Traffic Impact Study –Final Report

Village Camp Durango RV Resort

Durango, Colorado

December 23, 2024

COLORADO LICENSED
MITCHELL JOHN WAGNER
12/23/2024
58578
PROFESSIONAL ENGINEER

SEH

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Prepared for Roberts Resorts and Communities

1 Introduction

Short Elliott Hendrickson Inc. (SEH) is pleased to provide this traffic impact study for the proposed Village Camp Durango RV Resort in Durango, Colorado. The parcel for the development is located on the west side of Trimble Road (Rd)/County Rd (CR) 252 approximately 3,000’ east of the intersection of US 550 / CR 252.

The purpose of this study is to identify traffic impacts and recommend mitigation measures associated with the proposed development of the site. This study examines intersection operations for existing (Year 2024), short-term (Year 2025) and long-term (Year 2045) traffic conditions at build-out. Typical weekday peak periods of operation were analyzed for site-specific impacts.

2 Project Description

2.1 Proposed Development

The proposed Village Camp Durango RV Resort will be located on the west side of Trimble Rd (CR 252) approximately 3,000' east of the intersection at US 550 / CR 252 and approximately 1,000' southeast of the proposed Dalton Ranch West development. A vicinity map showing the site location in relation to the surrounding roadway network is provided in **Figure 1**. The existing site is currently vacant. The conceptual layout for the site proposes 277 full size RV spots plus amenities. The site plan is illustrated in **Figure 2**.

2.2 Site Access

Two site accesses to the Village Camp Durango from CR 252 are proposed with one main full movement access on the north side of the site and another access on the south side of the site. **Figure 2** displays the proposed access points for the RV Resort.

The main intersection affected by the site generated traffic will be at the intersection of US 550 and CR 252 which is currently a signal-controlled intersection. The lane configuration at the intersection is as follows:

- Eastbound Approach (CR 252)
  - One shared left, through and right turn lane
- Westbound Approach (CR 252)
  - One left turn lane
  - One through lane
  - One right turn lane (free movement)
- Northbound (US 550)
  - One left turn lane
  - One through lane
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- Southbound (16 Rd)
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  - One through lane
  - One right turn lane

Additional intersections at CR 252 and Trimble Crossing (commercial access), CR 252 and Trimble Crossing (residential access), CR 252 and Dalton Ranch Rd, and the proposed site accesses were also analyzed as part of the study.

2.3 Sight Distance

Required passenger vehicle sight distance along a 35 miles per hour (MPH) roadway is 390’ for left turning vehicles and 335’ for right turning vehicles. Required sight distance for heavy vehicles along a 35 MPH roadway is 590’ for left turning vehicles and 540’ for right turning vehicles.

The existing sight distance for the north access of the Village Camp Durango development is sufficient with roughly 1000’ in either direction. Exiting sight distance from the south access looking northwest is sufficient. Sight distance looking southeast is approximately 400’ of sight distance due to the roadway geometry across the Animas River bridge. The distance is sufficient for passenger vehicles and deficient for heavy vehicles; however, stopping sight distance for a 35 MPH roadway is 250’ and vehicles ample distance to safely stop if any conflicts may occur between turning vehicles. Signage directing heavy vehicles to use the north access to turn out of the Village Camp Durango development is recommended for a safer left-turn movement on CR 252.

2.4 Study Area and Evaluation Parameters

The project study area includes analysis of the intersection at US 550 and CR 252, CR 252 and Trimble Crossing (commercial access), CR 252 and Trimble Crossing (residential access), CR 252 and Dalton Ranch Rd, and CR 252 and the two proposed site accesses. Morning and evening peak period operations were evaluated for an average weekday in the existing (Year 2023), short-term (Year 2025), and long-term (Year 2045) scenarios.

3 Existing Conditions

3.1 Circulation Network

US 550 is two-lane roadway classified by CDOT as a principal arterial with E-X: Expressway, Major Bypass access control classification. US 550 has a posted speed limit of 55 MPH within the vicinity of the site. CR 252 is currently a collector roadway, classified R-B (Rural Highway), with a posted speed limit of 35 MPH.

3.2 Existing Traffic Volumes

Existing traffic count data were collected by SEH in early October, 2024. **Figure 3** displays peak hour traffic volumes, lane configurations, and control type. The traffic counts are compiled in **Appendix A**.

Per La Plata Land Use Code Sec. 74-3.IV.G, “traffic counts taken between October and April shall include a seasonal adjustment factor as calculated by CDOT for the region and time of year”. The nearest continuous count station to the site is Station 104809 along US 160 between mile marker 83 and 84 in Durango. A seasonal factor of 0.96 was calculated for the month of October. Traffic volumes **were not** adjusted down to remain conservative and represent an accurate traffic count on a typical weekday.

Average daily traffic (ADT) for 2023 along CR 252 is displayed in CDOT’s Traffic Count Data System in 2023. Between US 550 and the first Trimble Access ADT is reported as 4,248 vehicles per. The ADT between the proposed Village Camp Durango site access and CR 250 is 1,777.

3.3 Existing Levels of Service

Intersection Level of Service (LOS) was calculated using Synchro 11 software to evaluate the performance of the intersections within the study area. This software package utilizes criteria described in the Highway Capacity Manual[1]. LOS is a measure used to describe operational conditions at an intersection. LOS categories ranging from A to F are assigned based on the predicted delay in seconds per vehicle for the intersection overall, as well as for individual turning movements. LOS A indicates very good operations, and LOS F indicates poor, congested operations. According to La Plata County Code, intersection LOS C or better is desirable for collector roadways.

A summarization of the results of the intersection LOS calculations is displayed in **Table 1**. The analysis indicates that the intersection of US 550/CR 252 operates at an overall LOS B with individual movements operating at LOS C or better during the morning and evening peak periods. All minor intersections are projected to operate at LOS A with all individual movements operating at LOS B or better during the morning and evening peak periods. **Appendix B** contains the LOS analysis worksheets for reference.

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1 *HCM 6th: Highway Capacity Manual 6th Edition: A Guide for Multimodal Mobility Analysis* Washington, D.C.: Transportation Research Board, 2016. Print.

3.4 Trip Generation

To determine the traffic impacts associated with the Village Camp Durango development, the amount of traffic generated by the proposed development was estimated using the average trip generation rates contained in the Institute of Transportation Engineers (ITE) Trip Generation Manual[2]. ITE Code 416-Campground/Recreational Vehicle Park was used to determine trip generation rates for the peak hour. The average peak hour trip generation rates for 416-Campground/Recreational Vehicle Park represent a slightly more conservative value than the fitted curve. It is assumed that all proposed RV sites will be fully occupied (277 occupied sites). The proposed development is projected to generate 58 vehicles per hour (vph) at full build out in the morning peak hour with 21 vph entering and 37 vph exiting. Likewise, an estimated 75 vph are projected to be generated for the evening peak hour at full build out with 49 vph entering and 26 vph exiting. The estimated weekday, AM, and PM peak hour trip generation for the proposed development is contained in **Table 2**.

Average Daily Traffic (ADT) for the proposed Village Camp Durango development was adapted from the information listed in the *Comparable Campground Trip Generation Calculations, KOA Silt CO* study prepared by Mcdowell Engineering in July 2016. The study was conducted to develop ADT for the site because ITE does not list a rate for total daily traffic generation. The study counted existing traffic for the KOA Campground near the Town of Silt and developed local trip generation rates. The trip generation calculations are used in the traffic impact study for a Campground/RV Park development in Eagle County, CO prepared by SGM in December 2020. **Appendix C** includes the traffic study and trip generation calculations. The total projected ADT for the Village Camp Durango site is 418 vehicles per day (vpd).

According to CDOT Access Code, “To allow for the impact of larger trucks, buses and recreational vehicles, “passenger car equivalents” shall be determined. Use a passenger car equivalent of 3 for each bus and all trucks and combinations of 40’ in length or longer. Use a passenger car equivalent of 2 for each vehicle or combination at or over 20’ in length but less than 40’.” Most RVs accessing the site will be less than 40’ in length to fit in the proposed sites at Village Camp Durango. A passenger car equivalency factor (PCE) of 2 was applied to 50% of the site generated volumes to account for a mixture of RVs and passenger cars accessing the site.

3.5 Trip Distribution and Assignment

Trip distribution percentages for site generated traffic are based on current traffic patterns in the study area and how traffic will access the site. It is assumed that most of the traffic will be traveling to/from the City of Durango located to the south of the site. Based on this assumption, the following trip distributions were used for analysis: 80% of trips to and from the south (City of Durango) with 15% to and from points north on US 550. 5% of trips are projected to use CR 250 to the southeast of the project site. The overall distribution of trips to and from the site are illustrated in **Figure 4**.

[2] Trip Generation. Institute of Transportation Engineers. 11th Edition. 2021.

4 Short-Term Background Analysis

4.1 Short-Term Background Traffic Volumes

Through movement traffic along US 550 was grown by 0.85% per year as displayed on CDOT's Online Transportation Information System (OTIS) for the 20 year traffic growth rate (1.17) of the nearest station to the project site. The 0.85% growth per year was applied to through movement background traffic along US 550. A growth rate of 1% per year was applied to background traffic along CR 252. Year 2025 is identified as the projected open of the Village Camp Durango. The projected short-term background traffic volumes are contained in **Figure 5**.

4.2 Short-Term Background Level of Service

Year 2025 background traffic volumes were analyzed to determine future operations and capacity constraints. The analysis of the intersection of US 550 and CR 252 for year 2025 indicates that the intersection is projected to operate at LOS B during the morning and evening peak hour periods with all individual movements operating at LOS C or better meeting the criteria outlined in La Plata County code (LOS C or better). All minor intersections are projected to operate at LOS A with all individual movements operating at LOS B or better during the morning and evening peak periods. The results of the intersection LOS calculations and queue length results are summarized in **Table 1**. **Appendix B** contains the LOS analysis worksheets.

5 Short-Term Background plus Site Generated Traffic Analysis

5.1 Short-Term Background plus Site Generated Traffic Volumes

The Village Camp Durango site generated traffic volumes were combined with the short-term background volumes to produce the total short-term traffic volumes. The resulting total traffic volumes are presented in **Figure 6**.

5.2 Short-Term Background plus Site Generated Traffic Level of Service

The Year 2025 background plus site generated traffic volumes were analyzed to determine short-term operations and potential capacity constraints caused by the addition of site traffic from the Village Camp Durango development.

The analysis of the intersection of US 550 and CR 252 with the addition of the site generated traffic indicates that the intersection is projected to continue to operate at a LOS B during the morning and evening peak hour periods with all individual movements operating at LOS C or better. Minor impacts to travel time delay are anticipated; however, no changes in LOS are projected due to the additional site generated traffic. The results of the intersection LOS and calculations and queue length results are summarized in **Table 1**. **Appendix B** contains the LOS analysis worksheets.

Impacts to the minor intersections along CR 252 between the intersection of US 550/CR 252 and the site access were also analyzed for the long-term background plus site generated traffic condition. Similar to the impacts at the signalized intersection of US 550/CR 252, the minor unsignalized intersections are expected to see slightly more travel time delay with no changes projected to LOS for the overall intersections. All individual movements are projected to operate at LOS B or better for the minor intersections in the study area. **Appendix B** contains the LOS worksheets for each of the minor intersections along CR 252.

6 Long-Term Background Analysis

6.1 Long-Term Background Traffic Volumes

Similar to the short-term, long-term background traffic volumes were grown using the 1% growth per year applied to traffic accessing CR 252 and 0.85% growth per year for through movement traffic along US 550. Traffic generated from the Dalton Ranch West development was added to the background traffic volumes to more accurately represent the full build out of the residential development. **Appendix D** outlines the site generated traffic volumes for the Dalton Ranch West development. The projected long-term background traffic volumes are contained in **Figure 7**.

6.2 Long-Term Background Level of Service

Year 2045 background traffic volumes were analyzed to determine future operations and capacity constraints. The analysis of the intersection of US 550 and CR 252 for year 2045 indicates that the intersection is projected to operate at LOS B during the morning and evening peak hour periods with all individual movements operating at LOS C or better meeting the criteria outlined in La Plata County code (LOS C or better). All minor intersections are projected to operate at LOS A with all individual movements operating at LOS B or better during the morning and evening peak periods. The results of the intersection LOS calculations and queue length results are summarized in **Table 1**. **Appendix B** contains the LOS analysis worksheets.

7 Long-Term Background plus Site Generated Traffic Analysis

7.1 Long-Term Background plus Site Generated Traffic Volumes

The Village Camp Durango site generated traffic volumes were combined with the long-term background volumes to produce the total future traffic volumes. The resulting total traffic volumes are presented in **Figure 8**.

7.2 Long-Term Background plus Site Generated Traffic Level of Service

The Year 2045 background plus site generated traffic volumes were analyzed to determine future operations and potential capacity constraints caused by the addition of site traffic from the Village Camp Durango development.

The analysis of the intersection of US 550 and CR 252 with the addition of the site generated traffic indicates that the intersection is projected to continue to operate at a LOS B during the morning and evening peak hour periods with all individual movements operating at LOS C or better. Minor impacts to travel time delay are anticipated; however, no changes in LOS are projected due to the additional site generated traffic. The results of the intersection LOS and calculations and queue length results are summarized in **Table 1**. **Appendix B** contains the LOS analysis worksheets.

Impacts to the minor intersections along CR 252 between the intersection of US 550/CR 252 and the site access were also analyzed for the long-term background plus site generated traffic condition. Similar to the impacts at the signalized intersection of US 550/CR 252, the minor unsignalized intersections are expected to see slightly more travel time delay for certain movements with no changes projected to LOS for the overall intersections or individual movements. **Appendix B** contains the LOS worksheets for each of the minor intersections along CR 252.

7.3 Long-Term Background plus Site Generated Traffic Level of Service Including Passenger Car Equivalency Factor

A sensitivity analysis was done to determine the roadway effects of having 100% site generated traffic being RVs (2:1 PCE) instead of 50% used as the initial assumption. The site generated volume using the 2:1 PCE is displayed in **Figure 4**. Overall 2045 Background plus Site Generated (Including a 2:1 PCE) traffic displayed in **Figure 9**.

The analysis of the intersection of US 550 and CR 252 including the PCE indicates that the traffic impacts due to the volume increase are projected to be minimal. Travel time delay is projected to increase slightly compared to non-PCE adjusted volumes, and LOS is projected to remain LOS B or for the overall intersection and LOS C or better for each individual movement. **Table 1** displays the results of the LOS calculations and queue length results. Additionally, the minor unsignalized intersections along CR 252 are expected to see minimal impacts due to the increase in projected traffic with all movements and overall intersection performance projected to perform at LOS C or better. **Appendix B** contains the LOS analysis worksheets.

7.4 Queue Length Consideration at US 550 / CR 252

The limited storage space for the westbound left-turn movement as US 550/CR 252 was cited as a concern by previous CDOT Staff. There is approximately 130' of storage from the stop bar to the start of the taper.

95th percentile queue lengths were analyzed for each scenario. Queue length analysis results of 2045 peak hour volumes plus PCE indicate the largest queue length of 115' is expected to occur in the morning peak hour for the westbound left turn movement (see **Appendix B**). The existing westbound left turn lane appears to have sufficient storage to accommodate the future year projected volume plus site generated traffic.

Additionally, the queue length for the eastbound left turning movement at the intersection immediately adjacent to US 550/CR 252, CR 252/Trimble 1, is not expected to exceed the 150' of existing storage.

8 Additional CR 252 Roadway Analysis

8.1 CR 252 Roadway Classification

ADT between US 550 and the Village Camp Durango access along CR 252 is already above 2,500 vehicles. The roadway classification should be updated from Collector to Arterial roadway per La Plata County's Land Use Code. The roadway will also require a minimum right-of-way (ROW) width of 80'. Currently, the section of CR 252 included in the study has a width of 70'. Table 74-2 of the La Plata Land Use Code (LPLUC) displays the road classification and standards the roadway will need to be designed to.

TABLE 74-2: ROAD CLASSIFICATIONS AND STANDARDS

Road Class	ADT	Design Speed (miles per hour)	Minimum Right-of-Way Width (feet)	Travel Way Width (feet)	Shoulder Width (feet)	Surface Type	Maximum Grade (percent)
Arterial	2500+	45-55	80	24	4	Paved	6
Collector	1,000-2,499	30-45	70	24	3	Paved	8
Major Local	400-999	25-40	60	22	2	Paved	8
Minor Local	49-399	15-30	50	20	2	Gravel	10
Low ADT	25-48	n/a	30	20	n/a	Gravel	10

Portions of CR 252, which have not redeveloped recently, generally have a 60' ROW width, while those that have redeveloped since the early 1990's have dedicated additional ROW along their lot frontages to increase the total ROW to 80'. The Village Camp Durango development will dedicate the necessary ROW to create at least 40' of ROW from the centerline of CR 252 to their new property line, for the total ROW width of 80', as well as any necessary ROW for auxiliary lanes.

8.2 CR 252 Roadway LOS Analysis

Per Section 74-2-2-D-2 of the LPLUC, all county roads that experience an increase in traffic due to a proposed development must function at LOS C or better. The process of analyzing LOS for CR 252 near the development was followed using the Highway Capacity Manual 7th Edition[3]. Highway Capacity Software (HCS) was utilized to determine the LOS of the roadway segment affected by the Village Camp Durango development. The following criteria is listed in the HCM 7th Edition for roadway LOS:

[3] *HCM 7th: Highway Capacity Manual 7th Edition: A Guide for Multimodal Mobility Analysis* Washington, D.C.: Transportation Research Board, 2022. Print.

HCM 7th Edition Methodology
• Average Speed • Percent Followers • **Follower Density (Service Measure)**
• Flow as veh/h • % HV as a direct input for performance measures
• 1,700 veh/h for passing zones and passing constrained • Variable for passing lanes

LOS	Follower Density (followers/mi/ln) Higher-Speed Highways Posted Speed Limit ≥ 50 mi/h	Follower Density (followers/mi/ln) Lower-Speed Highways Posted Speed Limit < 50 mi/h
A	≤ 2.0	≤ 2.5
B	> 2.0 – 4.0	> 2.5 – 5.0
C	> 4.0 – 8.0	> 5.0 – 10.0
D	> 8.0 – 12.0	> 10.0 – 15.0
E	> 12.0	> 15.0
F	Demand exceeds capacity	

HCM 7th Edition – LOS criteria

LOS analysis was conducted for the segment that most closely aligns with a level 2 highway and the segment that is most affected by the development (Village Camp Durango access to Dalton Ranch Rd). Site observations confirm the speed limit is 35 MPH, lane width is approximately 11’, and shoulders are approximately 2’ wide. The passing section and no-passing section of roadways were analyzed separately. The no-passing section of CR 252 is the most critical to LOS. Year 2022 ADT count was obtained from CDOT’s Traffic Count Database System at location ID: 355669 on CR 252 W/O CR 250 at 1,793 vpd. The ADT was grown by 1% per year to Year 2025 with 1,847 vpd and Year 2045 with 2,205 vpd. Directional peak traffic volumes (DHV-30) of traffic were obtained from the Traffic Count Database System and used for the peak hour analysis for the roadway. According to the HCS results, the roadway is projected to function at LOS A in both the short-term and long-term scenarios with follower density at less than 2.0.

PM peak hour site generated traffic is identified as the critical peak period of traffic by the Village Camp Durango development. The heavy vehicle percentage was increased to the projected 12% of total traffic and the site generated traffic was added to the short-term and long-term background scenarios. According to the HCS results, the roadway is still projected to function at LOS A in the short-term scenario and drop to LOS B in the eastbound direction no-passing zone segment in the long-term scenario.

Additional analysis was conducted to determine the vehicular demand needed to degrade the existing roadway to LOS D. According to the HCS analysis, approximately 500 vph in a singular direction would be needed in order to approach LOS D, or approximately an ADT of 10,000 vpd along the roadway, well under future year projections. **Appendix B** displays the roadway LOS.

8.3 Auxiliary Lane Analysis

The PCE adjusted evening peak hour represents the largest amount of site generated traffic with 150 vph, including 98 vph entering and 52 vph exiting the site. The morning peak hour period projects 116 vph, including 42 vph entering and 74 vph exiting the site. The proposed site includes two full movement accesses onto CR 252 with an estimated split of 80% traffic using the north access and 20% of the traffic using the south access. **Figure 4** from Section 3.5 displays the trip generation.

According to the State of Colorado State Highway Access Code, (Volume 2, March 2002), the following criteria require the construction of auxiliary lanes for a R-B classified road:

- Right turn deceleration lane: 25 vehicles/hour
- Left turn deceleration lane: 10 vehicles/hour
- Right turn acceleration lane: 50 vehicles/hour
- Left turn acceleration lane: as needed to benefit safety and operations.

Guidelines for auxiliary lanes for an R-B roadway are outlined in Table 4-5 of the Access Code.

Table 4 - 5: Components of Speed Change Lane Length

Access Category	Left turn deceleration lane	Right turn deceleration lane	Acceleration lane
F-W	Design must meet federal interstate standards, and no less then E-X		
E-X	taper + decel.length+storage	taper + decel. length	accel.length + taper
R-A	* decel. length + storage	* decel. length	* accel. length
R-B	* decel. length + storage	* decel. length	* accel. length

Design criteria for acceleration and deceleration lanes are outlined in Table 4-6 of the Access Code.

Table 4 - 6: Design Criteria for Acceleration and Deceleration Lanes

Posted Speed Limit in MPH	25	30	35	40	45	50	55	60	65	70
Deceleration Length in feet	180	250	310	370	435	500	600	700	800	900
Acceleration Length in feet	N/A	190	270	380	550	760	960	1170	1380	1590
Transition Taper Ratio	7.5:1	8:1	10:1	12:1	13.5:1	15:1	18.5:1	25:1	25:1	25:1

Storage lengths are outlined in the Access Code in Table 4-8.

Table 4 - 8: Storage Lengths

Turning Vehicles Per Peak Hour	below 30	30	60	100	200	300
Required Lane Length in Feet	25	40	50	100	200	300

According to the peak hour generated volume, a right-turn deceleration lane is warranted at the north site access. A southbound right-turn deceleration lane of 310' is advised for the right turn movement into the north site access to the Village Camp Durango development.

The site generated traffic is accommodated by the existing lanes at the intersection of US 550/CR 252.

8.4 Safety Analysis

CR 252 is a low speed, moderately traveled roadway that has no known pattern of serious accidents resulting in injuries or fatalities. Additional monitoring after full build out of the site is recommended to determine if any roadway changes in the future result in an increase in crashes.

8.5 CR 252 Equivalent Single Axle Load (ESAL) Analysis

An analysis of the existing pavement was conducted by Trautner Geotech LLC for the study section of CR 252 and is included in **Appendix E**. For the purposes of this traffic study, the reliability, standard deviation, roadbed soil resilient modulus, change in present serviceability index, and structure number outlined in the Trautner study were used. Two sections of roadway were analyzed for pavement improvements along CR 252 including 1) Railroad to Dalton Ranch, and 2) Dalton Ranch to Bridge. **Appendix E** includes a series of tables and nomographs that outline the results of the impact projected ESALs will have on the existing pavement section.

The existing 20-year ESALs along the study segment is approximately 1,508,031 from Railroad to Dalton Ranch using a 5% truck traffic value and 1.7 truck factor. The existing 20-year ESALs from Dalton Ranch to the Bridge is approximately 630,879. The loading from the Village Camp Durango is estimated to produce a 20-year ESAL of 1,420,945 using a conservative 50% truck traffic value. Due to the projected increase in ESALs from the Village Camp Durango, a 2" overlay is recommended to achieve an adequate structural section (SN=4.50) along CR 252. CR 252 pavement sections have recently seen improvements due to the Dalton Ranch development. As such, the 2" overlay is recommended for the section of CR 252 from the railroad to the Trimble entrance, and from Dalton Ranch Rd to the West Entry of the Village Camp Durango. The pavement between site access will be resurfaced as part of the site plan.

9 Conclusions and Other Considerations

Based on the analysis described in the sections above, the following conclusion has been drawn regarding the traffic impacts resulting from the construction of the Village Camp Durango:

- The anticipated traffic volume generated by the Village Camp Durango development is not expected to significantly impact the surrounding roadway network.
- Existing auxiliary lanes appear to be sufficient length for the intersection of US 550/CR 252.
- A southbound right turn deceleration lane is recommended at the north access to the Village Camp Durango from CR 252.
- Sight distance is adequate for the north site access for the Village Camp Durango. Signage directing heavy vehicles to use the north access to turn left onto CR 252 is recommended.
- Currently, there are no sidewalks or multiuse paths along CR 252 in the vicinity of the site. Multiuse paths are incorporated in the design throughout the development but no improvements outside the site are proposed.
- ADT generated by the development is not projected to degrade the roadway LOS along CR 252 to LOS D or worse. The roadway is projected to perform at LOS A in the short-term and LOS B or better in long-term scenarios.
- A 2” overlay is recommended for the missing sections of overlay on CR 252 from the railroad to Trimble entrance, and from Dalton Ranch Rd to the west entry of the Village Camp Durango. A fee of $138,000 in lieu of construction may be considered. Further talks with La Plata County are recommended to decide next steps.

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The main intersection affected by the site generated traffic will be at the intersection of US 550 and CR 252 which is currently a signal-controlled intersection. The lane configuration at the intersection is as follows:

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Additional intersections at CR 252 and Trimble Crossing (commercial access), CR 252 and Trimble Crossing (residential access), CR 252 and Dalton Ranch Rd, and the proposed site accesses were also analyzed as part of the study.

2.3 Sight Distance

Required passenger vehicle sight distance along a 35 miles per hour (MPH) roadway is 390' for left turning vehicles and 335' for right turning vehicles. Required sight distance for heavy vehicles along a 35 MPH roadway is 590' for left turning vehicles and 540' for right turning vehicles.

The existing sight distance for the north access of the Village Camp Durango development is sufficient with roughly 1000' in either direction. Exiting sight distance from the south access looking northwest is sufficient. Sight distance looking southeast is approximately 400' of sight distance due to the roadway geometry across the Animas River bridge. The distance is sufficient for passenger vehicles and deficient for heavy vehicles; however, stopping sight distance for a 35 MPH roadway is 250' and vehicles ample distance to safely stop if any conflicts may occur between turning vehicles. Signage directing heavy vehicles to use the north access to turn out of the Village Camp Durango development is recommended for a safer left-turn movement on CR 252.

2.4 Study Area and Evaluation Parameters

The project study area includes the site accesses as well as the intersection at US 550 and CR 252. Minor intersections along CR 252 between the intersections of US 550/CR 252 and CR 252/Site Access were also analyzed for site generated traffic impacts. Morning and evening peak period operations were evaluated for an average weekday in the existing (Year 2023), short-term (Year 2025), and long-term (Year 2045) scenarios.

3 Existing Conditions

3.1 Circulation Network

US 550 is two-lane roadway classified by CDOT as a principal arterial with E-X: Expressway, Major Bypass access control classification. US 550 has a posted speed limit of 55 MPH within the vicinity of the site. CR 252 is currently a collector roadway, classified R-B (Rural Highway), with a posted speed limit of 35 MPH.

3.2 Existing Traffic Volumes

Existing traffic count data were collected by SEH in early October, 2024. **Figure 3** displays peak hour traffic volumes, lane configurations, and control type. The traffic counts are compiled in **Appendix A**.

