



LSC TRANSPORTATION CONSULTANTS, INC.
2504 East Pikes Peak Avenue, Suite 304
Colorado Springs, CO 80909
(719) 633-2868
FAX (719) 633-5430
E-mail: lsc@lscctrans.com
Website: <http://www.lscctrans.com>

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Engineering Review
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adnjikamp
EPC Planning & Community
Development Department

Windermere
Addendum Memorandum to TIS
(LSC #184643)
September 10, 2021

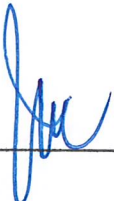
Traffic Engineer's Statement

This traffic report and supporting information were prepared under my responsible charge and they comport 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.



9/10/21

Date



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September 10, 2021

Mr. Jeff Mark
Landhuis Company
212 North Wahsatch Avenue, Suite 301
Colorado Springs, CO 80903

RE: Windermere
Addendum Memorandum to TIS
El Paso County, Colorado
LSC #184643

Dear Mr. Mark:

This report is intended as an addendum/supplement to the *Windermere Traffic Impact Study* (TIS) dated August 31, 2020. As shown in Figure 1, the site is located north of North Carefree Circle between Marksheffel Road and Antelope Ridge Drive in El Paso County, Colorado.

This memo addresses “pedestrian and school issues (specifically the nearby Rocky Mountain Classical Academy)” as required by El Paso County staff in comments dated August 20, 2021. This memo also calls out the latest traffic count data and peak times and identifies current roadway conditions, traffic control, etc.

TRAFFIC COUNT DATA – SCHOOL PEAK HOURS

Figure 2 shows the existing morning, mid-afternoon (3:00-4:00 p.m.), and late afternoon peak-hour traffic volumes at the intersection of North Carefree Circle/Antelope Ridge Drive and the south Antelope Ridge Drive/Pronghorn Meadows Circle. The volumes shown in Figure 2 are based on traffic counts conducted by LSC in August 2018 from 6:30 am to 8:30 am, 11:00 am to 1:00 pm, 2:00 pm to 4:00 pm (during which period the afternoon school peak hour of Rocky Mountain Classical Academy occurs), and 4:00 pm to 6:00 pm.

EXISTING (SEPTEMBER 2021) ROADWAY CONDITIONS

The roadways in the site’s vicinity are described below:

Antelope Ridge Drive is an Urban Residential Collector that extends north from North Carefree Circle to about one-half mile north of Stetson Hills Boulevard. In the vicinity of the site, Antelope Ridge Drive has one through lane in each direction and a striped center

median. The posted speed limit on Antelope Ridge Drive is 35 miles per hour (mph). The intersection of Antelope Ridge Drive/North Carefree Circle is currently stop-sign controlled and the intersection of Antelope Ridge Drive/Barnes Road is currently signal controlled. There have been no changes to the lane geometry, posted speed limit, or intersection traffic control since traffic counts were conducted in August 2018.

North Carefree Circle is a six-lane Principal Arterial. In the vicinity of Antelope Ridge Drive, North Carefree Circle has a posted limit of 35 mph.

Marksheffel Road is a Principal Arterial. South of North Carefree Circle, Marksheffel has two through lanes in each direction, plus a raised median. Between North Carefree Circle and Dublin Boulevard, Marksheffel is generally one through lane in each direction. The posted speed limit adjacent to the site is 50 mph. The intersection of Marksheffel Road/North Carefree Circle is currently stop-sign controlled. The City of Colorado Springs has recently completed a traffic-signal warrant analysis for this intersection and has indicated it will be converted to traffic-signal control, once funding is available.

PEDESTRIAN ACCESS & CIRCULATION

Figure 3 shows the potential pedestrian routes to schools within two miles of the site (Springs Ranch Elementary, the Rocky Mountain Classical Academy, and Sand Creek High School).

