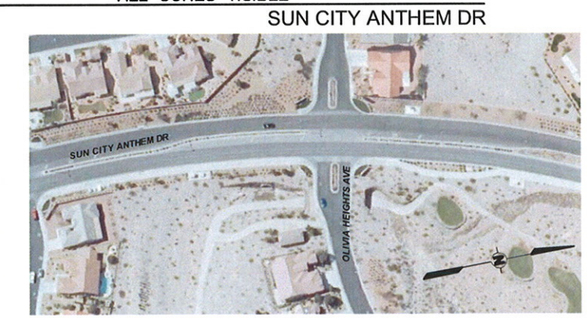


EXHIBIT N-3

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TURNING MOVEMENT B2

ALL CONES VISIBLE

SUN CITY ANTHEM DR

OLIVIA HEIGHTS AVE

MOVEMENT B3

ALL CONES VISIBLE

SUN CITY ANTHEM DR

ALL CONES VISIBLE

OLIVIA HEIGHTS AVE

SUN CITY ANTHEM DRIVE /
OLIVIA HEIGHTS AVENUE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT N-4

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NO CONES VISIBLE

SUN CITY ANTHEM DR

NO CONES VISIBLE

TURNING MOVEMENT B1

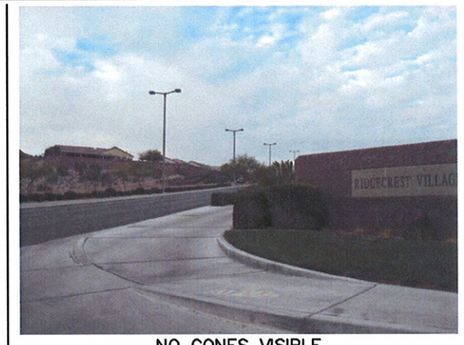
OLIVIA HEIGHTS AVE

35mph AND 40mph CONES VISIBLE

SUN CITY ANTHEM DR

TURNING MOVEMENT B2

OLIVIA HEIGHTS AVE



NO CONES VISIBLE

SUN CITY ANTHEM DR

NO CONES VISIBLE

MOVEMENT B3

OLIVIA HEIGHTS AVE

SUN CITY ANTHEM DRIVE /
OLVIA HEIGHTS AVENUE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

TURNING MOVEMENT B1

ALL CONES VISIBLE

SUN CITY ANTHEM DR

ALL CONES VISIBLE

OLIVIA HEIGHTS AVE

EXHIBIT N-5

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TURNING MOVEMENT B2

ALL CONES VISIBLE

SUN CITY ANTHEM DR

OLIVIA HEIGHTS AVE

MOVEMENT B3

ALL CONES VISIBLE

SUN CITY ANTHEM DR

ALL CONES VISIBLE

OLIVIA HEIGHTS AVE

SUN CITY ANTHEM DRIVE /
OLIVIA HEIGHTS AVENUE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT N-6

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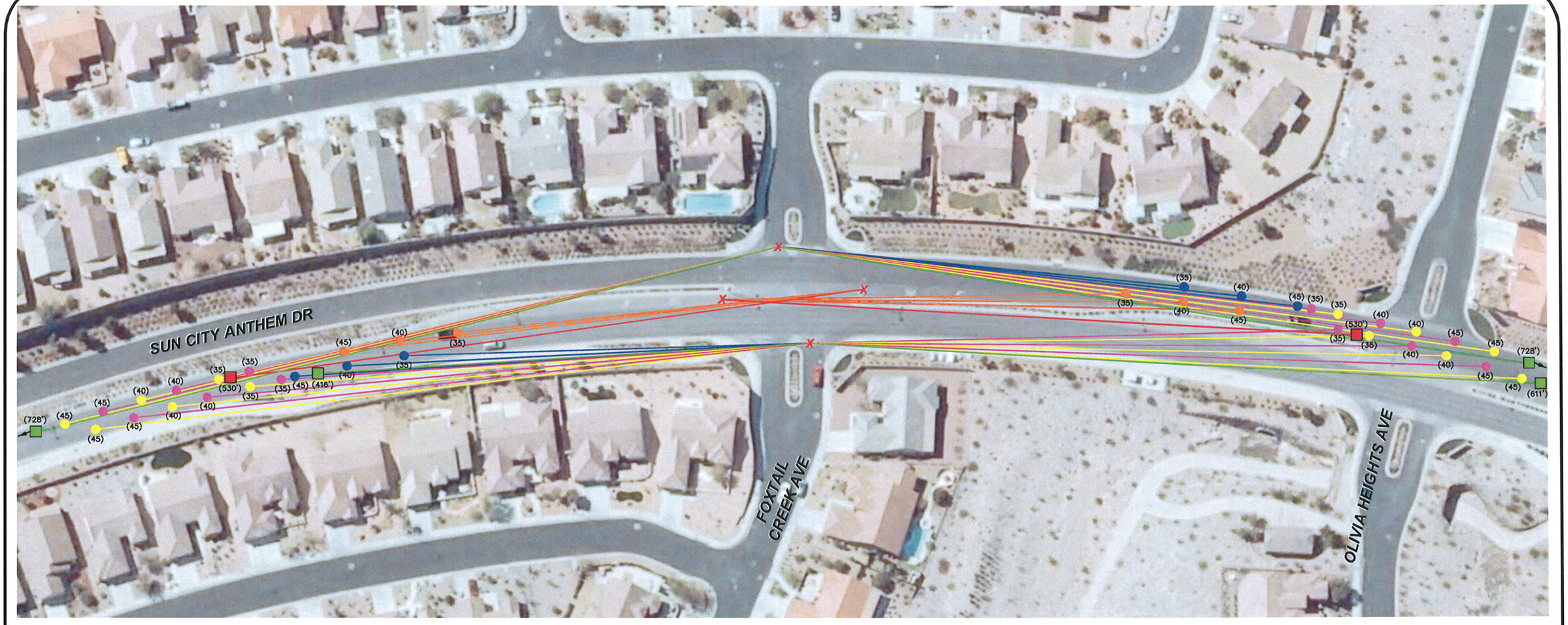

LEGEND

X	CAMERA LOCATION 8 FT
(mph)	ISD OBJECT DISTANCE CASE B1 35 mph: 464ft 40 mph: 530ft 45 mph: 596ft
(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE B2 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft
(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE B3 35 mph: 438ft 40 mph: 500ft 45 mph: 563ft
(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE F 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft
(ft)	ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT O-1

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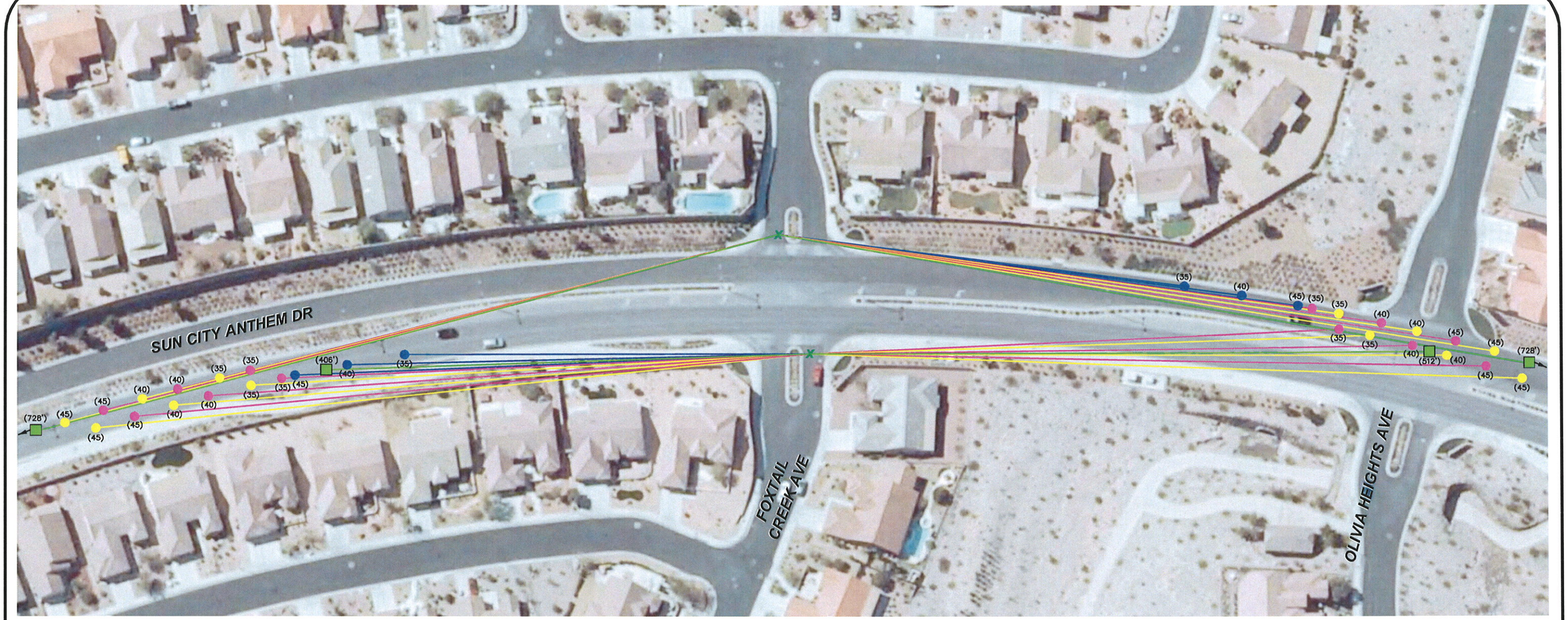

LEGEND

X CAMERA LOCATION 14.5 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B3
35 mph: 438ft
40 mph: 500ft
45 mph: 563ft

(ft) ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT O-2

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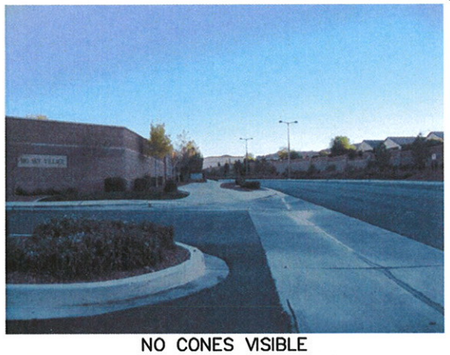
ALL CONES VISIBLE

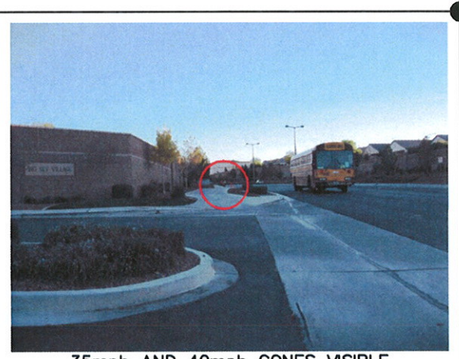
SUN CITY ANTHEM DR



NO CONES VISIBLE

TURNING MOVEMENT B1

FOXTAIL CREEK AVE

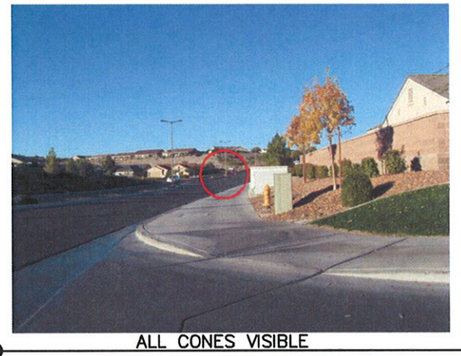


35mph AND 40mph CONES VISIBLE

SUN CITY ANTHEM DR

TURNING MOVEMENT B2

FOXTAIL CREEK AVE



ALL CONES VISIBLE

SUN CITY ANTHEM DR

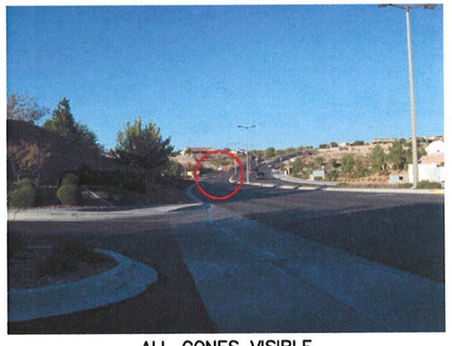
NO CONES VISIBLE

MOVEMENT B3

FOXTAIL CREEK AVE

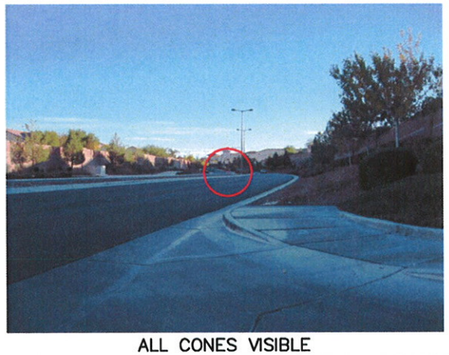
SUN CITY ANTHEM DRIVE /
FOXTRAIL CREEK AVENUE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

TURNING MOVEMENT B1



ALL CONES VISIBLE

SUN CITY ANTHEM DR



ALL CONES VISIBLE

FOXTAIL CREEK AVE

EXHIBIT O-3

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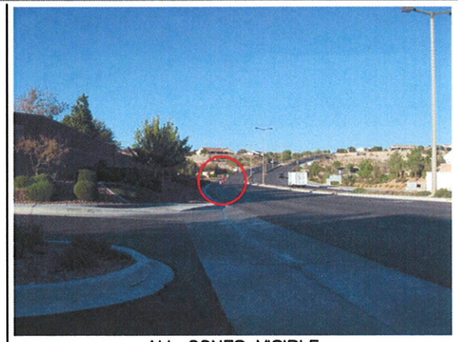
TURNING MOVEMENT B2



