



LSC TRANSPORTATION CONSULTANTS, INC.  
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Rocky Top Resources  
 Transportation Memorandum  
 (LSC #194630)  
 August 23, 2019

<sup>1</sup> Add PCD File No. PPR1913

**Traffic Engineer's Statement**

The traffic report and supporting information were prepared under my responsible charge and they conform with the standard of care. So far as is consistent with the standard of care, said report was prepared in general conformance with the criteria established by the County for traffic reports.



**Developer's Statement**

I, the Developer, have read and will comply with all commitments made on my behalf within this report.

\_\_\_\_\_

\_\_\_\_\_

Date

# Summary of Comments on N:\2019\194630 - Rocky Top Resources\194630\_0 Vicinity (1)

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Page: 1

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 Number: 1 Author: Daniel Torres Subject: Text Box Date: 9/25/2019 10:15:11 AM

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[Add PCD File No. PPR1913](#)

 Author: cguillotte Subject: Sticky Note Date: 10/1/2019 4:32:24 PM  
LSC Response: Added

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August 12, 2019

Mr. David Hostetler  
Land Development Consultants, Inc.  
3898 Maizeland Road  
Colorado Springs, CO 80909

RE: Rocky Top Resources  
El Paso County, CO  
Transportation Memorandum  
LSC #194630

Dear Mr. Hostetler,

LSC Transportation Consultants, Inc. has prepared this transportation memorandum for the Rocky Top Resources site redevelopment located southwest of Las Vegas Street and the US 24 overpass in El Paso County, Colorado. This has been prepared for submittal to El Paso County.

## REPORT CONTENTS

The preparation of this report included the following:

- An inventory of existing road and traffic conditions on Las Vegas Street adjacent to the site, including surface conditions, functional classification, road widths, traffic control signs, posted speed limits, intersection and access spacing, roadway and intersection alignments, and any auxiliary turn lanes;
- Weekday morning and evening peak hour and Saturday peak hour turning movement traffic counts at the intersection of site access with Las Vegas Street;
- Intersection level of service analysis;
- A review of the site land use and access location;
- Auxiliary right-/left-turn lane needs analysis based on the projected volumes and criteria in the El Paso County *Engineering Criteria Manual*;
- Findings and recommendations.

## LAND USE/SITE ACCESS

The 44.8-acre property (zoned I-3) is located at 1755 East Las Vegas Street in El Paso County, Colorado. The site is proposed to be redeveloped, as shown in Figure 2, but the current land use will not change. There is currently a single access point onto Las Vegas Street, located just south of the US 24 overpass. The site access is a stop-controlled, T-intersection.

## EXISTING ADJACENT STREETS

Figure 1 shows the streets in the vicinity of the site. Streets adjacent to the site are identified below, followed by a brief description of each:

**Las Vegas Street** runs northwest to southeast adjacent to the site and is classified as a two-lane minor arterial. The posted speed limit along this corridor is 40 miles per hour (mph) in the southbound (eastbound) direction and 50 mph in the northbound (westbound) direction adjacent to the site. No auxiliary turn lanes currently exist at the site access on Las Vegas Street.

## EXISTING TRAFFIC

Existing turning movement counts were collected in July 2019 at the site access with Las Vegas Street. Weekday AM and PM peak hour counts were collected in addition to Saturday peak hour counts, as shown in Figure 3. The weekday counts coincide with peak traffic on Las Vegas Street, while the Saturday count coincides with the peak traffic generated by the site.

The site is not anticipated to undergo any changes in land usage or the number of employees as a result of the redevelopment. Therefore, there is not anticipated to be any change in the site generated traffic.

## LEVEL OF SERVICE ANALYSIS

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection and is indicated on a scale from "A" to "F." LOS A is indicative of little congestion or delay. LOS F indicates a high level of congestion or delay. Table 1 shows the level of service delay ranges for signalized and unsignalized intersections.