Per La Plata Land Use Code Sec. 74-3.IV.G, “traffic counts taken between October and April shall include a seasonal adjustment factor as calculated by CDOT for the region and time of year”. The nearest continuous count station to the site is Station 104809 along US 160 between mile marker 83 and 84 in Durango. A seasonal factor of 0.96 was calculated for the month of October. Traffic volumes **were not** adjusted down to remain conservative and represent an accurate traffic count on a typical weekday.

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Intersection Level of Service (LOS) was calculated using Synchro 11 software to evaluate the performance of the intersections within the study area. This software package utilizes criteria described in the Highway Capacity Manual[1]. LOS is a measure used to describe operational conditions at an intersection. LOS categories ranging from A to F are assigned based on the predicted delay in seconds per vehicle for the intersection overall, as well as for individual turning movements. LOS A indicates very good operations, and LOS F indicates poor, congested operations. According to La Plata County Code, intersection LOS C or better is desirable for collector roadways.

A summarization of the results of the intersection LOS calculations is displayed in **Table 1**. The analysis indicates that the intersection of US550/CR 252 operates at an overall LOS B with individual movements operating at LOS C or better during the morning and evening peak periods. All minor intersections are projected to operate at LOS A with all individual movements operating at LOS B or better during the morning and evening peak periods. **Appendix B** contains the LOS analysis worksheets for reference.

1 *HCM 6th: Highway Capacity Manual 6th Edition: A Guide for Multimodal Mobility Analysis* Washington, D.C.: Transportation Research Board, 2016. Print.

3.4 Trip Generation

To determine the traffic impacts associated with the Village Camp Durango development, the amount of traffic generated by the proposed development was estimated using the average trip generation rates contained in the Institute of Transportation Engineers (ITE) Trip Generation Manual[2]. ITE Code 416-Campground/Recreational Vehicle Park was used to determine trip generation rates for the peak hour. The average peak hour trip generation rates for 416-Campground/Recreational Vehicle Park represent a slightly more conservative value than the fitted curve. It is assumed that all proposed RV sites will be fully occupied (277 occupied sites). The proposed development is projected to generate 58 vehicles per hour (vph) at full build out in the morning peak hour with 21 entering and 37 exiting. Likewise, an estimated 75 vph are projected to be generated for the evening peak hour at full build out with 49 entering and 26 exiting. The estimated weekday, AM, and PM peak hour trip generation for the proposed development is contained in **Table 2**.

Average Daily Traffic (ADT) for the proposed Village Camp Durango development was adapted from the information listed in the *Comparable Campground Trip Generation Calculations, KOA Silt CO* study prepared by Mcdowell Engineering in July 2016. The study was conducted to develop ADT for the site because ITE does not list a rate for total daily traffic generation. The study counted existing traffic for the KOA Campground near the Town of Silt and developed local trip generation rates. The trip generation calculations are used in the traffic impact study for a Campground/RV Park development in Eagle County, CO prepared by SGM in December 2020. **Appendix C** includes the traffic study and trip generation calculations. The total projected ADT for the Village Camp Durango site is 418 vehicles per day (vpd).

According to CDOT Access Code, "To allow for the impact of larger trucks, buses and recreational vehicles, "passenger car equivalents" shall be determined. Use a passenger car equivalent of 3 for each bus and all trucks and combinations of 40' in length or longer. Use a passenger car equivalent of 2 for each vehicle or combination at or over 20' in length but less than 40'." Most RVs accessing the site will be less than 40' in length to fit in the proposed sites at Village Camp Durango. A passenger car equivalency factor (PCE) of 2 was applied to 50% of the site generated volumes to account for a mixture of RVs and passenger cars accessing the site.

3.5 Trip Distribution and Assignment

Trip distribution percentages for site generated traffic are based on current traffic patterns in the study area and how traffic will access the site. It is assumed that most of the traffic will be traveling to/from the City of Durango located to the south of the site. Based on this assumption, the following trip distributions were used for analysis: 80% of trips to and from the south (City of Durango) with 15% to and from points north on US 550. 5% of trips are projected to use CR 250 to the southeast of the project site. The overall distribution of trips to and from the site are illustrated in **Figure 4**.

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2 Trip Generation. Institute of Transportation Engineers. 11th Edition. 2021.

4 Short-Term Background Analysis

4.1 Short-Term Background Traffic Volumes

Through movement traffic along US 550 was grown by 0.85% per year as displayed on CDOT's Online Transportation Information System (OTIS) for the 20 year traffic growth rate (1.17) of the nearest station to the project site. The 0.85% growth per year was applied to through movement traffic along US 550. 1% growth per year was applied to traffic along CR 252. Year 2025 is identified as the projected open of the Village Camp Durango. The projected short-term background traffic volumes are contained in **Figure 5**.

4.2 Short-Term Background Level of Service

Year 2025 background traffic volumes were analyzed to determine future operations and capacity constraints. The analysis of the intersection of US 550 and CR 252 for year 2025 indicates that the intersection is projected to operate at LOS B during the morning and evening peak hour periods with all individual movements operating at LOS C or better meeting the criteria outlined in La Plata County code (LOS C or better). All minor intersections are projected to operate at LOS A with all individual movements operating at LOS B or better during the morning and evening peak periods. The results of the intersection LOS calculations and queue length results are summarized in **Table 1**. **Appendix B** contains the LOS analysis worksheets.

5 Short-Term Background plus Site Generated Traffic Analysis

5.1 Short-Term Background plus Site Generated Traffic Volumes

The Village Camp Durango site generated traffic volumes were combined with the short-term background volumes to produce the total short-term traffic volumes. The resulting total traffic volumes are presented in **Figure 6**.

5.2 Short-Term Background plus Site Generated Traffic Level of Service

The Year 2025 background plus site generated traffic volumes were analyzed to determine short-term operations and potential capacity constraints caused by the addition of site traffic from the Village Camp Durango development.

The analysis of the intersection of US 550 and CR 252 with the addition of the site generated traffic indicates that the intersection is projected to continue to operate at a LOS B during the morning and evening peak hour periods with all individual movements operating at LOS C or better. Minor impacts to travel time delay are anticipated; however, no changes in LOS are projected due to the additional site generated traffic. The results of the intersection LOS and calculations and queue length results are summarized in **Table 1**. **Appendix B** contains the LOS analysis worksheets.

Impacts to the minor intersections along CR 252 between the intersection of US 550/CR 252 and the site access were also analyzed for the long-term background plus site generated traffic condition. Similar to the impacts at the signalized intersection of US 550/CR 252, the minor unsignalized intersections are expected to see slightly more travel time delay with no changes projected to LOS for the overall intersections. All individual movements are projected to operate at LOS B or better for the minor intersections in the study area. **Appendix B** contains the LOS worksheets for each of the minor intersections along CR 252.

6 Long-Term Background Analysis

6.1 Long-Term Background Traffic Volumes

Similar to the short-term, long-term background traffic volumes were grown using the 1% growth per year applied to traffic accessing CR 252 and 0.85% growth per year for through movement traffic along US 550. Traffic generated from the Dalton Ranch West development was added to the background traffic volumes to more accurately represent the full build out of the residential development. **Appendix D** outlines the site generated traffic volumes for the Dalton Ranch West development. The projected long-term background traffic volumes are contained in **Figure 7**.

6.2 Long-Term Background Level of Service

Year 2045 background traffic volumes were analyzed to determine future operations and capacity constraints. The analysis of the intersection of US 550 and CR 252 for year 2045 indicates that the intersection is projected to operate at LOS B during the morning and evening peak hour periods with all individual movements operating at LOS C or better meeting the criteria outlined in La Plata County code (LOS C or better). All minor intersections are projected to operate at LOS A with all individual movements operating at LOS B or better during the morning and evening peak periods. The results of the intersection LOS calculations and queue length results are summarized in **Table 1**. **Appendix B** contains the LOS analysis worksheets.

7 Long-Term Background plus Site Generated Traffic Analysis

7.1 Long-Term Background plus Site Generated Traffic Volumes

The Village Camp Durango site generated traffic volumes were combined with the long-term background volumes to produce the total future traffic volumes. The resulting total traffic volumes are presented in **Figure 8**.

7.2 Long-Term Background plus Site Generated Traffic Level of Service

The Year 2045 background plus site generated traffic volumes were analyzed to determine future operations and potential capacity constraints caused by the addition of site traffic from the Village Camp Durango development.

The analysis of the intersection of US 550 and CR 252 with the addition of the site generated traffic indicates that the intersection is projected to continue to operate at a LOS B during the morning and evening peak hour periods with all individual movements operating at LOS C or better. Minor impacts to travel time delay are anticipated; however, no changes in LOS are projected due to the additional site generated traffic. The results of the intersection LOS and calculations and queue length results are summarized in **Table 1**. **Appendix B** contains the LOS analysis worksheets.

Impacts to the minor intersections along CR 252 between the intersection of US 550/CR 252 and the site access were also analyzed for the long-term background plus site generated traffic condition. Similar to the impacts at the signalized intersection of US 550/CR 252, the minor unsignalized intersections are expected to see slightly more travel time delay for certain movements with no changes projected to LOS for the overall intersections or individual movements. **Appendix B** contains the LOS worksheets for each of the minor intersections along CR 252.

7.3 Long-Term Background plus Site Generated Traffic Level of Service Including Passenger Car Equivalency Factor

A sensitivity analysis was done to determine the roadway effects of having 100% site generated traffic being RVs (2:1 PCE) instead of 50% used as the initial assumption. The site generated volume using the 2:1 PCE is displayed in **Figure 4**. Overall 2045 Background plus Site Generated (Including a 2:1 PCE) traffic displayed in **Figure 9**.

The analysis of the intersection of US 550 and CR 252 including the PCE indicates that the traffic impacts due to the volume increase are projected to be minimal. Travel time delay is projected to increase slightly compared to non-PCE adjusted volumes, and LOS is projected to remain LOS B or for the overall intersection and LOS C or better for each individual movement. **Table 1** displays the results of the LOS calculations and queue length results. Additionally, the minor unsignalized intersections along CR 252 are expected to see minimal impacts due to the increase in projected traffic with all movements and overall intersection performance projected to perform at LOS C or better. **Appendix B** contains the LOS analysis worksheets.

7.4 Queue Length Consideration at US 550 / CR 252

The limited storage space for the westbound left-turn movement as US 550/CR 252 was cited as a concern by previous CDOT Staff. There is approximately 130' of storage from the stop bar to the start of the taper.

95th percentile queue lengths were analyzed for each scenario. Queue length analysis results of 2045 peak hour volumes plus PCE indicate the largest queue length of 115' is expected to occur in the morning peak hour for the westbound left turn movement (see **Appendix B**). The existing westbound left turn lane appears to have sufficient storage to accommodate the future year projected volume plus site generated traffic.

Additionally, the queue length for the eastbound left turning movement at the intersection immediately adjacent to US 550/CR 252, CR 252/Trimble 1, is not expected to exceed the 150' of existing storage.

8 Additional CR 252 Roadway Analysis

8.1 CR 252 Roadway Classification

ADT between US 550 and the Village Camp Durango access along CR 252 is already above 2,500 vehicles. The roadway classification should be updated from Collector to Arterial roadway per La Plata County's Land Use Code. The roadway will also require a minimum right-of-way (ROW) width of 80'. Currently, the section of CR 252 included in the study has a width of 70'. Table 74-2 of the La Plata Land Use Code (LPLUC) displays the road classification and standards the roadway will need to be designed to.

TABLE 74-2: ROAD CLASSIFICATIONS AND STANDARDS

Road Class	ADT	Design Speed (miles per hour)	Minimum Right-of-Way Width (feet)	Travel Way Width (feet)	Shoulder Width (feet)	Surface Type	Maximum Grade (percent)
Arterial	2500+	45-55	80	24	4	Paved	6
Collector	1,000-2,499	30-45	70	24	3	Paved	8
Major Local	400-999	25-40	60	22	2	Paved	8
Minor Local	49-399	15-30	50	20	2	Gravel	10
Low ADT	25-48	n/a	30	20	n/a	Gravel	10

Portions of CR 252, which have not redeveloped recently, generally have a 60' ROW width, while those that have redeveloped since the early 1990's have dedicated additional ROW along their lot frontages to increase the total ROW to 80'. The Village Camp Durango development will dedicate the necessary ROW to create at least 40' of ROW from the centerline of CR 252 to their new property line, for the total ROW width of 80', as well as any necessary ROW for auxiliary lanes.

8.2 CR 252 Roadway LOS Analysis

Per Section 74-2-2-D-2 of the LPLUC, all county roads that experience an increase in traffic due to a proposed development must function at LOS C or better. The process of analyzing LOS for CR 252 near the development was followed using the Highway Capacity Manual 7th Edition[3]. Highway Capacity Software (HCS) was utilized to determine the LOS of the roadway segment affected by the Village Camp Durango development. The following criteria is listed in the HCM 7th Edition for roadway LOS:

[3] *HCM 7th: Highway Capacity Manual 7th Edition: A Guide for Multimodal Mobility Analysis* Washington, D.C.: Transportation Research Board, 2022. Print.

HCM 7th Edition Methodology
• Average Speed • Percent Followers • **Follower Density (Service Measure)**
• Flow as veh/h • % HV as a direct input for performance measures
• 1,700 veh/h for passing zones and passing constrained • Variable for passing lanes

	Follower Density (followers/mi/ln)	
LOS	Higher-Speed Highways Posted Speed Limit ≥ 50 mi/h	Lower-Speed Highways Posted Speed Limit < 50 mi/h
A	≤ 2.0	≤ 2.5
B	> 2.0 – 4.0	> 2.5 – 5.0
C	> 4.0 – 8.0	> 5.0 – 10.0
D	> 8.0 – 12.0	> 10.0 – 15.0
E	> 12.0	> 15.0
F	Demand exceeds capacity	

HCM 7th Edition – LOS criteria

LOS analysis was conducted for the segment that most closely aligns with a level 2 highway and the segment that is most affected by the development (Village Camp Durango access to Dalton Ranch Rd). Site observations confirm the speed limit is 35 MPH, lane width is approximately 11', and shoulders are approximately 2' wide. The passing section and no-passing section of roadways were analyzed separately. The no-passing section of CR 252 is the most critical to LOS. Year 2022 ADT count was obtained from CDOT's Traffic Count Database System at location ID: 355669 on CR 252 W/O CR 250 at 1,793 vpd. The ADT was grown by 1% per year to Year 2025 with 1,847 vpd and Year 2045 with 2,205 vpd. Directional peak traffic volumes (DHV-30) of traffic were obtained from the Traffic Count Database System and used for the peak hour analysis for the roadway. According to the HCS results, the roadway is projected to function at LOS A in both the short-term and long-term scenarios with follower density at less than 2.0.

PM Peak hour site generated traffic is identified as the critical peak period of traffic by the Village Camp Durango development. The heavy vehicle percentage was increased to the projected 12% of total traffic and the site generated traffic was added to the short-term and long-term background scenarios. According to the HCS results, the roadway is still projected to function at LOS A in the short-term scenario and drop to LOS B in the eastbound direction no-passing zone segment in the long-term scenario.

Additional analysis was conducted to determine the vehicular demand needed to degrade the existing roadway to LOS D. According to the HCS analysis, approximately 500 vph in a singular direction would be needed in order to approach LOS D, or approximately an ADT of 10,000 vpd along the roadway, well under future year projections. **Appendix B** displays the roadway LOS.

8.3 Auxiliary Lane Analysis

The PCE adjusted evening peak hour period represents the largest amount of site generated traffic with 150 vph, including 98 vehicles entering and 52 vehicles exiting the site. The morning peak hour period projects 116 vph, including 42 vehicles entering and 74 vehicles exiting the site. The proposed site includes two full movement accesses onto CR 252 with an estimated split of 80% traffic using the north access and 20% of the traffic using the south access. **Figure 4** from Section 3.5 displays the trip generation.

According to the State of Colorado State Highway Access Code, (Volume 2, March 2002), the following criteria require the construction of auxiliary lanes for a R-B classified road:

- Right turn deceleration lane: 25 vehicles/hour
- Left turn deceleration lane: 10 vehicles/hour
- Right turn acceleration lane: 50 vehicles/hour
- Left turn acceleration lane: as needed to benefit safety and operations.

Guidelines for auxiliary lanes for an R-B roadway are outlined in Table 4-5 of the Access Code.

Table 4 - 5: Components of Speed Change Lane Length

Access Category	Left turn deceleration lane	Right turn deceleration lane	Acceleration lane
F-W	Design must meet federal interstate standards, and no less then E-X		
E-X	taper + decel.length+storage	taper + decel. length	accel.length + taper
R-A	* decel. length + storage	* decel. length	* accel. length
R-B	* decel. length + storage	* decel. length	* accel. length

Design criteria for acceleration and deceleration lanes are outlined in Table 4-6 of the Access Code.

Table 4 - 6: Design Criteria for Acceleration and Deceleration Lanes

Posted Speed Limit in MPH	25	30	35	40	45	50	55	60	65	70
Deceleration Length in feet	180	250	310	370	435	500	600	700	800	900
Acceleration Length in feet	N/A	190	270	380	550	760	960	1170	1380	1590
Transition Taper Ratio	7.5:1	8:1	10:1	12:1	13.5:1	15:1	18.5:1	25:1	25:1	25:1

Storage lengths are outlined in the Access Code in Table 4-8.

Table 4 - 8: Storage Lengths

Turning Vehicles Per Peak Hour	below 30	30	60	100	200	300
Required Lane Length in Feet	25	40	50	100	200	300

According to the peak hour generated volume, a right-turn deceleration lane is warranted at the north site access. A southbound right-turn deceleration lane of 310' is advised for the right turn movement into the north site access to the Village Camp Durango development.

The site generated traffic is accommodated by the existing lanes at the intersection of US 550/CR 252.

8.4 Safety Analysis

CR 252 is a low speed, moderately traveled roadway that has no known pattern of serious accidents resulting in injuries or fatalities. Additional monitoring after full build out of the site is recommended to determine if any roadway changes in the future result in an increase in crashes.

8.5 CR 252 Equivalent Single Axle Load (ESAL) Analysis

An analysis of the existing pavement was conducted by Trautner Geotech LLC for the study section of CR 252 and is included in **Appendix E**. For the purposes of this traffic study, the reliability, standard deviation, roadbed soil resilient modulus, change in present serviceability index, and structure number outlined in the Trautner study were used. Two sections of roadway were analyzed for pavement improvements along CR 252 including 1) Railroad to Dalton Ranch, and 2) Dalton Ranch to Bridge. **Appendix E** includes a series of tables and nomographs that outline the results of the impact projected ESALs will have on the existing pavement section.

The existing 20-year ESALs along the study segment is approximately 1,508,031 from Railroad to Dalton Ranch using a 5% truck traffic value and 1.7 truck factor. The existing 20-year ESALs from Dalton Ranch to the Bridge is approximately 630,879. The loading from the Village Camp Durango is estimated to produce a 20-year ESAL of 1,420,945 using a conservative 50% truck traffic value. Due to the projected increase in ESALs from the Village Camp Durango, a 2" overlay is recommended to achieve an adequate structural section (SN=4.50) along CR 252. CR 252 pavement sections have recently seen improvements due to the Dalton Ranch development. As such, the 2" overlay is recommended for the section of CR 252 from the railroad to the Trimble entrance, and from Dalton Ranch Rd to the West Entry of the Village Camp Durango. The pavement between site access will be resurfaced as part of the site plan.

9 Conclusions and Other Considerations

Based on the analysis described in the sections above, the following conclusion has been drawn regarding the traffic impacts resulting from the construction of the Village Camp Durango:

- The anticipated traffic volume generated by the Village Camp Durango development is not expected to significantly impact the surrounding roadway network.
- Existing auxiliary lanes appear to be sufficient length for the intersection of US 550/CR 252.
- A southbound right turn deceleration lane is recommended at the north access to the Village Camp Durango from CR 252.
- Sight distance is adequate for the north site access for the Village Camp Durango. Signage directing heavy vehicles to use the north access to turn left onto CR 252 is recommended.
- Currently, there are no sidewalks or multiuse paths along CR 252 in the vicinity of the site. Multiuse paths are incorporated in the design throughout the development but no improvements outside the site are proposed.
- ADT generated by the development is not projected to degrade the roadway LOS along CR 252 to LOS D or worse. The roadway is projected to perform at LOS A in the short-term and LOS B or better in long-term scenarios.
- A 2” overlay is recommended for the missing sections of overlay on CR 252 from the railroad to Trimble entrance, and from Dalton Ranch Rd to the west entry of the Village Camp Durango. A fee of $138,000 in lieu of construction may be considered. Further talks with La Plata County are recommended to decide next steps.

MJW

Tables

Table 1 – LOS Results – Village Camp Durango RV Resort TIS

Table 2 – Weekday Trip Generation Estimate – Village Camp Durango RV Resort

Table 1. LOS Results - Village Camp Durango RV Resort TIS

Intersection and Critical Movements	Year 2024 Traffic						Year 2025 Traffic												Year 2045 Traffic																	
	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
	Delay (sec)	LOS	95th %ile Q (ft)	Delay (sec)	LOS	95th %ile Q (ft)	Delay (sec)	LOS	95th %ile Q (ft)	Delay (sec)	LOS	95th %ile Q (ft)	Delay (sec)	LOS	95th %ile Q (ft)	Delay (sec)	LOS	95th %ile Q (ft)	Delay (sec)	LOS	95th %ile Q (ft)	Delay (sec)	LOS	95th %ile Q (ft)	Delay (sec)	LOS	95th %ile Q (ft)	Delay (sec)	LOS	95th %ile Q (ft)	Delay (sec)	LOS	95th %ile Q (ft)	Delay (sec)	LOS	95th %ile Q (ft)
SIGNAL CONTROL	**Existing Background Traffic**						**2025 Background Traffic**						**2025 Background + Site Generated Traffic**						**2045 Background Traffic**						**2045 Background + Site Generated Traffic**						**2045 Background + Site Generated Traffic Passenger Vehicle Equivalency Included**					
US 550 / CR 252	**15.4**	**B**		**14.4**	**B**		**15.4**	**B**		**14.5**	**B**		**15.7**	**B**		**14.7**	**B**		**17.1**	**B**		**15.9**	**B**		**15.5**	**B**		**16.1**	**B**		**16.0**	**B**		**16.2**	**B**	
Eastbound Left + Through + Right	20.9	C	47	19.1	B	53	21.0	C	47	19.2	B	53	21.3	C	47	19.5	B	53	23.1	C	53	20.8	C	63	20.1	C	52	20.9	C	63	20.3	C	52	21.0	C	64
Eastbound Right	0.0	A	0	0.0	A	0	0.0	A	0	0.0	A	0	0.0	A	0	0.0	A	0	0.0	A	0	0.0	A	0	0.0	A	0	0.0	A	0	0.0	A	0	0.0	A	0
Westbound Left	17.5	B	56	18.3	B	55	17.6	B	57	18.4	B	55	18.0	B	82	18.7	B	72	19.6	B	85	20.4	C	79	21.4	C	106	21.0	C	96	23.5	C	115	21.3	C	102
Westbound Through + Right	12.4	B	33	12.5	B	40	12.4	B	33	12.5	B	40	12.5	B	34	12.4	B	41	13.9	B	40	13.7	B	47	13.0	B	35	13.7	B	47	13.0	B	35	13.7	B	47
Northbound Left	13.7	B	17	17.4	B	34	13.7	B	17	17.5	B	34	14.0	B	17	17.5	B	34	15.4	B	20	20.0	B	40	13.1	B	20	19.9	B	40	13.2	B	20	19.9	B	40
Northbound Through	14.4	B	212	14.5	B	170	14.5	B	214	14.5	B	172	14.6	B	214	14.3	B	172	16.6	B	261	15.5	B	196	13.7	B	251	15.3	B	196	13.8	B	251	15.2	B	196
Northbound Right	10.0	A	1	11.9	B	16	10.0	A	2	11.9	B	16	10.4	B	12	12.9	B	37	10.1	B	12	13.0	B	36	9.9	A	21	13.9	B	41	10.1	B	26	14.3	B	42
Southbound Left	20.3	C	23	12.9	B	27	20.4	C	23	13.0	B	27	20.7	C	25	13.5	B	31	22.5	C	29	15.1	B	39	18.8	B	31	15.6	B	43	18.9	B	32	15.8	B	44
Southbound Through	17.3	B	163	13.8	B	229	17.3	B	163	13.8	B	231	17.7	B	163	14.1	B	231	18.6	B	184	15.1	B	316	15.9	B	184	15.3	B	316	16.1	B	184	15.3	B	316
Southbound Right	12.5	B	0	9.1	A	0	12.5	B	0	9.1	A	0	12.7	B	0	9.2	A	0	12.9	B	0	9.2	A	0	11.0	B	0	9.3	A	0	11.1	B	0	9.3	A	0
STOP CONTROL	**Existing Background Traffic**						**2025 Background Traffic**						**2025 Background + Site Generated Traffic**						**2045 Background Traffic**						**2045 Background + Site Generated Traffic**						**2045 Background + Site Generated Traffic Passenger Vehicle Equivalency Included**					
CR 252 / Trimble Commercial Access	**3.1**	**A**		**3.1**	**A**		**3.1**	**A**		**3.2**	**A**		**2.6**	**A**		**2.6**	**A**		**2.9**	**A**		**3.1**	**A**		**2.1**	**A**		**2.8**	**A**		**2.0**	**A**		**2.7**	**A**	
Eastbound Left	7.6	A		7.7	A		7.6	A		7.7	A		7.8	A		7.8	A		2.5	A		7.9	A		8.0	A		8.0	A		8.1	A		8.0	A	
Eastbound Through	0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A	
Westbound Through + Right	0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A	
Southbound Left + Right	10.2	B		10.2	B		10.2	B		10.3	B		10.8	B		10.8	B		11.4	B		11.2	B		11.6	B		11.9	B		11.8	B		12.2	B	
CR 252 / Trimble Residential Access	**0.6**	**A**		**1.0**	**A**		**0.6**	**A**		**1.0**	**A**		**0.4**	**A**		**0.8**	**A**		**0.5**	**A**		**1.1**	**A**		**0.5**	**A**		**0.9**	**A**		**0.5**	**A**		**0.8**	**A**	
Eastbound Left	7.5	A		7.6	A		7.5	A		7.6	A		7.7	A		7.7	A		7.8	A		7.7	A		7.9	A		7.8	A		7.9	A		7.9	A	
Eastbound Through	0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A	
Westbound Through + Right	0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A	
Southbound Left + Right	9.5	A		10.6	B		9.5	A		10.6	B		10.0	A		11.5	B		10.3	B		11.7	B		10.9	B		12.9	B		11.1	B		13.3	B	
CR 252 / Dalton Ranch Rd / Horse Theif Ln	**2.3**	**A**		**2.3**	**A**		**2.3**	**A**		**2.3**	**A**		**1.9**	**A**		**1.9**	**A**		**2.4**	**A**		**2.4**	**A**		**1.4**	**A**		**2.1**	**A**		**1.3**	**A**		**2.0**	**A**	
Eastbound Left	7.5	A		7.6	A		7.5	A		7.6	A		7.6	A		7.7	A		7.5	A		7.7	A		7.7	A		7.8	A		7.8	A		7.9	A	
Eastbound Through + Right	0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A	
Westbound Left + Through + Right	7.5	A		7.6	A		7.5	A		7.6	A		7.6	A		7.9	A		7.6	A		7.7	A		7.7	A		7.9	A		7.7	A		8.0	A	
Northbound Left + Through + Right	10.8	B		12.1	B		10.8	B		12.1	B		11.8	B		13.9	B		11.6	B		13.4	B		12.7	B		15.7	C		13.1	B		16.5	C	
Southbound Left + Through + Right	9.2	A		9.8	A		9.2	A		9.8	A		9.6	A		10.4	B		9.4	A		10.2	B		9.9	A		11.0	B		10.1	B		11.2	B	
CR 252 / RV Site Main Access	**0.5**	**A**		**0.4**	**A**		**0.5**	**A**		**0.4**	**A**		**4.7**	**A**		**3.3**	**A**		**0.4**	**A**		**0.5**	**A**		**4.5**	**A**		**3.3**	**A**		**5.7**	**A**		**4.1**	**A**	
Eastbound Left + Through + Right	9.9	A		0.0	A		10.0	A		0.0	A		11.7	B		12.4	B		10.3	B		0.0	A		13.1	B		13.4	B		14.5	B		14.7	B	
Westbound Through + Right	0.0	A		9.1	A		0.0	A		9.1	A		0.0	A		9.1	A		0.0	A		9.3	A		0.0	A		9.3	A		0.0	A		9.3	A	
Northbound Left + Through + Right	0.0	A		0.0	A		0.0	A		0.0	A		7.5	A		7.6	A		0.0	A		7.6	A		7.6	A		7.7	A		7.6	A		7.8	A	
Southbound Left + Through	7.4	A		7.5	A		7.4	A		7.5	A		7.5	A		7.5	A		7.5	A		0.0	A		7.6	A		7.6	A		7.6	A		7.6	A	
Southbound Right	7.4	A		7.5	A		7.4	A		7.5	A		0.0	A		0.0	A		7.5	A		0.0	A		0.0	A		0.0	A		0.0	A		0.0	A	
CR 252 / RV Site Access 2													**0.5**	**A**		**0.3**	**A**								**0.4**	**A**		**0.3**	**A**		**0.5**	**A**		**0.4**	**A**	
Eastbound Left + Right													9.5	A		9.6	A								9.8	A		9.8	A		10.0	A		10.0	A	
Northbound Left + Through													0.0	A		0.0	A								0.0	A		0.0	A		7.5	A		7.5	A	
Southbound Through													0.0	A		0.0	A								0.0	A		0.0	A		0.0	A		0.0	A	
Southbound Right													0.0	A		0.0	A								0.0	A		0.0	A		0.0	A		0.0	A	

Note: Access 2 not analyzed for Background Traffic scenarios due to the traffic being through movements only.