There are existing sidewalks along the west side of Antelope Ridge Drive from North Carefree Circle to Barnes Road and on the east side of Antelope Ridge Drive from the north boundary of the Windermere development to Barnes Road. Sidewalks are planned to be constructed on the east side of Antelope Ridge Drive adjacent to the site as part of this Windermere development. There are existing sidewalks on all of the local streets west of Antelope Ridge Drive, including along the shortest path to Spring Ranch Elementary. There is an existing school crossing location at the intersection of Ranch Creek Drive/Centerville Drive near Springs Ranch Elementary School.

During the afternoon school peak hour, a crossing guard was present at the signalized intersection of Antelope Ridge Drive/Barnes Road (this is not particularly relevant to this site but has been noted as it is important for the pedestrian plan for the Rocky Mountain Classical Academy).

There is not currently a designated pedestrian or school pedestrian crossing location across Antelope Ridge Drive.

There are existing sidewalks on the north side of North Carefree Circle from Antelope Ridge Drive to the existing signalized school crossing for Sand Creek High School (there are no sidewalks on the south side of North Carefree Circle between Akers Drive and Marksheffel Road). The pedestrian route for high school students between Windermere and Sand Creek High school could include the north side of North Carefree Circle and crossing the north leg of North Carefree Circle/Antelope Ridge. The north leg could be striped with crosswalk bars.

EXISTING SCHOOL TRAFFIC OPERATIONS

Rocky Mountain Classical Academy

The Rocky Mountain Classical Academy serves students from preschool to 8th grade. School hours are from 8:00 a.m. to 3:00 p.m. for full-day kindergarten through 4th grade and from 8:00 a.m. to 3:30 p.m. for 5th through 8th grades. A copy of the school carpool plan is attached (may not be the official version). The school Parent-Student Handbook posted online notes that the “City of Colorado Springs, El Paso County Sheriff’s Department, and District Security Resource Officers have approved our traffic plan.” As noted on the plan the school opens the parking lot for school drop-off starting at 7:30 a.m.

It appeared that vehicular entry onto the campus began at about 3:00 p.m. The carpool plan indicates that parents of students in the 4th through 8th grades are not allowed to enter the campus until 3:15 p.m.

Only right-turns are permitted out of the school access during pick-up and drop-off times. To facilitate better traffic flow, school staff meters the exiting vehicles into platoons of up to ten cars per line.

LSC staff observed the afternoon pick-up time in September 2021. Based on this recent field observation, the afternoon pick-up operations appear to be generally in accordance with the established plan.

Prior to 3:00 p.m., northbound queues (vehicles waiting to enter the school campus for pickup) formed along the east edge of Antelope Drive generally from Klipspringer Drive north to the school entrance and southbound queues formed along the west edge of Antelope Drive from Barnes south to the school entrance. Eastbound queues formed along the south edge of Barnes Road from Antelope Ridge Drive back to about Desert Varnish Drive. These queues did not block through traffic on these roadways. Antelope Ridge has a center painted median, so there was space to bypass the queue without encroaching into the southbound lane. On Barnes, there are three eastbound through lanes and acceleration/deceleration lanes. The queue remained on the far right in either the acceleration/deceleration lanes or the far-right lane east of Desert Varnish. These queues did not appear to impede through traffic on eastbound Barnes, as there are multiple lanes and traffic volumes during this time of the day are relatively light.

Queues dissipated after the first pick-up time of 3:00 p.m. Shorter queues (shorter than prior to the 3:00 p.m. pick-up time) formed on Antelope Ridge Drive prior to the 3:30 p.m. pick-up time (corresponding to the 4th through 8th grade release time).

The southbound right-turn queue on Antelope Ridge Drive approaching North Carefree Circle was observed to be a “rolling queue,” periodically extending to a length of about ten to twelve vehicles. The southbound left-turn queue on Antelope Ridge Drive approaching North Carefree

Circle was observed to periodically extend to a length of about six to seven vehicles. The queue never extended back to Pronghorn Meadow Circle during the observation time.

Few pedestrians were observed along Antelope Ridge Drive south of the school. Some pedestrians were observed walking just south of the school and north along the west side of Antelope Ridge Drive towards Barnes Road where a crossing guard facilitated crossings on the west leg of the intersection.