ALL CONES VISIBLE

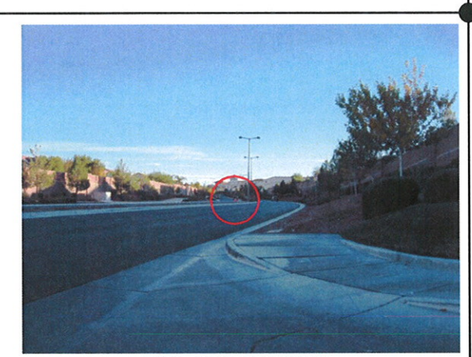
SUN CITY ANTHEM DR

FOXTAIL CREEK AVE

MOVEMENT B3

ALL CONES VISIBLE

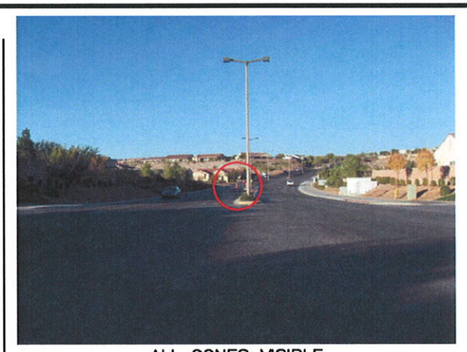
SUN CITY ANTHEM DR



ALL CONES VISIBLE

FOXTAIL CREEK AVE

TURNING MOVEMENT F

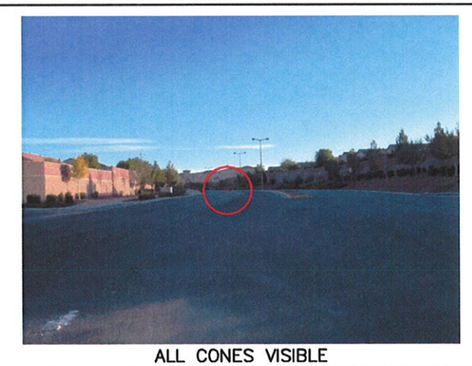


ALL CONES VISIBLE

SUN CITY ANTHEM DR

FOXTAIL CREEK AVE

SUN CITY ANTHEM DRIVE /
FOXTRAIL CREEK AVENUE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS



ALL CONES VISIBLE

TURNING MOVEMENT F

SUN CITY ANTHEM DR

FOXTAIL CREEK AVE

EXHIBIT O-4

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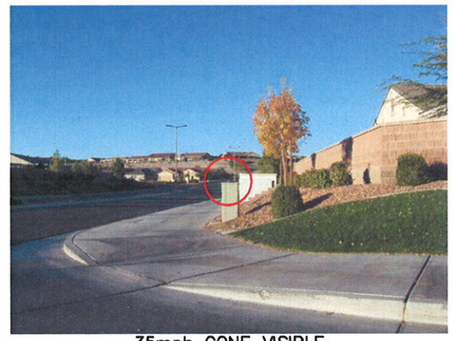
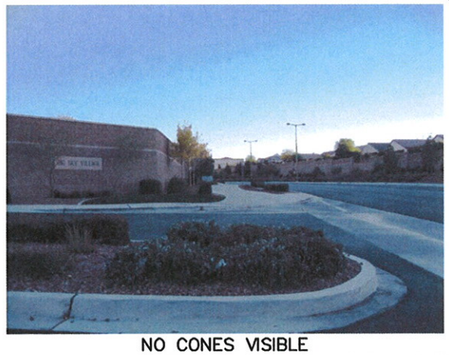


35mph CONE VISIBLE

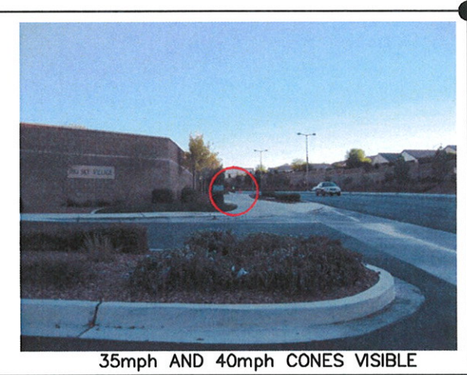
SUN CITY ANTHEM DR



NO CONES VISIBLE

TURNING MOVEMENT B1

FOXTAIL CREEK AVE

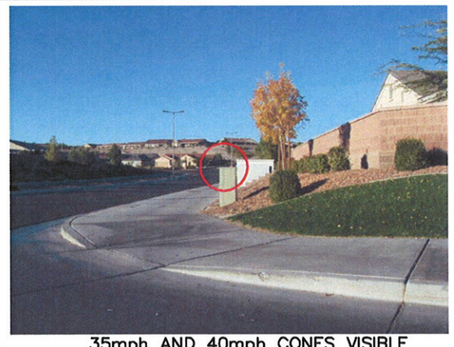


35mph AND 40mph CONES VISIBLE

SUN CITY ANTHEM DR

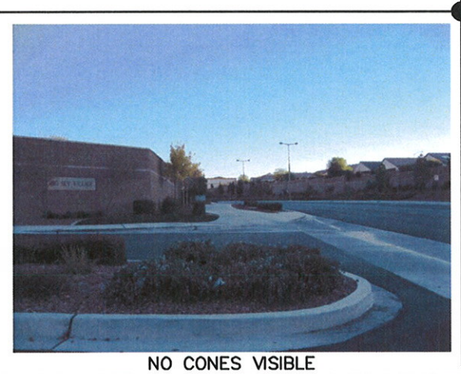
TURNING MOVEMENT B2

FOXTAIL CREEK AVE



35mph AND 40mph CONES VISIBLE

SUN CITY ANTHEM DR



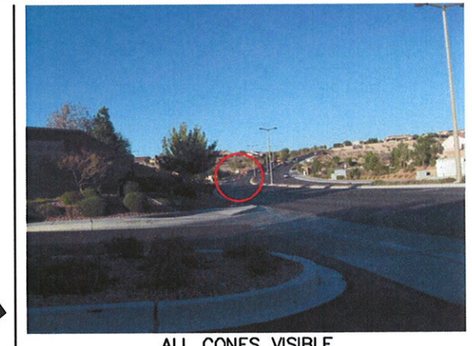
NO CONES VISIBLE

MOVEMENT B3

FOXTAIL CREEK AVE

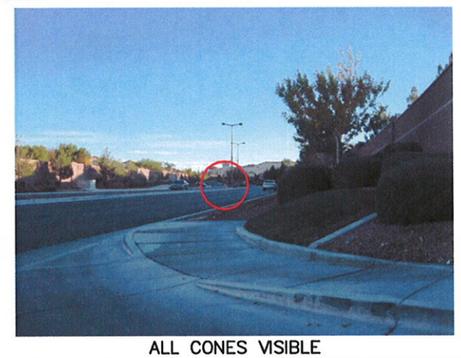
SUN CITY ANTHEM DRIVE /
FOXTRAIL CREEK AVENUE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

TURNING MOVEMENT B1



ALL CONES VISIBLE

SUN CITY ANTHEM DR



ALL CONES VISIBLE

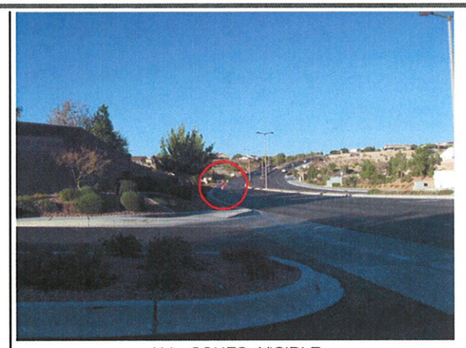
FOXTAIL CREEK AVE

EXHIBIT O-5

Kimley-Horn and Associates, Inc.

Path: K:\LAV_PublicTrans\092266011 – COH Speed and Sight Vis Study\CAD\266011PHOTO–Foxtail Creek.dwg (December 12, 2008)

TURNING MOVEMENT B2



ALL CONES VISIBLE

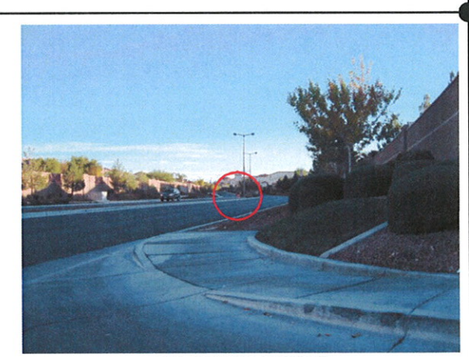
SUN CITY ANTHEM DR

FOXTAIL CREEK AVE

MOVEMENT B3

ALL CONES VISIBLE

SUN CITY ANTHEM DR



ALL CONES VISIBLE

FOXTAIL CREEK AVE

SUN CITY ANTHEM DRIVE /
FOXTRAIL CREEK AVENUE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT O-6

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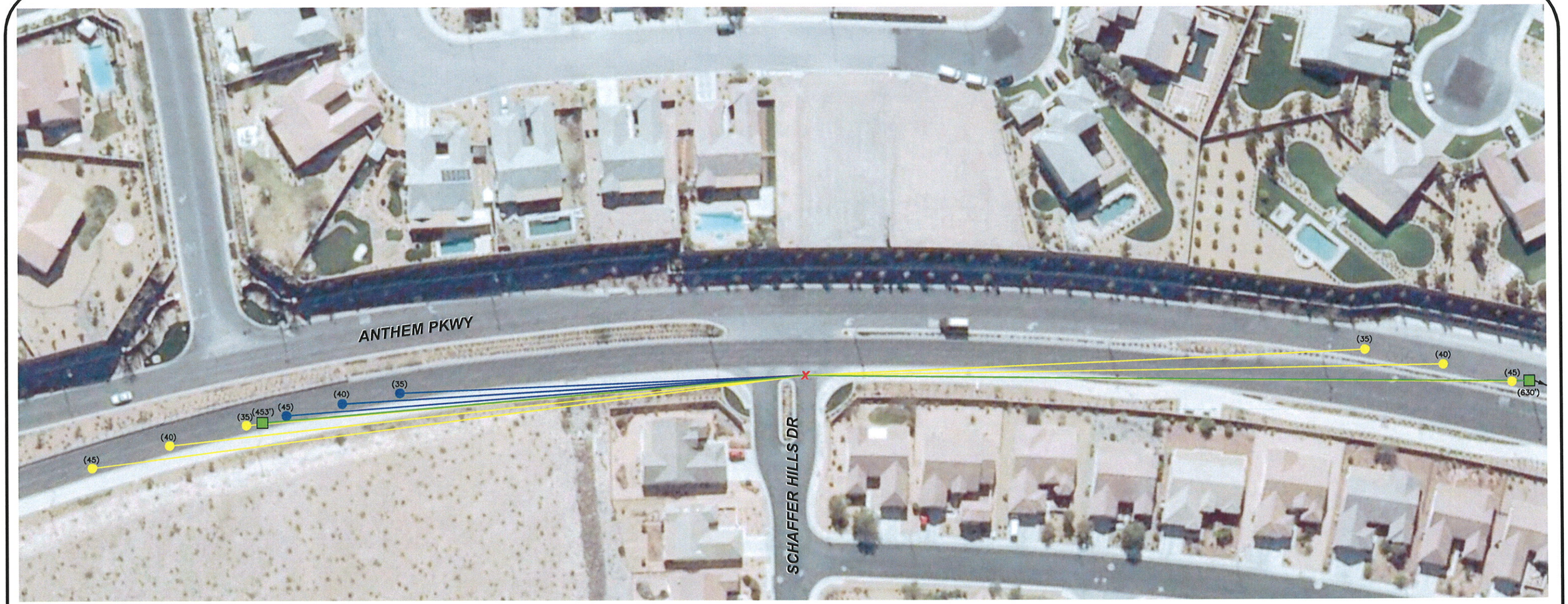

LEGEND

X	CAMERA LOCATION 8 FT
(mph)	ISD OBJECT DISTANCE CASE B1 35 mph: 464ft 40 mph: 530ft 45 mph: 596ft
(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE B2 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft
(ft)	ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT P-1

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LEGEND

X CAMERA LOCATION 14.5 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT P-2

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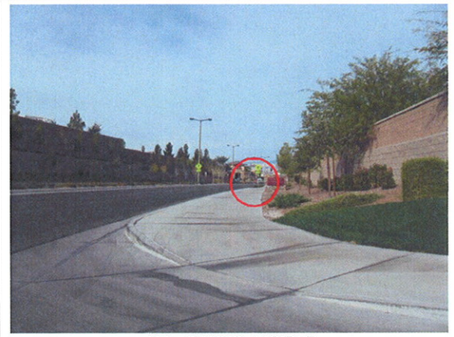
Path: K:\LAV_PublicTrans\092266011 – COH Speed and Sight Vis Study\CAD\266011ISD-4_14ft.dwg (December 12, 2008)



ALL CONES VISIBLE

NO CONES VISIBLE

TURNING MOVEMENT B1

ALL CONES VISIBLE

ANTHEM PKWY

TURNING MOVEMENT B2

SCHAFFER AVE

ANTHEM PARKWAY /
SCHAFFER HILLS DRIVE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

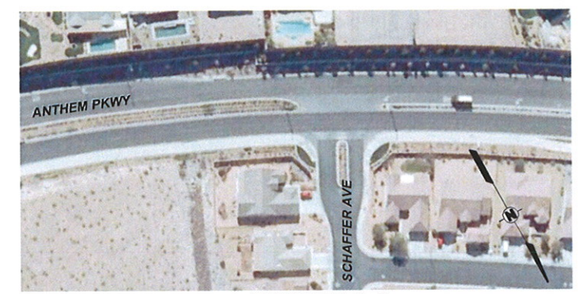


EXHIBIT P-3

Kimley-Horn and Associates, Inc.