**Table 1: Intersection Levels of Service Delay Ranges**

Level of Service	Signalized Intersections	Unsignalized Intersections
	Average Control Delay (Seconds per Vehicle)	Average Control Delay (Seconds per Vehicle) <sup>1</sup>
A	≤ 10.0	≤ 10.0
B	10.1 - 20.0	10.1 - 15.0
C	20.1 - 35.0	15.1 - 25.0
D	35.1 - 55.0	25.1 - 35.0
E	55.1 - 80.0	35.1 - 50.0
F	≥ 80.1	≥ 50.1

<sup>1</sup> For unsignalized intersections, if v/c is > 1.00, then LOS is LOS F, regardless of the projected average control delay per vehicle

Levels of service for the current traffic conditions during the weekday morning and afternoon peak hours, as well as the Saturday peak hour, are shown in Figure 3. Detailed Synchro reports

are attached. As shown, the outbound movement from the site currently operates at LOS B during all peak hours. <sup>1</sup>

It appears that this is a project by the City of Colorado Springs. Please state that in the narrative. Will the City be performing the improvements to the site access?

### LAS VEGAS STREET IMPROVEMENTS

There is a planned T-intersection with Las Vegas Street for the new Spring Creek roadway to be located approximately 100 feet west of the site access. As part of the new intersection construction, there are planned improvements to Las Vegas Street adjacent to the site and to the site access. The site access is planned to be widened to have separate left- and right-turn lanes. Las Vegas Street will have a 40-mph speed limit with the new design. Roadway plans are attached. <sup>2</sup>

The current outbound laneage has a shared left/right-turn lane. As mentioned previously, the current laneage operates at LOS B for this movement. Figure 3 provides the resulting levels of service with the separate turning movements. As shown, the outbound left-turn will operate at LOS B during all peak hours. While the outbound right-turning movement will operate at LOS B or better during all peak hours.

### AUXILIARY TURN LANE NEEDS EVALUATION

Las Vegas Street is classified by El Paso County as a two-lane minor arterial adjacent to the site. All auxiliary turn lane design criteria below refer to Section 2.3.7 from the El Paso County *Engineering Criteria Manual (ECM)*.

#### Auxiliary Right-Turn Deceleration Lane

A right-turn deceleration lane is **not** required at site access point, as the current peak-hour eastbound right-ingress turning volume is less than the 50 vehicles per hour (vph) threshold.

Which is the planned speed limit, 40 or 45 mph? Revise accordingly.

#### Auxiliary Left-Turn Deceleration Lane

An exclusive left-turn deceleration lane shall be provided for access on minor arterial roadways with a peak-hour ingress left-turning volume greater than 25 vph. Based on counts recorded, the current peak-hour volumes for the westbound left-turn turning movements at the site access points exceeds 25 vph during the Saturday peak hour. Therefore, a left-turn deceleration lane will be required.

Based on the ECM and the planned 45 mph design speed, the left turn lane would require 50 feet of storage, 195 feet for deceleration, and a 180-foot taper. The roadway plans have a painted median located east of the intersection, therefore much of the turn lane can be accommodated by simply restriping. However, there is a bridge located approximately 600 feet east of the intersection, which limits the turn lane length and potential lane redirects. <sup>3</sup>

To limit impacts to the bridge or the roadway immediately adjacent to the bridge a design deviation is requested. It is recommended that a 90-foot bay taper be constructed within the

Submit a deviation request form. please use the latest form.

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☰ Number: 1 Author: Daniel Torres Subject: Callout Date: 9/25/2019 10:15:12 AM

It appears that this is a project by the City of Colorado Springs. Please state that in the narrative. Will the City be performing the improvements to the site access?

🔄 Author: cguillotte Subject: Sticky Note Date: 10/1/2019 4:47:00 PM

LSC Response: Improvements to the access will be completed as part of the PPRTA Las Vegas project

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☰ Number: 2 Author: Daniel Torres Subject: Callout Date: 9/25/2019 10:15:13 AM

Which is the planned speed limit, 40 or 45 mph? Revise accordingly.

🔄 Author: cguillotte Subject: Sticky Note Date: 10/1/2019 4:47:15 PM

LSC Response: 45 mph design speed, 40 mph posted speed

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☰ Number: 3 Author: Daniel Torres Subject: Callout Date: 9/25/2019 10:15:14 AM

Submit a deviation request form. please use the latest form.

🔄 Author: cguillotte Subject: Sticky Note Date: 10/1/2019 4:47:46 PM

LSC Response: A deviation request will be submitted

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required deceleration length. This would result in the lane being striped with 50 feet of storage, 105 feet of deceleration, and a 90-foot bay taper, as shown in Figure 4.