Springs Ranch Elementary School

Springs Ranch Elementary bell schedule is from 8:30 a.m. - 3:40 p.m.

Sand Creek High School

The Sand Creek High School bell schedule is from 7:30 a.m. to 2:40 p.m. The building opens at 6:30 a.m. and closes at 3:00 p.m. daily.

FINDINGS/CONCLUSIONS/RECOMMENDATIONS

- As discussed in the Windermere TIS, all of the Windermere site access points to Antelope Ridge Drive are projected to operate at LOS D or better for all movements during the morning, school afternoon, and late afternoon peak hours. The analysis did not account for the “metering” of exiting vehicles from the Rocky Mountain Classical Academy, which helps to create additional gaps in the southbound through traffic. These gaps generally reduce the side-street delay.
- The Rocky Mountain Academy carpool plan requires all exiting vehicles to make a right turn and travel south on Antelope Ridge Drive towards North Carefree Circle. The calculated southbound left-turn movement at the intersection of Antelope Ridge Drive/North Carefree Circle is currently operating at LOS F during the **morning peak hour**. Traffic-signal warrants (vehicular volume) are not anticipated to be met in the short term. Please refer to the TIS for complete LOS analysis and potential improvements to this intersection prior to signalization.
- Given the Antelope Ridge community to the north of the site, and this Windermere development, a designated school pedestrian crossing may be needed at or in the vicinity of the intersection of Klipspringer Drive/Antelope Ridge Drive to facilitate crossing of pedestrians from these communities east of Antelope Ridge Drive to and from Spring Ranch Elementary and between Windermere and the Rocky Mountain Classical Academy.
- Prior to implementing any signed/marked pedestrian crossing across the north leg (or the south leg) of the Klipspringer Drive/Antelope Ridge Drive intersection, the sight distance should be verified. Note: Should a pedestrian crossing be established, any queuing

(waiting/standing) activity along Antelope Ridge Drive associated with the Rocky Mountain Classical Academy afternoon pick-up should be strictly prohibited (through signage, markings, enforcement, etc.) in the vicinity of a crossing. The details of this “no parking or standing/waiting” zone could be part of a design for the crossing.

* * * * *

Please contact me if you have any questions regarding this report.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