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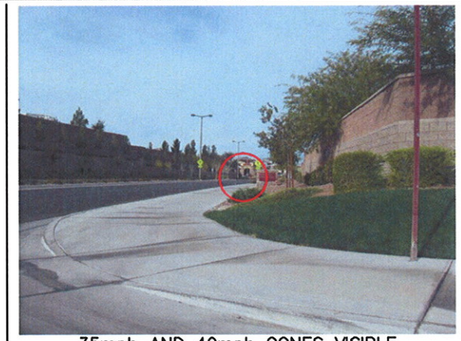


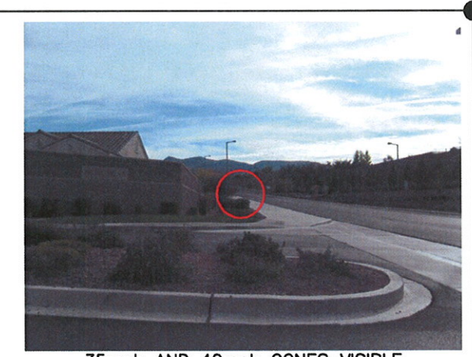
35mph AND 40mph CONES VISIBLE

ANTHEM PKWY

NO CONES VISIBLE

TURNING MOVEMENT B1

SCHAFFER AVE



35mph AND 40mph CONES VISIBLE

ANTHEM PKWY

TURNING MOVEMENT B2

SCHAFFER AVE

ANTHEM PARKWAY /
SCHAFFER HILLS DRIVE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

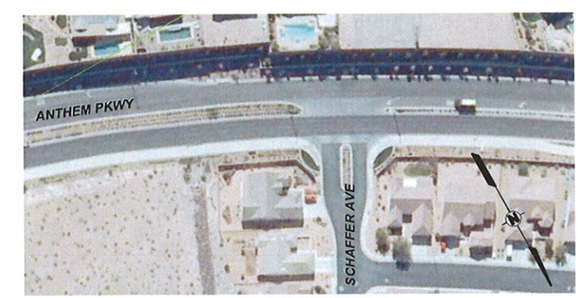


EXHIBIT P-4

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LEGEND

X CAMERA LOCATION 8 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B3
35 mph: 438ft
40 mph: 500ft
45 mph: 563ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE F
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT Q-1

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LEGEND

X CAMERA LOCATION 14.5 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B3
35 mph: 438ft
40 mph: 500ft
45 mph: 563ft

(ft) ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT Q-2

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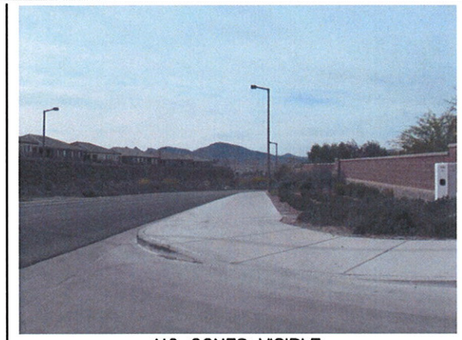


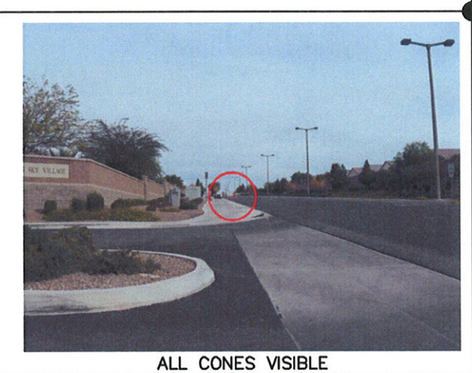
NO CONES VISIBLE

ANTHEM PKWY

ALL CONES VISIBLE

TURNING MOVEMENT B1

WILD IRIS TER



ALL CONES VISIBLE

ANTHEM PKWY

TURNING MOVEMENT B2

WILD IRIS TER

35mph CONE VISIBLE

ANTHEM PKWY

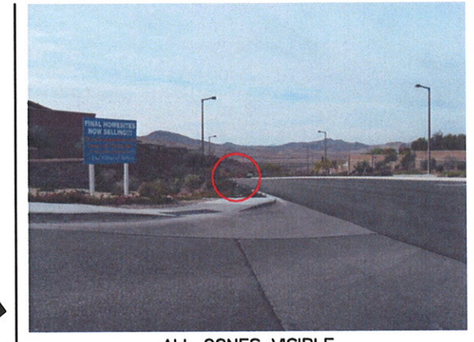
ALL CONES VISIBLE

MOVEMENT B3

WILD IRIS TER

ANTHEM PARKWAY /
WILD IRIS TERRACE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

TURNING MOVEMENT B1



ALL CONES VISIBLE

ANTHEM PKWY

ALL CONES VISIBLE

WILD IRIS TER

EXHIBIT Q-3

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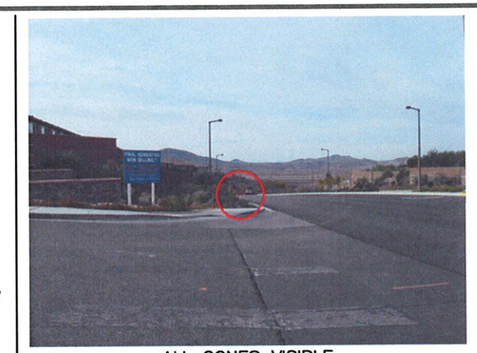
TURNING MOVEMENT B2

ALL CONES VISIBLE

ANTHEM PKWY

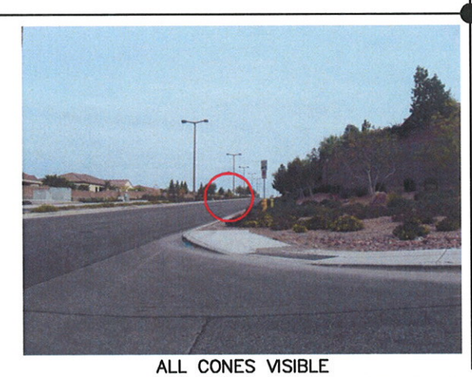
WILD IRIS TER

MOVEMENT B3



ALL CONES VISIBLE

ANTHEM PKWY



ALL CONES VISIBLE

WILD IRIS TER

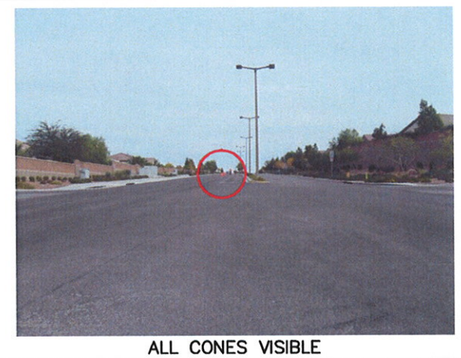
TURNING MOVEMENT F

ALL CONES VISIBLE

ANTHEM PKWY

WILD IRIS TER

ANTHEM PARKWAY /
WILD IRIS TERRACE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS



ALL CONES VISIBLE

TURNING MOVEMENT F

ANTHEM PKWY

WILD IRIS TER

EXHIBIT Q-4

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NO CONES VISIBLE

ANTHEM PKWY

ALL CONES VISIBLE

TURNING MOVEMENT B1

WILD IRIS TER

ALL CONES VISIBLE

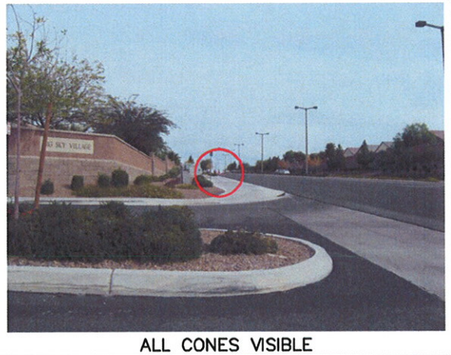
ANTHEM PKWY

TURNING MOVEMENT B2

WILD IRIS TER

35mph CONE VISIBLE

ANTHEM PKWY



ALL CONES VISIBLE

MOVEMENT B3

WILD IRIS TER

ANTHEM PARKWAY /
WILD IRIS TERRACE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

TURNING MOVEMENT B1

ALL CONES VISIBLE

ALL CONES VISIBLE

ANTHEM PKWY

WILD IRIS TER

EXHIBIT Q-5

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TURNING MOVEMENT B2

ALL CONES VISIBLE

ANTHEM PKWY

WILD IRIS TER

MOVEMENT B3

NO CONES VISIBLE

ANTHEM PKWY

ALL CONES VISIBLE

WILD IRIS TER

ANTHEM PARKWAY /
WILD IRIS TERRACE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT Q-6

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LEGEND

X CAMERA LOCATION 8 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE F
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT R-1

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LEGEND

X CAMERA LOCATION 14.5 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT R-2

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NO CONES VISIBLE

ANTHEM PKWY

ALL CONES VISIBLE

TURNING MOVEMENT B1

LAUREL HEIGHTS LN

ALL CONES VISIBLE

ANTHEM PKWY

TURNING MOVEMENT B2

LAUREL HEIGHTS LN

TURNING MOVEMENT F

ANTHEM PKWY

35mph AND 40mph CONES VISIBLE

LAUREL HEIGHTS LN

ANTHEM PARKWAY /
LAUREL HEIGHTS LANE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT R-3

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NO CONES VISIBLE

ANTHEM PKWY

ALL CONES VISIBLE

TURNING MOVEMENT B1

LAUREL HEIGHTS LN

ALL CONES VISIBLE

ANTHEM PKWY

TURNING MOVEMENT B2

LAUREL HEIGHTS LN

ANTHEM PARKWAY /
LAUREL HEIGHTS LANE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT R-4

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LEGEND

X CAMERA LOCATION 8 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

N

EXHIBIT S-1

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LEGEND

X CAMERA LOCATION 14.5 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

N

EXHIBIT S-2

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40mph AND 45mph CONES VISIBLE

ANTHEM PKWY

35mph CONE VISIBLE

TURNING MOVEMENT B1

SOMERSWORTH DR

ALL CONES VISIBLE

ANTHEM PKWY

TURNING MOVEMENT B2

SOMERSWORTH DR

ANTHEM PARKWAY /
SOMERSWORTH DRIVE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT S-3

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40mph AND 45mph CONES VISIBLE

ANTHEM PKWY

NO CONES VISIBLE

TURNING MOVEMENT B1

SOMERSWORTH DR

35mph CONE VISIBLE

ANTHEM PKWY

TURNING MOVEMENT B2

SOMERSWORTH DR

ANTHEM PARKWAY /
SOMERSWORTH DRIVE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

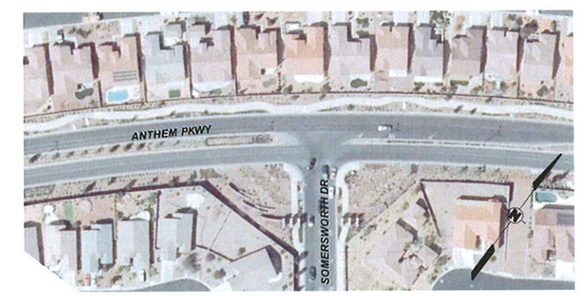

EXHIBIT S-4

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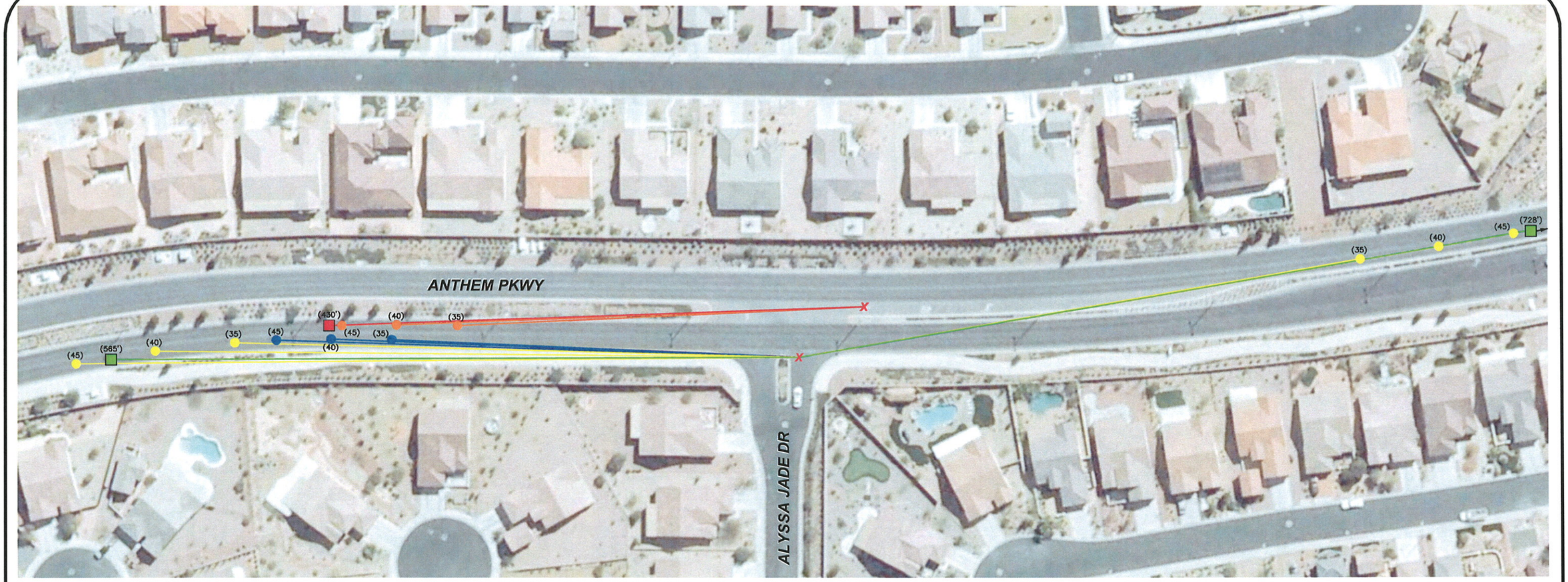