Table 2. Weekday Trip Generation Estimate - Village Camp Durango RV Resort

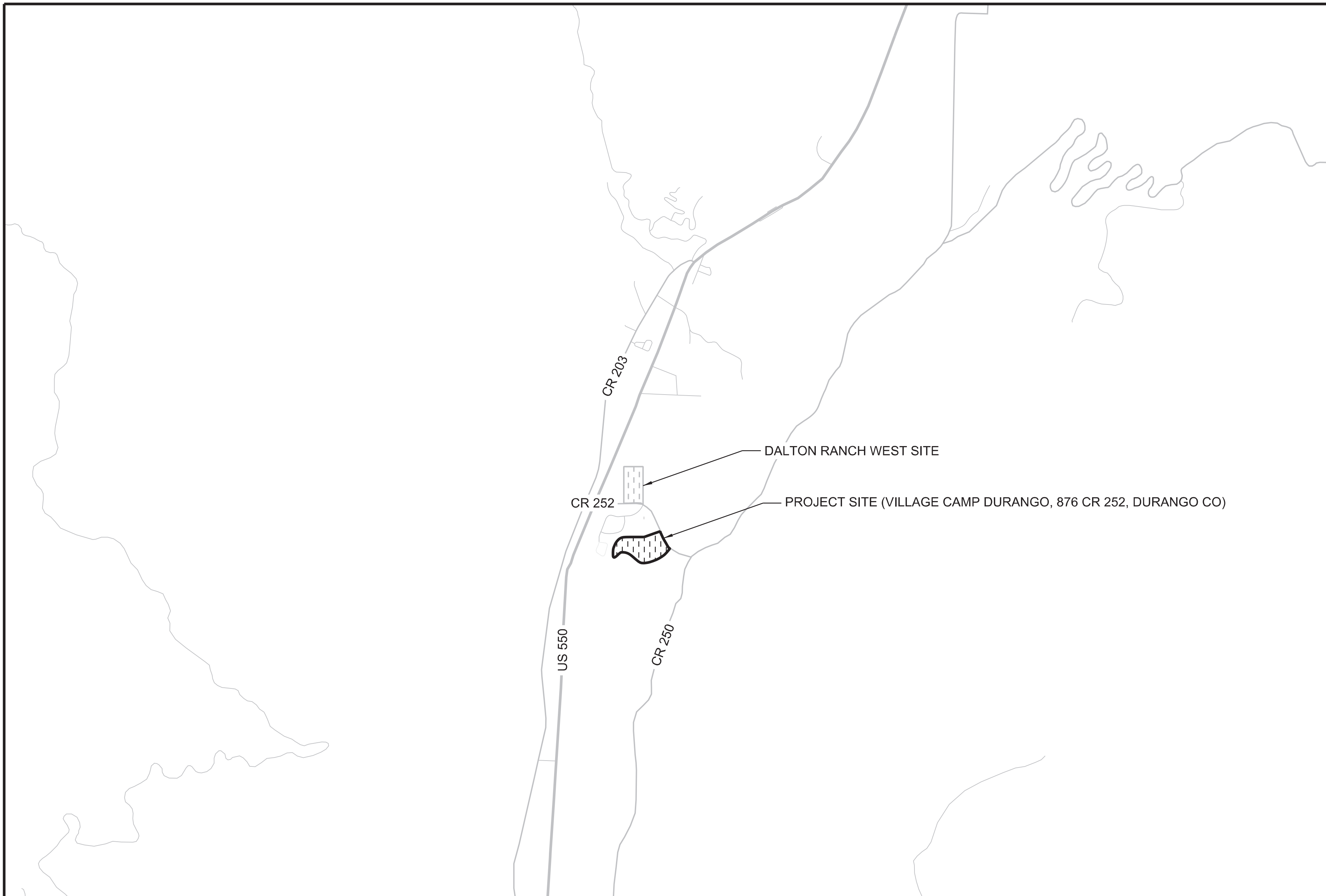
Land Use	ITE Code	Size	Unit	Average Weekday Trips				AM Peak Hour Trips				PM Peak Hour Trips			
				Rate	Total	In	Out	Rate	Total	In	Out	Rate	Total	In	Out
Recreational Vehicle Park[1,2]	416	277	Occupied Campsites	1.51	418	209	209	0.21	58	21	37	0.27	75	49	26
			Total Trips		**418**	**209**	**209**		**58**	**21**	**37**		**75**	**49**	**26**
Recreational Vehicle Park[1,2]	416	277	Occupied Campsites		628	314	314		87	32	55		113	74	39
Total Trips (50% RV, 50% Passenger Car)[3]					**628**	**314**	**313**		**87**	**32**	**55**		**113**	**74**	**39**
Recreational Vehicle Park[1,2]	416	277	Occupied Campsites		836	418	418		116	42	74		150	98	52
Total Trips (2:1 Passenger Car Equivalency Factor)					**836**	**418**	**418**		**116**	**42**	**74**		**150**	**98**	**52**

[1] Peak Hour Trip Generation estimates are based on average rates for 416-Campground/Recreational Vehicle Park contained in *Trip Generation, 11th Edition* (Institute of Transportation Engineers, 2021).

[2] Average weekday trip rate for 416-Campground/Recreational Vehicle Park adapted from *KOA Campground in Silt, CO*. Study.

[3] Assume that RV has a passenger car equivalency factor of 2.

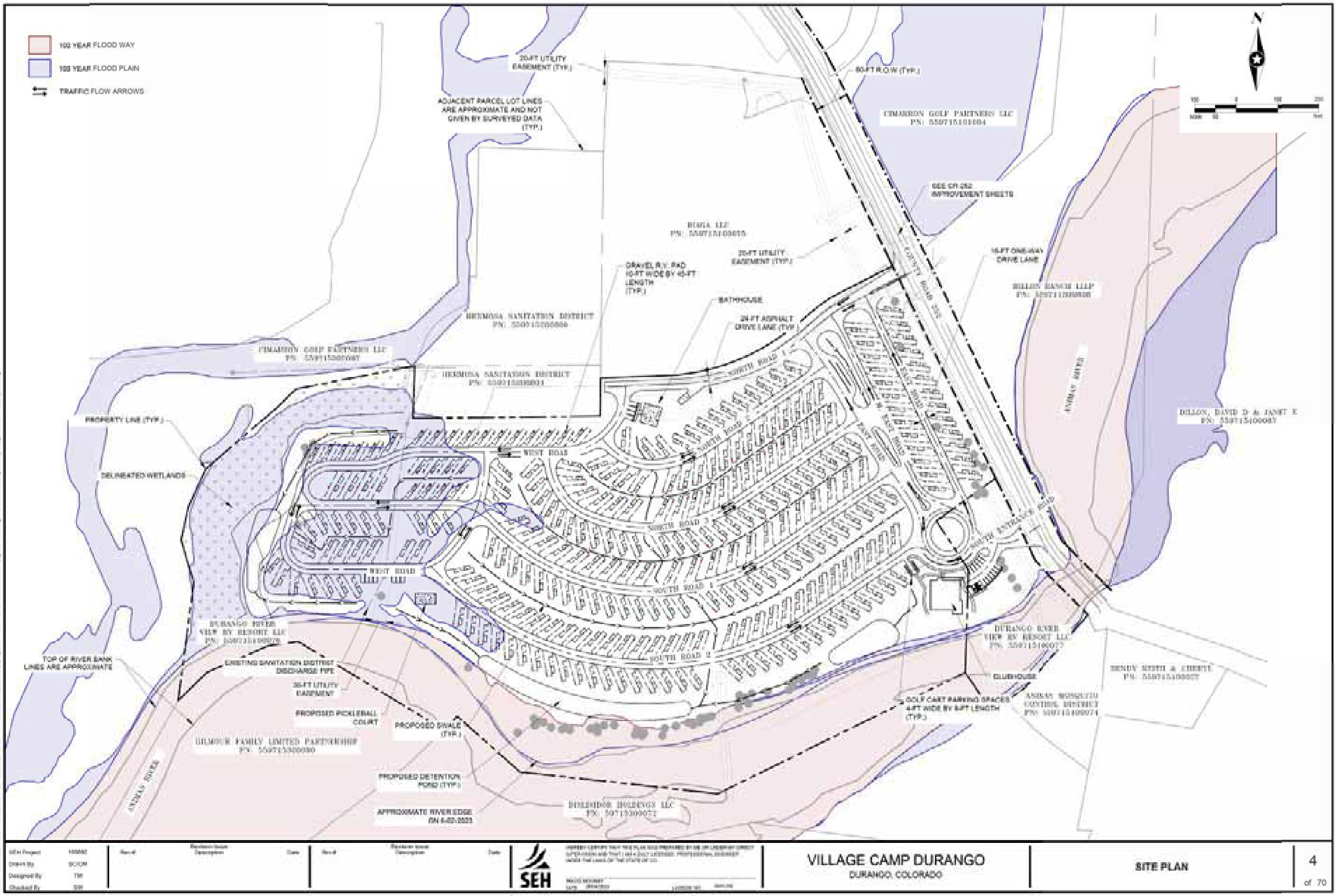
Figures



Traffic Impact Study - Village Camp Durango

VICINITY MAP

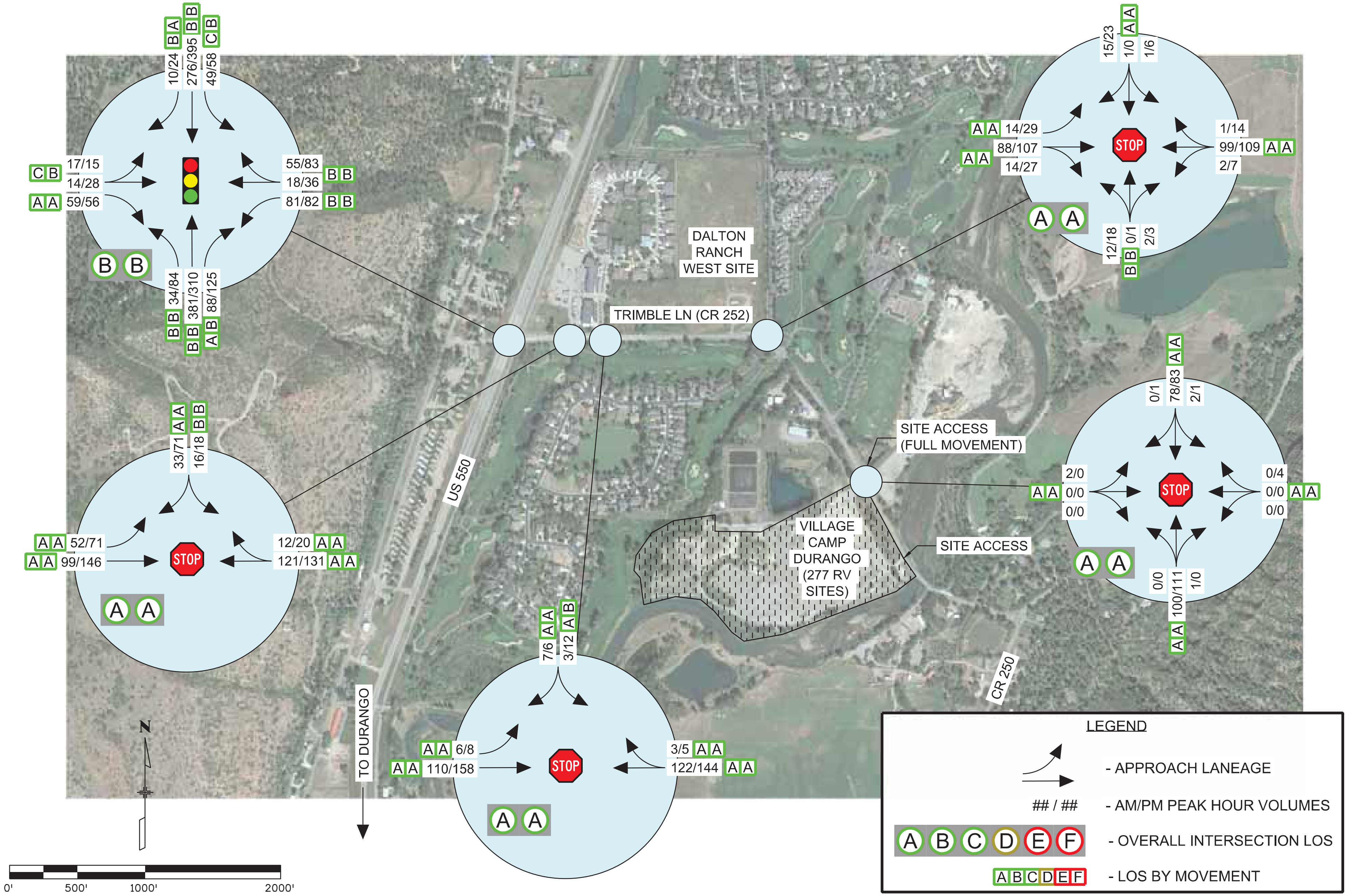
Scale	1" = 1 MILE	Date	11/08/2024	Drawn By	MJW	Job #	ROBRE-168892	Figure	1



Traffic Impact Study - Village Camp Durango

SITE PLAN

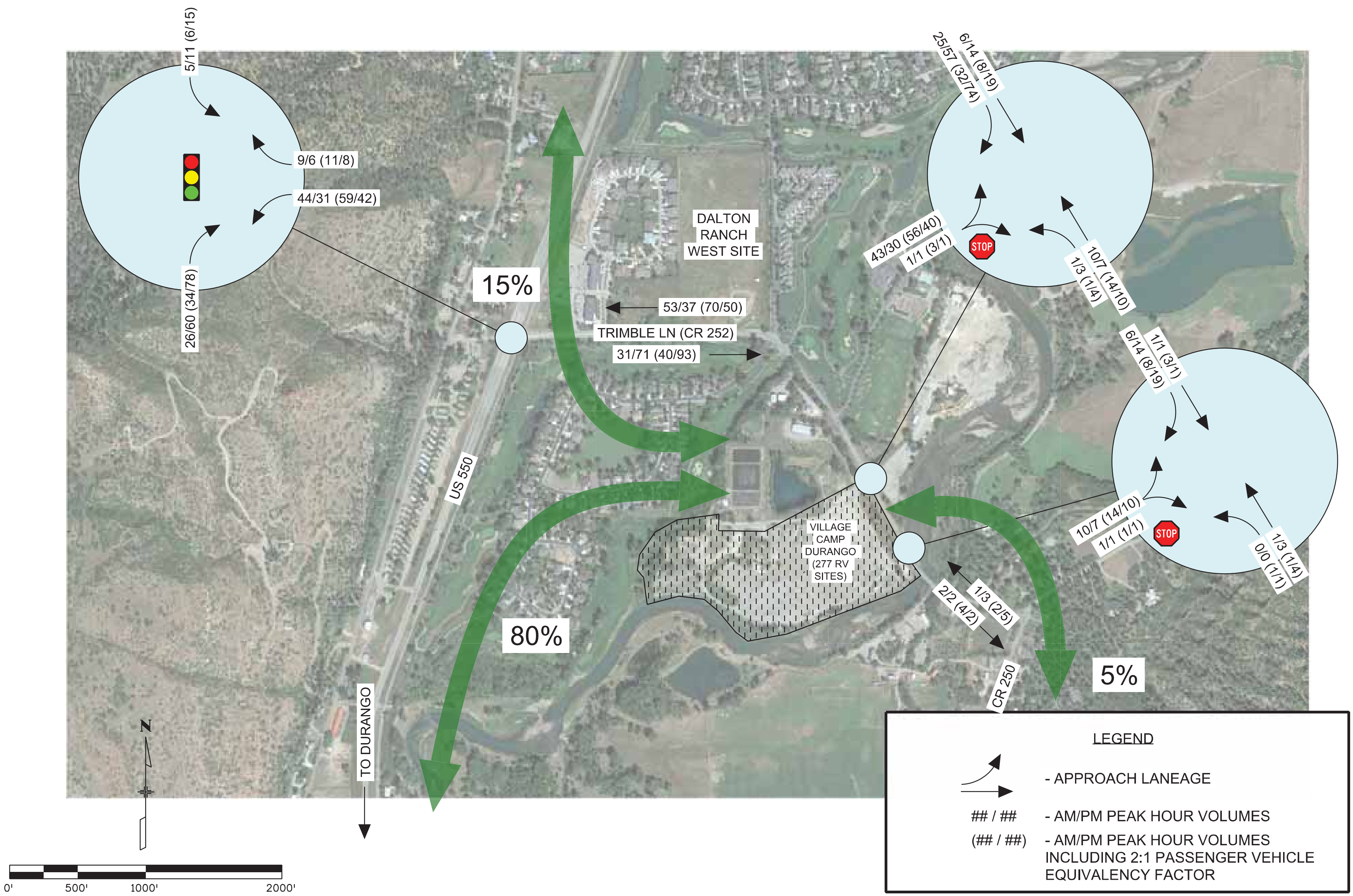
Scale	Date	11/08/2024	Drawn By	MJW	Job #	ROBRE-168892	Figure	2



Traffic Impact Study - Village Camp Durango

EXISTING CONDITIONS

Scale	1" = 1000'	Date	11/08/2024	Drawn By	MJW	Job #	ROBRE-168892	Figure	3

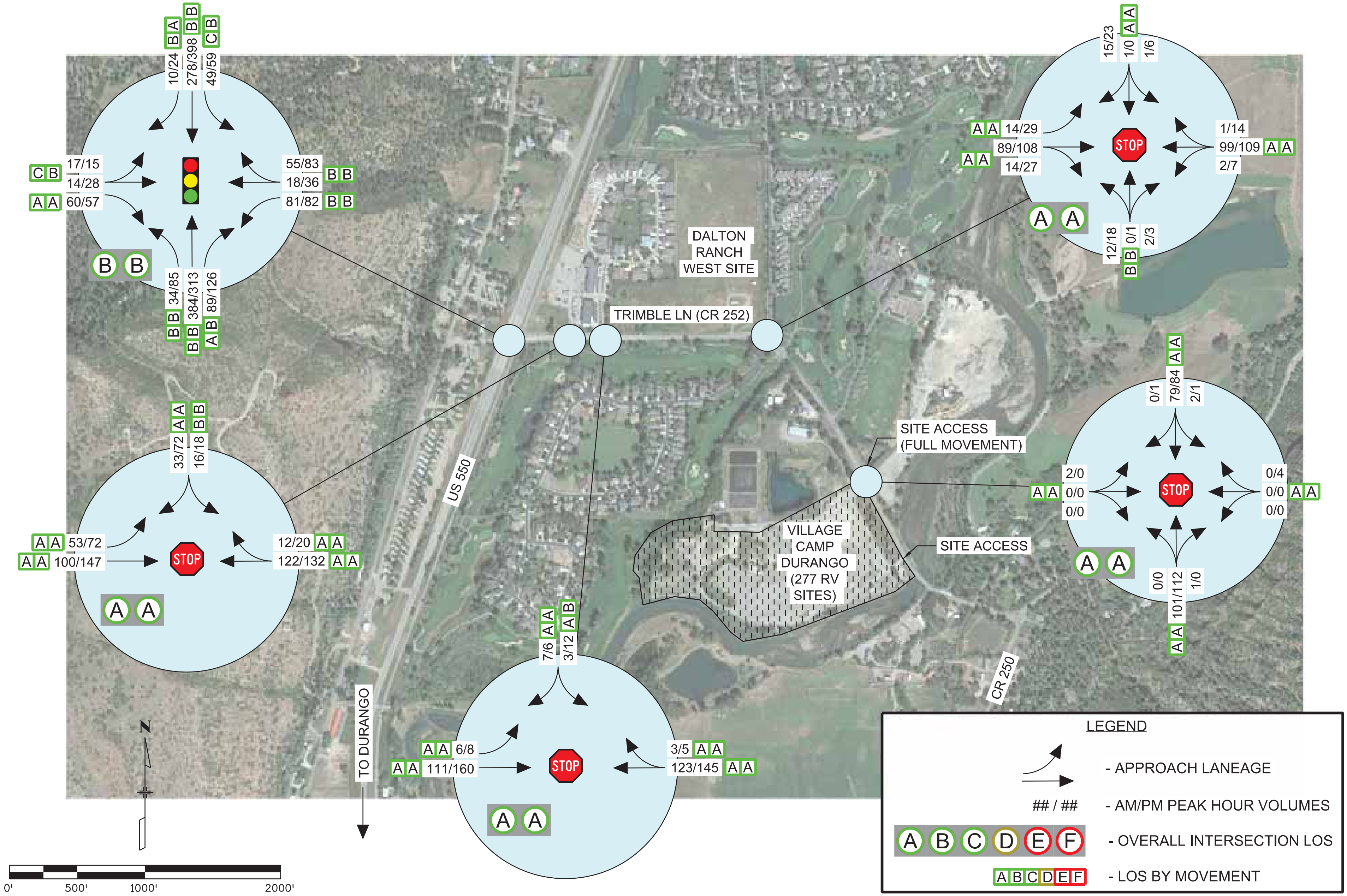


SEH

Traffic Impact Study - Village Camp Durango

TRIP GENERATION AND ASSIGNMENT

Scale	1" = 1000'	Date	11/08/2024	Drawn By	MJW	Job #	ROBRE-168892	Figure	4

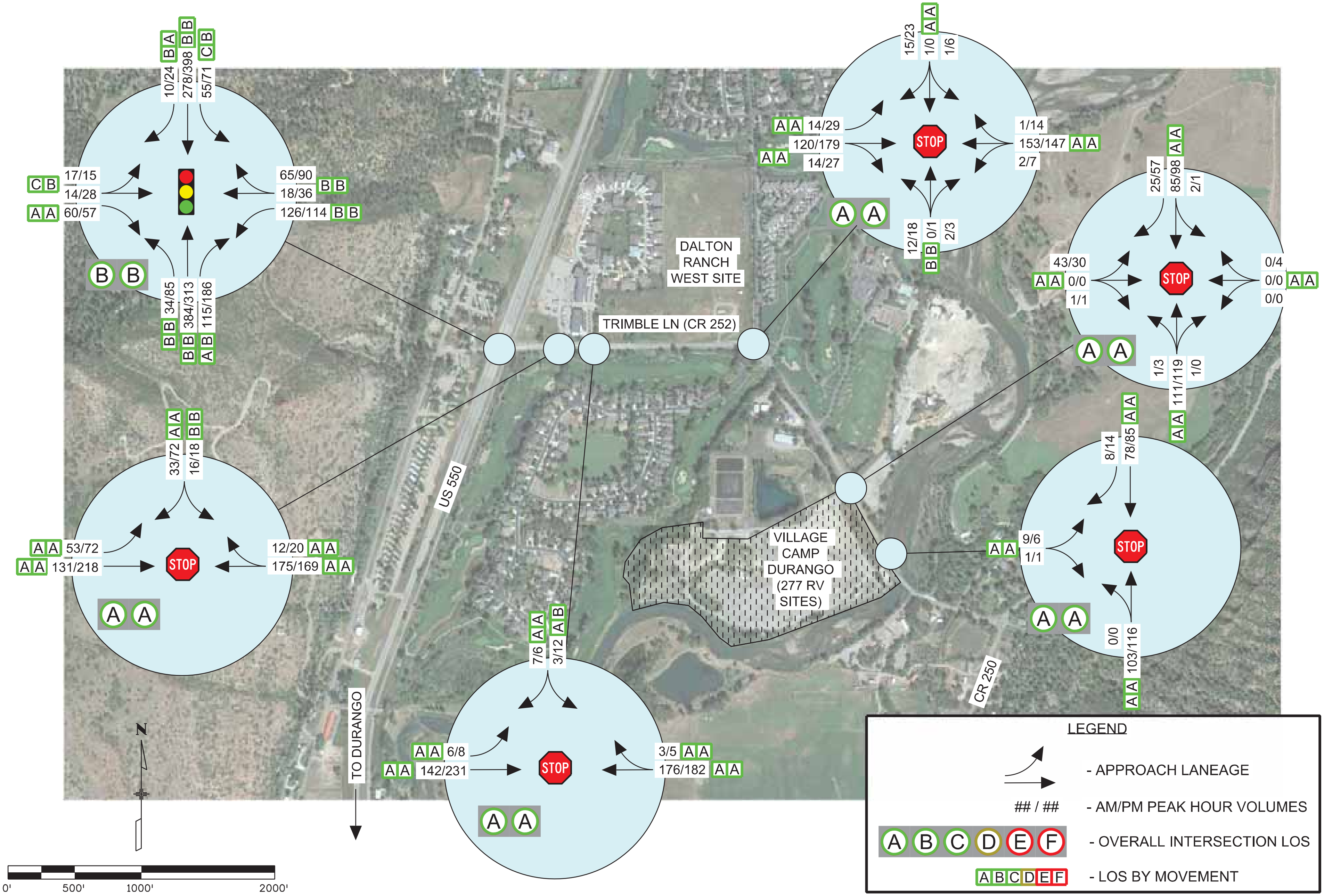


SEH

Traffic Impact Study - Village Camp Durango

2025 BACKGROUND CONDITIONS

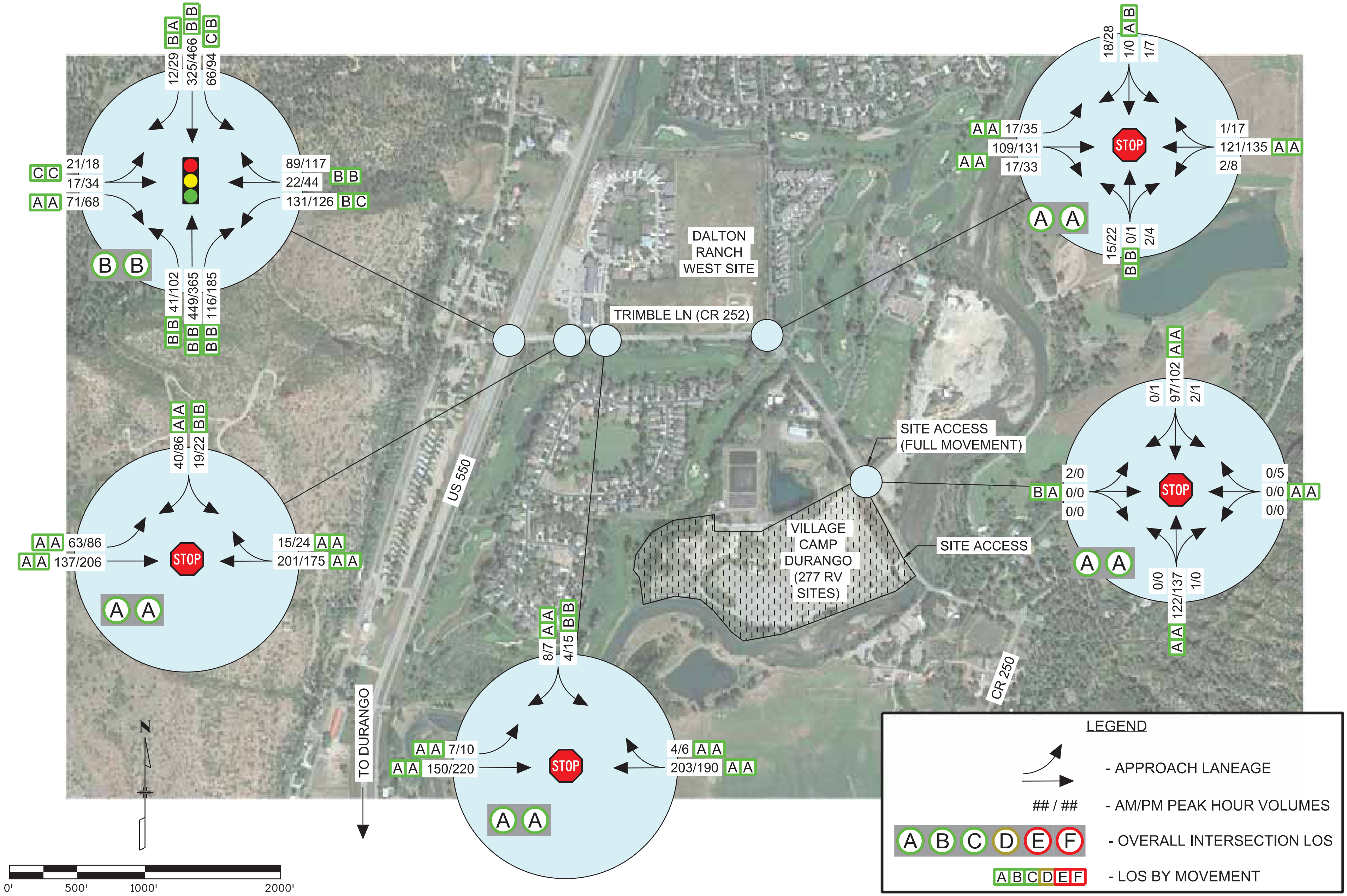
Scale	1" = 1000'	Date	11/08/2024	Drawn By	MJW	Job #	ROBRE-168892	Figure	5