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

JCH/KDF:jas

ENCLOSURES: Figures 1-3

Figures

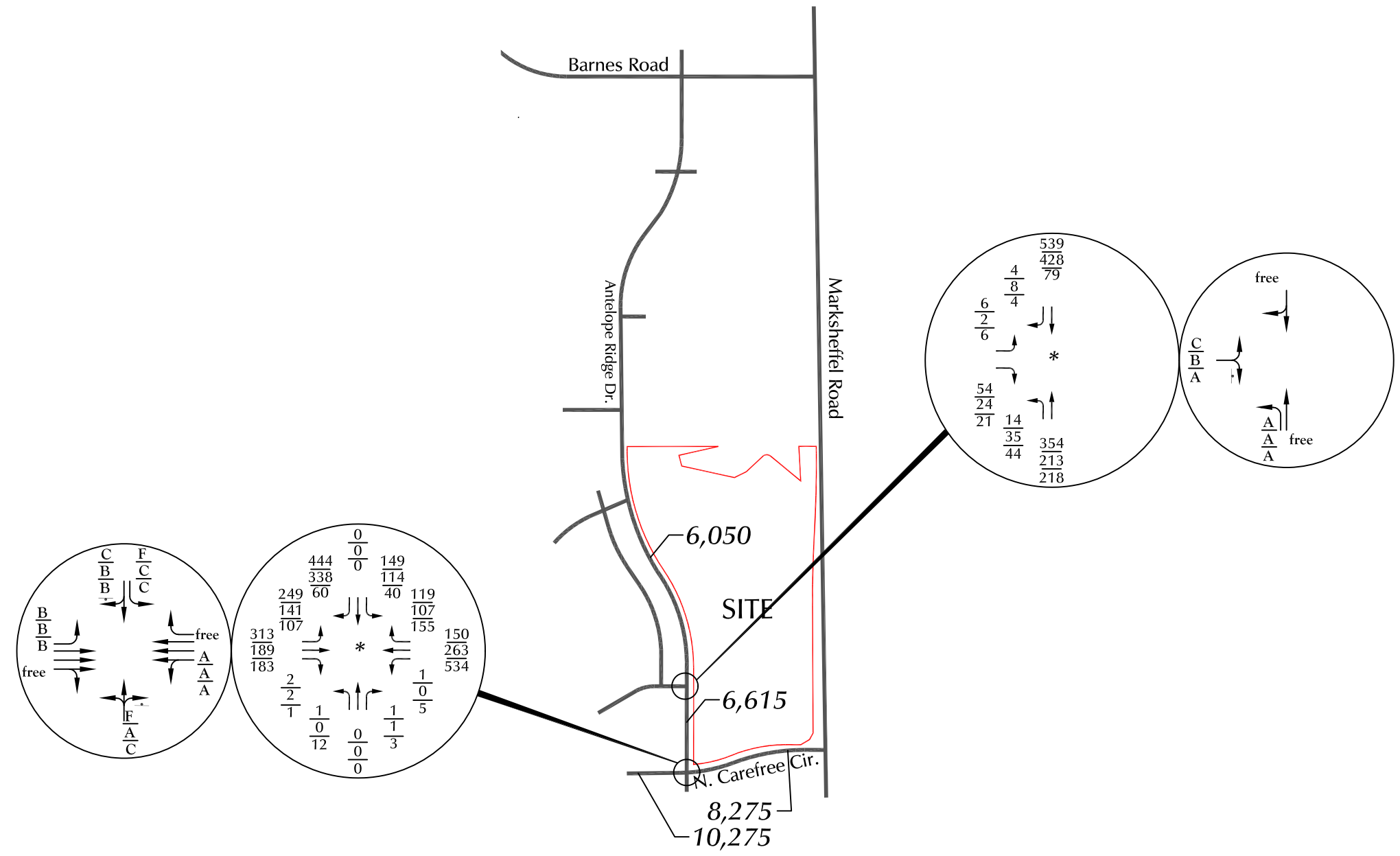


Approximate Scale
Scale: 1" = 1,000'

Figure 1
**Vicinity
Map**

Windermere School Memo (LSC #184643)





LEGEND:

• = Stop Sign

⊞ = Traffic Signal

$\frac{XX}{XX}$ = AM Weekday Peak-Hour Traffic (vehicles per hour)

$\frac{XX}{XX}$ = Midday Weekday Peak-Hour Traffic (vehicles per hour)

$\frac{XX}{XX}$ = PM Weekday Peak-Hour Traffic (vehicles per hour)

$\frac{A}{B}$ = AM Individual Movement Peak-Hour Level of Service

$\frac{A}{B}$ = Individual Movement Peak-Hour Level of Service (3:00-4:00pm)

$\frac{A}{C}$ = PM Individual Movement Peak-Hour Level of Service

$\frac{A}{C}$ = AM Entire Intersection Peak-Hour Level of Service

$\frac{A}{C}$ = Entire Intersection Peak-Hour Level of Service (3:00-4:00pm)