LEGEND

X	CAMERA LOCATION 8 FT
(mph)	ISD OBJECT DISTANCE CASE B1 35 mph: 464ft 40 mph: 530ft 45 mph: 596ft
(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE B2 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft
(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE F 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft
(ft)	ULTIMATE SIGHT DISTANCE

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

N

EXHIBIT T-1

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LEGEND

X CAMERA LOCATION 14.5 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

N

EXHIBIT T-2

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ALL CONES VISIBLE

ANTHEM PKWY

35mph AND 40mph CONES VISIBLE

TURNING MOVEMENT B1

ALYSSA JADE DR

ALL CONES VISIBLE

ANTHEM PKWY

TURNING MOVEMENT B2

ALYSSA JADE DR

TURNING MOVEMENT F

ANTHEM PKWY

35mph AND 40mph CONES VISIBLE

ALYSSA JADE DR

ANTHEM PARKWAY /
ALYSSA JADE DRIVE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

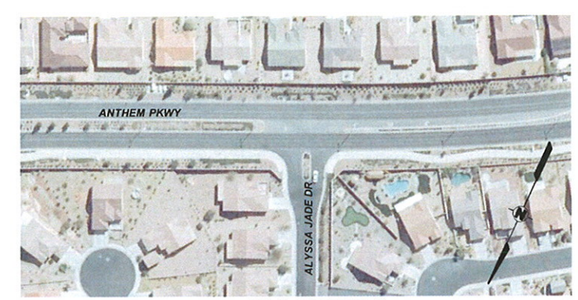

EXHIBIT T-3

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35mph AND 40mph CONES VISIBLE

ANTHEM PKWY

35mph AND 40mph CONES VISIBLE

TURNING MOVEMENT B1

ALYSSA JADE DR

ALL CONES VISIBLE

ANTHEM PKWY

TURNING MOVEMENT B2

ALYSSA JADE DR

ANTHEM PARKWAY /
ALYSSA JADE DRIVE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT T-4

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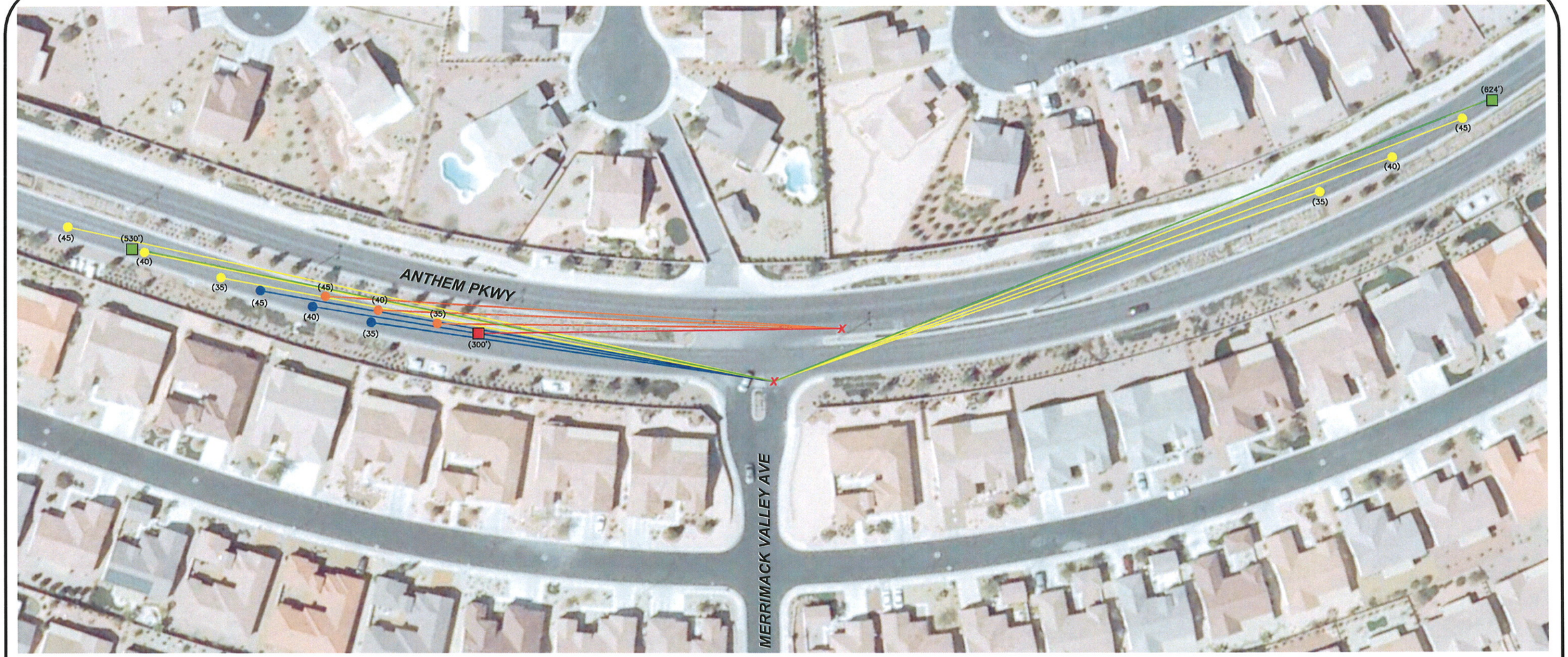

LEGEND

X	CAMERA LOCATION 8 FT
(mph)	ISD OBJECT DISTANCE CASE B1 35 mph: 464ft 40 mph: 530ft 45 mph: 596ft
(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE B2 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft
(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE F 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft
(ft)	ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT U-1

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LEGEND

X CAMERA LOCATION 14.5 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT U-2

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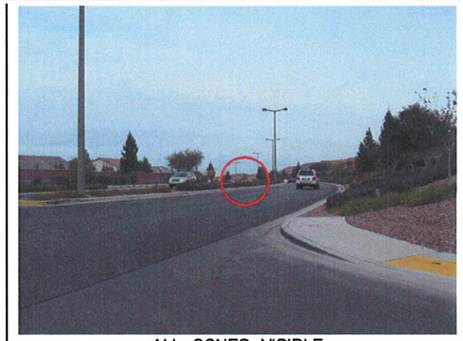

ALL CONES VISIBLE

ANTHEM PKWY

TURNING MOVEMENT B1

35mph AND 40mph CONES VISIBLE

MERRIMACK VALLEY AVE

ANTHEM PKWY

TURNING MOVEMENT B2

ALL CONES VISIBLE

MERRIMACK VALLEY AVE

TURNING MOVEMENT F

ANTHEM PKWY

NO CONES VISIBLE

MERRIMACK VALLEY AVE

ANTHEM PARKWAY /
MERRIMACK VALLEY AVENUE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT U-3

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ALL CONES VISIBLE

ANTHEM PKWY

35mph AND 40mph CONES VISIBLE

TURNING MOVEMENT B1

MERRIMACK VALLEY AVE

ANTHEM PKWY

ALL CONES VISIBLE

TURNING MOVEMENT B2

MERRIMACK VALLEY AVE

ANTHEM PARKWAY /
MERRIMACK VALLEY AVENUE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT U-4

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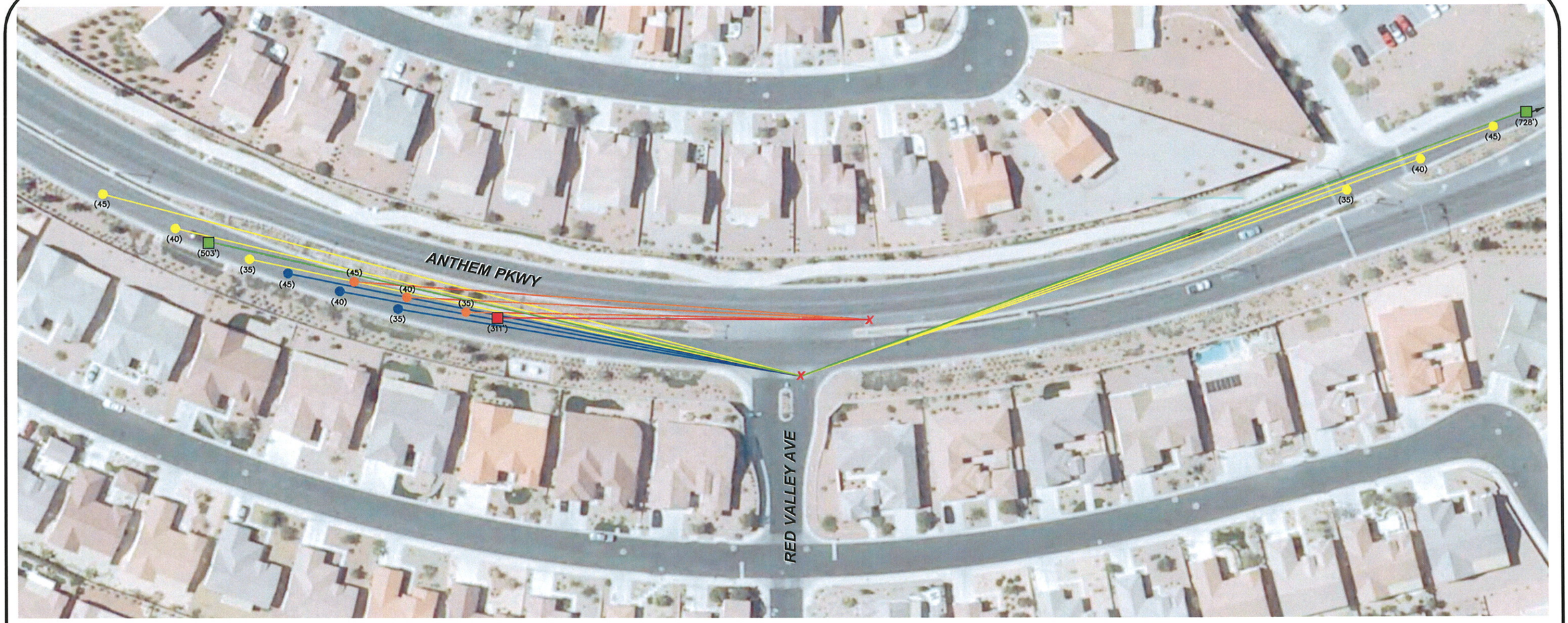
Path: K:\LAV_PublicTrans\092266011 – COH Speed and Sight Vis Study\CAD\266011PHOTO–Merrimack Valley.dwg (December 12, 2008)



LEGEND

X	CAMERA LOCATION 8 FT		
(mph)	ISD OBJECT DISTANCE CASE B1 35 mph: 464ft 40 mph: 530ft 45 mph: 596ft	(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE B2 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft	(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE F 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft	(ft)	ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT V-1

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LEGEND

X CAMERA LOCATION 14.5 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT V-2

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ALL CONES VISIBLE

ANTHEM PKWY

35mph CONE VISIBLE

TURNING MOVEMENT B1

RED VALLEY AVE

ANTHEM PKWY

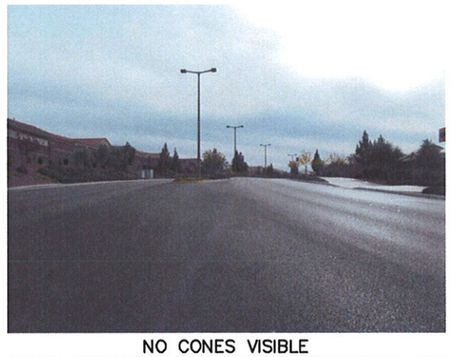
ALL CONES VISIBLE

TURNING MOVEMENT B2

RED VALLEY AVE

TURNING MOVEMENT F

ANTHEM PKWY



NO CONES VISIBLE

RED VALLEY AVE

ANTHEM PARKWAY /
RED VALLEY AVENUE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

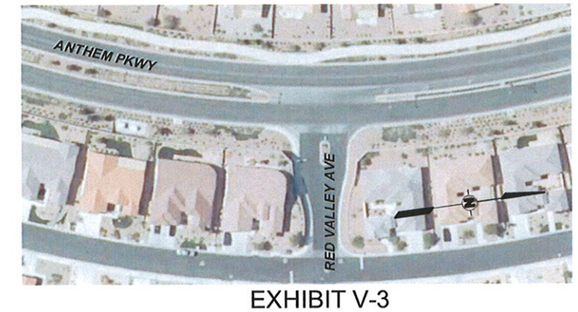


EXHIBIT V-3

Kimley-Horn and Associates, Inc.