Traffic Impact Study - Village Camp Durango

2025 BACKGROUND + SITE GENERATED TRAFFIC CONDITIONS

Scale	1" = 1000'	Date	11/08/2024	Drawn By	MJW	Job #	ROBRE-168892	Figure	6

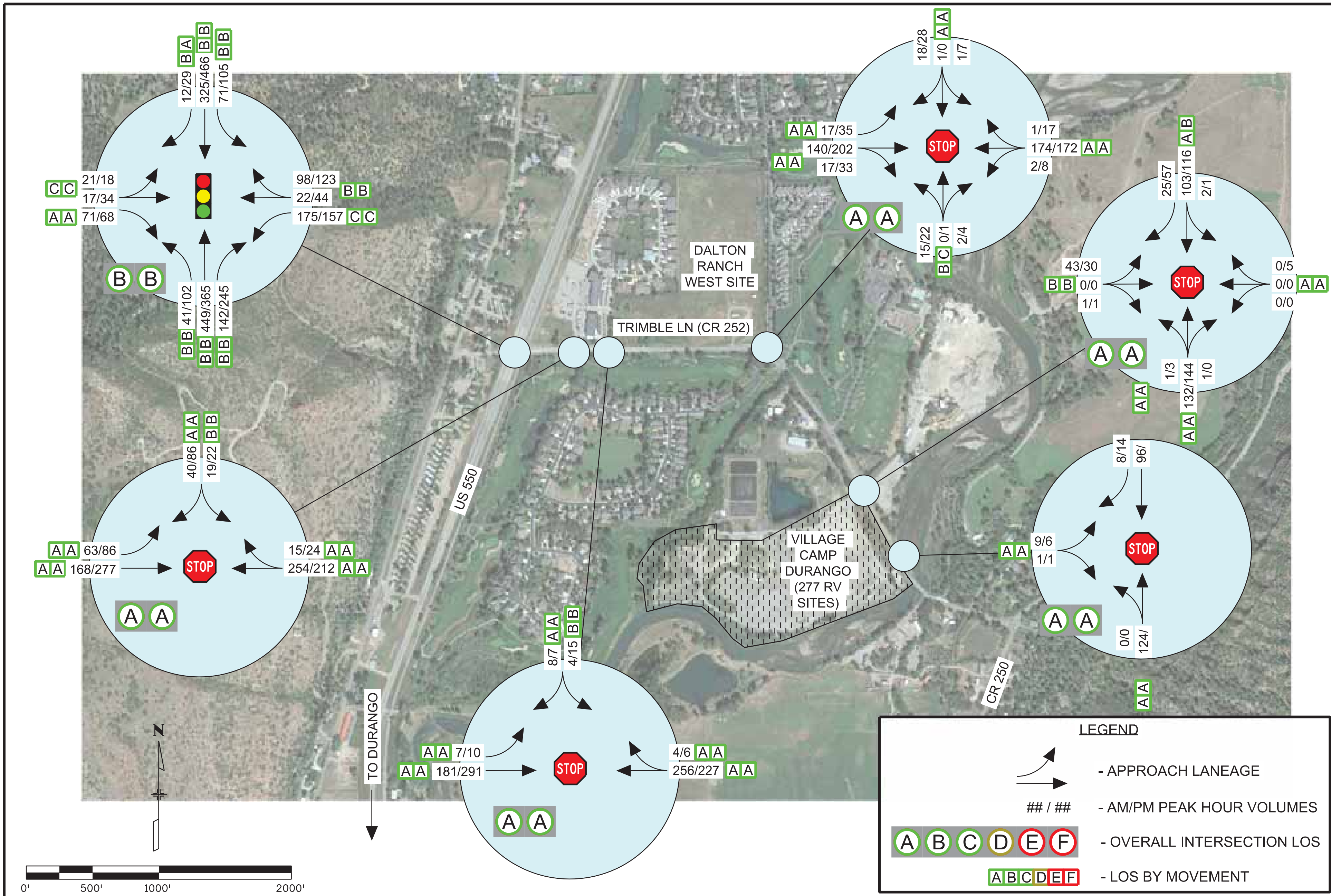


SEH

Traffic Impact Study - Village Camp Durango

2045 BACKGROUND CONDITIONS

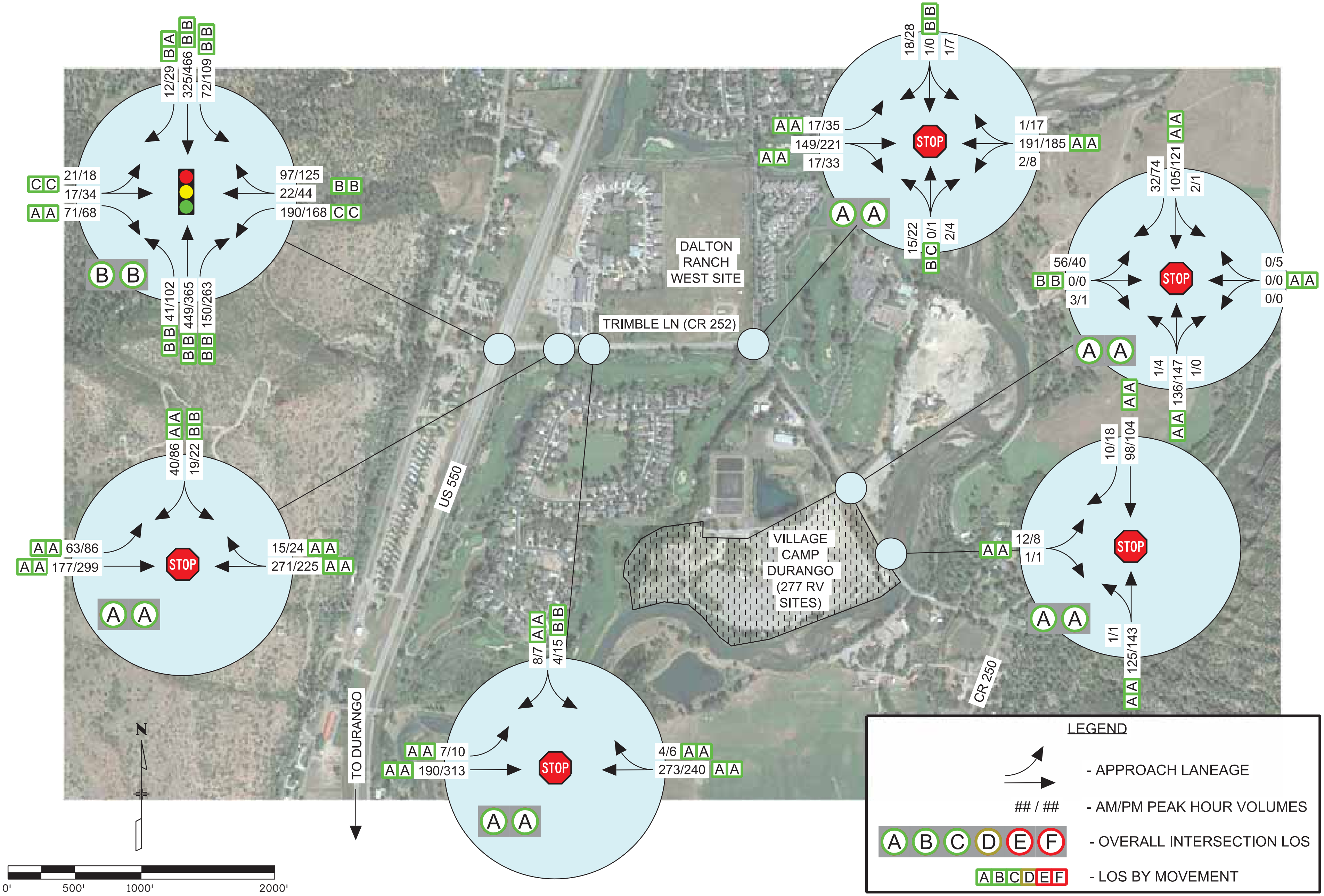
Scale	1" = 1000'	Date	11/08/2024	Drawn By	MJW	Job #	ROBRE-168892	Figure	7



Traffic Impact Study - Village Camp Durango

2045 BACKGROUND + SITE GENERATED TRAFFIC CONDITIONS

Scale	1" = 1000'	Date	11/08/2024	Drawn By	MJW	Job #	ROBRE-168892	Figure	8



Traffic Impact Study - Village Camp Durango

2045 BACKGROUND + SITE GENERATED TRAFFIC CONDITIONS - 2:1 PVE

Scale	1" = 1000'	Date	11/08/2024	Drawn By	MJW	Job #	ROBRE-168892	Figure	9

Appendix A

Traffic Counts – October, 2024

US 550 & CR 252 (Trimble Ln) Durango, CO
0 0
Tuesday, October 8, 2024

	Southbound 0						Westbound 0						Northbound 0						Eastbound 0						
Time	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	VEHICLE TOTAL
12:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
4:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
4:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
4:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
4:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
5:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
5:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
5:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
5:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
7:00 AM	0	5	39	0	0	*44*	0	4	0	6	0	*10*	0	8	53	2	0	*63*	0	6	3	15	0	*24*	**141**
7:15 AM	0	8	66	2	0	*76*	0	11	3	15	0	*29*	0	7	50	8	0	*65*	0	14	3	15	0	*32*	**202**
7:30 AM	0	13	135	8	0	*156*	0	29	1	15	0	*45*	0	10	54	7	0	*71*	0	8	4	20	0	*32*	**304**
7:45 AM	0	10	84	6	0	*100*	0	25	2	11	0	*38*	0	17	58	11	0	*86*	0	6	7	19	0	*32*	**256**
Hourly Total	0	36	324	16	0	*376*	0	69	6	47	0	*122*	0	42	215	28	0	*285*	0	34	17	69	0	*120*	**903**

US 550 & CR 252 (Trimble Ln) Durango, CO
0 0
Tuesday, October 8, 2024

	Southbound 0						Westbound 0						Northbound 0						Eastbound 0						
Time	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	**VEHICLE TOTAL**
8:00 AM	0	11	61	4	0	*76*	0	21	4	11	0	*36*	0	9	64	11	0	*84*	0	4	4	13	0	*21*	**217**
8:15 AM	0	7	70	0	0	*77*	0	20	7	12	0	*39*	0	3	127	27	0	*157*	0	7	2	14	0	*23*	**296**
8:30 AM	0	14	72	3	0	*89*	0	20	1	22	0	*43*	0	11	86	19	0	*116*	0	3	2	18	0	*23*	**271**
8:45 AM	0	17	73	3	0	*93*	0	20	6	10	0	*36*	0	11	104	31	0	*146*	0	3	6	14	0	*23*	**298**
Hourly Total	0	49	276	10	0	*335*	0	81	18	55	0	*154*	0	34	381	88	0	*503*	0	17	14	59	0	*90*	**1082**
9:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
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10:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**

US 550 & CR 252 (Trimble Ln) Durango, CO
0 0
Tuesday, October 8, 2024

	Southbound 0						Westbound 0						Northbound 0						Eastbound 0						
Time	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	VEHICLE TOTAL
4:00 PM	0	12	92	4	1	*108*	0	17	4	19	0	*40*	0	26	77	33	0	*136*	0	4	9	14	0	*27*	**311**
4:15 PM	0	11	96	7	0	*114*	0	14	13	20	0	*47*	0	22	69	35	0	*126*	0	6	8	16	0	*30*	**317**
4:30 PM	0	17	98	7	1	*122*	0	27	11	19	0	*57*	0	15	81	31	0	*127*	0	1	5	13	0	*19*	**325**
4:45 PM	0	18	109	6	1	*133*	0	16	7	17	0	*40*	0	21	83	26	0	*130*	0	4	6	13	0	*23*	**326**
Hourly Total	0	58	395	24	3	*477*	0	74	35	75	0	*184*	0	84	310	125	0	*519*	0	15	28	56	0	*99*	**1279**
5:00 PM	0	24	99	7	0	*130*	0	26	11	17	0	*54*	0	19	50	33	0	*102*	0	1	5	15	0	*21*	**307**
5:15 PM	0	17	95	7	0	*119*	0	20	11	11	0	*42*	0	22	71	27	0	*120*	0	5	8	26	0	*39*	**320**
5:30 PM	0	12	105	2	0	*119*	0	19	9	14	0	*42*	0	28	67	20	0	*115*	0	3	7	11	0	*21*	**297**
5:45 PM	0	6	79	3	0	*88*	0	11	12	15	0	*38*	0	23	79	23	0	*125*	0	3	3	20	0	*26*	**277**
Hourly Total	0	59	378	19	0	*456*	0	76	43	57	0	*176*	0	92	267	103	0	*462*	0	12	23	72	0	*107*	**1201**
6:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
7:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
7:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
7:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
7:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
8:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
8:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
8:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
8:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
DAILY TOTAL	**0**	**202**	**1373**	**69**	**3**	***1644***	**0**	**300**	**102**	**234**	**0**	***636***	**0**	**252**	**1173**	**344**	**0**	***1769***	**0**	**78**	**82**	**256**	**0**	***416***	**4465**
Cars	0	197	1346	68	0	*1611*	0	291	101	234	0	*626*	0	249	1139	338	0	*1726*	0	76	82	256	0	*414*	**4377**
Heavy Vehicles	0	5	27	1	3	*33*	0	9	1	0	0	*10*	0	3	34	6	0	*43*	0	2	0	0	0	*2*	**88**
Heavy Vehicle %	0.00%	2.48%	1.97%	1.45%	100.00%	*2.01%*	0.00%	3.00%	0.98%	0.00%	0.00%	*1.57%*	0.00%	1.19%	2.90%	1.74%	0.00%	*2.43%*	0.00%	2.56%	0.00%	0.00%	0.00%	*0.48%*	**1.97%**

US 550 & CR 252 (Trimble Ln) Durango, CO
0 0
Tuesday, October 8, 2024

AM Peak Hour

Time	Southbound U Turns	Southbound Left Turns	Southbound Straight Through	Southbound Right Turns	Southbound Crosswalk Crossings	Southbound *Vehicle Approach Total*	Westbound U Turns	Westbound Left Turns	Westbound Straight Through	Westbound Right Turns	Westbound Crosswalk Crossings	Westbound *Vehicle Approach Total*	Northbound U Turns	Northbound Left Turns	Northbound Straight Through	Northbound Right Turns	Northbound Crosswalk Crossings	Northbound *Vehicle Approach Total*	Eastbound U Turns	Eastbound Left Turns	Eastbound Straight Through	Eastbound Right Turns	Eastbound Crosswalk Crossings	Eastbound *Vehicle Approach Total*	VEHICLE TOTAL
8:00 AM	0	11	61	4	0	*76*	0	21	4	11	0	*36*	0	9	64	11	0	*84*	0	4	4	13	0	*21*	**217**
8:15 AM	0	7	70	0	0	*77*	0	20	7	12	0	*39*	0	3	127	27	0	*157*	0	7	2	14	0	*23*	**296**
8:30 AM	0	14	72	3	0	*89*	0	20	1	22	0	*43*	0	11	86	19	0	*116*	0	3	2	18	0	*23*	**271**
8:45 AM	0	17	73	3	0	*93*	0	20	6	10	0	*36*	0	11	104	31	0	*146*	0	3	6	14	0	*23*	**298**
Peak Hour Total	0	49	276	10	0	*335*	0	81	18	55	0	*154*	0	34	381	88	0	*503*	0	17	14	59	0	*90*	**1082**
PHF	0.000	0.721	0.945	0.625	0.000	*0.901*	0.000	0.964	0.643	0.625	0.000	*0.895*	0.000	0.773	0.750	0.710	0.000	*0.801*	0.000	0.607	0.583	0.819	0.000	*0.978*	**0.908**

PM Peak Hour

Time	Southbound U Turns	Southbound Left Turns	Southbound Straight Through	Southbound Right Turns	Southbound Crosswalk Crossings	Southbound *Vehicle Approach Total*	Westbound U Turns	Westbound Left Turns	Westbound Straight Through	Westbound Right Turns	Westbound Crosswalk Crossings	Westbound *Vehicle Approach Total*	Northbound U Turns	Northbound Left Turns	Northbound Straight Through	Northbound Right Turns	Northbound Crosswalk Crossings	Northbound *Vehicle Approach Total*	Eastbound U Turns	Eastbound Left Turns	Eastbound Straight Through	Eastbound Right Turns	Eastbound Crosswalk Crossings	Eastbound *Vehicle Approach Total*	VEHICLE TOTAL
4:00 PM	0	12	92	4	1	*108*	0	17	4	19	0	*40*	0	26	77	33	0	*136*	0	4	9	14	0	*27*	**311**
4:15 PM	0	11	96	7	0	*114*	0	14	13	20	0	*47*	0	22	69	35	0	*126*	0	6	8	16	0	*30*	**317**
4:30 PM	0	17	98	7	1	*122*	0	27	11	19	0	*57*	0	15	81	31	0	*127*	0	1	5	13	0	*19*	**325**
4:45 PM	0	18	109	6	1	*133*	0	16	7	17	0	*40*	0	21	83	26	0	*130*	0	4	6	13	0	*23*	**326**
Peak Hour Total	0	58	395	24	3	*477*	0	74	35	75	0	*184*	0	84	310	125	0	*519*	0	15	28	56	0	*99*	**1279**
PHF	0.000	0.806	0.906	0.857	0.750	*0.897*	0.000	0.685	0.673	0.938	0.000	*0.807*	0.000	0.808	0.934	0.893	0.000	*0.954*	0.000	0.625	0.778	0.875	0.000	*0.825*	**0.981**

Daily Volumes

Southbound

Total Vehicles On Leg	3129				
Vehicles Entering Intersection	1644	Vehicles Exiting Intersection	1485		
Cars	68	1346	197	0	0
Heavy	1	27	5	0	3
Total	**69**	**1373**	**202**	**0**	**3**

Eastbound

Total Vehicles on Leg 839

Vehicles Entering Intersection 416

Vehicles Exiting Intersection 423

Cars	Heavy	Total
0	0	**0**
0	0	**0**
76	2	**78**
82	0	**82**
256	0	**256**

Westbound

Cars	Heavy	Total
234	0	**234**
101	1	**102**
291	9	**300**
0	0	**0**
0	0	**0**

Vehicles Entering Intersection 636

Vehicles Exiting Intersection 628

Total Vehicles on Leg 1264

Northbound

Cars	0	0	249	1139	338
Heavy	0	0	3	34	6
Total	**0**	**0**	**252**	**1173**	**344**
Vehicles Entering Intersection	1769	Vehicles Exiting Intersection	1929		
Total Vehicles On Leg	3698				

CR 252 & Trimble Commercial Access
0 0
Tuesday, October 8, 2024

Time	Southbound 0						Westbound 0						Northbound 0						Eastbound 0						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	
12:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
4:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
4:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
4:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
4:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
5:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
5:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
5:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
5:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
7:00 AM	0	0	0	2	0	*2*	0	0	10	1	0	*11*	0	0	0	0	0	*0*	0	3	7	0	0	*10*	**23**
7:15 AM	0	0	0	3	0	*3*	0	0	12	1	0	*13*	0	0	0	0	0	*0*	0	2	19	0	0	*21*	**37**
7:30 AM	0	1	0	8	0	*9*	0	0	31	2	0	*33*	0	0	0	0	0	*0*	0	11	14	0	0	*25*	**67**
7:45 AM	0	1	0	12	0	*13*	0	0	37	2	0	*39*	0	0	0	0	0	*0*	0	7	22	0	0	*29*	**81**
Hourly Total	0	2	0	25	0	*27*	0	0	90	6	0	*96*	0	0	0	0	0	*0*	0	23	62	0	0	*85*	**208**

CR 252 & Trimble Commercial Access

0 0

Tuesday, October 8, 2024

	Southbound 0						Westbound 0						Northbound 0						Eastbound 0						
Time	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	**VEHICLE TOTAL**
8:00 AM	0	6	0	4	0	*10*	0	0	25	3	0	*28*	0	0	0	0	0	*0*	0	9	24	0	0	*33*	**71**
8:15 AM	0	4	0	5	0	*9*	0	0	33	4	0	*37*	0	0	0	0	0	*0*	0	7	20	0	0	*27*	**73**
8:30 AM	0	3	0	18	0	*21*	0	0	33	5	0	*38*	0	0	0	0	0	*0*	0	15	25	0	0	*40*	**99**
8:45 AM	0	3	0	6	0	*9*	0	0	30	0	0	*30*	0	0	0	0	0	*0*	0	15	22	0	0	*37*	**76**
Hourly Total	0	16	0	33	0	*49*	0	0	121	12	0	*133*	0	0	0	0	0	*0*	0	46	91	0	0	*137*	**319**
9:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**

CR 252 & Trimble Commercial Access
0 0
Tuesday, October 8, 2024

	Southbound 0						Westbound 0						Northbound 0						Eastbound 0						
Time	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	VEHICLE TOTAL
4:00 PM	0	3	0	11	0	*14*	0	0	27	3	0	*30*	0	0	0	0	0	*0*	0	12	31	0	0	*43*	**87**
4:15 PM	0	3	0	20	0	*23*	0	0	33	6	0	*39*	0	0	0	0	0	*0*	0	21	34	0	0	*55*	**117**
4:30 PM	0	4	0	16	0	*20*	0	0	25	4	0	*29*	0	0	0	0	0	*0*	0	14	43	0	0	*57*	**106**
4:45 PM	0	6	0	16	0	*22*	0	0	38	5	0	*43*	0	0	0	0	0	*0*	0	17	32	0	0	*49*	**114**
Hourly Total	0	16	0	63	0	*79*	0	0	123	18	0	*141*	0	0	0	0	0	*0*	0	64	140	0	0	*204*	**424**
5:00 PM	0	5	0	19	0	*24*	0	0	35	5	0	*40*	0	0	0	0	0	*0*	0	19	37	0	0	*56*	**120**
5:15 PM	0	8	0	15	0	*23*	0	0	22	4	0	*26*	0	0	0	0	0	*0*	0	16	39	0	0	*55*	**104**
5:30 PM	0	6	0	19	0	*25*	0	0	28	3	0	*31*	0	0	0	0	0	*0*	0	24	31	0	0	*55*	**111**
5:45 PM	1	5	0	15	0	*21*	0	0	28	5	0	*33*	0	0	0	0	0	*0*	0	14	23	0	0	*37*	**91**
Hourly Total	1	24	0	68	0	*93*	0	0	113	17	0	*130*	0	0	0	0	0	*0*	0	73	130	0	0	*203*	**426**
6:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
7:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
7:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
7:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
7:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
8:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
8:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
8:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
8:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
DAILY TOTAL	**1**	**58**	**0**	**189**	**0**	***248***	**0**	**0**	**447**	**53**	**0**	***500***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**206**	**423**	**0**	**0**	***629***	**1377**
Cars	1	58	0	187	0	*246*	0	0	439	53	0	*492*	0	0	0	0	0	*0*	0	204	413	0	0	*617*	**1355**
Heavy Vehicles	0	0	0	2	0	*2*	0	0	8	0	0	*8*	0	0	0	0	0	*0*	0	2	10	0	0	*12*	**22**
Heavy Vehicle %	0.00%	0.00%	0.00%	1.06%	0.00%	*0.81%*	0.00%	0.00%	1.79%	0.00%	0.00%	*1.60%*	0.00%	0.00%	0.00%	0.00%	0.00%	*0.00%*	0.00%	0.97%	2.36%	0.00%	0.00%	*1.91%*	**1.60%**