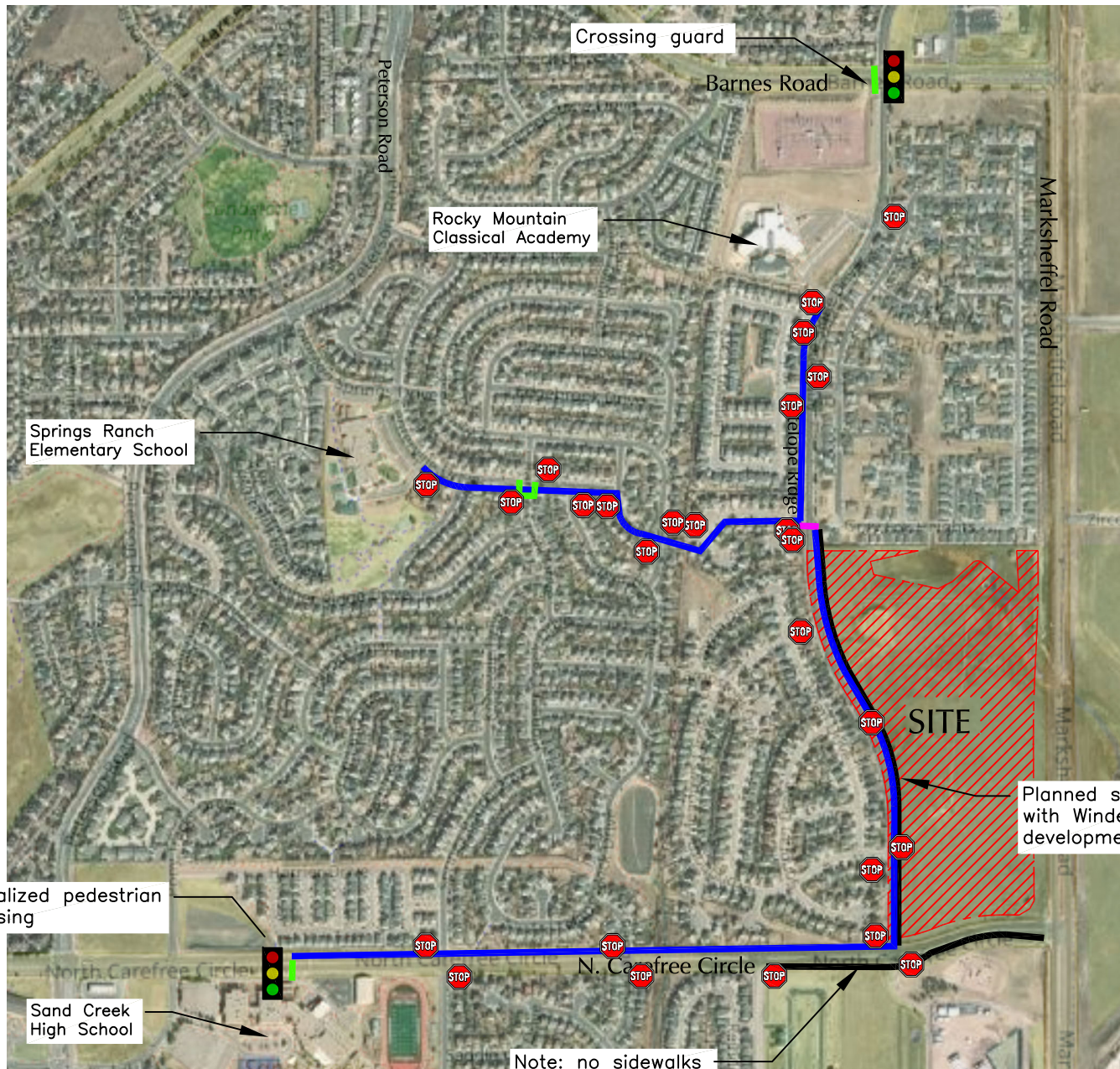
$\frac{A}{D}$ = PM Entire Intersection Peak-Hour Level of Service

16,330 = Average Weekday Traffic (vehicles per day)

* Based on counts August 2018
** Based on counts Feb 2019

Figure 2
**Existing Traffic,
Lane Geometry, Traffic Control
and Levels of Service**
Windermere School Memo (LSC #184643)





Approximate Scale
Scale: 1" = 1,000'



- LEGEND:
- = Pedestrian Route
 - = Existing School Crossing Location
 - = Potential Future School Crossing Location (please refer to report narrative for details/discussion)
 -  = Stop Sign Traffic Control
 -  = Traffic Signal

Figure 3
School Pedestrian Routes

Windermere School Memo (LSC #184643)



Note: no sidewalks on this section