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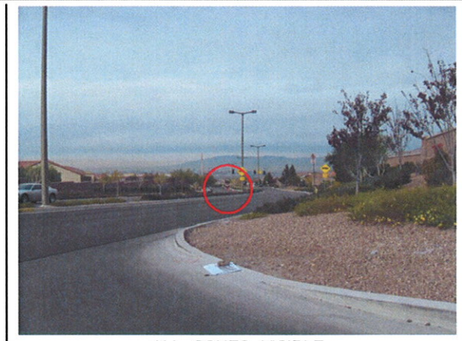

ALL CONES VISIBLE

ANTHEM PKWY

35mph AND 40mph CONES VISIBLE

TURNING MOVEMENT B1

RED VALLEY AVE

ANTHEM PKWY

ALL CONES VISIBLE

TURNING MOVEMENT B2

RED VALLEY AVE

ANTHEM PARKWAY /
RED VALLEY AVENUE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

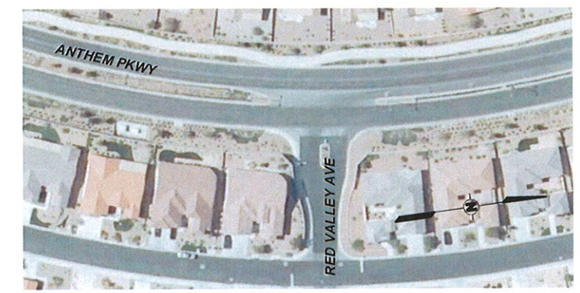

EXHIBIT V-4

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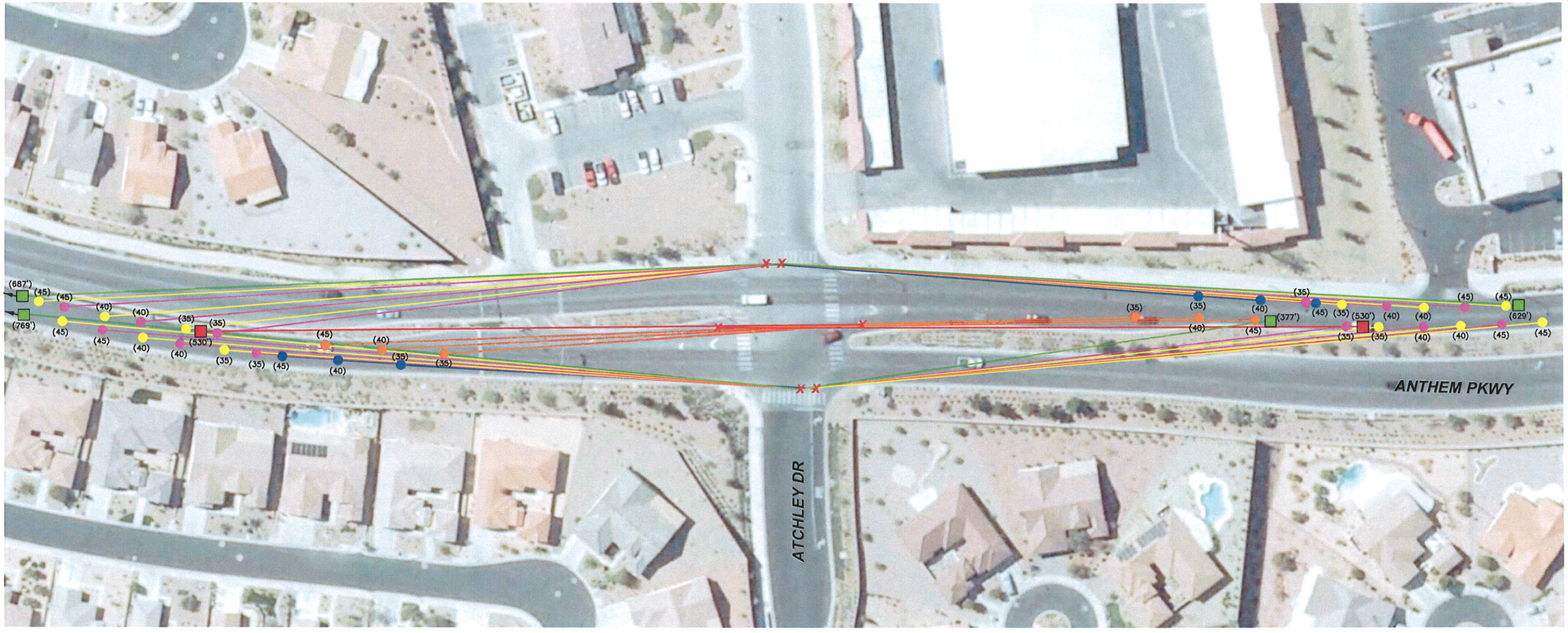

LEGEND

X	CAMERA LOCATION 8 FT
(mph)	ISD OBJECT DISTANCE CASE B1 35 mph: 489ft 40 mph: 559ft 45 mph: 629ft
(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE B2 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft
(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE B3 35 mph: 464ft 40 mph: 530ft 45 mph: 596ft
(ft)	ULTIMATE SIGHT DISTANCE
(mph)	ISD OBJECT DISTANCE CASE F 35 mph: 335ft 40 mph: 383ft 45 mph: 430ft
(ft)	ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT W-1

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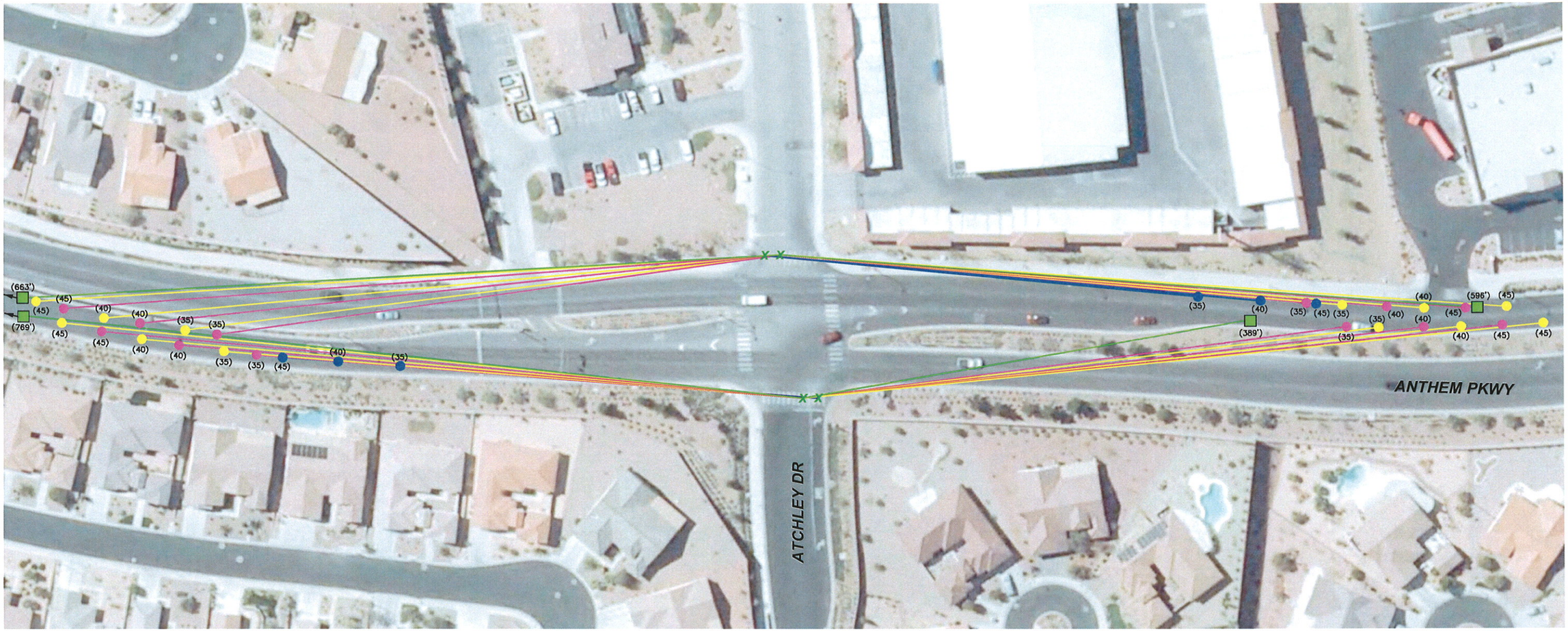
Path: K:\LAV_PublicTrans\092266011 – COH Speed and Sight Vis Study\CAD\266011ISD-6.dwg (December 12, 2008)



LEGEND

X CAMERA LOCATION 14.5 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 489ft
40 mph: 559ft
45 mph: 629ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B3
35 mph: 464ft
40 mph: 530ft
45 mph: 596ft

(ft) ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT W-2

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NO CONES VISIBLE

ANTHEM PKWY

ALL CONES VISIBLE

TURNING MOVEMENT B1

ATCHLEY DR

ALL CONES VISIBLE

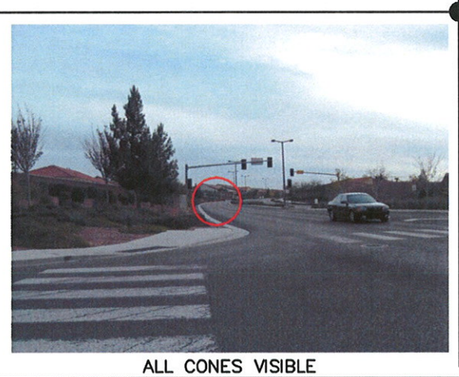
ANTHEM PKWY

TURNING MOVEMENT B2

ATCHLEY DR

NO CONES VISIBLE

ANTHEM PKWY



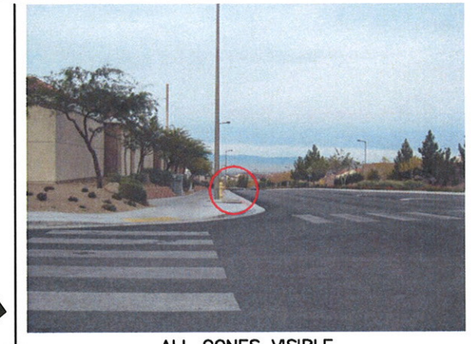
ALL CONES VISIBLE

MOVEMENT B3

ATCHLEY DR

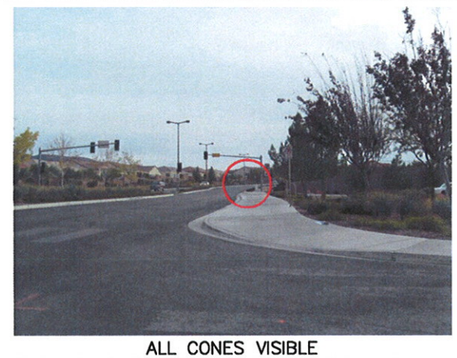
ANTHEM PARKWAY /
ATCHLEY DRIVE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

TURNING MOVEMENT B1



ALL CONES VISIBLE

ANTHEM PKWY



ALL CONES VISIBLE

ATCHLEY DR

EXHIBIT W-3

Kimley-Horn and Associates, Inc.

Path: K:\LAV_PublicTrans\092266011 – COH Speed and Sight Vis Study\CAD\266011PHOTO–Atchley.dwg (December 12, 2008)

TURNING MOVEMENT B2

ALL CONES VISIBLE

ANTHEM PKWY

ATCHLEY DR

MOVEMENT B3

ALL CONES VISIBLE

ANTHEM PKWY

ALL CONES VISIBLE

ATCHLEY DR

TURNING MOVEMENT F

ALL CONES VISIBLE

ANTHEM PKWY

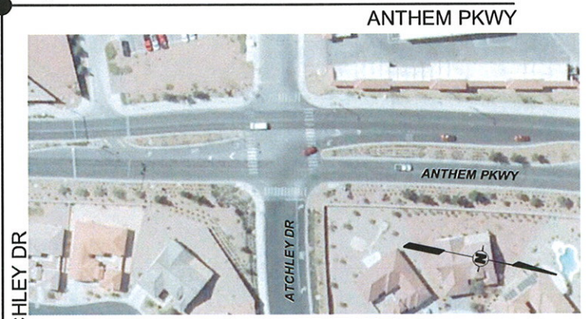
ATCHLEY DR

ANTHEM PARKWAY /
ATCHLEY DRIVE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

ALL CONES VISIBLE

TURNING MOVEMENT F

ANTHEM PKWY



ATCHLEY DR

EXHIBIT W-4

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Path: K:\LAV_PublicTrans\092266011 – COH Speed and Sight Vis Study\CAD\266011PHOTO-Atchley.dwg (December 12, 2008)

NO CONES VISIBLE

ANTHEM PKWY

ALL CONES VISIBLE

TURNING MOVEMENT B1

ATCHLEY DR

ALL CONES VISIBLE

ANTHEM PKWY

TURNING MOVEMENT B2

ATCHLEY DR

NO CONES VISIBLE

ANTHEM PKWY

ALL CONES VISIBLE

MOVEMENT B3

ATCHLEY DR

ANTHEM PARKWAY /
ATCHLEY DRIVE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

TURNING MOVEMENT B1

35mph AND 40mph CONES VISIBLE

ANTHEM PKWY

ALL CONES VISIBLE

ATCHLEY DR

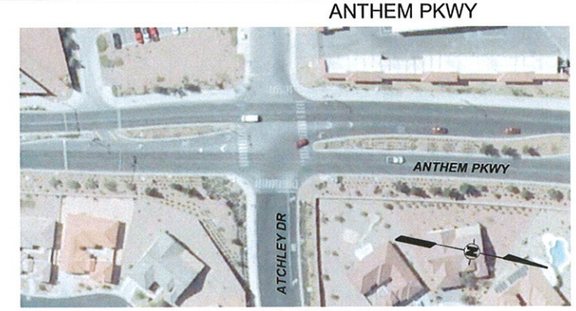

EXHIBIT W-5

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TURNING MOVEMENT B2

ALL CONES VISIBLE

ANTHEM PKWY

ATCHLEY DR

MOVEMENT B3

35mph AND 40mph CONES VISIBLE

ANTHEM PKWY

ALL CONES VISIBLE

ATCHLEY DR

ANTHEM PARKWAY /
ATCHLEY DRIVE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

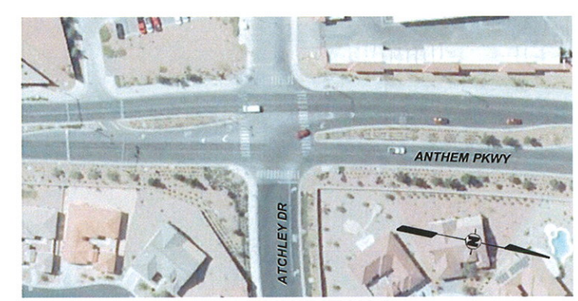

EXHIBIT W-6

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Path: K:\LAV_PublicTrans\092266011 – COH Speed and Sight Vis Study\CAD\266011PHOTO-Atchley.dwg (December 12, 2008)

LEGEND

X CAMERA LOCATION 8 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 489ft
40 mph: 559ft
45 mph: 629ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE F
35 mph: 361ft
40 mph: 412ft
45 mph: 464ft

(ft) ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT X-1

Kimley-Horn and Associates, Inc.