CR 252 & Trimble Commercial Access
0 0
Tuesday, October 8, 2024

AM Peak Hour

	Southbound						Westbound						Northbound						Eastbound						
Time	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	VEHICLE TOTAL
7:45 AM	0	1	0	12	0	*13*	0	0	37	2	0	*39*	0	0	0	0	0	*0*	0	7	22	0	0	*29*	**81**
8:00 AM	0	6	0	4	0	*10*	0	0	25	3	0	*28*	0	0	0	0	0	*0*	0	9	24	0	0	*33*	**71**
8:15 AM	0	4	0	5	0	*9*	0	0	33	4	0	*37*	0	0	0	0	0	*0*	0	7	20	0	0	*27*	**73**
8:30 AM	0	3	0	18	0	*21*	0	0	33	5	0	*38*	0	0	0	0	0	*0*	0	15	25	0	0	*40*	**99**
Peak Hour Total	0	14	0	39	0	*53*	0	0	128	14	0	*142*	0	0	0	0	0	*0*	0	38	91	0	0	*129*	**324**
PHF	0.000	0.583	0.000	0.542	0.000	*0.631*	0.000	0.000	0.865	0.700	0.000	*0.910*	0.000	0.000	0.000	0.000	0.000	*0.000*	0.000	0.633	0.910	0.000	0.000	*0.806*	**0.818**

PM Peak Hour

	Southbound						Westbound						Northbound						Eastbound						
Time	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	VEHICLE TOTAL
4:15 PM	0	3	0	20	0	*23*	0	0	33	6	0	*39*	0	0	0	0	0	*0*	0	21	34	0	0	*55*	**117**
4:30 PM	0	4	0	16	0	*20*	0	0	25	4	0	*29*	0	0	0	0	0	*0*	0	14	43	0	0	*57*	**106**
4:45 PM	0	6	0	16	0	*22*	0	0	38	5	0	*43*	0	0	0	0	0	*0*	0	17	32	0	0	*49*	**114**
5:00 PM	0	5	0	19	0	*24*	0	0	35	5	0	*40*	0	0	0	0	0	*0*	0	19	37	0	0	*56*	**120**
Peak Hour Total	0	18	0	71	0	*89*	0	0	131	20	0	*151*	0	0	0	0	0	*0*	0	71	146	0	0	*217*	**457**
PHF	0.000	0.750	0.000	0.888	0.000	*0.927*	0.000	0.000	0.862	0.833	0.000	*0.878*	0.000	0.000	0.000	0.000	0.000	*0.000*	0.000	0.845	0.849	0.000	0.000	*0.952*	**0.952**

Daily Volumes

Southbound

Total Vehicles On Leg	508
Vehicles Entering Intersection 248	Vehicles Exiting Intersection 260

Cars	187	0	58	1	0
Heavy	2	0	0	0	0
Total	**189**	**0**	**58**	**1**	**0**

Eastbound

Total Vehicles on Leg 1265	Vehicles Entering Intersection 629 / Vehicles Exiting Intersection 636

Cars	Heavy	Total
0	0	**0**
0	0	**0**
204	2	**206**
413	10	**423**
0	0	**0**

Westbound

Cars	Heavy	Total
53	0	**53**
439	8	**447**
0	0	**0**
0	0	**0**
0	0	**0**

Vehicles Entering Intersection 500 / Vehicles Exiting Intersection 481	Total Vehicles on Leg 981

Northbound

Cars	0	0	0	0	0
Heavy	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**

Vehicles Entering Intersection 0	Vehicles Exiting Intersection 0
Total Vehicles On Leg	0

CR 252 & Trimble Access 2
0 0
Tuesday, October 8, 2024

Time	Southbound 0						Westbound 0						Northbound 0						Eastbound 0						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 AM	0	0	0	1	0	1	0	0	8	0	0	8	0	0	0	0	0	0	0	0	13	0	0	13	**22**
7:15 AM	0	0	0	3	1	3	0	0	25	0	0	25	0	0	0	0	0	0	0	1	19	0	0	20	**48**
7:30 AM	0	0	0	1	0	1	0	0	32	1	0	33	0	0	0	0	0	0	0	0	16	0	0	16	**50**
7:45 AM	0	0	0	3	0	3	0	0	32	1	0	33	0	0	0	0	0	0	0	1	25	0	0	26	**62**
Hourly Total	0	0	0	8	1	8	0	0	97	2	0	99	0	0	0	0	0	0	0	2	73	0	0	75	**182**

CR 252 & Trimble Access 2

0 0

Tuesday, October 8, 2024

	Southbound 0						Westbound 0						Northbound 0						Eastbound 0						
Time	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	VEHICLE TOTAL
8:00 AM	0	1	0	2	0	*3*	0	0	30	0	0	*30*	0	0	0	0	0	*0*	0	1	27	0	0	*28*	**61**
8:15 AM	0	1	0	1	0	*2*	0	0	37	1	0	*38*	0	0	0	0	0	*0*	0	1	22	0	0	*23*	**63**
8:30 AM	0	1	0	1	0	*2*	0	0	29	1	0	*30*	0	0	0	0	0	*0*	0	3	28	0	0	*31*	**63**
8:45 AM	0	0	0	3	0	*3*	0	0	26	1	0	*27*	0	0	0	0	0	*0*	0	1	33	0	0	*34*	**64**
Hourly Total	0	3	0	7	0	*10*	0	0	122	3	0	*125*	0	0	0	0	0	*0*	0	6	110	0	0	*116*	**251**
9:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**

CR 252 & Trimble Access 2
0 0
Tuesday, October 8, 2024

	Southbound 0						Westbound 0						Northbound 0						Eastbound 0						
Time	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	VEHICLE TOTAL
4:00 PM	0	0	0	0	0	*0*	0	0	28	1	0	*29*	0	0	0	0	0	*0*	0	3	39	0	0	*42*	**71**
4:15 PM	0	0	0	0	0	*0*	0	0	41	3	0	*44*	0	0	0	0	0	*0*	0	3	34	0	0	*37*	**81**
4:30 PM	0	3	0	3	0	*6*	0	0	40	0	0	*40*	0	0	0	0	0	*0*	0	2	41	0	0	*43*	**89**
4:45 PM	0	5	0	3	0	*8*	0	0	27	1	0	*28*	0	0	0	0	0	*0*	0	2	34	0	0	*36*	**72**
Hourly Total	0	8	0	6	0	*14*	0	0	136	5	0	*141*	0	0	0	0	0	*0*	0	10	148	0	0	*158*	**313**
5:00 PM	0	4	0	0	0	*4*	0	0	36	1	0	*37*	0	0	0	0	0	*0*	0	1	49	0	0	*50*	**91**
5:15 PM	0	1	0	2	0	*3*	0	0	30	0	0	*30*	0	0	0	0	0	*0*	0	1	40	0	0	*41*	**74**
5:30 PM	0	2	0	1	0	*3*	0	0	27	2	0	*29*	0	0	0	0	0	*0*	0	2	31	0	0	*33*	**65**
5:45 PM	0	1	0	0	0	*1*	0	0	31	0	0	*31*	0	0	0	0	0	*0*	0	0	23	0	0	*23*	**55**
Hourly Total	0	8	0	3	0	*11*	0	0	124	3	0	*127*	0	0	0	0	0	*0*	0	4	143	0	0	*147*	**285**
6:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
7:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
7:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
7:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
7:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
8:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
8:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
8:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
8:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
DAILY TOTAL	**0**	**19**	**0**	**24**	**1**	***43***	**0**	**0**	**479**	**13**	**0**	***492***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**22**	**474**	**0**	**0**	***496***	**1031**
Cars	0	18	0	23	1	*41*	0	0	472	12	0	*484*	0	0	0	0	0	*0*	0	22	462	0	0	*484*	**1009**
Heavy Vehicles	0	1	0	1	0	*2*	0	0	7	1	0	*8*	0	0	0	0	0	*0*	0	0	12	0	0	*12*	**22**
Heavy Vehicle %	0.00%	5.26%	0.00%	4.17%	0.00%	*4.65%*	0.00%	0.00%	1.46%	7.69%	0.00%	*1.63%*	0.00%	0.00%	0.00%	0.00%	0.00%	*0.00%*	0.00%	0.00%	2.53%	0.00%	0.00%	*2.42%*	**2.13%**

CR 252 & Trimble Access 2
0 0
Tuesday, October 8, 2024

AM Peak Hour

Time	Southbound						Westbound						Northbound						Eastbound						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	
8:00 AM	0	1	0	2	0	*3*	0	0	30	0	0	*30*	0	0	0	0	0	*0*	0	1	27	0	0	*28*	**61**
8:15 AM	0	1	0	1	0	*2*	0	0	37	1	0	*38*	0	0	0	0	0	*0*	0	1	22	0	0	*23*	**63**
8:30 AM	0	1	0	1	0	*2*	0	0	29	1	0	*30*	0	0	0	0	0	*0*	0	3	28	0	0	*31*	**63**
8:45 AM	0	0	0	3	0	*3*	0	0	26	1	0	*27*	0	0	0	0	0	*0*	0	1	33	0	0	*34*	**64**
Peak Hour Total	0	3	0	7	0	*10*	0	0	122	3	0	*125*	0	0	0	0	0	*0*	0	6	110	0	0	*116*	**251**
PHF	0.000	0.750	0.000	0.583	0.000	*0.833*	0.000	0.000	0.824	0.750	0.000	*0.822*	0.000	0.000	0.000	0.000	0.000	*0.000*	0.000	0.500	0.833	0.000	0.000	*0.853*	**0.980**

PM Peak Hour

Time	Southbound						Westbound						Northbound						Eastbound						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	
4:15 PM	0	0	0	0	0	*0*	0	0	41	3	0	*44*	0	0	0	0	0	*0*	0	3	34	0	0	*37*	**81**
4:30 PM	0	3	0	3	0	*6*	0	0	40	0	0	*40*	0	0	0	0	0	*0*	0	2	41	0	0	*43*	**89**
4:45 PM	0	5	0	3	0	*8*	0	0	27	1	0	*28*	0	0	0	0	0	*0*	0	2	34	0	0	*36*	**72**
5:00 PM	0	4	0	0	0	*4*	0	0	36	1	0	*37*	0	0	0	0	0	*0*	0	1	49	0	0	*50*	**91**
Peak Hour Total	0	12	0	6	0	*18*	0	0	144	5	0	*149*	0	0	0	0	0	*0*	0	8	158	0	0	*166*	**333**
PHF	0.000	0.600	0.000	0.500	0.000	*0.563*	0.000	0.000	0.878	0.417	0.000	*0.847*	0.000	0.000	0.000	0.000	0.000	*0.000*	0.000	0.667	0.806	0.000	0.000	*0.830*	**0.915**

Daily Volumes

Southbound

Total Vehicles On Leg	78
Vehicles Entering Intersection 43	Vehicles Exiting Intersection 35

Cars	23	0	18	0	1
Heavy	1	0	1	0	0
Total	**24**	**0**	**19**	**0**	**1**

Eastbound

Total Vehicles on Leg 999

Vehicles Entering Intersection 496

Vehicles Exiting Intersection 503

Cars	Heavy	Total
0	0	**0**
0	0	**0**
22	0	**22**
462	12	**474**
0	0	**0**

Westbound

Cars	Heavy	Total
12	1	**13**
472	7	**479**
0	0	**0**
0	0	**0**
0	0	**0**

Vehicles Entering Intersection 492

Vehicles Exiting Intersection 493

Total Vehicles on Leg 985

Northbound

Cars	0	0	0	0	0
Heavy	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**

Vehicles Entering Intersection 0	Vehicles Exiting Intersection 0
Total Vehicles On Leg	0

CR 252 (Trimble Ln) & Dalton Ranch Rd. Durango, CO

0 0

Thursday, October 10, 2024

Time	Southbound 0 U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	Westbound 0 U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	Northbound 0 U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	Eastbound 0 U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	VEHICLE TOTAL
12:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
4:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
4:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
4:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
4:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
5:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
5:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
5:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
5:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:00 AM	0	0	0	2	0	*2*	0	0	2	0	0	*2*	0	0	0	0	0	*0*	0	1	4	0	0	*5*	**9**
6:15 AM	0	0	0	1	0	*1*	0	0	0	0	0	*0*	0	2	0	0	0	*2*	0	0	3	0	0	*3*	**6**
6:30 AM	0	1	0	1	0	*2*	0	0	5	0	0	*5*	0	2	0	0	0	*2*	0	0	4	1	0	*5*	**14**
6:45 AM	0	0	0	2	0	*2*	0	0	7	0	0	*7*	0	0	0	1	0	*1*	0	0	12	0	0	*12*	**22**
Hourly Total	0	1	0	6	0	*7*	0	0	14	0	0	*14*	0	4	0	1	0	*5*	0	1	23	1	0	*25*	**51**
7:00 AM	0	1	0	2	0	*3*	0	0	10	0	0	*10*	0	1	0	0	0	*1*	0	0	5	0	0	*5*	**19**
7:15 AM	0	0	0	6	0	*6*	0	0	14	0	1	*14*	0	3	0	0	0	*3*	0	0	12	1	0	*13*	**36**
7:30 AM	0	1	0	10	0	*11*	0	1	17	1	0	*19*	0	6	0	0	0	*6*	0	0	18	0	0	*18*	**54**
7:45 AM	0	2	0	7	0	*9*	0	1	16	0	0	*17*	0	7	0	1	0	*8*	0	3	16	3	0	*22*	**56**
Hourly Total	0	4	0	25	0	*29*	0	2	57	1	1	*60*	0	17	0	1	0	*18*	0	3	51	4	0	*58*	**165**

CR 252 (Trimble Ln) & Dalton Ranch Rd. Durango, CO

0 0

Thursday, October 10, 2024

	Southbound 0						Westbound 0						Northbound 0						Eastbound 0						
Time	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	VEHICLE TOTAL
8:00 AM	0	0	1	1	0	*2*	0	0	22	1	1	*23*	0	5	0	1	0	*6*	0	1	21	4	0	*26*	**57**
8:15 AM	0	0	0	3	0	*3*	0	2	24	0	0	*26*	0	2	0	0	0	*2*	0	5	11	5	0	*21*	**52**
8:30 AM	0	0	0	2	0	*2*	0	0	28	0	0	*28*	0	3	0	1	0	*4*	0	1	24	3	0	*28*	**62**
8:45 AM	0	1	0	9	0	*10*	1	0	25	0	0	*26*	0	2	0	0	0	*2*	0	7	32	2	0	*41*	**79**
Hourly Total	0	1	1	15	0	*17*	1	2	99	1	1	*103*	0	12	0	2	0	*14*	0	14	88	14	0	*116*	**250**
9:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**

CR 252 (Trimble Ln) & Dalton Ranch Rd. Durango, CO
0 0
Thursday, October 10, 2024

	Southbound 0						Westbound 0						Northbound 0						Eastbound 0						
Time	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	VEHICLE TOTAL
4:00 PM	0	2	0	7	0	*9*	0	3	26	1	0	*30*	0	4	1	2	0	*7*	0	5	28	3	0	*36*	**82**
4:15 PM	0	1	0	3	0	*4*	0	0	31	11	0	*42*	0	5	0	0	0	*5*	0	9	38	9	1	*56*	**107**
4:30 PM	0	0	0	7	2	*7*	0	1	18	1	0	*20*	0	6	0	0	0	*6*	0	6	21	11	0	*38*	**71**
4:45 PM	0	3	0	6	0	*9*	0	3	34	1	1	*38*	0	3	0	1	0	*4*	0	9	20	4	2	*33*	**84**
Hourly Total	0	6	0	23	2	29	0	7	109	14	1	130	0	18	1	3	0	22	0	29	107	27	3	163	**344**
5:00 PM	0	2	0	2	0	*4*	0	2	28	1	0	*31*	0	2	0	1	0	*3*	0	5	29	5	2	*39*	**77**
5:15 PM	0	3	0	3	0	*6*	0	0	23	1	0	*24*	0	0	3	2	0	*5*	0	9	22	8	2	*39*	**74**
5:30 PM	0	1	0	7	0	*8*	0	0	22	4	0	*26*	0	1	0	1	0	*2*	0	5	15	1	2	*21*	**57**
5:45 PM	0	4	0	4	0	*8*	0	1	26	2	0	*29*	0	1	0	4	0	*5*	0	6	16	6	0	*28*	**70**
Hourly Total	0	10	0	16	0	26	0	3	99	8	0	110	0	4	3	8	0	15	0	25	82	20	6	127	**278**
6:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
7:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
7:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
7:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
8:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
8:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
8:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
DAILY TOTAL	**0**	**22**	**1**	**85**	**2**	***108***	**1**	**14**	**378**	**24**	**3**	***417***	**0**	**55**	**4**	**15**	**0**	***74***	**0**	**72**	**351**	**66**	**9**	***489***	**1088**
Cars	0	22	1	85	2	*108*	1	13	367	24	2	*405*	0	55	4	15	0	*74*	0	72	344	65	9	*481*	**1068**
Heavy Vehicles	0	0	0	0	0	*0*	0	1	11	0	1	*12*	0	0	0	0	0	*0*	0	0	7	1	0	*8*	**20**
Heavy Vehicle %	0.00%	0.00%	0.00%	0.00%	0.00%	*0.00%*	0.00%	7.14%	2.91%	0.00%	33.33%	*2.88%*	0.00%	0.00%	0.00%	0.00%	0.00%	*0.00%*	0.00%	0.00%	1.99%	1.52%	0.00%	*1.64%*	**1.84%**

CR 252 (Trimble Ln) & Dalton Ranch Rd. Durango, CO
0 0
Thursday, October 10, 2024

AM Peak Hour

	Southbound						Westbound						Northbound						Eastbound						
Time	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	VEHICLE TOTAL
8:00 AM	0	0	1	1	0	*2*	0	0	22	1	1	*23*	0	5	0	1	0	*6*	0	1	21	4	0	*26*	**57**
8:15 AM	0	0	0	3	0	*3*	0	2	24	0	0	*26*	0	2	0	0	0	*2*	0	5	11	5	0	*21*	**52**
8:30 AM	0	0	0	2	0	*2*	0	0	28	0	0	*28*	0	3	0	1	0	*4*	0	1	24	3	0	*28*	**62**
8:45 AM	0	1	0	9	0	*10*	1	0	25	0	0	*26*	0	2	0	0	0	*2*	0	7	32	2	0	*41*	**79**
Peak Hour Total	0	1	1	15	0	*17*	1	2	99	1	1	*103*	0	12	0	2	0	*14*	0	14	88	14	0	*116*	**250**
PHF	0.000	0.250	0.250	0.417	0.000	*0.425*	0.250	0.250	0.884	0.250	0.250	*0.920*	0.000	0.600	0.000	0.500	0.000	*0.583*	0.000	0.500	0.688	0.700	0.000	*0.707*	**0.791**

PM Peak Hour

	Southbound						Westbound						Northbound						Eastbound						
Time	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	VEHICLE TOTAL
4:00 PM	0	2	0	7	0	*9*	0	3	26	1	0	*30*	0	4	1	2	0	*7*	0	5	28	3	0	*36*	**82**
4:15 PM	0	1	0	3	0	*4*	0	0	31	11	0	*42*	0	5	0	0	0	*5*	0	9	38	9	1	*56*	**107**
4:30 PM	0	0	0	7	2	*7*	0	1	18	1	0	*20*	0	6	0	0	0	*6*	0	6	21	11	0	*38*	**71**
4:45 PM	0	3	0	6	0	*9*	0	3	34	1	1	*38*	0	3	0	1	0	*4*	0	9	20	4	2	*33*	**84**
Peak Hour Total	0	6	0	23	2	*29*	0	7	109	14	1	*130*	0	18	1	3	0	*22*	0	29	107	27	3	*163*	**344**
PHF	0.000	0.500	0.000	0.821	0.250	*0.806*	0.000	0.583	0.801	0.318	0.250	*0.774*	0.000	0.750	0.250	0.375	0.000	*0.786*	0.000	0.806	0.704	0.614	0.375	*0.728*	**0.804**

Daily Volumes

Southbound

Total Vehicles On Leg	208				
Vehicles Entering Intersection 108	Vehicles Exiting Intersection 100				
Cars	85	1	22	0	2
Heavy	0	0	0	0	0
Total	**85**	**1**	**22**	**0**	**2**

Eastbound

Total Vehicles on Leg 1007

Vehicles Entering Intersection 489

Vehicles Exiting Intersection 518

Cars	Heavy	Total
9	0	**9**
0	0	**0**
72	0	**72**
344	7	**351**
65	1	**66**

Westbound

Total Vehicles on Leg 806

Vehicles Entering Intersection 417

Vehicles Exiting Intersection 389

Cars	Heavy	Total
24	0	**24**
367	11	**378**
13	1	**14**
1	0	**1**
2	1	**3**

Northbound

Cars	0	0	55	4	15
Heavy	0	0	0	0	0
Total	**0**	**0**	**55**	**4**	**15**
Vehicles Entering Intersection 74	Vehicles Exiting Intersection 81				
Total Vehicles On Leg	155				

CR 252 (Trimble Ln) and RV Site Access

0 0

Thursday, October 10, 2024

Time	Southbound 0						Westbound 0						Northbound 0						Eastbound 0						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	
12:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
4:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
4:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
4:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
4:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
5:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
5:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
5:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
5:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:00 AM	1	0	2	1	0	*4*	0	0	0	0	0	*0*	0	0	2	0	0	*2*	0	0	0	0	0	*0*	**6**
6:15 AM	0	0	2	0	0	*2*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**2**
6:30 AM	0	0	2	2	0	*4*	0	0	0	1	0	*1*	0	0	4	0	0	*4*	0	0	0	0	0	*0*	**9**
6:45 AM	0	1	5	3	0	*9*	0	0	0	0	0	*0*	0	0	5	0	0	*5*	0	0	0	0	0	*0*	**14**
Hourly Total	1	1	11	6	0	*19*	0	0	0	1	0	*1*	0	0	11	0	0	*11*	0	0	0	0	0	*0*	**31**
7:00 AM	0	1	4	1	0	*6*	0	0	0	1	0	*1*	0	0	9	0	0	*9*	0	1	0	0	0	*1*	**17**
7:15 AM	0	0	12	0	0	*12*	0	0	0	0	0	*0*	0	0	13	0	0	*13*	0	0	0	0	0	*0*	**25**
7:30 AM	0	0	14	0	0	*14*	0	0	0	0	0	*0*	0	0	20	0	0	*20*	0	1	0	0	0	*1*	**35**
7:45 AM	0	0	15	0	0	*15*	0	0	0	0	0	*0*	0	0	19	0	0	*19*	0	0	0	0	0	*0*	**34**
Hourly Total	0	1	45	1	0	*47*	0	0	0	1	0	*1*	0	0	61	0	0	*61*	0	2	0	0	0	*2*	**111**

CR 252 (Trimble Ln) and RV Site Access
0 0
Thursday, October 10, 2024

	Southbound 0						Westbound 0						Northbound 0						Eastbound 0						
Time	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	VEHICLE TOTAL
8:00 AM	0	0	21	0	0	*21*	0	0	0	0	0	*0*	0	0	22	0	0	*22*	0	0	0	0	0	*0*	**43**
8:15 AM	0	1	9	0	0	*10*	0	0	0	0	0	*0*	0	0	27	0	0	*27*	0	0	0	0	0	*0*	**37**
8:30 AM	0	0	22	0	0	*22*	0	0	0	0	0	*0*	0	0	27	0	0	*27*	0	0	0	0	0	*0*	**49**
8:45 AM	0	1	26	0	0	*27*	0	0	0	0	0	*0*	0	0	24	1	0	*25*	0	2	0	0	0	*2*	**54**
Hourly Total	0	2	78	0	0	*80*	0	0	0	0	0	*0*	0	0	100	1	0	*101*	0	2	0	0	0	*2*	**183**
9:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:30 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
12:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
2:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
3:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**

CR 252 (Trimble Ln) and RV Site Access
0 0
Thursday, October 10, 2024

Time	Southbound 0						Westbound 0						Northbound 0						Eastbound 0						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	
4:00 PM	0	0	25	0	0	*25*	0	0	0	2	0	*2*	0	0	18	0	0	*18*	0	1	0	0	0	*1*	**46**
4:15 PM	0	0	18	0	0	*18*	0	0	0	3	0	*3*	0	0	33	0	0	*33*	0	0	0	0	0	*0*	**54**
4:30 PM	0	0	15	0	0	*15*	0	0	0	0	0	*0*	0	0	21	0	0	*21*	0	0	0	0	0	*0*	**36**
4:45 PM	0	1	23	0	0	*24*	0	0	0	0	0	*0*	0	0	37	0	0	*37*	0	0	0	0	0	*0*	**61**
Hourly Total	0	1	81	0	0	*82*	0	0	0	5	0	*5*	0	0	109	0	0	*109*	0	1	0	0	0	*1*	**197**
5:00 PM	0	0	27	1	0	*28*	0	0	0	1	0	*1*	0	0	20	0	0	*20*	0	0	0	0	0	*0*	**49**
5:15 PM	0	0	26	0	0	*26*	0	0	0	0	0	*0*	0	0	17	0	0	*17*	0	1	0	0	0	*1*	**44**
5:30 PM	0	0	13	0	0	*13*	0	0	0	0	0	*0*	0	0	17	0	0	*17*	0	0	0	0	0	*0*	**30**
5:45 PM	0	1	21	0	0	*22*	0	0	0	1	0	*1*	0	0	19	0	0	*19*	0	0	0	0	0	*0*	**42**
Hourly Total	0	1	87	1	0	*89*	0	0	0	2	0	*2*	0	0	73	0	0	*73*	0	1	0	0	0	*1*	**165**
6:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
7:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
7:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
7:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
7:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
8:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
8:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
8:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
8:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
DAILY TOTAL	**1**	**6**	**302**	**8**	**0**	***317***	**0**	**0**	**0**	**9**	**0**	***9***	**0**	**0**	**354**	**1**	**0**	***355***	**0**	**6**	**0**	**0**	**0**	***6***	**687**
Cars	1	4	297	8	0	*310*	0	0	0	7	0	*7*	0	0	345	1	0	*346*	0	6	0	0	0	*6*	**669**
Heavy Vehicles	0	2	5	0	0	*7*	0	0	0	2	0	*2*	0	0	9	0	0	*9*	0	0	0	0	0	*0*	**18**
Heavy Vehicle %	0.00%	33.33%	1.66%	0.00%	0.00%	*2.21%*	0.00%	0.00%	0.00%	22.22%	0.00%	*22.22%*	0.00%	0.00%	2.54%	0.00%	0.00%	*2.54%*	0.00%	0.00%	0.00%	0.00%	0.00%	*0.00%*	**2.62%**