The proposed design deviation is not expected to negatively impact safety on the corridor due to the low number of turning vehicles at this intersection. It should be noted that the site is very seasonal and only exceeds the turn lane threshold on Saturdays during peak months (between April and September). Additionally, because the volume of turning vehicles only exceeds the turn lane threshold on Saturdays, the through volume on Las Vegas Street is lower and the 95<sup>th</sup> percentile queue for the turning movement is less than one vehicle.

### CONCLUSIONS AND RECOMMENDATIONS

- During the Saturday peak hour, approximately 84 vehicles enter the site and 90 vehicles exit the site.
- The site access will be reconstructed with the construction of the Spring Creek intersection to the west of the site. The access is planned to have separate left and right turn lanes.
- The site access requires a westbound left-turn lane based on criteria in the El Paso County *Engineering Criteria Manual*. It is recommended that a 50-foot storage lane with 105 feet of deceleration length and a 90-foot taper be constructed for the required turn lane. A design deviation will be filed, as this does not meet the County's turn lane requirements due to a bridge located west of the access.

\* \* \* \* \*

Please contact me if you have any questions.

Respectfully Submitted,

LSC TRANSPORTATION CONSULTANTS, INC.

By: Jeffrey C. Hodsdon, P.E.  
Principal

CRG:jas

Enclosure: Figures 1-3  
Spring Creek roadway plans

Please state who will be responsible for constructing this improvement.

- Clearly state in the text what the ADT is for the site access and along Las Vegas St.
- State whether the MTCP or other approved corridor study calls for the construction of improvements in the area.
- State what the sight distance is for the access and whether it can be met. If it cannot be met, state the required modifications so that it can be met.
- List any other traffic studies in the area within the past 5 years and state whether the current study is consistent with those studies. If there is none than please state it.

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Number: 1 Author: Daniel Torres Subject: Callout Date: 9/25/2019 10:15:16 AM

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Please state who will be responsible for constructing this improvement.

Author: cguillotte Subject: Sticky Note Date: 10/1/2019 4:47:55 PM

LSC Response: This improvement will be constructed by the City as part of the Las Vegas improvement project

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Number: 2 Author: Daniel Torres Subject: Text Box Date: 9/25/2019 10:15:16 AM

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•Clearly state in the text what the ADT is for the site access and along Las Vegas St. •State whether the MTCP or other approved corridor study calls for the construction of improvements in the area. •State what the sight distance is for the access and whether it can be met. If it cannot be met, state the required modifications so that it can be met. •List any other traffic studies in the area within the past 5 years and state whether the current study is consistent with those studies. If there is none than please state it.

Author: cguillotte Subject: Sticky Note Date: 10/7/2019 11:19:07 AM

LSC Response:

- ADT has been added to graphics and text
- MTCP has been added to text
- Sight distance has been measured and discussion added to text
- No other studies in the past 5 years have been found - this has been added to text