Path: K:\LAV_PublicTrans\092266011 – COH Speed and Sight Vis Study\CAD\266011ISD-6.dwg (December 12, 2008)

LEGEND

X CAMERA LOCATION 14.5 FT

(mph) ISD OBJECT DISTANCE CASE B1
35 mph: 489ft
40 mph: 559ft
45 mph: 629ft

(ft) ULTIMATE SIGHT DISTANCE

(mph) ISD OBJECT DISTANCE CASE B2
35 mph: 335ft
40 mph: 383ft
45 mph: 430ft

(ft) ULTIMATE SIGHT DISTANCE

N

NOTE:
ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESSES

80 40 0 80
60 20 40

SCALE: 1" = 80'

EXHIBIT X-2

Kimley-Horn and Associates, Inc.

Path: K:\LAV_PublicTrans\092266011 – COH Speed and Sight Vis Study\CAD\266011ISD-6_14ft.dwg (December 12, 2008)

45mph CONE VISIBLE

ANTHEM PKWY

NO CONES VISIBLE

TURNING MOVEMENT B1

ALEXANDRIA DR

ALL CONES VISIBLE

ANTHEM PKWY

TURNING MOVEMENT B2

ALEXANDRIA DR

TURNING MOVEMENT F

ANTHEM PKWY

NO CONES VISIBLE

ALEXANDRIA DR

ANTHEM PARKWAY /
ALEXANDRIA DRIVE
8' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT X-3

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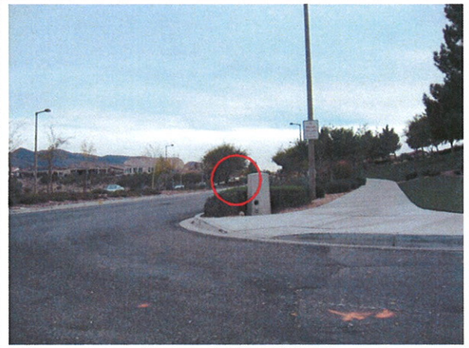
Path: K:\LAV_PublicTrans\092266011 – COH Speed and Sight Vis Study\CAD\266011PHOTO–Alexandria.dwg (December 12, 2008)



45mph CONE VISIBLE

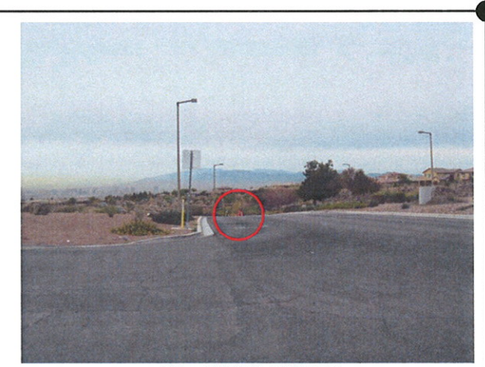
ANTHEM PKWY

NO CONES VISIBLE

TURNING MOVEMENT B1

ALEXANDRIA DR

ANTHEM PKWY



ALL CONES VISIBLE

TURNING MOVEMENT B2

ALEXANDRIA DR

ANTHEM PARKWAY /
ALEXANDRIA DRIVE
14.5' CAMERA LOCATION
INTERSECTION SITE PHOTOS

EXHIBIT X-4

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APPENDIX E

INTERSECTION SIGHT VISIBILITY SUMMARY (8-FT)

INTERSECTION SIGHT VISIBILITY SUMMARY (14.5-FT)

Intersection and Approach Movement (8-Ft Observation Location)		Approximate Speed for Existing Sight Visibility				Restricting Factors for Existing Sight Visibility								Recommended Mitigation							Anticipated Posted Speed with Recommended Mitigation			
		45 mph	40 mph	35 mph	Less than 35 mph	Landscaping	Permanent Community Signing	Property Line Walls	Above Ground Utilities	Road Surface Elevation differences	Horizontal/Vertical Curves	Side Slope	None	Reduce Posted Speed Limit	Post Advisory Speed/Warning Signs	Investigate All-Way Stop Installation	Remove Landscaping within Sight Lines	Remove/Relocate Community Signs out of Sight Lines	Further Study Required	None	45 mph	40 mph	35 mph	Unknown (Advisory)
Sun City Anthem Drive at Anthem Parkway (Exhibits A-1 - A-4)																								
W Approach	Sun City Anthem Dr. to Anthem Pkwy																							
	Left Turn - Looking North	X				X											X				X			
	Left Turn - Looking South	X				X				X	X						X				X			
	Right Turn - Looking North	X															X				X			
Sun City Anthem Drive at Fieldbrook Street (Exhibits B-1 - B-6)																								
NE Approach	Fieldbrook St. to Sun City Anthem Dr.																							
	Left Turn - Looking Southeast				X	X		X			X			X	X	X	X		X					X
	Left Turn - Looking Northwest	X				X					X						X				X			
	Through - Looking Southeast				X	X		X			X			X	X	X	X		X					X
	Through Looking Northwest	X				X											X				X			
	Right Turn - Looking Southeast				X	X		X			X			X	X	X	X		X					X
SW Approach	Fieldbrook St. to Sun City Anthem Dr.																							
	Left Turn - Looking Southeast	X				X											X				X			
	Left Turn - Looking Northwest				X	X	X	X	X		X			X	X	X	X	X	X					X
	Through - Looking Southeast	X				X											X				X			
	Through - Looking Northwest				X	X	X	X	X		X			X	X	X	X	X	X					X
	Right Turn - Looking Northwest				X	X		X	X		X			X	X	X	X		X					X
SE Approach	Sun City Anthem Dr. to Fieldbrook St.																							
	Left Turn - Looking Northwest	X											X							X	X			
NW Approach	Sun City Anthem Dr. to Fieldbrook St.																							
	Left Turn - Looking Southeast	X											X							X	X			
Sun City Anthem Drive at Langston Hughes Street (Exhibits C-1 - C-6)																								
N Approach	Langston Hughes St. to Sun City Anthem Dr.																							
	Left Turn - Looking East		X			X											X				X			
	Left Turn - Looking West				X	X											X				X			
	Through - Looking East	X											X							X	X			
	Through - Looking West			X		X											X				X			
	Right Turn - Looking East	X											X							X	X			
S Approach	Langston Hughes St. to Sun City Anthem Dr.																							
	Left Turn - Looking West		X			X											X				X			
	Left Turn - Looking East				X	X			X		X			X	X	X	X		X					X
	Through - Looking West	X											X							X	X			
	Through - Looking East				X	X			X		X			X	X	X	X		X					X
	Right Turn - Looking West	X											X							X	X			
E Approach	Sun City Anthem Dr. to Langston Hughes St.																							
	Left Turn - Looking West	X											X							X	X			

Intersection and Approach Movement (8-Ft Observation Location)		Approximate Speed for Existing Sight Visibility				Restricting Factors for Existing Sight Visibility								Recommended Mitigation							Anticipated Posted Speed with Recommended Mitigation			
		45 mph	40 mph	35 mph	Less than 35 mph	Landscaping	Permanent Community Signing	Property Line Walls	Above Ground Utilities	Road Surface Elevation differences	Horizontal/Vertical Curves	Side Slope	None	Reduce Posted Speed Limit	Post Advisory Speed/Warning Signs	Investigate All-Way Stop Installation	Remove Landscaping within Sight Lines	Remove/Relocate Community Signs out of Sight Lines	Further Study Required	None	45 mph	40 mph	35 mph	Unknown (Advisory)
W Approach	Sun City Anthem Dr. to Langston Hughes St.																							
	Left Turn - Looking East	X											X							X	X			
Sun City Anthem Drive at Williamsport Street (Exhibits D-1 - D-4)																								
S Approach	Williamsport St. to Sun City Anthem Dr.																							
	Left Turn - Looking West			X							X	X		X									X	
	Left Turn - Looking East				X	X			X		X			X	X	X	X		X					X
	Right Turn - Looking West	X											X							X	X			
E Approach	Sun City Anthem Dr. to Williamsport St.																							
	Left Turn - Looking West				X	X					X			X	X	X	X		X					X
Sun City Anthem Drive at Heritage Springs Drive (Exhibits E-1 - E-4)																								
S Approach	Heritage Springs Dr. to Sun City Anthem Dr.																							
	Left Turn - Looking West	X				X											X				X			
	Left Turn - Looking East				X	X			X		X			X	X	X	X		X					X
	Right Turn - Looking West	X				X											X				X			
Sun City Anthem Drive at Preston Park Drive (Exhibits F-1 - F-4)																								
S Approach	Preston Park Dr. to Sun City Anthem Dr.																							
	Left Turn - Looking West	X											X							X	X			
	Left Turn - Looking East				X	X											X				X			
	Right Turn - Looking West	X											X							X	X			
Sun City Anthem Drive at Scotts Valley Drive (Exhibits G-1 - G-6)																								
NW Approach	Scotts Valley Dr. to Sun City Anthem Dr.																							
	Left Turn - Looking Northeast	X											X							X	X			
	Left Turn - Looking Southwest	X				X											X				X			
	Through - Looking Northeast	X											X							X	X			
	Through - Looking Southwest	X				X											X				X			
	Right Turn - Looking Northeast	X											X							X	X			
SE Approach	Scotts Valley Dr. to Sun City Anthem Dr.																							
	Left Turn - Looking Southwest				X	X					X	X		X	X	X	X		X					X
	Left Turn - Looking Northeast				X	X			X					X	X	X	X		X					X
	Through - Looking Southwest				X	X					X	X		X	X	X	X		X					X
	Through - Looking Northeast				X	X			X					X	X	X	X		X					X
	Right Turn - Looking Southwest		X			X					X	X		X								X		
NE Approach	Sun City Anthem Dr. to Scotts Valley Dr.																							
	Left Turn - Looking Southwest	X											X							X	X			
SW Approach	Sun City Anthem Dr. to Scotts Valley Dr.																							
	Left Turn - Looking Northeast		X			X			X								X				X			
Sun City Anthem Drive at Prichard Avenue (Exhibits H-1 - H-4)																								

Intersection and Approach Movement (8-Ft Observation Location)		Approximate Speed for Existing Sight Visibility				Restricting Factors for Existing Sight Visibility								Recommended Mitigation							Anticipated Posted Speed with Recommended Mitigation			
		45 mph	40 mph	35 mph	Less than 35 mph	Landscaping	Permanent Community Signing	Property Line Walls	Above Ground Utilities	Road Surface Elevation differences	Horizontal/Vertical Curves	Side Slope	None	Reduce Posted Speed Limit	Post Advisory Speed/Warning Signs	Investigate All-Way Stop Installation	Remove Landscaping within Sight Lines	Remove/Relocate Community Signs out of Sight Lines	Further Study Required	None	45 mph	40 mph	35 mph	Unknown (Advisory)
E Approach	Prichard Ave. to Sun City Anthem Dr.																							
	Left Turn - Looking South		X			X											X				X			
	Left Turn - Looking North		X			X					X	X		X			X					X		
	Right Turn - Looking South	X				X											X				X			
Sun City Anthem Drive at Gettysburg Avenue (Exhibits I-1 - I-4)																								
E Approach	Gettysburg Ave. to Sun City Anthem Dr.																							
	Left Turn - Looking South	X				X											X				X			
	Left Turn - Looking North		X			X											X				X			
	Right Turn - Looking South	X				X											X				X			
Sun City Anthem Drive at Hampton Road (Exhibits J-1 - J-3)																								
NE Approach	Hampton Rd. to Sun City Anthem Dr.																							
	Right Turn - Looking Southeast	X											X							X	X			
Sun City Anthem Drive at Colvin Run Drive (Exhibits K-1 - K-4)																								
NE Approach	Colvin Run Dr. to Sun City Anthem Dr.																							
	Left Turn - Looking Northwest	X				X											X				X			
	Left Turn - Looking Southeast	X											X							X	X			
	Right Turn - Looking Southeast	X											X							X	X			
NW Approach	Sun City Anthem Dr. to Colvin Run Dr.																							
	Left Turn - Looking Southeast	X				X											X				X			
Sun City Anthem Drive at Thunder Bay Avenue (Exhibits L-1 - L-6)																								
E Approach	Thunder Bay Ave. to Sun City Anthem Dr.																							
	Left Turn - Looking North				X	X					X			X	X	X	X		X					X
	Left Turn - Looking South		X								X			X								X		
	Through - Looking North				X	X					X			X	X	X	X		X					X
	Through - Looking South		X								X			X								X		
	Right Turn - Looking South	X											X							X	X			
W Approach	Thunder Bay Ave. to Sun City Anthem Dr.																							
	Left Turn - Looking South				X	X					X			X	X	X	X		X					X
	Left Turn - Looking North				X	X					X			X	X	X	X		X					X
	Through - Looking South				X	X					X			X	X	X	X		X					X
	Through - Looking North				X	X					X			X	X	X	X		X					X
	Right Turn - Looking North			X		X					X			X			X					X		
N Approach	Sun City Anthem Dr. to Thunder Bay Ave.																							
	Left Turn - Looking South	X											X							X	X			
S Approach	Sun City Anthem Dr. to Thunder Bay Ave.																							
	Left Turn - Looking North	X											X							X	X			
Sun City Anthem Drive at Hayden Creek Terrace (Exhibits M-1 - M-6)																								