CR 252 (Trimble Ln) and RV Site Access

0 0

Thursday, October 10, 2024

AM Peak Hour

Time	Southbound U Turns	Southbound Left Turns	Southbound Straight Through	Southbound Right Turns	Southbound Crosswalk Crossings	Southbound *Vehicle Approach Total*	Westbound U Turns	Westbound Left Turns	Westbound Straight Through	Westbound Right Turns	Westbound Crosswalk Crossings	Westbound *Vehicle Approach Total*	Northbound U Turns	Northbound Left Turns	Northbound Straight Through	Northbound Right Turns	Northbound Crosswalk Crossings	Northbound *Vehicle Approach Total*	Eastbound U Turns	Eastbound Left Turns	Eastbound Straight Through	Eastbound Right Turns	Eastbound Crosswalk Crossings	Eastbound *Vehicle Approach Total*	VEHICLE TOTAL
8:00 AM	0	0	21	0	0	*21*	0	0	0	0	0	*0*	0	0	22	0	0	*22*	0	0	0	0	0	*0*	**43**
8:15 AM	0	1	9	0	0	*10*	0	0	0	0	0	*0*	0	0	27	0	0	*27*	0	0	0	0	0	*0*	**37**
8:30 AM	0	0	22	0	0	*22*	0	0	0	0	0	*0*	0	0	27	0	0	*27*	0	0	0	0	0	*0*	**49**
8:45 AM	0	1	26	0	0	*27*	0	0	0	0	0	*0*	0	0	24	1	0	*25*	0	2	0	0	0	*2*	**54**
Peak Hour Total	0	2	78	0	0	*80*	0	0	0	0	0	*0*	0	0	100	1	0	*101*	0	2	0	0	0	*2*	**183**
PHF	0.000	0.500	0.750	0.000	0.000	*0.741*	0.000	0.000	0.000	0.000	0.000	*0.000*	0.000	0.000	0.926	0.250	0.000	*0.935*	0.000	0.250	0.000	0.000	0.000	*0.250*	**0.847**

PM Peak Hour

Time	Southbound U Turns	Southbound Left Turns	Southbound Straight Through	Southbound Right Turns	Southbound Crosswalk Crossings	Southbound *Vehicle Approach Total*	Westbound U Turns	Westbound Left Turns	Westbound Straight Through	Westbound Right Turns	Westbound Crosswalk Crossings	Westbound *Vehicle Approach Total*	Northbound U Turns	Northbound Left Turns	Northbound Straight Through	Northbound Right Turns	Northbound Crosswalk Crossings	Northbound *Vehicle Approach Total*	Eastbound U Turns	Eastbound Left Turns	Eastbound Straight Through	Eastbound Right Turns	Eastbound Crosswalk Crossings	Eastbound *Vehicle Approach Total*	VEHICLE TOTAL
4:15 PM	0	0	18	0	0	*18*	0	0	0	3	0	*3*	0	0	33	0	0	*33*	0	0	0	0	0	*0*	**54**
4:30 PM	0	0	15	0	0	*15*	0	0	0	0	0	*0*	0	0	21	0	0	*21*	0	0	0	0	0	*0*	**36**
4:45 PM	0	1	23	0	0	*24*	0	0	0	0	0	*0*	0	0	37	0	0	*37*	0	0	0	0	0	*0*	**61**
5:00 PM	0	0	27	1	0	*28*	0	0	0	1	0	*1*	0	0	20	0	0	*20*	0	0	0	0	0	*0*	**49**
Peak Hour Total	0	1	83	1	0	*85*	0	0	0	4	0	*4*	0	0	111	0	0	*111*	0	0	0	0	0	*0*	**200**
PHF	0.000	0.250	0.769	0.250	0.000	*0.759*	0.000	0.000	0.000	0.333	0.000	*0.333*	0.000	0.000	0.750	0.000	0.000	*0.750*	0.000	0.000	0.000	0.000	0.000	*0.000*	**0.820**

Daily Volumes

Southbound

Total Vehicles On Leg	687
Vehicles Entering Intersection 317	Vehicles Exiting Intersection 370

Cars	8	297	4	1	0
Heavy	0	5	2	0	0
Total	**8**	**302**	**6**	**1**	**0**

Eastbound

Total Vehicles on Leg 14
Vehicles Entering Intersection 6
Vehicles Exiting Intersection 8

Cars	Heavy	Total
0	0	**0**
0	0	**0**
6	0	**6**
0	0	**0**
0	0	**0**

Westbound

Total Vehicles on Leg 16
Vehicles Entering Intersection 9
Vehicles Exiting Intersection 7

Cars	Heavy	Total
7	2	**9**
0	0	**0**
0	0	**0**
0	0	**0**
0	0	**0**

Northbound

Cars	0	0	0	345	1
Heavy	0	0	0	9	0
Total	**0**	**0**	**0**	**354**	**1**

Vehicles Entering Intersection 355	Vehicles Exiting Intersection 302
Total Vehicles On Leg	657

Appendix B

LOS Calculation and Queue Length Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	14	59	81	18	55	34	381	88	49	276	10
Future Volume (veh/h)	17	14	59	81	18	55	34	381	88	49	276	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.66		1.00	1.00		1.00	0.91		1.00	1.00		0.79
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	14	0	90	20	0	42	476	110	54	307	11
Peak Hour Factor	0.98	0.98	0.98	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	2	2	2	2	2	2	2	2	2
Cap, veh/h	153	19		354	456		494	651	552	243	451	303
Arrive On Green	0.04	0.04	0.00	0.11	0.24	0.00	0.14	0.35	0.35	0.03	0.24	0.24
Sat Flow, veh/h	535	441	0	1781	1870	0	1781	1870	1585	1781	1870	1256
Grp Volume(v), veh/h	31	0	0	90	20	0	42	476	110	54	307	11
Grp Sat Flow(s),veh/h/ln	976	0	0	1781	1870	0	1781	1870	1585	1781	1870	1256
Q Serve(g_s), s	1.1	0.0	0.0	0.0	0.3	0.0	0.0	9.5	2.1	0.0	6.4	0.3
Cycle Q Clear(g_c), s	1.4	0.0	0.0	0.0	0.3	0.0	0.0	9.5	2.1	0.0	6.4	0.3
Prop In Lane	0.55		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	172	0		354	456		494	651	552	243	451	303
V/C Ratio(X)	0.18	0.00		0.25	0.04		0.08	0.73	0.20	0.22	0.68	0.04
Avail Cap(c_a), veh/h	416	0		397	877		494	1052	892	393	1052	707
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.4	0.0	0.0	17.2	12.3	0.0	13.6	12.2	9.7	19.8	14.7	12.4
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.4	0.0	0.0	0.1	2.3	0.3	0.5	2.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.7	0.1	0.0	0.2	2.8	0.6	0.4	2.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.9	0.0	0.0	17.5	12.4	0.0	13.7	14.4	10.0	20.3	17.3	12.5
LnGrp LOS	C	A		B	B		B	B	A	C	B	B
Approach Vol, veh/h		31			110			628			372	
Approach Delay, s/veh		20.9			16.6			13.6			17.6	
Approach LOS		C			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	7.4	20.8	8.6	5.8	12.0	16.3		14.4
Change Period (Y+Rc), s	6.0	6.0	4.0	4.0	6.0	6.0		4.0
Max Green Setting (Gmax), s	5.0	24.0	5.6	10.4	5.0	24.0		20.0
Max Q Clear Time (g_c+I1), s	2.0	11.5	2.0	3.4	2.0	8.4		2.3
Green Ext Time (p_c), s	0.0	3.4	0.1	0.0	0.0	1.9		0.0

Intersection Summary	
HCM 6th Ctrl Delay	15.4
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection						
Int Delay, s/veh	3.1					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	52	99	121	12	16	33
Future Vol, veh/h	52	99	121	12	16	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	118	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	91	91	63	63
Heavy Vehicles, %	2	2	2	2	1	1
Mvmt Flow	64	122	133	13	25	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	146	0	-	0	390	140
Stage 1	-	-	-	-	140	-
Stage 2	-	-	-	-	250	-
Critical Hdwy	4.12	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.218	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1436	-	-	-	616	911
Stage 1	-	-	-	-	889	-
Stage 2	-	-	-	-	794	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1436	-	-	-	588	911
Mov Cap-2 Maneuver	-	-	-	-	588	-
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	794	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1436	-	-	-	772
HCM Lane V/C Ratio	0.045	-	-	-	0.101
HCM Control Delay (s)	7.6	-	-	-	10.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection						
Int Delay, s/veh	0.6					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	110	122	3	3	7
Future Vol, veh/h	6	110	122	3	3	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	82	82	83	83
Heavy Vehicles, %	2	2	2	2	5	5
Mvmt Flow	7	129	149	4	4	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	153	0	-	0	294	151
Stage 1	-	-	-	-	151	-
Stage 2	-	-	-	-	143	-
Critical Hdwy	4.12	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.218	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1428	-	-	-	691	887
Stage 1	-	-	-	-	870	-
Stage 2	-	-	-	-	877	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1428	-	-	-	688	887
Mov Cap-2 Maneuver	-	-	-	-	688	-
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	877	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1428	-	-	-	816
HCM Lane V/C Ratio	0.005	-	-	-	0.015
HCM Control Delay (s)	7.5	-	-	-	9.5
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	88	14	2	99	1	12	0	2	1	1	15
Future Vol, veh/h	14	88	14	2	99	1	12	0	2	1	1	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	135	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	92	92	92	58	58	58	43	43	43
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	124	20	2	108	1	21	0	3	2	2	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	109	0	0	144	0	0	305	287	134	289	297	109
Stage 1	-	-	-	-	-	-	174	174	-	113	113	-
Stage 2	-	-	-	-	-	-	131	113	-	176	184	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1481	-	-	1438	-	-	647	623	915	663	615	945
Stage 1	-	-	-	-	-	-	828	755	-	892	802	-
Stage 2	-	-	-	-	-	-	873	802	-	826	747	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1481	-	-	1438	-	-	615	614	915	653	606	945
Mov Cap-2 Maneuver	-	-	-	-	-	-	615	614	-	653	606	-
Stage 1	-	-	-	-	-	-	816	744	-	880	801	-
Stage 2	-	-	-	-	-	-	837	801	-	812	737	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.1	10.8	9.2
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	645	1481	-	-	1438	-	-	892
HCM Lane V/C Ratio	0.037	0.013	-	-	0.002	-	-	0.044
HCM Control Delay (s)	10.8	7.5	-	-	7.5	0	-	9.2
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	0	0	0	0	0	100	1	2	78	0
Future Vol, veh/h	2	0	0	0	0	0	0	100	1	2	78	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	25	25	25	94	94	94	74	74	74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	0	0	0	0	0	106	1	3	105	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	218	218	105	218	218	107	105	0	0	107	0	0
Stage 1	111	111	-	107	107	-	-	-	-	-	-	-
Stage 2	107	107	-	111	111	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	738	680	949	738	680	947	1486	-	-	1484	-	-
Stage 1	894	804	-	898	807	-	-	-	-	-	-	-
Stage 2	898	807	-	894	804	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	737	679	949	737	679	947	1486	-	-	1484	-	-
Mov Cap-2 Maneuver	737	679	-	737	679	-	-	-	-	-	-	-
Stage 1	894	802	-	898	807	-	-	-	-	-	-	-
Stage 2	898	807	-	892	802	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	0	0	0.2
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1486	-	-	737	-	1484	-	-
HCM Lane V/C Ratio	-	-	-	0.011	-	0.002	-	-
HCM Control Delay (s)	0	-	-	9.9	0	7.4	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	28	56	82	36	83	84	310	125	58	395	24
Future Volume (veh/h)	15	28	56	82	36	83	84	310	125	58	395	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	34	0	101	44	0	88	326	132	64	439	27
Peak Hour Factor	0.83	0.83	0.83	0.81	0.81	0.81	0.95	0.95	0.95	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	2	2	2	2	2	2	2	2	2
Cap, veh/h	150	51		300	408		329	511	433	477	615	521
Arrive On Green	0.07	0.07	0.00	0.05	0.22	0.00	0.05	0.27	0.27	0.10	0.33	0.33
Sat Flow, veh/h	413	780	0	1781	1870	0	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	52	0	0	101	44	0	88	326	132	64	439	27
Grp Sat Flow(s),veh/h/ln	1193	0	0	1781	1870	0	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	1.2	0.0	0.0	0.0	0.7	0.0	0.0	6.1	2.6	0.0	8.1	0.5
Cycle Q Clear(g_c), s	2.0	0.0	0.0	0.0	0.7	0.0	0.0	6.1	2.6	0.0	8.1	0.5
Prop In Lane	0.35		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	202	0		300	408		329	511	433	477	615	521
V/C Ratio(X)	0.26	0.00		0.34	0.11		0.27	0.64	0.30	0.13	0.71	0.05
Avail Cap(c_a), veh/h	532	0		463	949		471	1138	965	520	1138	965
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.5	0.0	0.0	17.7	12.3	0.0	17.0	12.6	11.4	12.8	11.6	9.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.7	0.1	0.0	0.4	1.9	0.6	0.1	2.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	0.8	0.3	0.0	0.6	1.8	0.8	0.3	2.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.1	0.0	0.0	18.3	12.5	0.0	17.4	14.5	11.9	12.9	13.8	9.1
LnGrp LOS	B	A		B	B		B	B	B	B	B	A
Approach Vol, veh/h		52			145			546			530	
Approach Delay, s/veh		19.1			16.5			14.3			13.5	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	10.1	16.8	6.0	6.6	7.9	19.0		12.6				
Change Period (Y+Rc), s	6.0	6.0	4.0	4.0	6.0	6.0		4.0				
Max Green Setting (Gmax), s	5.0	24.0	5.6	10.4	5.0	24.0		20.0				
Max Q Clear Time (g_c+I1), s	2.0	8.1	2.0	4.0	2.0	10.1		2.7				
Green Ext Time (p_c), s	0.0	2.7	0.1	0.0	0.0	2.9		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			14.4									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	71	146	131	20	18	71
Future Vol, veh/h	71	146	131	20	18	71
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	118	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	89	89	93	93
Heavy Vehicles, %	2	2	2	2	1	1
Mvmt Flow	75	154	147	22	19	76

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	169	0	-	0	462	158
Stage 1	-	-	-	-	158	-
Stage 2	-	-	-	-	304	-
Critical Hdwy	4.12	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.218	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1409	-	-	-	560	890
Stage 1	-	-	-	-	873	-
Stage 2	-	-	-	-	751	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1409	-	-	-	530	890
Mov Cap-2 Maneuver	-	-	-	-	530	-
Stage 1	-	-	-	-	827	-
Stage 2	-	-	-	-	751	-

Approach	EB	WB	SB
HCM Control Delay, s	2.5	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1409	-	-	-	783
HCM Lane V/C Ratio	0.053	-	-	-	0.122
HCM Control Delay (s)	7.7	-	-	-	10.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.4

Intersection						
Int Delay, s/veh	1					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	158	144	5	12	6
Future Vol, veh/h	8	158	144	5	12	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	83	83	85	85	56	56
Heavy Vehicles, %	2	2	2	2	5	5
Mvmt Flow	10	190	169	6	21	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	175	0	-	0	382	172
Stage 1	-	-	-	-	172	-
Stage 2	-	-	-	-	210	-
Critical Hdwy	4.12	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.218	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1401	-	-	-	615	864
Stage 1	-	-	-	-	851	-
Stage 2	-	-	-	-	818	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1401	-	-	-	611	864
Mov Cap-2 Maneuver	-	-	-	-	611	-
Stage 1	-	-	-	-	845	-
Stage 2	-	-	-	-	818	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1401	-	-	-	677
HCM Lane V/C Ratio	0.007	-	-	-	0.047
HCM Control Delay (s)	7.6	-	-	-	10.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	107	27	7	109	14	18	1	3	6	0	23
Future Vol, veh/h	29	107	27	7	109	14	18	1	3	6	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	135	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	78	78	78	79	79	79	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	149	38	9	140	18	23	1	4	7	0	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	158	0	0	187	0	0	429	424	168	418	434	149
Stage 1	-	-	-	-	-	-	248	248	-	167	167	-
Stage 2	-	-	-	-	-	-	181	176	-	251	267	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1422	-	-	1387	-	-	536	522	876	545	515	898
Stage 1	-	-	-	-	-	-	756	701	-	835	760	-
Stage 2	-	-	-	-	-	-	821	753	-	753	688	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1422	-	-	1387	-	-	505	504	876	527	497	898
Mov Cap-2 Maneuver	-	-	-	-	-	-	505	504	-	527	497	-
Stage 1	-	-	-	-	-	-	735	681	-	812	755	-
Stage 2	-	-	-	-	-	-	789	748	-	727	669	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0.4	12.1	9.8
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	536	1422	-	-	1387	-	-	784
HCM Lane V/C Ratio	0.052	0.028	-	-	0.006	-	-	0.046
HCM Control Delay (s)	12.1	7.6	-	-	7.6	0	-	9.8
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	0	4	0	111	0	1	83	1
Future Vol, veh/h	0	0	0	0	0	4	0	111	0	1	83	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	33	33	33	75	75	75	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	12	0	148	0	1	109	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	266	260	110	260	260	148	110	0	0	148	0	0
Stage 1	112	112	-	148	148	-	-	-	-	-	-	-
Stage 2	154	148	-	112	112	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	687	645	943	693	645	899	1480	-	-	1434	-	-
Stage 1	893	803	-	855	775	-	-	-	-	-	-	-
Stage 2	848	775	-	893	803	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	677	644	943	692	644	899	1480	-	-	1434	-	-
Mov Cap-2 Maneuver	677	644	-	692	644	-	-	-	-	-	-	-
Stage 1	893	802	-	855	775	-	-	-	-	-	-	-
Stage 2	837	775	-	892	802	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	9.1	0	0.1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1480	-	-	-	899	1434	-	-
HCM Lane V/C Ratio	-	-	-	-	0.013	0.001	-	-
HCM Control Delay (s)	0	-	-	0	9.1	7.5	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	14	60	82	18	56	34	384	89	49	278	10
Future Volume (veh/h)	17	14	60	82	18	56	34	384	89	49	278	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.66		1.00	1.00		1.00	0.91		1.00	1.00		0.79
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	14	0	91	20	0	42	480	111	54	309	11
Peak Hour Factor	0.98	0.98	0.98	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	2	2	2	2	2	2	2	2	2
Cap, veh/h	153	19		354	455		494	654	555	242	453	304
Arrive On Green	0.04	0.04	0.00	0.11	0.24	0.00	0.14	0.35	0.35	0.03	0.24	0.24
Sat Flow, veh/h	535	441	0	1781	1870	0	1781	1870	1585	1781	1870	1257
Grp Volume(v), veh/h	31	0	0	91	20	0	42	480	111	54	309	11
Grp Sat Flow(s),veh/h/ln	976	0	0	1781	1870	0	1781	1870	1585	1781	1870	1257
Q Serve(g_s), s	1.1	0.0	0.0	0.0	0.4	0.0	0.0	9.6	2.1	0.0	6.4	0.3
Cycle Q Clear(g_c), s	1.4	0.0	0.0	0.0	0.4	0.0	0.0	9.6	2.1	0.0	6.4	0.3
Prop In Lane	0.55		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	172	0		354	455		494	654	555	242	453	304
V/C Ratio(X)	0.18	0.00		0.26	0.04		0.09	0.73	0.20	0.22	0.68	0.04
Avail Cap(c_a), veh/h	414	0		395	874		494	1048	888	391	1048	705
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.5	0.0	0.0	17.2	12.4	0.0	13.7	12.2	9.7	19.9	14.7	12.4
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.4	0.0	0.0	0.1	2.3	0.2	0.5	2.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.8	0.1	0.0	0.2	2.8	0.6	0.4	2.2	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.0	0.0	0.0	17.6	12.4	0.0	13.7	14.5	10.0	20.4	17.3	12.5
LnGrp LOS	C	A		B	B		B	B	A	C	B	B
Approach Vol, veh/h		31			111			633			374	
Approach Delay, s/veh		21.0			16.7			13.6			17.6	
Approach LOS		C			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	21.0	8.6	5.8	12.0	16.4		14.4				
Change Period (Y+Rc), s	6.0	6.0	4.0	4.0	6.0	6.0		4.0				
Max Green Setting (Gmax), s	5.0	24.0	5.6	10.4	5.0	24.0		20.0				
Max Q Clear Time (g_c+I1), s	2.0	11.6	2.0	3.4	2.0	8.4		2.4				
Green Ext Time (p_c), s	0.0	3.4	0.1	0.0	0.0	1.9		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			15.4
HCM 6th LOS			B

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	53	100	122	12	16	33
Future Vol, veh/h	53	100	122	12	16	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	118	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	91	91	63	63
Heavy Vehicles, %	2	2	2	2	1	1
Mvmt Flow	65	123	134	13	25	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	147	0	-	0	394	141
Stage 1	-	-	-	-	141	-
Stage 2	-	-	-	-	253	-
Critical Hdwy	4.12	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.218	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1435	-	-	-	613	910
Stage 1	-	-	-	-	888	-
Stage 2	-	-	-	-	791	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1435	-	-	-	585	910
Mov Cap-2 Maneuver	-	-	-	-	585	-
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	791	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1435	-	-	-	770
HCM Lane V/C Ratio	0.046	-	-	-	0.101
HCM Control Delay (s)	7.6	-	-	-	10.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection						
Int Delay, s/veh	0.6					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	111	123	3	3	7
Future Vol, veh/h	6	111	123	3	3	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	82	82	83	83
Heavy Vehicles, %	2	2	2	2	5	5
Mvmt Flow	7	131	150	4	4	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	154	0	-	0	297	152
Stage 1	-	-	-	-	152	-
Stage 2	-	-	-	-	145	-
Critical Hdwy	4.12	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.218	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1426	-	-	-	688	886
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	875	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1426	-	-	-	685	886
Mov Cap-2 Maneuver	-	-	-	-	685	-
Stage 1	-	-	-	-	865	-
Stage 2	-	-	-	-	875	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1426	-	-	-	814
HCM Lane V/C Ratio	0.005	-	-	-	0.015
HCM Control Delay (s)	7.5	-	-	-	9.5
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	89	14	2	100	1	12	0	2	1	1	15
Future Vol, veh/h	14	89	14	2	100	1	12	0	2	1	1	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	135	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	92	92	92	58	58	58	43	43	43
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	125	20	2	109	1	21	0	3	2	2	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	110	0	0	145	0	0	307	289	135	291	299	110
Stage 1	-	-	-	-	-	-	175	175	-	114	114	-
Stage 2	-	-	-	-	-	-	132	114	-	177	185	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1480	-	-	1437	-	-	645	621	914	661	613	943
Stage 1	-	-	-	-	-	-	827	754	-	891	801	-
Stage 2	-	-	-	-	-	-	871	801	-	825	747	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1480	-	-	1437	-	-	613	612	914	651	604	943
Mov Cap-2 Maneuver	-	-	-	-	-	-	613	612	-	651	604	-
Stage 1	-	-	-	-	-	-	815	743	-	879	800	-
Stage 2	-	-	-	-	-	-	836	800	-	811	737	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.1	10.8	9.2
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	643	1480	-	-	1437	-	-	890
HCM Lane V/C Ratio	0.038	0.013	-	-	0.002	-	-	0.044
HCM Control Delay (s)	10.8	7.5	-	-	7.5	0	-	9.2
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	0	0	0	0	0	101	1	2	79	0
Future Vol, veh/h	2	0	0	0	0	0	0	101	1	2	79	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	25	25	25	94	94	94	74	74	74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	0	0	0	0	0	107	1	3	107	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	221	221	107	221	221	108	107	0	0	108	0	0
Stage 1	113	113	-	108	108	-	-	-	-	-	-	-
Stage 2	108	108	-	113	113	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	735	678	947	735	678	946	1484	-	-	1483	-	-
Stage 1	892	802	-	897	806	-	-	-	-	-	-	-
Stage 2	897	806	-	892	802	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	734	677	947	734	677	946	1484	-	-	1483	-	-
Mov Cap-2 Maneuver	734	677	-	734	677	-	-	-	-	-	-	-
Stage 1	892	800	-	897	806	-	-	-	-	-	-	-
Stage 2	897	806	-	890	800	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	0	0	0.2
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1484	-	-	734	-	1483	-	-
HCM Lane V/C Ratio	-	-	-	0.011	-	0.002	-	-
HCM Control Delay (s)	0	-	-	10	0	7.4	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	28	57	83	36	84	85	313	126	59	398	24
Future Volume (veh/h)	15	28	57	83	36	84	85	313	126	59	398	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	34	0	102	44	0	89	329	133	66	442	27
Peak Hour Factor	0.83	0.83	0.83	0.81	0.81	0.81	0.95	0.95	0.95	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	2	2	2	2	2	2	2	2	2
Cap, veh/h	150	51		300	408		329	514	435	477	618	523
Arrive On Green	0.07	0.07	0.00	0.05	0.22	0.00	0.05	0.27	0.27	0.10	0.33	0.33
Sat Flow, veh/h	413	780	0	1781	1870	0	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	52	0	0	102	44	0	89	329	133	66	442	27
Grp Sat Flow(s),veh/h/ln	1192	0	0	1781	1870	0	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	1.2	0.0	0.0	0.0	0.7	0.0	0.0	6.1	2.6	0.0	8.2	0.5
Cycle Q Clear(g_c), s	2.0	0.0	0.0	0.0	0.7	0.0	0.0	6.1	2.6	0.0	8.2	0.5
Prop In Lane	0.35		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	201	0		300	408		329	514	435	477	618	523
V/C Ratio(X)	0.26	0.00		0.34	0.11		0.27	0.64	0.31	0.14	0.72	0.05
Avail Cap(c_a), veh/h	530	0		461	945		469	1134	961	519	1134	961
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.5	0.0	0.0	17.7	12.4	0.0	17.0	12.6	11.4	12.9	11.6	9.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.7	0.1	0.0	0.4	1.9	0.6	0.1	2.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	0.8	0.3	0.0	0.6	1.8	0.8	0.3	2.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.2	0.0	0.0	18.4	12.5	0.0	17.5	14.5	11.9	13.0	13.8	9.1
LnGrp LOS	B	A		B	B		B	B	B	B	B	A
Approach Vol, veh/h		52			146			551			535	
Approach Delay, s/veh		19.2			16.6			14.4			13.5	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	10.1	16.9	6.0	6.6	7.9	19.1		12.6				
Change Period (Y+Rc), s	6.0	6.0	4.0	4.0	6.0	6.0		4.0				
Max Green Setting (Gmax), s	5.0	24.0	5.6	10.4	5.0	24.0		20.0				
Max Q Clear Time (g_c+I1), s	2.0	8.1	2.0	4.0	2.0	10.2		2.7				
Green Ext Time (p_c), s	0.0	2.7	0.1	0.0	0.0	2.9		0.1				

Intersection Summary			
HCM 6th Ctrl Delay			14.5
HCM 6th LOS			B

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	72	147	132	20	18	72
Future Vol, veh/h	72	147	132	20	18	72
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	118	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	89	89	93	93
Heavy Vehicles, %	2	2	2	2	1	1
Mvmt Flow	76	155	148	22	19	77

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	170	0	-	0	466	159
Stage 1	-	-	-	-	159	-
Stage 2	-	-	-	-	307	-
Critical Hdwy	4.12	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.218	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1407	-	-	-	557	889
Stage 1	-	-	-	-	872	-
Stage 2	-	-	-	-	748	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1407	-	-	-	527	889
Mov Cap-2 Maneuver	-	-	-	-	527	-
Stage 1	-	-	-	-	825	-
Stage 2	-	-	-	-	748	-

Approach	EB	WB	SB
HCM Control Delay, s	2.5	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1407	-	-	-	782
HCM Lane V/C Ratio	0.054	-	-	-	0.124
HCM Control Delay (s)	7.7	-	-	-	10.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.4