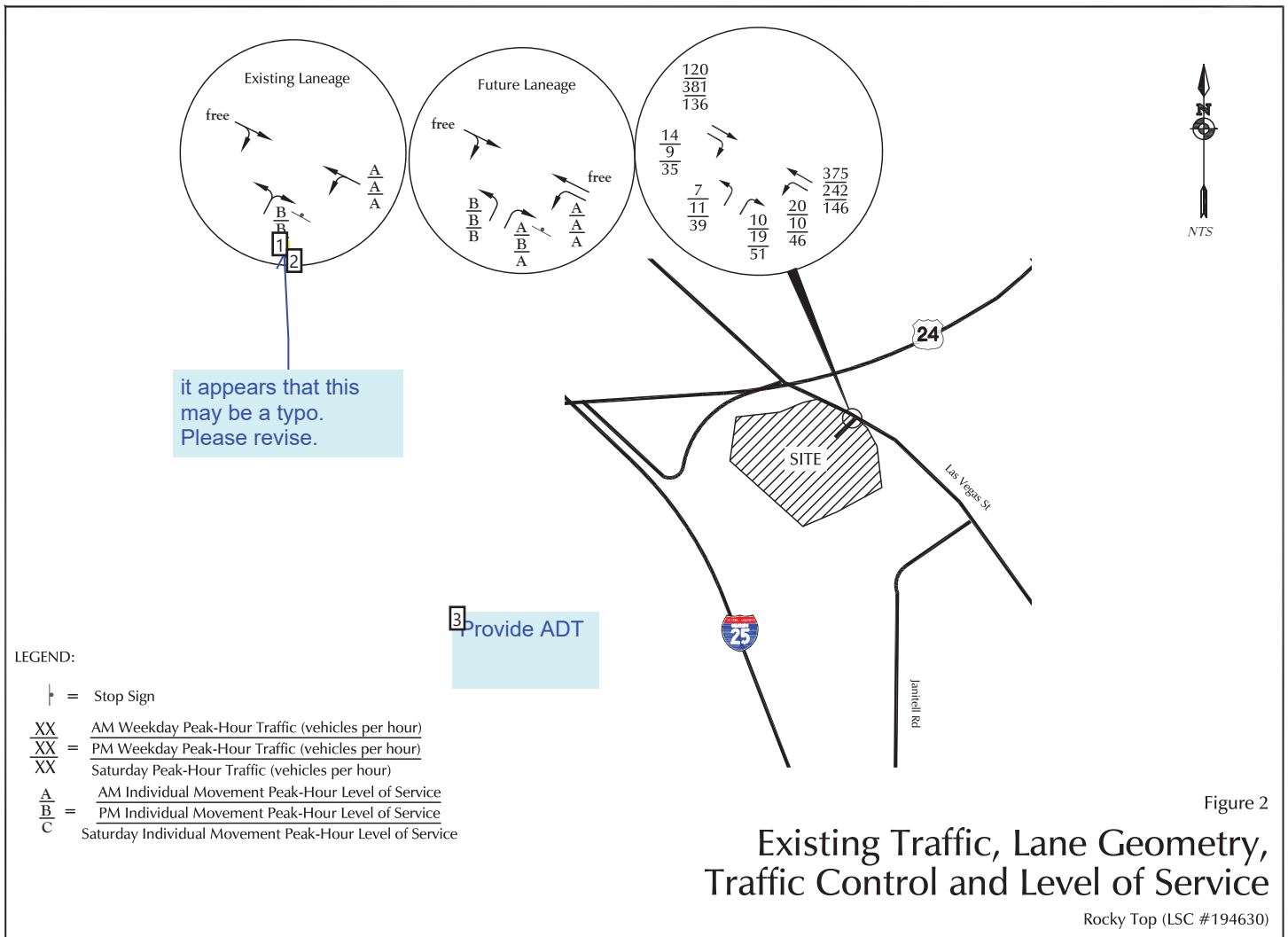


Figure 2  
**Existing Traffic, Lane Geometry,  
 Traffic Control and Level of Service**  
 Rocky Top (LSC #194630)

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 Number: 1 Author: Daniel Torres Subject: Highlight Date: 9/25/2019 10:15:19 AM  
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 Number: 2 Author: Daniel Torres Subject: Callout Date: 9/25/2019 10:15:19 AM  
[it appears that this may be a typo. Please revise.](#)

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 Author: cguillotte Subject: Sticky Note Date: 10/7/2019 10:01:37 AM  
LSC Response: This has been corrected

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 Number: 3 Author: Daniel Torres Subject: Text Box Date: 9/25/2019 10:15:20 AM  
[Provide ADT](#)

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 Author: cguillotte Subject: Sticky Note Date: 10/7/2019 10:01:55 AM  
LSC Response: ADT has been added