Intersection and Approach Movement (8-Ft Observation Location)		Approximate Speed for Existing Sight Visibility				Restricting Factors for Existing Sight Visibility								Recommended Mitigation							Anticipated Posted Speed with Recommended Mitigation			
		45 mph	40 mph	35 mph	Less than 35 mph	Landscaping	Permanent Community Signing	Property Line Walls	Above Ground Utilities	Road Surface Elevation differences	Horizontal/Vertical Curves	Side Slope	None	Reduce Posted Speed Limit	Post Advisory Speed/Warning Signs	Investigate All-Way Stop Installation	Remove Landscaping within Sight Lines	Remove/Relocate Community Signs out of Sight Lines	Further Study Required	None	45 mph	40 mph	35 mph	Unknown (Advisory)
E Approach	Hayden Creek Ter. to Sun City Anthem Dr.																							
	Left Turn - Looking North				X	X					X			X	X	X	X		X					X
	Left Turn - Looking South		X								X			X								X		
	Through - Looking North				X	X					X			X	X	X	X		X					X
	Through - Looking South		X								X			X								X		
	Right Turn - Looking South	X											X							X	X			
W Approach	Hayden Creek Ter. to Sun City Anthem Dr.																							
	Left Turn - Looking South				X	X					X			X	X	X	X		X					X
	Left Turn - Looking North				X	X					X			X	X	X	X		X					X
	Through - Looking South				X	X					X			X	X	X	X		X					X
	Through - Looking North				X	X					X			X	X	X	X		X					X
	Right Turn - Looking North			X		X								X			X					X		
N Approach	Sun City Anthem Dr. to Hayden Creek Ter.																							
	Left Turn - Looking South	X											X							X	X			
S Approach	Sun City Anthem Dr. to Hayden Creek Ter.																							
	Left Turn - Looking North	X											X							X	X			
Sun City Anthem Drive at Olivia Heights Avenue (Exhibits N-1 - N-6)																								
E Approach	Olivia Heights Ave. to Sun City Anthem Dr.																							
	Left Turn - Looking North				X	X					X						X				X			
	Left Turn - Looking South			X		X	X		X		X			X			X	X					X	
	Through - Looking North				X	X					X						X				X			
	Through - Looking South		X			X	X		X		X			X			X					X		
	Right Turn - Looking South	X											X							X	X			
W Approach	Olivia Heights Ave. to Sun City Anthem Dr.																							
	Left Turn - Looking South	X											X							X	X			
	Left Turn - Looking North	X											X							X	X			
	Through - Looking South	X											X							X	X			
	Through - Looking North	X											X							X	X			
	Right Turn - Looking North	X											X							X	X			
Sun City Anthem Drive at Foxtail Creek Avenue (Exhibits O-1 - O-6)																								
E Approach	Foxtail Creek Ave. to Sun City Anthem Dr.																							
	Left Turn - Looking North	X											X							X	X			
	Left Turn - Looking South				X	X		X	X		X			X	X	X	X		X					X
	Through - Looking North	X											X							X	X			
	Through - Looking South				X	X		X	X		X			X	X	X	X		X					X
	Right Turn - Looking South		X			X					X			X			X					X		
W Approach	Foxtail Creek Ave. to Sun City Anthem Dr.																							

Intersection and Approach Movement (8-Ft Observation Location)		Approximate Speed for Existing Sight Visibility				Restricting Factors for Existing Sight Visibility								Recommended Mitigation							Anticipated Posted Speed with Recommended Mitigation			
		45 mph	40 mph	35 mph	Less than 35 mph	Landscaping	Permanent Community Signing	Property Line Walls	Above Ground Utilities	Road Surface Elevation differences	Horizontal/Vertical Curves	Side Slope	None	Reduce Posted Speed Limit	Post Advisory Speed/Warning Signs	Investigate All-Way Stop Installation	Remove Landscaping within Sight Lines	Remove/Relocate Community Signs out of Sight Lines	Further Study Required	None	45 mph	40 mph	35 mph	Unknown (Advisory)
	Left Turn - Looking South	X											X							X	X			
	Left Turn - Looking North	X											X							X	X			
	Through - Looking South	X											X							X	X			
	Through - Looking North	X											X							X	X			
	Right Turn - Looking North	X											X							X	X			
N Approach	Sun City Anthem Dr. to Foxtail Creek Ave.																							
	Left Turn - Looking South	X											X							X	X			
S Approach	Sun City Anthem Dr. to Foxtail Creek Ave.																							
	Left Turn - Looking North	X											X							X	X			
Anthem Parkway at Schaeffer Hills Drive (Exhibits P-1 - P-4)																								
N Approach	Schaeffer Hills Dr. to Anthem Pkwy.																							
	Left Turn - Looking West	X											X							X	X			
	Left Turn - Looking East				X	X					X			X			X						X	
	Right Turn - Looking East	X											X							X	X			
Anthem Parkway at Wild Iris Ter./Solera Moon Dr. (Exhibits Q-1 - Q-6)																								
NW Approach	Wild Iris Ter. to Anthem Pkwy.																							
	Left Turn - Looking Southwest				X	X					X						X				X			
	Left Turn - Looking Northeast	X											X							X	X			
	Through - Looking Southwest			X		X					X						X				X			
	Through - Looking Northeast	X											X							X	X			
	Right Turn - Looking Northeast	X											X							X	X			
SE Approach	Solera Moon Dr. to Anthem Pkwy																							
	Left Turn - Looking Northeast	X				X											X				X			
	Left Turn - Looking Southwest	X											X							X	X			
	Through - Looking Northeast	X				X											X				X			
	Through - Looking Southwest	X											X							X	X			
	Right Turn - Looking Southwest	X											X							X	X			
SW Approach	Anthem Pkwy. to Wild Iris Ter.																							
	Left Turn - Looking Northeast	X											X							X	X			
NE Approach	Anthem Pkwy. to Solera Moon Dr.																							
	Left Turn - Looking Southwest	X											X							X	X			
Anthem Parkway at Laurel Heights Lane (Exhibits R-1 - R-4)																								
NW Approach	Laurel Heights Ln. to Anthem Pkwy.																							
	Left Turn - Looking Southwest				X	X					X			X	X	X	X		X					X
	Left Turn - Looking Northeast	X											X							X	X			
	Right Turn - Looking Northeast	X											X							X	X			
SW Approach	Anthem Pkwy. to Laurel Heights Ln.																							

Intersection and Approach Movement (8-Ft Observation Location)		Approximate Speed for Existing Sight Visibility				Restricting Factors for Existing Sight Visibility								Recommended Mitigation							Anticipated Posted Speed with Recommended Mitigation			
		45 mph	40 mph	35 mph	Less than 35 mph	Landscaping	Permanent Community Signing	Property Line Walls	Above Ground Utilities	Road Surface Elevation differences	Horizontal/Vertical Curves	Side Slope	None	Reduce Posted Speed Limit	Post Advisory Speed/Warning Signs	Investigate All-Way Stop Installation	Remove Landscaping within Sight Lines	Remove/Relocate Community Signs out of Sight Lines	Further Study Required	None	45 mph	40 mph	35 mph	Unknown (Advisory)
	Left Turn - Looking Northeast		X			X											X				X			
Anthem Parkway at Somersworth Drive (Exhibits S-1 - S-4)																								
SE Approach	Somersworth Dr. to Anthem Pkwy.																							
	Left Turn - Looking Northeast	X				X											X				X			
	Left Turn - Looking Southwest			X		X					X	X		X			X						X	
	Right Turn - Looking Southwest	X				X											X				X			
Anthem Parkway at Alyssa Jade Drive (Exhibits T-1 - T-4)																								
N Approach	Alyssa Jade Dr. to Anthem Pkwy.																							
	Left Turn - Looking West	X											X							X	X			
	Left Turn - Looking East		X			X			X					X								X		
	Right Turn - Looking East	X											X							X	X			
Anthem Parkway at Merrimack Valley Ave (Exhibits U-1 - U-6)																								
SE Approach	Merrimack Valley Ave. to Anthem Pkwy.																							
	Left Turn - Looking Northeast	X				X											X				X			
	Left Turn - Looking Southwest		X			X					X			X			X					X		
	Right Turn - Looking Southwest	X											X							X	X			
NE Approach	Anthem Pkwy. to Merrimack Valley Ave.																							
	Left Turn - Looking Southwest				X	X								X			X					X		
Anthem Parkway at Red Valley Avenue (Exhibits V-1 - V-6)																								
E Approach	Red Valley Ave. to Anthem Pkwy.																							
	Left Turn - Looking North	X											X							X	X			
	Left Turn - Looking South			X		X					X			X									X	
	Right Turn - Looking South	X											X							X	X			
N Approach	Anthem Pkwy. to Red Valley Ave.																							
	Left Turn - Looking South				X	X					X			X			X						X	
Anthem Parkway at Atchley Drive (Exhibits W-1 - W-6)																								
E Approach	Atchley Dr. to Anthem Pkwy.																							
	Left Turn - Looking North				X	X					X						X				X			
	Left Turn - Looking South	X											X							X	X			
	Through - Looking North				X	X					X						X				X			
	Through - Looking South	X											X							X	X			
	Right Turn - Looking South	X											X							X	X			
W Approach	Atchley Dr. to Anthem Pkwy																							
	Left Turn - Looking South	X											X							X	X			
	Left Turn - Looking North	X									X									X	X			
	Through - Looking South	X											X							X	X			
	Through - Looking North	X									X									X	X			

Intersection and Approach Movement (8-Ft Observation Location)		Approximate Speed for Existing Sight Visibility				Restricting Factors for Existing Sight Visibility								Recommended Mitigation							Anticipated Posted Speed with Recommended Mitigation			
		45 mph	40 mph	35 mph	Less than 35 mph	Landscaping	Permanent Community Signing	Property Line Walls	Above Ground Utilities	Road Surface Elevation differences	Horizontal/Vertical Curves	Side Slope	None	Reduce Posted Speed Limit	Post Advisory Speed/Warning Signs	Investigate All-Way Stop Installation	Remove Landscaping within Sight Lines	Remove/Relocate Community Signs out of Sight Lines	Further Study Required	None	45 mph	40 mph	35 mph	Unknown (Advisory)
	Right Turn - Looking North	X											X							X	X			
N Approach	Anthem Pkwy. to Atchley Dr.																							
	Left Turn - Looking South	X											X							X	X			
S Approach	Anthem Pkwy. to Atchley Dr.																							
	Left Turn - Looking North	X											X							X	X			
Anthem Parkway at Alexandria Drive (Exhibits X-1 - X-4)																								
W Approach	Alexandria Dr. to Anthem Pkwy.																							
	Left Turn - Looking South	X				X											X				X			
	Left Turn - Looking North				X						X			X	X	X			X					X
	Right Turn - Looking North	X											X							X	X			
S Approach	Anthem Pkwy. to Alexandria Dr.																							
	Left Turn - Looking North				X	X					X			X	X	X	X		X					X

Intersection and Approach Movement (14.5-Ft Observation Location)		Approximate Speed for Existing Sight Visibility				Restricting Factors for Existing Sight Visibility								Recommended Mitigation							Potential Posted Speed with Recommended Mitigation			
		45 mph	40 mph	35 mph	Less than 35 mph	Landscaping	Permanent Community Signing	Property Line Walls	Above Ground Utilities	Road Surface Elevation differences	Horizontal/Vertical Curves	Side Slope	None	Reduce Posted Speed Limit	Post Advisory Speed/Warning Signs	Investigate All-Way Stop Installation	Remove Landscaping within Sight Lines	Remove/Relocate Community Signs out of Sight Lines	Further Study Required	None	45 mph	40 mph	35 mph	Unknown (Advisory)
Sun City Anthem Drive at Anthem Parkway (Exhibits A-1 - A-4)																								
W Approach	Sun City Anthem Dr. to Anthem Pkwy																							
	Left Turn - Looking North				X	X	X										X	X			X			
	Left Turn - Looking South	X				X				X	X						X				X			
	Right Turn - Looking North				X	X	X										X	X			X			
Sun City Anthem Drive at Fieldbrook Street (Exhibits B-1 - B-6)																								
NE Approach	Fieldbrook St. to Sun City Anthem Dr.																							
	Left Turn - Looking Southeast				X	X	X	X			X			X	X	X	X	X	X					X
	Left Turn - Looking Northwest	X				X											X				X			
	Through - Looking Southeast				X	X	X	X			X			X	X	X	X	X	X					X
	Through - Looking Northwest	X				X											X				X			
	Right Turn - Looking Southeast				X	X	X	X			X			X	X	X	X	X	X					X
SW Approach	Fieldbrook St. to Sun City Anthem Dr.																							
	Left Turn - Looking Southeast	X				X					X						X				X			
	Left Turn - Looking Northwest				X	X	X	X	X		X			X	X	X	X	X	X					X
	Through - Looking Southeast	X				X					X						X				X			
	Through - Looking Northwest				X	X	X	X	X		X			X	X	X	X	X	X					X
	Right Turn - Looking Northwest				X	X	X	X	X		X			X	X	X	X	X	X					X
Sun City Anthem Drive at Langston Hughes Street (Exhibits C-1 - C-6)																								
N Approach	Langston Hughes St. to Sun City Anthem Dr.																							
	Left Turn - Looking East	X											X							X	X			
	Left Turn - Looking West				X	X											X				X			
	Through - Looking East	X											X							X	X			
	Through - Looking West				X	X											X				X			
	Right Turn - Looking East	X											X							X	X			
S Approach	Langston Hughes St. to Sun City Anthem Dr.																							
	Left Turn - Looking West		X			X											X				X			
	Left Turn - Looking East				X	X			X		X						X		X					X
	Through - Looking West		X			X											X				X			
	Through - Looking East				X	X			X		X						X		X					X
	Right Turn - Looking West	X											X							X	X			
Sun City Anthem Drive at Williamsport Street (Exhibits D-1 - D-4)																								
S Approach	Williamsport St. to Sun City Anthem Dr.																							
	Left Turn - Looking West				X	X	X				X			X	X	X	X		X					X
	Left Turn - Looking East				X	X			X		X			X	X	X	X		X					X
	Right Turn - Looking West				X	X	X				X			X	X	X	X		X					X