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	160	145	5	12	6
Future Vol, veh/h	8	160	145	5	12	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	83	83	85	85	56	56
Heavy Vehicles, %	2	2	2	2	5	5
Mvmt Flow	10	193	171	6	21	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	177	0	-	0	387	174
Stage 1	-	-	-	-	174	-
Stage 2	-	-	-	-	213	-
Critical Hdwy	4.12	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.218	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1399	-	-	-	610	862
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	815	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1399	-	-	-	606	862
Mov Cap-2 Maneuver	-	-	-	-	606	-
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	815	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1399	-	-	-	673
HCM Lane V/C Ratio	0.007	-	-	-	0.048
HCM Control Delay (s)	7.6	-	-	-	10.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	108	27	7	110	14	18	1	3	6	0	23
Future Vol, veh/h	29	108	27	7	110	14	18	1	3	6	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	135	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	78	78	78	79	79	79	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	150	38	9	141	18	23	1	4	7	0	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	159	0	0	188	0	0	431	426	169	420	436	150
Stage 1	-	-	-	-	-	-	249	249	-	168	168	-
Stage 2	-	-	-	-	-	-	182	177	-	252	268	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1420	-	-	1386	-	-	535	520	875	544	514	896
Stage 1	-	-	-	-	-	-	755	701	-	834	759	-
Stage 2	-	-	-	-	-	-	820	753	-	752	687	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1420	-	-	1386	-	-	504	502	875	526	496	896
Mov Cap-2 Maneuver	-	-	-	-	-	-	504	502	-	526	496	-
Stage 1	-	-	-	-	-	-	734	681	-	811	754	-
Stage 2	-	-	-	-	-	-	788	748	-	726	668	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.4	12.1	9.8
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	535	1420	-	-	1386	-	-	782
HCM Lane V/C Ratio	0.052	0.028	-	-	0.006	-	-	0.046
HCM Control Delay (s)	12.1	7.6	-	-	7.6	0	-	9.8
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.1

Intersection												
Int Delay, s/veh	0.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	0	0	0	0	0	4	0	112	0	1	84	1
Future Vol, veh/h	0	0	0	0	0	4	0	112	0	1	84	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	33	33	33	75	75	75	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	12	0	149	0	1	111	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	269	263	112	263	263	149	112	0	0	149	0	0
Stage 1	114	114	-	149	149	-	-	-	-	-	-	-
Stage 2	155	149	-	114	114	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	684	642	941	690	642	898	1478	-	-	1432	-	-
Stage 1	891	801	-	854	774	-	-	-	-	-	-	-
Stage 2	847	774	-	891	801	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	674	641	941	689	641	898	1478	-	-	1432	-	-
Mov Cap-2 Maneuver	674	641	-	689	641	-	-	-	-	-	-	-
Stage 1	891	800	-	854	774	-	-	-	-	-	-	-
Stage 2	836	774	-	890	800	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	9.1	0	0.1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1478	-	-	-	898	1432	-	-
HCM Lane V/C Ratio	-	-	-	-	0.013	0.001	-	-
HCM Control Delay (s)	0	-	-	0	9.1	7.5	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	14	60	126	18	65	34	384	115	54	278	10
Future Volume (veh/h)	17	14	60	126	18	65	34	384	115	54	278	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.66		1.00	1.00		1.00	0.90		1.00	1.00		0.79
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	14	0	140	20	0	42	480	144	60	309	11
Peak Hour Factor	0.98	0.98	0.98	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	2	2	2	2	2	2	2	2	2
Cap, veh/h	151	19		359	460		494	656	556	242	450	302
Arrive On Green	0.04	0.04	0.00	0.11	0.25	0.00	0.15	0.35	0.35	0.04	0.24	0.24
Sat Flow, veh/h	535	440	0	1781	1870	0	1781	1870	1585	1781	1870	1256
Grp Volume(v), veh/h	31	0	0	140	20	0	42	480	144	60	309	11
Grp Sat Flow(s),veh/h/ln	975	0	0	1781	1870	0	1781	1870	1585	1781	1870	1256
Q Serve(g_s), s	1.1	0.0	0.0	0.0	0.4	0.0	0.0	9.7	2.8	0.0	6.5	0.3
Cycle Q Clear(g_c), s	1.5	0.0	0.0	0.0	0.4	0.0	0.0	9.7	2.8	0.0	6.5	0.3
Prop In Lane	0.55		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	169	0		359	460		494	656	556	242	450	302
V/C Ratio(X)	0.18	0.00		0.39	0.04		0.08	0.73	0.26	0.25	0.69	0.04
Avail Cap(c_a), veh/h	407	0		390	860		494	1032	875	384	1032	693
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.8	0.0	0.0	17.3	12.5	0.0	13.9	12.3	10.1	20.1	15.0	12.6
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.7	0.0	0.0	0.1	2.3	0.3	0.5	2.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	1.2	0.1	0.0	0.2	2.9	0.9	0.5	2.2	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.3	0.0	0.0	18.0	12.5	0.0	14.0	14.6	10.4	20.7	17.7	12.7
LnGrp LOS	C	A		B	B		B	B	B	C	B	B
Approach Vol, veh/h		31			160			666			380	
Approach Delay, s/veh		21.3			17.3			13.7			18.0	
Approach LOS		C			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	7.5	21.2	8.8	5.8	12.3	16.5		14.7				
Change Period (Y+Rc), s	6.0	6.0	4.0	4.0	6.0	6.0		4.0				
Max Green Setting (Gmax), s	5.0	24.0	5.6	10.4	5.0	24.0		20.0				
Max Q Clear Time (g_c+I1), s	2.0	11.7	2.0	3.5	2.0	8.5		2.4				
Green Ext Time (p_c), s	0.0	3.5	0.1	0.0	0.0	1.9		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			15.7
HCM 6th LOS			B

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	53	131	175	12	16	33
Future Vol, veh/h	53	131	175	12	16	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	118	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	91	91	63	63
Heavy Vehicles, %	2	2	2	2	1	1
Mvmt Flow	65	162	192	13	25	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	205	0	-	0	491	199
Stage 1	-	-	-	-	199	-
Stage 2	-	-	-	-	292	-
Critical Hdwy	4.12	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.218	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1366	-	-	-	539	845
Stage 1	-	-	-	-	837	-
Stage 2	-	-	-	-	760	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1366	-	-	-	513	845
Mov Cap-2 Maneuver	-	-	-	-	513	-
Stage 1	-	-	-	-	797	-
Stage 2	-	-	-	-	760	-

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1366	-	-	-	698
HCM Lane V/C Ratio	0.048	-	-	-	0.111
HCM Control Delay (s)	7.8	-	-	-	10.8
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.4

Intersection						
Int Delay, s/veh	0.4					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	142	176	3	3	7
Future Vol, veh/h	6	142	176	3	3	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	82	82	83	83
Heavy Vehicles, %	2	2	2	2	5	5
Mvmt Flow	7	167	215	4	4	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	219	0	-	0	398	217
Stage 1	-	-	-	-	217	-
Stage 2	-	-	-	-	181	-
Critical Hdwy	4.12	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.218	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1350	-	-	-	602	815
Stage 1	-	-	-	-	812	-
Stage 2	-	-	-	-	843	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1350	-	-	-	599	815
Mov Cap-2 Maneuver	-	-	-	-	599	-
Stage 1	-	-	-	-	808	-
Stage 2	-	-	-	-	843	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1350	-	-	-	735
HCM Lane V/C Ratio	0.005	-	-	-	0.016
HCM Control Delay (s)	7.7	-	-	-	10
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	120	14	2	153	1	12	0	2	1	1	15
Future Vol, veh/h	14	120	14	2	153	1	12	0	2	1	1	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	135	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	92	92	92	58	58	58	43	43	43
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	169	20	2	166	1	21	0	3	2	2	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	167	0	0	189	0	0	408	390	179	392	400	167
Stage 1	-	-	-	-	-	-	219	219	-	171	171	-
Stage 2	-	-	-	-	-	-	189	171	-	221	229	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1411	-	-	1385	-	-	554	545	864	567	538	877
Stage 1	-	-	-	-	-	-	783	722	-	831	757	-
Stage 2	-	-	-	-	-	-	813	757	-	781	715	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1411	-	-	1385	-	-	524	536	864	558	529	877
Mov Cap-2 Maneuver	-	-	-	-	-	-	524	536	-	558	529	-
Stage 1	-	-	-	-	-	-	772	712	-	819	755	-
Stage 2	-	-	-	-	-	-	777	755	-	767	705	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.1	11.8	9.6
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	555	1411	-	-	1385	-	-	818
HCM Lane V/C Ratio	0.043	0.014	-	-	0.002	-	-	0.048
HCM Control Delay (s)	11.8	7.6	-	-	7.6	0	-	9.6
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	0	1	0	0	0	1	111	1	2	85	25
Future Vol, veh/h	43	0	1	0	0	0	1	111	1	2	85	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	25	25	25	94	94	94	74	74	74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	172	0	4	0	0	0	1	118	1	3	115	34

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	242	242	115	261	276	119	149	0	0	119	0	0
Stage 1	121	121	-	121	121	-	-	-	-	-	-	-
Stage 2	121	121	-	140	155	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	712	660	937	692	632	933	1432	-	-	1469	-	-
Stage 1	883	796	-	883	796	-	-	-	-	-	-	-
Stage 2	883	796	-	863	769	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	711	658	937	687	630	933	1432	-	-	1469	-	-
Mov Cap-2 Maneuver	711	658	-	687	630	-	-	-	-	-	-	-
Stage 1	882	794	-	882	795	-	-	-	-	-	-	-
Stage 2	882	795	-	858	767	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.7	0	0.1	0.1
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1432	-	-	715	-	1469	-	-
HCM Lane V/C Ratio	0.001	-	-	0.246	-	0.002	-	-
HCM Control Delay (s)	7.5	0	-	11.7	0	7.5	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1	-	0	-	-

Intersection						
Int Delay, s/veh	0.5					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	1	0	103	78	8
Future Vol, veh/h	9	1	0	103	78	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	1	0	112	85	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	197	85	94	0	-	0
Stage 1	85	-	-	-	-	-
Stage 2	112	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	792	974	1500	-	-	-
Stage 1	938	-	-	-	-	-
Stage 2	913	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	792	974	1500	-	-	-
Mov Cap-2 Maneuver	792	-	-	-	-	-
Stage 1	938	-	-	-	-	-
Stage 2	913	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1500	-	807	-	-
HCM Lane V/C Ratio	-	-	0.013	-	-
HCM Control Delay (s)	0	-	9.5	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	28	57	118	36	90	85	313	188	71	398	24
Future Volume (veh/h)	15	28	57	118	36	90	85	313	188	71	398	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	34	0	146	44	0	89	329	198	79	442	27
Peak Hour Factor	0.83	0.83	0.83	0.81	0.81	0.81	0.95	0.95	0.95	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	2	2	2	2	2	2	2	2	2
Cap, veh/h	148	51		315	422		331	525	445	460	615	521
Arrive On Green	0.07	0.07	0.00	0.06	0.23	0.00	0.05	0.28	0.28	0.09	0.33	0.33
Sat Flow, veh/h	414	782	0	1781	1870	0	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	52	0	0	146	44	0	89	329	198	79	442	27
Grp Sat Flow(s),veh/h/ln	1196	0	0	1781	1870	0	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	1.2	0.0	0.0	0.0	0.7	0.0	0.0	6.2	4.1	0.0	8.3	0.5
Cycle Q Clear(g_c), s	2.0	0.0	0.0	0.0	0.7	0.0	0.0	6.2	4.1	0.0	8.3	0.5
Prop In Lane	0.35		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	200	0		315	422		331	525	445	460	615	521
V/C Ratio(X)	0.26	0.00		0.46	0.10		0.27	0.63	0.45	0.17	0.72	0.05
Avail Cap(c_a), veh/h	522	0		457	932		469	1119	948	513	1119	948
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.8	0.0	0.0	17.7	12.3	0.0	17.1	12.6	11.9	13.3	11.8	9.2
Incr Delay (d2), s/veh	0.7	0.0	0.0	1.1	0.1	0.0	0.4	1.8	1.0	0.2	2.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	1.2	0.3	0.0	0.6	1.8	1.3	0.4	2.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.5	0.0	0.0	18.7	12.4	0.0	17.5	14.3	12.9	13.5	14.1	9.3
LnGrp LOS	B	A		B	B		B	B	B	B	B	A
Approach Vol, veh/h		52			190			616			548	
Approach Delay, s/veh		19.5			17.3			14.3			13.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	9.8	17.3	6.4	6.6	7.9	19.2		13.1
Change Period (Y+Rc), s	6.0	6.0	4.0	4.0	6.0	6.0		4.0
Max Green Setting (Gmax), s	5.0	24.0	5.6	10.4	5.0	24.0		20.0
Max Q Clear Time (g_c+I1), s	2.0	8.2	2.0	4.0	2.0	10.3		2.7
Green Ext Time (p_c), s	0.0	3.1	0.1	0.0	0.0	2.8		0.1

Intersection Summary	
HCM 6th Ctrl Delay	14.7
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	72	221	173	20	18	72
Future Vol, veh/h	72	221	173	20	18	72
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	118	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	89	89	93	93
Heavy Vehicles, %	2	2	2	2	1	1
Mvmt Flow	76	233	194	22	19	77

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	216	0	-	0	590	205
Stage 1	-	-	-	-	205	-
Stage 2	-	-	-	-	385	-
Critical Hdwy	4.12	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.218	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1354	-	-	-	472	838
Stage 1	-	-	-	-	832	-
Stage 2	-	-	-	-	690	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1354	-	-	-	446	838
Mov Cap-2 Maneuver	-	-	-	-	446	-
Stage 1	-	-	-	-	785	-
Stage 2	-	-	-	-	690	-

Approach	EB	WB	SB
HCM Control Delay, s	1.9	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1354	-	-	-	713
HCM Lane V/C Ratio	0.056	-	-	-	0.136
HCM Control Delay (s)	7.8	-	-	-	10.8
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	234	186	5	12	6
Future Vol, veh/h	8	234	186	5	12	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	83	83	85	85	56	56
Heavy Vehicles, %	2	2	2	2	5	5
Mvmt Flow	10	282	219	6	21	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	225	0	-	0	524	222
Stage 1	-	-	-	-	222	-
Stage 2	-	-	-	-	302	-
Critical Hdwy	4.12	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.218	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1344	-	-	-	508	810
Stage 1	-	-	-	-	808	-
Stage 2	-	-	-	-	743	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1344	-	-	-	504	810
Mov Cap-2 Maneuver	-	-	-	-	504	-
Stage 1	-	-	-	-	802	-
Stage 2	-	-	-	-	743	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1344	-	-	-	577
HCM Lane V/C Ratio	0.007	-	-	-	0.056
HCM Control Delay (s)	7.7	-	-	-	11.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	182	27	7	151	14	18	1	3	6	0	23
Future Vol, veh/h	29	182	27	7	151	14	18	1	3	6	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	135	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	78	78	78	79	79	79	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	253	38	9	194	18	23	1	4	7	0	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	212	0	0	291	0	0	587	582	272	576	592	203
Stage 1	-	-	-	-	-	-	352	352	-	221	221	-
Stage 2	-	-	-	-	-	-	235	230	-	355	371	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1358	-	-	1271	-	-	421	425	767	428	419	838
Stage 1	-	-	-	-	-	-	665	632	-	781	720	-
Stage 2	-	-	-	-	-	-	768	714	-	662	620	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1358	-	-	1271	-	-	395	409	767	413	403	838
Mov Cap-2 Maneuver	-	-	-	-	-	-	395	409	-	413	403	-
Stage 1	-	-	-	-	-	-	646	614	-	758	714	-
Stage 2	-	-	-	-	-	-	736	708	-	638	602	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.3	14.1	10.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	424	1358	-	-	1271	-	-	691
HCM Lane V/C Ratio	0.066	0.03	-	-	0.007	-	-	0.052
HCM Control Delay (s)	14.1	7.7	-	-	7.9	0	-	10.5
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	0	1	0	0	4	3	118	0	1	98	60
Future Vol, veh/h	35	0	1	0	0	4	3	118	0	1	98	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	33	33	33	75	75	75	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	140	0	4	0	0	12	4	157	0	1	129	79

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	342	336	169	338	375	157	208	0	0	157	0	0
Stage 1	171	171	-	165	165	-	-	-	-	-	-	-
Stage 2	171	165	-	173	210	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	612	585	875	616	556	889	1363	-	-	1423	-	-
Stage 1	831	757	-	837	762	-	-	-	-	-	-	-
Stage 2	831	762	-	829	728	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	602	583	875	611	554	889	1363	-	-	1423	-	-
Mov Cap-2 Maneuver	602	583	-	611	554	-	-	-	-	-	-	-
Stage 1	829	756	-	834	760	-	-	-	-	-	-	-
Stage 2	817	760	-	824	727	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.8	9.1	0.2	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1363	-	-	607	889	1423	-	-
HCM Lane V/C Ratio	0.003	-	-	0.237	0.014	0.001	-	-
HCM Control Delay (s)	7.6	0	-	12.8	9.1	7.5	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.9	0	0	-	-

Intersection						
Int Delay, s/veh	0.3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	1	0	112	84	14
Future Vol, veh/h	6	1	0	112	84	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	1	0	122	91	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	213	91	106	0	-	0
Stage 1	91	-	-	-	-	-
Stage 2	122	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	775	967	1485	-	-	-
Stage 1	933	-	-	-	-	-
Stage 2	903	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	775	967	1485	-	-	-
Mov Cap-2 Maneuver	775	-	-	-	-	-
Stage 1	933	-	-	-	-	-
Stage 2	903	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1485	-	798	-	-
HCM Lane V/C Ratio	-	-	0.01	-	-
HCM Control Delay (s)	0	-	9.6	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	17	71	131	22	89	41	449	116	66	325	12
Future Volume (veh/h)	21	17	71	131	22	89	41	449	116	66	325	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.68		1.00	1.00		1.00	0.92		1.00	1.00		0.81
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	17	0	146	24	0	51	561	145	73	361	13
Peak Hour Factor	0.98	0.98	0.98	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	2	2	2	2	2	2	2	2	2
Cap, veh/h	144	20		349	444		485	715	606	224	496	341
Arrive On Green	0.05	0.05	0.00	0.11	0.24	0.00	0.16	0.38	0.38	0.04	0.27	0.27
Sat Flow, veh/h	535	433	0	1781	1870	0	1781	1870	1585	1781	1870	1286
Grp Volume(v), veh/h	38	0	0	146	24	0	51	561	145	73	361	13
Grp Sat Flow(s),veh/h/ln	968	0	0	1781	1870	0	1781	1870	1585	1781	1870	1286
Q Serve(g_s), s	1.4	0.0	0.0	0.0	0.5	0.0	0.0	12.4	2.9	0.0	8.2	0.4
Cycle Q Clear(g_c), s	1.9	0.0	0.0	0.0	0.5	0.0	0.0	12.4	2.9	0.0	8.2	0.4
Prop In Lane	0.55		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	165	0		349	444		485	715	606	224	496	341
V/C Ratio(X)	0.23	0.00		0.42	0.05		0.11	0.78	0.24	0.33	0.73	0.04
Avail Cap(c_a), veh/h	378	0		374	797		485	957	811	344	957	658
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.4	0.0	0.0	18.8	13.8	0.0	15.3	12.8	9.9	21.7	15.7	12.8
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.8	0.0	0.0	0.1	3.8	0.3	0.8	2.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	1.4	0.2	0.0	0.3	4.0	0.9	0.7	2.9	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.1	0.0	0.0	19.6	13.9	0.0	15.4	16.6	10.1	22.5	18.6	12.9
LnGrp LOS	C	A		B	B		B	B	B	C	B	B
Approach Vol, veh/h		38			170			757			447	
Approach Delay, s/veh		23.1			18.8			15.3			19.1	
Approach LOS		C			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	7.8	23.9	8.9	6.2	13.3	18.4		15.1				
Change Period (Y+Rc), s	6.0	6.0	4.0	4.0	6.0	6.0		4.0				
Max Green Setting (Gmax), s	5.0	24.0	5.6	10.4	5.0	24.0		20.0				
Max Q Clear Time (g_c+I1), s	2.0	14.4	2.0	3.9	2.0	10.2		2.5				
Green Ext Time (p_c), s	0.0	3.5	0.1	0.0	0.0	2.2		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			17.1
HCM 6th LOS			B

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection						
Int Delay, s/veh	2.9					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	63	137	201	15	19	40
Future Vol, veh/h	63	137	201	15	19	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	118	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	91	91	63	63
Heavy Vehicles, %	2	2	2	2	1	1
Mvmt Flow	78	169	221	16	30	63

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	237	0	-	0	554	229
Stage 1	-	-	-	-	229	-
Stage 2	-	-	-	-	325	-
Critical Hdwy	4.12	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.218	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1330	-	-	-	495	813
Stage 1	-	-	-	-	811	-
Stage 2	-	-	-	-	734	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1330	-	-	-	466	813
Mov Cap-2 Maneuver	-	-	-	-	466	-
Stage 1	-	-	-	-	763	-
Stage 2	-	-	-	-	734	-

Approach	EB	WB	SB
HCM Control Delay, s	2.5	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1330	-	-	-	656
HCM Lane V/C Ratio	0.058	-	-	-	0.143
HCM Control Delay (s)	7.9	-	-	-	11.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5

Intersection						
Int Delay, s/veh	0.5					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	150	203	4	4	8
Future Vol, veh/h	7	150	203	4	4	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	82	82	83	83
Heavy Vehicles, %	2	2	2	2	5	5
Mvmt Flow	8	176	248	5	5	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	253	0	-	0	443	251
Stage 1	-	-	-	-	251	-
Stage 2	-	-	-	-	192	-
Critical Hdwy	4.12	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.218	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1312	-	-	-	567	780
Stage 1	-	-	-	-	784	-
Stage 2	-	-	-	-	833	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1312	-	-	-	564	780
Mov Cap-2 Maneuver	-	-	-	-	564	-
Stage 1	-	-	-	-	779	-
Stage 2	-	-	-	-	833	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1312	-	-	-	692
HCM Lane V/C Ratio	0.006	-	-	-	0.021
HCM Control Delay (s)	7.8	-	-	-	10.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	109	17	2	121	1	15	0	2	1	1	18
Future Vol, veh/h	17	109	17	2	121	1	15	0	2	1	1	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	135	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	92	92	92	58	58	58	43	43	43
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	154	24	2	132	1	26	0	3	2	2	42

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	133	0	0	178	0	0	373	351	166	353	363	133
Stage 1	-	-	-	-	-	-	214	214	-	137	137	-
Stage 2	-	-	-	-	-	-	159	137	-	216	226	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1452	-	-	1398	-	-	584	573	878	602	565	916
Stage 1	-	-	-	-	-	-	788	725	-	866	783	-
Stage 2	-	-	-	-	-	-	843	783	-	786	717	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1452	-	-	1398	-	-	548	562	878	591	554	916
Mov Cap-2 Maneuver	-	-	-	-	-	-	548	562	-	591	554	-
Stage 1	-	-	-	-	-	-	775	713	-	851	781	-
Stage 2	-	-	-	-	-	-	800	781	-	770	705	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.1	11.6	9.4
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	573	1452	-	-	1398	-	-	864
HCM Lane V/C Ratio	0.051	0.016	-	-	0.002	-	-	0.054
HCM Control Delay (s)	11.6	7.5	-	-	7.6	0	-	9.4
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	0	0	0	0	0	122	1	2	97	0
Future Vol, veh/h	2	0	0	0	0	0	0	122	1	2	97	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	25	25	25	94	94	94	74	74	74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	0	0	0	0	0	130	1	3	131	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	268	268	131	268	268	131	131	0	0	131	0	0
Stage 1	137	137	-	131	131	-	-	-	-	-	-	-
Stage 2	131	131	-	137	137	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	685	638	919	685	638	919	1454	-	-	1454	-	-
Stage 1	866	783	-	873	788	-	-	-	-	-	-	-
Stage 2	873	788	-	866	783	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	684	637	919	684	637	919	1454	-	-	1454	-	-
Mov Cap-2 Maneuver	684	637	-	684	637	-	-	-	-	-	-	-
Stage 1	866	781	-	873	788	-	-	-	-	-	-	-
Stage 2	873	788	-	864	781	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	0	0	0.2
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1454	-	-	684	-	1454	-	-
HCM Lane V/C Ratio	-	-	-	0.012	-	0.002	-	-
HCM Control Delay (s)	0	-	-	10.3	0	7.5	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	34	68	126	44	117	102	365	185	94	466	29
Future Volume (veh/h)	18	34	68	126	44	117	102	365	185	94	466	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	41	0	156	54	0	107	384	195	104	518	32
Peak Hour Factor	0.83	0.83	0.83	0.81	0.81	0.81	0.95	0.95	0.95	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	2	2	2	2	2	2	2	2	2
Cap, veh/h	141	69		321	421		301	564	478	460	675	572
Arrive On Green	0.08	0.08	0.00	0.06	0.22	0.00	0.05	0.30	0.30	0.11	0.36	0.36
Sat Flow, veh/h	404	912	0	1781	1870	0	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	63	0	0	156	54	0	107	384	195	104	518	32
Grp Sat Flow(s),veh/h/ln	1316	0	0	1781	1870	0	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	1.3	0.0	0.0	0.0	1.0	0.0	0.0	7.9	4.3	0.0	10.7	0.6
Cycle Q Clear(g_c), s	2.3	0.0	0.0	0.0	1.0	0.0	0.0	7.9	4.3	0.0	10.7	0.6
Prop In Lane	0.35		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	210	0		321	421		301	564	478	460	675	572
V/C Ratio(X)	0.30	0.00		0.49	0.13		0.36	0.68	0.41	0.23	0.77	0.06
Avail Cap(c_a), veh/h	478	0		445	852		415	1022	866	468	1022	866
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.0	0.0	0.0	19.3	13.6	0.0	19.3	13.5	12.2	14.9	12.4	9.2
Incr Delay (d2), s/veh	0.8	0.0	0.0	1.1	0.1	0.0	0.7	2.1	0.8	0.2	2.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	1.5	0.4	0.0	0.9	2.5	1.4	0.7	3.2	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.8	0.0	0.0	20.4	13.7	0.0	20.0	15.5	13.0	15.1	15.1	9.2
LnGrp LOS	C	A		C	B		B	B	B	B	B	A
Approach Vol, veh/h		63			210			686			654	
Approach Delay, s/veh		20.8			18.7			15.5			14.8	
Approach LOS		C			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	10.8	19.2	6.6	7.3	8.2	21.9		13.9				
Change Period (Y+Rc), s	6.0	6.0	4.0	4.0	6.0	6.0		4.0				
Max Green Setting (Gmax), s	5.0	24.0	5.6	10.4	5.0	24.0		20.0				
Max Q Clear Time (g_c+I1), s	2.0	9.9	2.0	4.3	2.0	12.7		3.0				
Green Ext Time (p_c), s	0.1	3.3	0.1	0.1	0.1	3.1		0.1				

Intersection Summary		
HCM 6th Ctrl Delay		15.9
HCM 6th LOS		B

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection						
Int Delay, s/veh	3.1					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	86	206	175	24	22	86
Future Vol, veh/h	86	206	175	24	22	86
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	118	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	89	89	93	93
Heavy Vehicles, %	2	2	2	2	1	1
Mvmt Flow	91	217	197	27	24	92

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	224	0	-	0	610	211
Stage 1	-	-	-	-	211	-
Stage 2	-	-	-	-	399	-
Critical Hdwy	4.12	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.218	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1345	-	-	-	459	832
Stage 1	-	-	-	-	827	-
Stage 2	-	-	-	-	680	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1345	-	-	-	428	832
Mov Cap-2 Maneuver	-	-	-	-	428	-
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	680	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	11.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1345	-	-	-	698
HCM Lane V/C Ratio	0.067	-	-	-	0.166
HCM Control Delay (s)	7.9	-	-	-	11.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.6