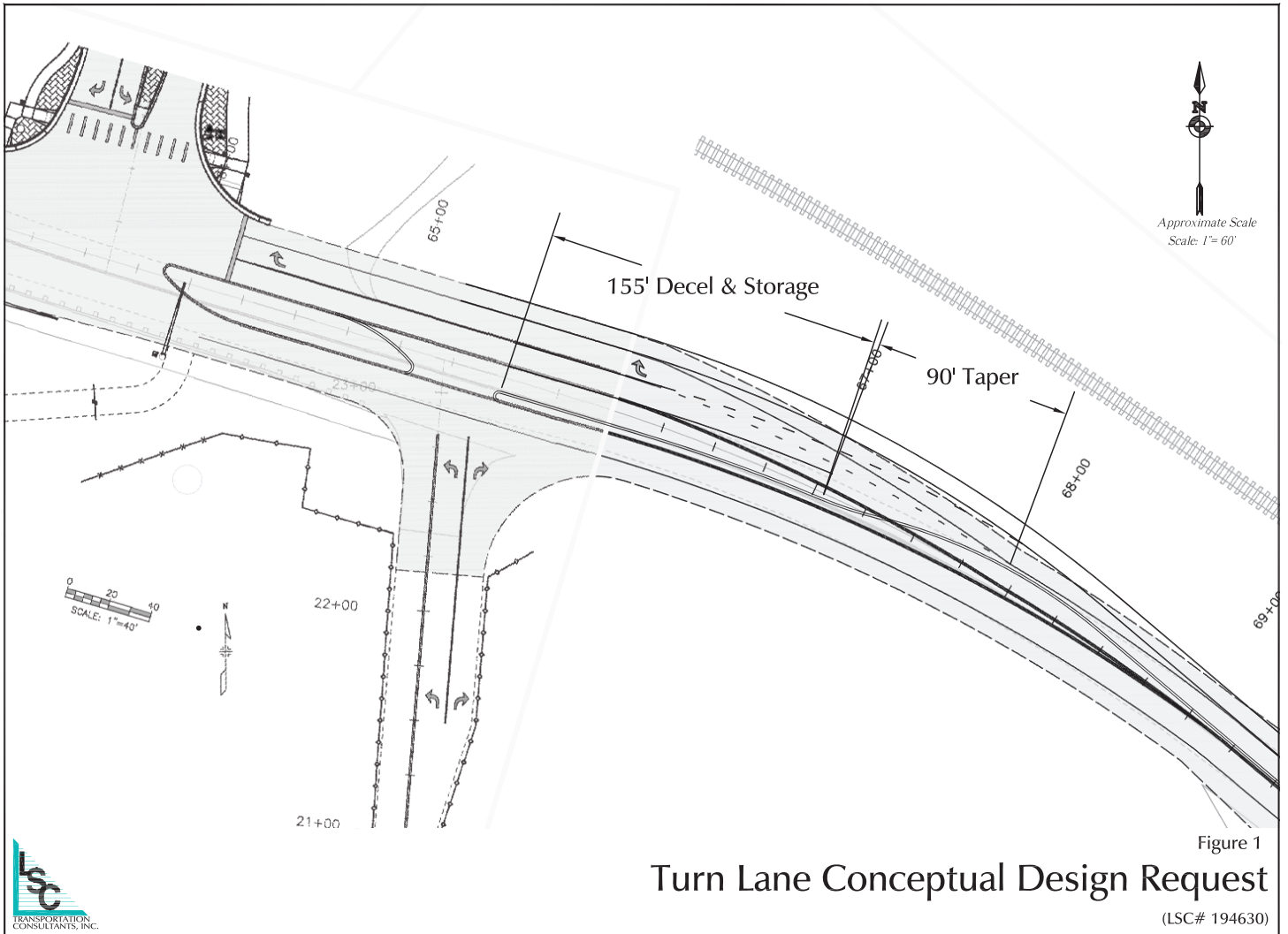


Figure 1  
 Turn Lane Conceptual Design Request  
 (LSC# 194630)

# Markup Summary

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**Subject:** Text Box  
**Page Label:** 1  
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**Author:** Daniel Torres  
**Date:** 9/25/2019 10:15:11 AM  
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Add PCD File No. PPR1913



**Subject:** Callout  
**Page Label:** 4  
**Lock:** Locked  
**Author:** Daniel Torres  
**Date:** 9/25/2019 10:15:12 AM  
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It appears that this is a project by the City of Colorado Springs. Please state that in the narrative. Will the City be performing the improvements to the site access?



**Subject:** Callout  
**Page Label:** 4  
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**Author:** Daniel Torres  
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Which is the planned speed limit, 40 or 45 mph? Revise accordingly.



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**Date:** 9/25/2019 10:15:14 AM  
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Submit a deviation request form. please use the latest form.



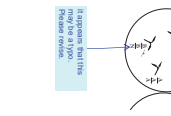
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**Author:** Daniel Torres  
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Please state who will be responsible for constructing this improvement.



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**Author:** Daniel Torres  
**Date:** 9/25/2019 10:15:16 AM  
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- Clearly state in the text what the ADT is for the site access and along Las Vegas St.
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**Subject:** Callout  
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**Author:** Daniel Torres  
**Date:** 9/25/2019 10:15:19 AM  
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it appears that this may be a typo. Please revise.



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Provide ADT

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**Author:** Daniel Torres  
**Date:** 9/25/2019 10:15:20 AM  
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Provide ADT