Intersection and Approach Movement (14.5-Ft Observation Location)		Approximate Speed for Existing Sight Visibility				Restricting Factors for Existing Sight Visibility								Recommended Mitigation							Potential Posted Speed with Recommended Mitigation			
		45 mph	40 mph	35 mph	Less than 35 mph	Landscaping	Permanent Community Signing	Property Line Walls	Above Ground Utilities	Road Surface Elevation differences	Horizontal/Vertical Curves	Side Slope	None	Reduce Posted Speed Limit	Post Advisory Speed/Warning Signs	Investigate All-Way Stop Installation	Remove Landscaping within Sight Lines	Remove/Relocate Community Signs out of Sight Lines	Further Study Required	None	45 mph	40 mph	35 mph	Unknown (Advisory)
Sun City Anthem Drive at Heritage Springs Drive (Exhibits E-1 - E-4)																								
S Approach	Heritage Springs Dr. to Sun City Anthem Dr.																							
	Left Turn - Looking West				X	X											X				X			
	Left Turn - Looking East				X	X					X			X	X	X	X		X					X
	Right Turn - Looking West				X	X											X				X			
Sun City Anthem Drive at Preston Park Drive (Exhibits F-1 - F-4)																								
S Approach	Preston Park Dr. to Sun City Anthem Dr.																							
	Left Turn - Looking West				X	X			X					X	X	X	X		X					X
	Left Turn - Looking East				X	X			X								X				X			
	Right Turn - Looking West				X	X			X					X	X	X	X		X					X
Sun City Anthem Drive at Scotts Valley Drive (Exhibits G-1 - G-6)																								
NW Approach	Scotts Valley Dr. to Sun City Anthem Dr.																							
	Left Turn - Looking Northeast	X											X							X	X			
	Left Turn - Looking Southwest	X				X											X				X			
	Through - Looking Northeast	X											X							X	X			
	Through - Looking Southwest	X				X											X				X			
	Right Turn - Looking Northeast	X											X							X	X			
SE Approach	Scotts Valley Dr. to Sun City Anthem Dr.																							
	Left Turn - Looking Southwest				X	X	X	X			X	X		X	X	X	X		X					X
	Left Turn - Looking Northeast				X	X			X		X			X	X	X	X		X					X
	Through - Looking Southwest				X	X	X	X			X	X		X	X	X	X		X					X
	Through - Looking Northeast				X	X			X		X			X	X	X	X		X					X
	Right Turn - Looking Southwest			X		X	X	X			X	X		X	X	X	X		X					X
Sun City Anthem Drive at Prichard Avenue (Exhibits H-1 - H-4)																								
E Approach	Prichard Ave. to Sun City Anthem Dr.																							
	Left Turn - Looking South				X	X								X	X	X	X		X					X
	Left Turn - Looking North				X	X					X	X		X	X	X	X		X					X
	Right Turn - Looking South				X	X								X	X	X	X		X					X
Sun City Anthem Drive at Gettysburg Avenue (Exhibits I-1 - I-4)																								
E Approach	Gettysburg Ave. to Sun City Anthem Dr.																							
	Left Turn - Looking South				X	X											X				X			
	Left Turn - Looking North				X	X											X				X			
	Right Turn - Looking South			X		X											X				X			
Sun City Anthem Drive at Hampton Road (Exhibits J-1 - J-3)																								
NE Approach	Hampton Rd. to Sun City Anthem Dr.																							
	Right Turn - Looking Southeast	X											X							X	X			
Sun City Anthem Drive at Colvin Run Drive (Exhibits K-1 - K-4)																								

Intersection and Approach Movement (14.5-Ft Observation Location)		Approximate Speed for Existing Sight Visibility				Restricting Factors for Existing Sight Visibility								Recommended Mitigation							Potential Posted Speed with Recommended Mitigation			
		45 mph	40 mph	35 mph	Less than 35 mph	Landscaping	Permanent Community Signing	Property Line Walls	Above Ground Utilities	Road Surface Elevation differences	Horizontal/Vertical Curves	Side Slope	None	Reduce Posted Speed Limit	Post Advisory Speed/Warning Signs	Investigate All-Way Stop Installation	Remove Landscaping within Sight Lines	Remove/Relocate Community Signs out of Sight Lines	Further Study Required	None	45 mph	40 mph	35 mph	Unknown (Advisory)
NE Approach	Colvin Run Dr. to Sun City Anthem Dr.																							
	Left Turn - Looking Northwest	X				X											X				X			
	Left Turn - Looking Southeast	X											X							X	X			
	Right Turn - Looking Southeast	X											X							X	X			
Sun City Anthem Drive at Thunder Bay Avenue (Exhibits L-1 - L-6)																								
E Approach	Thunder Bay Ave. to Sun City Anthem Dr.																							
	Left Turn - Looking North				X	X					X			X	X	X	X		X					X
	Left Turn - Looking South		X								X			X								X		
	Through - Looking North				X	X					X			X	X	X	X		X					X
	Through - Looking South		X								X			X								X		
	Right Turn - Looking South	X											X							X	X			
W Approach	Thunder Bay Ave. to Sun City Anthem Dr.																							
	Left Turn - Looking South				X	X					X			X	X	X	X		X					X
	Left Turn - Looking North				X	X		X	X		X			X	X	X	X		X					X
	Through - Looking South				X	X					X			X	X	X	X		X					X
	Through - Looking North				X	X		X	X		X			X	X	X	X		X					X
	Right Turn - Looking North				X	X					X			X	X	X	X		X					X
Sun City Anthem Drive at Hayden Creek Terrace (Exhibits M-1 - M-6)																								
E Approach	Hayden Creek Ter. to Sun City Anthem Dr.																							
	Left Turn - Looking North				X	X					X			X	X	X	X		X					X
	Left Turn - Looking South		X								X			X								X		
	Through - Looking North				X	X					X			X	X	X	X		X					X
	Through - Looking South		X								X			X								X		
	Right Turn - Looking South	X				X											X				X			
W Approach	Hayden Creek Ter. to Sun City Anthem Dr.																							
	Left Turn - Looking South				X	X					X			X	X	X	X		X					X
	Left Turn - Looking North				X	X		X			X			X	X	X	X		X					X
	Through - Looking South				X	X					X			X	X	X	X		X					X
	Through - Looking North				X	X		X			X			X	X	X	X		X					X
	Right Turn - Looking North			X		X								X			X						X	
Sun City Anthem Drive at Olivia Heights Avenue (Exhibits N-1 - N-6)																								
E Approach	Olivia Heights Ave. to Sun City Anthem Dr.																							
	Left Turn - Looking North				X	X	X				X			X	X	X	X	X	X					X
	Left Turn - Looking South				X		X				X			X	X	X		X	X					X
	Through - Looking North				X	X	X				X			X	X	X	X	X	X					X
	Through - Looking South				X		X				X			X	X	X		X	X					X
	Right Turn - Looking South		X				X				X		X	X								X		

Intersection and Approach Movement (14.5-Ft Observation Location)		Approximate Speed for Existing Sight Visibility				Restricting Factors for Existing Sight Visibility								Recommended Mitigation							Potential Posted Speed with Recommended Mitigation			
		45 mph	40 mph	35 mph	Less than 35 mph	Landscaping	Permanent Community Signing	Property Line Walls	Above Ground Utilities	Road Surface Elevation differences	Horizontal/Vertical Curves	Side Slope	None	Reduce Posted Speed Limit	Post Advisory Speed/Warning Signs	Investigate All-Way Stop Installation	Remove Landscaping within Sight Lines	Remove/Relocate Community Signs out of Sight Lines	Further Study Required	None	45 mph	40 mph	35 mph	Unknown (Advisory)
W Approach	Olivia Heights Ave. to Sun City Anthem Dr.																							
	Left Turn - Looking South	X											X							X	X			
	Left Turn - Looking North	X											X							X	X			
	Through - Looking South	X											X							X	X			
	Through - Looking North	X											X							X	X			
	Right Turn - Looking North	X											X							X	X			
Sun City Anthem Drive at Foxtail Creek Avenue (Exhibits O-1 - O-6)																								
E Approach	Foxtail Creek Ave. to Sun City Anthem Dr.																							
	Left Turn - Looking North			X					X		X			X									X	
	Left Turn - Looking South				X	X		X	X		X			X	X	X	X		X					X
	Through - Looking North		X						X		X			X								X		
	Through - Looking South				X	X		X	X		X			X	X	X	X		X					X
	Right Turn - Looking South		X			X			X		X			X			X					X		
W Approach	Foxtail Creek Ave. to Sun City Anthem Dr.																							
	Left Turn - Looking South	X											X							X	X			
	Left Turn - Looking North	X											X							X	X			
	Through - Looking South	X											X							X	X			
	Through - Looking North	X											X							X	X			
	Right Turn - Looking North	X											X							X	X			
Anthem Parkway at Schaeffer Hills Drive (Exhibits P-1 - P-4)																								
N Approach	Schaeffer Hills Dr. to Anthem Pkwy.																							
	Left Turn - Looking West		X			X	X							X				X				X		
	Left Turn - Looking East				X	X					X			X	X	X	X		X					X
	Right Turn - Looking East		X			X					X						X				X			
Anthem Parkway at Wild Iris Ter./Solera Moon Dr. (Exhibits Q-1 - Q-6)																								
NW Approach	Wild Iris Ter. to Anthem Pkwy.																							
	Left Turn - Looking Southwest				X	X					X			X	X	X	X		X					X
	Left Turn - Looking Northeast	X											X							X	X			
	Through - Looking Southeast			X		X					X			X	X	X	X		X					X
	Through - Looking Northeast	X											X							X	X			
	Right Turn - Looking Northeast	X											X							X	X			
SE Approach	Solera Moon Dr. to Anthem Pkwy																							
	Left Turn - Looking Northeast	X				X											X				X			
	Left Turn - Looking Southwest	X				X											X				X			
	Through - Looking Northeast	X				X											X				X			
	Through - Looking Southwest	X				X											X				X			
	Right Turn - Looking Southwest	X				X											X				X			

Intersection and Approach Movement (14.5-Ft Observation Location)		Approximate Speed for Existing Sight Visibility				Restricting Factors for Existing Sight Visibility								Recommended Mitigation							Potential Posted Speed with Recommended Mitigation			
		45 mph	40 mph	35 mph	Less than 35 mph	Landscaping	Permanent Community Signing	Property Line Walls	Above Ground Utilities	Road Surface Elevation differences	Horizontal/Vertical Curves	Side Slope	None	Reduce Posted Speed Limit	Post Advisory Speed/Warning Signs	Investigate All-Way Stop Installation	Remove Landscaping within Sight Lines	Remove/Relocate Community Signs out of Sight Lines	Further Study Required	None	45 mph	40 mph	35 mph	Unknown (Advisory)
Anthem Parkway at Laurel Heights Lane (Exhibits R-1 - R-4)																								
NW Approach	Laurel Heights Ln. to Anthem Pkwy.																							
	Left Turn - Looking Southwest				X	X					X			X	X	X	X		X					X
	Left Turn - Looking Northeast	X											X							X	X			
	Right Turn - Looking Northeast	X											X							X	X			
Anthem Parkway at Somersworth Drive (Exhibits S-1 - S-4)																								
SE Approach	Somersworth Dr. to Anthem Pkwy.																							
	Left Turn - Looking Northeast		X			X			X		X						X					X		
	Left Turn - Looking Southwest				X	X					X	X		X	X	X	X		X					X
	Right Turn - Looking Southwest			X		X					X	X		X			X						X	
Anthem Parkway at Alyssa Jade Drive (Exhibits T-1 - T-4)																								
N Approach	Alyssa Jade Dr. to Anthem Pkwy.																							
	Left Turn - Looking West	X				X											X				X			
	Left Turn - Looking East		X			X			X		X			X								X		
	Right Turn - Looking East	X											X							X	X			
Anthem Parkway at Merrimack Valley Ave (Exhibits U-1 - U-4)																								
SE Approach	Merrimack Valley Ave. to Anthem Pkwy.																							
	Left Turn - Looking Northeast	X				X											X				X			
	Left Turn - Looking Southwest		X								X			X								X		
	Right Turn - Looking Southwest	X											X							X	X			
NE Approach	Anthem Pkwy. to Merrimack Valley Ave.																							
Anthem Parkway at Red Valley Avenue (Exhibits V-1 - V-4)																								
E Approach	Red Valley Ave. to Anthem Pkwy.																							
	Left Turn - Looking North	X											X							X	X			
	Left Turn - Looking South			X		X					X			X									X	
	Right Turn - Looking South	X											X							X	X			
Anthem Parkway at Atchley Drive (Exhibits W-1 - W-6)																								
E Approach	Atchley Dr. to Anthem Pkwy.																							
	Left Turn - Looking North				X	X			X		X			X	X	X	X		X					X
	Left Turn - Looking South	X											X	X						X	X			
	Through - Looking North				X	X			X		X			X	X	X	X		X					X
	Through - Looking South	X											X							X	X			
	Right Turn - Looking South	X											X							X	X			
W Approach	Atchley Dr. to Anthem Pkwy																							
	Left Turn - Looking South	X				X											X			X	X			
	Left Turn - Looking North			X							X			X									X	
	Through - Looking South	X				X											X			X	X			

Intersection and Approach Movement (14.5-Ft Observation Location)		Approximate Speed for Existing Sight Visibility				Restricting Factors for Existing Sight Visibility								Recommended Mitigation							Potential Posted Speed with Recommended Mitigation			
		45 mph	40 mph	35 mph	Less than 35 mph	Landscaping	Permanent Community Signing	Property Line Walls	Above Ground Utilities	Road Surface Elevation differences	Horizontal/Vertical Curves	Side Slope	None	Reduce Posted Speed Limit	Post Advisory Speed/Warning Signs	Investigate All-Way Stop Installation	Remove Landscaping within Sight Lines	Remove/Relocate Community Signs out of Sight Lines	Further Study Required	None	45 mph	40 mph	35 mph	Unknown (Advisory)
	Through - Looking North		X								X			X						X		X		
	Right Turn - Looking North	X											X							X	X			
Anthem Parkway at Alexandria Drive (Exhibits X-1 - X-4)																								
W Approach	Alexandria Dr. to Anthem Pkwy.																							
	Left Turn - Looking South	X				X											X				X			
	Left Turn - Looking North				X						X			X	X	X			X					X
	Right Turn - Looking North	X											X							X	X			

APPENDIX F

INTERSECTION SIGHT VISIBILITY PHOTOGRAPHS

SPEED, VOLUME AND CLASSIFICATION DATA

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