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	220	190	6	15	7
Future Vol, veh/h	10	220	190	6	15	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	83	83	85	85	56	56
Heavy Vehicles, %	2	2	2	2	5	5
Mvmt Flow	12	265	224	7	27	13

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	231	0	-	0	517	228
Stage 1	-	-	-	-	228	-
Stage 2	-	-	-	-	289	-
Critical Hdwy	4.12	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.218	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1337	-	-	-	513	804
Stage 1	-	-	-	-	803	-
Stage 2	-	-	-	-	753	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1337	-	-	-	508	804
Mov Cap-2 Maneuver	-	-	-	-	508	-
Stage 1	-	-	-	-	796	-
Stage 2	-	-	-	-	753	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1337	-	-	-	575
HCM Lane V/C Ratio	0.009	-	-	-	0.068
HCM Control Delay (s)	7.7	-	-	-	11.7
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	131	33	8	135	17	22	1	4	7	0	28
Future Vol, veh/h	35	131	33	8	135	17	22	1	4	7	0	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	135	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	78	78	78	79	79	79	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	182	46	10	173	22	28	1	5	9	0	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	195	0	0	228	0	0	525	518	205	510	530	184
Stage 1	-	-	-	-	-	-	303	303	-	204	204	-
Stage 2	-	-	-	-	-	-	222	215	-	306	326	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1378	-	-	1340	-	-	463	462	836	474	455	858
Stage 1	-	-	-	-	-	-	706	664	-	798	733	-
Stage 2	-	-	-	-	-	-	780	725	-	704	648	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1378	-	-	1340	-	-	430	442	836	455	435	858
Mov Cap-2 Maneuver	-	-	-	-	-	-	430	442	-	455	435	-
Stage 1	-	-	-	-	-	-	681	640	-	769	727	-
Stage 2	-	-	-	-	-	-	743	719	-	674	625	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0.4	13.4	10.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	464	1378	-	-	1340	-	-	729
HCM Lane V/C Ratio	0.074	0.035	-	-	0.008	-	-	0.059
HCM Control Delay (s)	13.4	7.7	-	-	7.7	0	-	10.2
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	0	5	0	137	0	1	102	1
Future Vol, veh/h	0	0	0	0	0	5	0	137	0	1	102	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	33	33	33	75	75	75	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	15	0	183	0	1	134	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	328	320	135	320	320	183	135	0	0	183	0	0
Stage 1	137	137	-	183	183	-	-	-	-	-	-	-
Stage 2	191	183	-	137	137	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	625	597	914	633	597	859	1449	-	-	1392	-	-
Stage 1	866	783	-	819	748	-	-	-	-	-	-	-
Stage 2	811	748	-	866	783	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	614	596	914	632	596	859	1449	-	-	1392	-	-
Mov Cap-2 Maneuver	614	596	-	632	596	-	-	-	-	-	-	-
Stage 1	866	782	-	819	748	-	-	-	-	-	-	-
Stage 2	797	748	-	865	782	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	9.3	0	0.1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1449	-	-	-	859	1392	-	-
HCM Lane V/C Ratio	-	-	-	-	0.018	0.001	-	-
HCM Control Delay (s)	0	-	-	0	9.3	7.6	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	17	71	175	22	98	41	449	142	71	325	12
Future Volume (veh/h)	21	17	71	175	22	98	41	449	142	71	325	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	20	0	216	27	0	43	473	149	79	361	13
Peak Hour Factor	0.83	0.83	0.83	0.81	0.81	0.81	0.95	0.95	0.95	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	2	2	2	2	2	2	2	2	2
Cap, veh/h	173	30		303	406		492	661	560	297	517	438
Arrive On Green	0.05	0.05	0.00	0.07	0.22	0.00	0.12	0.35	0.35	0.04	0.28	0.28
Sat Flow, veh/h	691	553	0	1781	1870	0	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	45	0	0	216	27	0	43	473	149	79	361	13
Grp Sat Flow(s),veh/h/ln	1244	0	0	1781	1870	0	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	1.2	0.0	0.0	0.5	0.5	0.0	0.0	9.1	2.8	0.0	7.2	0.2
Cycle Q Clear(g_c), s	1.6	0.0	0.0	0.5	0.5	0.0	0.0	9.1	2.8	0.0	7.2	0.2
Prop In Lane	0.56		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	203	0		303	406		492	661	560	297	517	438
V/C Ratio(X)	0.22	0.00		0.71	0.07		0.09	0.72	0.27	0.27	0.70	0.03
Avail Cap(c_a), veh/h	513	0		425	902		493	1083	918	435	1083	918
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.5	0.0	0.0	18.1	12.9	0.0	13.0	11.6	9.6	18.3	13.5	10.9
Incr Delay (d2), s/veh	0.5	0.0	0.0	3.3	0.1	0.0	0.1	2.1	0.4	0.5	2.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	2.0	0.2	0.0	0.2	2.5	0.8	0.6	2.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.1	0.0	0.0	21.4	13.0	0.0	13.1	13.7	9.9	18.8	15.9	11.0
LnGrp LOS	C	A		C	B		B	B	A	B	B	B
Approach Vol, veh/h		45			243			665			453	
Approach Delay, s/veh		20.1			20.4			12.8			16.3	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	7.8	20.7	6.8	6.3	11.0	17.4		13.0				
Change Period (Y+Rc), s	6.0	6.0	4.0	4.0	6.0	6.0		4.0				
Max Green Setting (Gmax), s	5.0	24.0	5.6	10.4	5.0	24.0		20.0				
Max Q Clear Time (g_c+I1), s	2.0	11.1	2.5	3.6	2.0	9.2		2.5				
Green Ext Time (p_c), s	0.0	3.6	0.2	0.0	0.0	2.3		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			15.5									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	63	168	254	15	19	40
Future Vol, veh/h	63	168	254	15	19	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	118	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	89	89	93	93
Heavy Vehicles, %	2	2	2	2	1	1
Mvmt Flow	66	177	285	17	20	43

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	302	0	-	0	603	294
Stage 1	-	-	-	-	294	-
Stage 2	-	-	-	-	309	-
Critical Hdwy	4.12	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.218	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1259	-	-	-	464	748
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	747	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1259	-	-	-	440	748
Mov Cap-2 Maneuver	-	-	-	-	440	-
Stage 1	-	-	-	-	720	-
Stage 2	-	-	-	-	747	-

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1259	-	-	-	610
HCM Lane V/C Ratio	0.053	-	-	-	0.104
HCM Control Delay (s)	8	-	-	-	11.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	181	256	4	4	8
Future Vol, veh/h	7	181	256	4	4	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	83	83	85	85	56	56
Heavy Vehicles, %	2	2	2	2	5	5
Mvmt Flow	8	218	301	5	7	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	306	0	-	0	538	304
Stage 1	-	-	-	-	304	-
Stage 2	-	-	-	-	234	-
Critical Hdwy	4.12	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.218	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1255	-	-	-	499	729
Stage 1	-	-	-	-	742	-
Stage 2	-	-	-	-	798	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1255	-	-	-	496	729
Mov Cap-2 Maneuver	-	-	-	-	496	-
Stage 1	-	-	-	-	738	-
Stage 2	-	-	-	-	798	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1255	-	-	-	630
HCM Lane V/C Ratio	0.007	-	-	-	0.034
HCM Control Delay (s)	7.9	-	-	-	10.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	140	17	2	174	1	15	0	2	1	1	18
Future Vol, veh/h	17	140	17	2	174	1	15	0	2	1	1	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	135	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	78	78	78	79	79	79	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	194	24	3	223	1	19	0	3	1	1	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	224	0	0	218	0	0	495	484	206	486	496	224
Stage 1	-	-	-	-	-	-	254	254	-	230	230	-
Stage 2	-	-	-	-	-	-	241	230	-	256	266	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1345	-	-	1352	-	-	485	483	835	492	475	815
Stage 1	-	-	-	-	-	-	750	697	-	773	714	-
Stage 2	-	-	-	-	-	-	762	714	-	749	689	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1345	-	-	1352	-	-	463	473	835	483	465	815
Mov Cap-2 Maneuver	-	-	-	-	-	-	463	473	-	483	465	-
Stage 1	-	-	-	-	-	-	737	684	-	759	712	-
Stage 2	-	-	-	-	-	-	738	712	-	733	677	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.1	12.7	9.9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	489	1345	-	-	1352	-	-	760
HCM Lane V/C Ratio	0.044	0.018	-	-	0.002	-	-	0.032
HCM Control Delay (s)	12.7	7.7	-	-	7.7	0	-	9.9
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	0	1	0	0	0	1	132	1	2	103	25
Future Vol, veh/h	43	0	1	0	0	0	1	132	1	2	103	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	33	33	33	75	75	75	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	172	0	4	0	0	0	1	176	1	3	136	33

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	338	338	153	340	354	177	169	0	0	177	0	0
Stage 1	159	159	-	179	179	-	-	-	-	-	-	-
Stage 2	179	179	-	161	175	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	616	583	893	614	571	866	1409	-	-	1399	-	-
Stage 1	843	766	-	823	751	-	-	-	-	-	-	-
Stage 2	823	751	-	841	754	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	615	581	893	610	569	866	1409	-	-	1399	-	-
Mov Cap-2 Maneuver	615	581	-	610	569	-	-	-	-	-	-	-
Stage 1	842	764	-	822	750	-	-	-	-	-	-	-
Stage 2	822	750	-	836	752	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.1	0	0.1	0.1
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1409	-	-	619	-	1399	-	-
HCM Lane V/C Ratio	0.001	-	-	0.284	-	0.002	-	-
HCM Control Delay (s)	7.6	0	-	13.1	0	7.6	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.2	-	0	-	-

Intersection						
Int Delay, s/veh	0.4					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	1	0	124	96	8
Future Vol, veh/h	9	1	0	124	96	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	1	0	135	104	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	239	104	113	0	-	0
Stage 1	104	-	-	-	-	-
Stage 2	135	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	749	951	1476	-	-	-
Stage 1	920	-	-	-	-	-
Stage 2	891	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	749	951	1476	-	-	-
Mov Cap-2 Maneuver	749	-	-	-	-	-
Stage 1	920	-	-	-	-	-
Stage 2	891	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1476	-	765	-	-
HCM Lane V/C Ratio	-	-	0.014	-	-
HCM Control Delay (s)	0	-	9.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	34	68	157	44	123	102	365	245	105	466	29
Future Volume (veh/h)	18	34	68	157	44	123	102	365	245	105	466	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	41	0	194	54	0	107	384	258	117	518	32
Peak Hour Factor	0.83	0.83	0.83	0.81	0.81	0.81	0.95	0.95	0.95	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	69		327	426		305	575	487	447	674	571
Arrive On Green	0.08	0.08	0.00	0.06	0.23	0.00	0.05	0.31	0.31	0.10	0.36	0.36
Sat Flow, veh/h	404	915	0	1781	1870	0	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	63	0	0	194	54	0	107	384	258	117	518	32
Grp Sat Flow(s),veh/h/ln	1319	0	0	1781	1870	0	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	1.3	0.0	0.0	0.0	1.0	0.0	0.0	7.9	5.9	0.0	10.8	0.6
Cycle Q Clear(g_c), s	2.3	0.0	0.0	0.0	1.0	0.0	0.0	7.9	5.9	0.0	10.8	0.6
Prop In Lane	0.35		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	210	0		327	426		305	575	487	447	674	571
V/C Ratio(X)	0.30	0.00		0.59	0.13		0.35	0.67	0.53	0.26	0.77	0.06
Avail Cap(c_a), veh/h	475	0		443	847		418	1016	861	466	1016	861
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.1	0.0	0.0	19.3	13.6	0.0	19.3	13.3	12.7	15.3	12.5	9.2
Incr Delay (d2), s/veh	0.8	0.0	0.0	1.7	0.1	0.0	0.7	1.9	1.3	0.3	2.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	1.9	0.4	0.0	0.9	2.5	2.0	0.8	3.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.9	0.0	0.0	21.0	13.7	0.0	19.9	15.3	13.9	15.6	15.3	9.3
LnGrp LOS	C	A		C	B		B	B	B	B	B	A
Approach Vol, veh/h		63			248			749			667	
Approach Delay, s/veh		20.9			19.4			15.5			15.1	
Approach LOS		C			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	10.5	19.6	6.7	7.3	8.2	21.9		14.1				
Change Period (Y+Rc), s	6.0	6.0	4.0	4.0	6.0	6.0		4.0				
Max Green Setting (Gmax), s	5.0	24.0	5.6	10.4	5.0	24.0		20.0				
Max Q Clear Time (g_c+I1), s	2.0	9.9	2.0	4.3	2.0	12.8		3.0				
Green Ext Time (p_c), s	0.1	3.7	0.2	0.1	0.1	3.1		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			16.1									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection						
Int Delay, s/veh	2.8					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	86	277	212	24	22	86
Future Vol, veh/h	86	277	212	24	22	86
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	118	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	89	89	93	93
Heavy Vehicles, %	2	2	2	2	1	1
Mvmt Flow	91	292	238	27	24	92

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	265	0	-	0	726	252
Stage 1	-	-	-	-	252	-
Stage 2	-	-	-	-	474	-
Critical Hdwy	4.12	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.218	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1299	-	-	-	393	789
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	628	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1299	-	-	-	365	789
Mov Cap-2 Maneuver	-	-	-	-	365	-
Stage 1	-	-	-	-	737	-
Stage 2	-	-	-	-	628	-

Approach	EB	WB	SB
HCM Control Delay, s	1.9	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1299	-	-	-	638
HCM Lane V/C Ratio	0.07	-	-	-	0.182
HCM Control Delay (s)	8	-	-	-	11.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.7

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	291	227	6	15	7
Future Vol, veh/h	10	291	227	6	15	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	83	83	85	85	56	56
Heavy Vehicles, %	2	2	2	2	5	5
Mvmt Flow	12	351	267	7	27	13

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	274	0	-	0	646	271
Stage 1	-	-	-	-	271	-
Stage 2	-	-	-	-	375	-
Critical Hdwy	4.12	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.218	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1289	-	-	-	431	761
Stage 1	-	-	-	-	768	-
Stage 2	-	-	-	-	688	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1289	-	-	-	427	761
Mov Cap-2 Maneuver	-	-	-	-	427	-
Stage 1	-	-	-	-	761	-
Stage 2	-	-	-	-	688	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	12.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1289	-	-	-	496
HCM Lane V/C Ratio	0.009	-	-	-	0.079
HCM Control Delay (s)	7.8	-	-	-	12.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	202	33	8	172	17	22	1	4	7	0	28
Future Vol, veh/h	35	202	33	8	172	17	22	1	4	7	0	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	135	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	78	78	78	79	79	79	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	281	46	10	221	22	28	1	5	9	0	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	243	0	0	327	0	0	672	665	304	657	677	232
Stage 1	-	-	-	-	-	-	402	402	-	252	252	-
Stage 2	-	-	-	-	-	-	270	263	-	405	425	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1323	-	-	1233	-	-	370	381	736	378	375	807
Stage 1	-	-	-	-	-	-	625	600	-	752	698	-
Stage 2	-	-	-	-	-	-	736	691	-	622	586	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1323	-	-	1233	-	-	342	363	736	361	358	807
Mov Cap-2 Maneuver	-	-	-	-	-	-	342	363	-	361	358	-
Stage 1	-	-	-	-	-	-	602	578	-	724	692	-
Stage 2	-	-	-	-	-	-	698	685	-	594	564	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.3	15.7	11
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	372	1323	-	-	1233	-	-	647
HCM Lane V/C Ratio	0.092	0.037	-	-	0.008	-	-	0.067
HCM Control Delay (s)	15.7	7.8	-	-	7.9	0	-	11
HCM Lane LOS	C	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	0	1	0	0	5	3	144	0	1	116	57
Future Vol, veh/h	30	0	1	0	0	5	3	144	0	1	116	57
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	33	33	33	75	75	75	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	120	0	4	0	0	15	4	192	0	1	153	75

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	401	393	191	395	430	192	228	0	0	192	0	0
Stage 1	193	193	-	200	200	-	-	-	-	-	-	-
Stage 2	208	200	-	195	230	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	560	543	851	565	518	850	1340	-	-	1381	-	-
Stage 1	809	741	-	802	736	-	-	-	-	-	-	-
Stage 2	794	736	-	807	714	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	548	541	851	560	516	850	1340	-	-	1381	-	-
Mov Cap-2 Maneuver	548	541	-	560	516	-	-	-	-	-	-	-
Stage 1	807	740	-	800	734	-	-	-	-	-	-	-
Stage 2	778	734	-	802	713	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.4	9.3	0.2	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1340	-	-	554	850	1381	-	-
HCM Lane V/C Ratio	0.003	-	-	0.224	0.018	0.001	-	-
HCM Control Delay (s)	7.7	0	-	13.4	9.3	7.6	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.9	0.1	0	-	-

Intersection						
Int Delay, s/veh	0.3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	1	0	139	103	14
Future Vol, veh/h	6	1	0	139	103	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	1	0	151	112	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	263	112	127	0	-	0
Stage 1	112	-	-	-	-	-
Stage 2	151	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	726	941	1459	-	-	-
Stage 1	913	-	-	-	-	-
Stage 2	877	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	726	941	1459	-	-	-
Mov Cap-2 Maneuver	726	-	-	-	-	-
Stage 1	913	-	-	-	-	-
Stage 2	877	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1459	-	750	-	-
HCM Lane V/C Ratio	-	-	0.01	-	-
HCM Control Delay (s)	0	-	9.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	17	71	190	22	97	41	449	150	72	325	12
Future Volume (veh/h)	21	17	71	190	22	97	41	449	150	72	325	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	20	0	235	27	0	43	473	158	80	361	13
Peak Hour Factor	0.83	0.83	0.83	0.81	0.81	0.81	0.95	0.95	0.95	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	2	2	2	2	2	2	2	2	2
Cap, veh/h	172	30		309	412		491	661	560	295	515	437
Arrive On Green	0.05	0.05	0.00	0.07	0.22	0.00	0.12	0.35	0.35	0.04	0.28	0.28
Sat Flow, veh/h	692	553	0	1781	1870	0	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	45	0	0	235	27	0	43	473	158	80	361	13
Grp Sat Flow(s),veh/h/ln	1245	0	0	1781	1870	0	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	1.2	0.0	0.0	0.9	0.5	0.0	0.0	9.1	3.0	0.0	7.2	0.3
Cycle Q Clear(g_c), s	1.7	0.0	0.0	0.9	0.5	0.0	0.0	9.1	3.0	0.0	7.2	0.3
Prop In Lane	0.56		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	202	0		309	412		491	661	560	295	515	437
V/C Ratio(X)	0.22	0.00		0.76	0.07		0.09	0.72	0.28	0.27	0.70	0.03
Avail Cap(c_a), veh/h	509	0		422	895		491	1074	911	430	1074	911
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.7	0.0	0.0	18.1	12.9	0.0	13.2	11.7	9.7	18.5	13.6	11.1
Incr Delay (d2), s/veh	0.6	0.0	0.0	5.4	0.1	0.0	0.1	2.1	0.4	0.5	2.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	2.4	0.2	0.0	0.2	2.6	0.9	0.6	2.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.3	0.0	0.0	23.5	13.0	0.0	13.2	13.8	10.1	18.9	16.1	11.1
LnGrp LOS	C	A		C	B		B	B	B	B	B	B
Approach Vol, veh/h		45			262			674			454	
Approach Delay, s/veh		20.3			22.4			12.9			16.4	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	7.8	20.8	6.9	6.3	11.1	17.5		13.2
Change Period (Y+Rc), s	6.0	6.0	4.0	4.0	6.0	6.0		4.0
Max Green Setting (Gmax), s	5.0	24.0	5.6	10.4	5.0	24.0		20.0
Max Q Clear Time (g_c+I1), s	2.0	11.1	2.9	3.7	2.0	9.2		2.5
Green Ext Time (p_c), s	0.0	3.6	0.2	0.0	0.0	2.3		0.0

Intersection Summary			
HCM 6th Ctrl Delay			16.0
HCM 6th LOS			B

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection						
Int Delay, s/veh	2					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	63	177	271	15	19	40
Future Vol, veh/h	63	177	271	15	19	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	118	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	89	89	93	93
Heavy Vehicles, %	2	2	2	2	1	1
Mvmt Flow	66	186	304	17	20	43

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	321	0	-	0	631	313
Stage 1	-	-	-	-	313	-
Stage 2	-	-	-	-	318	-
Critical Hdwy	4.12	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.218	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1239	-	-	-	447	730
Stage 1	-	-	-	-	744	-
Stage 2	-	-	-	-	740	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1239	-	-	-	423	730
Mov Cap-2 Maneuver	-	-	-	-	423	-
Stage 1	-	-	-	-	705	-
Stage 2	-	-	-	-	740	-

Approach	EB	WB	SB
HCM Control Delay, s	2.1	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1239	-	-	-	592
HCM Lane V/C Ratio	0.054	-	-	-	0.107
HCM Control Delay (s)	8.1	-	-	-	11.8
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.4

Intersection						
Int Delay, s/veh	0.5					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	190	273	4	4	8
Future Vol, veh/h	7	190	273	4	4	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	83	83	85	85	56	56
Heavy Vehicles, %	2	2	2	2	5	5
Mvmt Flow	8	229	321	5	7	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	326	0	-	0	569	324
Stage 1	-	-	-	-	324	-
Stage 2	-	-	-	-	245	-
Critical Hdwy	4.12	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.218	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1234	-	-	-	479	710
Stage 1	-	-	-	-	726	-
Stage 2	-	-	-	-	789	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1234	-	-	-	476	710
Mov Cap-2 Maneuver	-	-	-	-	476	-
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	789	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1234	-	-	-	610
HCM Lane V/C Ratio	0.007	-	-	-	0.035
HCM Control Delay (s)	7.9	-	-	-	11.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	149	17	2	191	1	15	0	2	1	1	18
Future Vol, veh/h	17	149	17	2	191	1	15	0	2	1	1	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	135	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	78	78	78	79	79	79	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	207	24	3	245	1	19	0	3	1	1	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	246	0	0	231	0	0	530	519	219	521	531	246
Stage 1	-	-	-	-	-	-	267	267	-	252	252	-
Stage 2	-	-	-	-	-	-	263	252	-	269	279	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1320	-	-	1337	-	-	460	461	821	466	454	793
Stage 1	-	-	-	-	-	-	738	688	-	752	698	-
Stage 2	-	-	-	-	-	-	742	698	-	737	680	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1320	-	-	1337	-	-	439	451	821	457	444	793
Mov Cap-2 Maneuver	-	-	-	-	-	-	439	451	-	457	444	-
Stage 1	-	-	-	-	-	-	725	676	-	738	696	-
Stage 2	-	-	-	-	-	-	718	696	-	721	668	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.1	13.1	10.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	464	1320	-	-	1337	-	-	737
HCM Lane V/C Ratio	0.046	0.018	-	-	0.002	-	-	0.034
HCM Control Delay (s)	13.1	7.8	-	-	7.7	0	-	10.1
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	56	0	3	0	0	0	1	136	1	2	105	32
Future Vol, veh/h	56	0	3	0	0	0	1	136	1	2	105	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	33	33	33	75	75	75	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	224	0	12	0	0	0	1	181	1	3	138	42

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	349	349	159	355	370	182	180	0	0	182	0	0
Stage 1	165	165	-	184	184	-	-	-	-	-	-	-
Stage 2	184	184	-	171	186	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	606	575	886	600	560	861	1396	-	-	1393	-	-
Stage 1	837	762	-	818	747	-	-	-	-	-	-	-
Stage 2	818	747	-	831	746	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	605	573	886	590	558	861	1396	-	-	1393	-	-
Mov Cap-2 Maneuver	605	573	-	590	558	-	-	-	-	-	-	-
Stage 1	836	760	-	817	746	-	-	-	-	-	-	-
Stage 2	817	746	-	818	745	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.5	0	0.1	0.1
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1396	-	-	615	-	1393	-	-
HCM Lane V/C Ratio	0.001	-	-	0.384	-	0.002	-	-
HCM Control Delay (s)	7.6	0	-	14.5	0	7.6	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.8	-	0	-	-

Intersection						
Int Delay, s/veh	0.5					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	1	1	134	107	10
Future Vol, veh/h	12	1	1	134	107	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	1	1	146	116	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	264	116	127	0	-	0
Stage 1	116	-	-	-	-	-
Stage 2	148	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	725	936	1459	-	-	-
Stage 1	909	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	724	936	1459	-	-	-
Mov Cap-2 Maneuver	724	-	-	-	-	-
Stage 1	908	-	-	-	-	-
Stage 2	880	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1459	-	737	-	-
HCM Lane V/C Ratio	0.001	-	0.019	-	-
HCM Control Delay (s)	7.5	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	34	68	168	44	125	102	365	263	109	466	29
Future Volume (veh/h)	18	34	68	168	44	125	102	365	263	109	466	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	41	0	207	54	0	107	384	277	121	518	32
Peak Hour Factor	0.83	0.83	0.83	0.81	0.81	0.81	0.95	0.95	0.95	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	69		328	427		306	578	490	443	674	571
Arrive On Green	0.08	0.08	0.00	0.06	0.23	0.00	0.05	0.31	0.31	0.10	0.36	0.36
Sat Flow, veh/h	404	916	0	1781	1870	0	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	63	0	0	207	54	0	107	384	277	121	518	32
Grp Sat Flow(s),veh/h/ln	1320	0	0	1781	1870	0	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	1.3	0.0	0.0	0.0	1.0	0.0	0.0	7.9	6.5	0.0	10.8	0.6
Cycle Q Clear(g_c), s	2.3	0.0	0.0	0.0	1.0	0.0	0.0	7.9	6.5	0.0	10.8	0.6
Prop In Lane	0.35		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	210	0		328	427		306	578	490	443	674	571
V/C Ratio(X)	0.30	0.00		0.63	0.13		0.35	0.66	0.57	0.27	0.77	0.06
Avail Cap(c_a), veh/h	475	0		442	846		419	1015	860	465	1015	860
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.2	0.0	0.0	19.3	13.6	0.0	19.3	13.3	12.8	15.5	12.5	9.2
Incr Delay (d2), s/veh	0.8	0.0	0.0	2.0	0.1	0.0	0.7	1.9	1.5	0.3	2.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	2.0	0.4	0.0	0.9	2.5	2.1	0.8	3.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.0	0.0	0.0	21.3	13.7	0.0	19.9	15.2	14.3	15.8	15.3	9.3
LnGrp LOS	C	A		C	B		B	B	B	B	B	A
Approach Vol, veh/h		63			261			768			671	
Approach Delay, s/veh		21.0			19.7			15.5			15.1	
Approach LOS		C			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	10.5	19.7	6.8	7.3	8.2	21.9		14.1
Change Period (Y+Rc), s	6.0	6.0	4.0	4.0	6.0	6.0		4.0
Max Green Setting (Gmax), s	5.0	24.0	5.6	10.4	5.0	24.0		20.0
Max Q Clear Time (g_c+I1), s	2.0	9.9	2.0	4.3	2.0	12.8		3.0
Green Ext Time (p_c), s	0.1	3.8	0.2	0.1	0.1	3.1		0.1

Intersection Summary	
HCM 6th Ctrl Delay	16.2
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection						
Int Delay, s/veh	2.7					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	86	299	225	24	22	86
Future Vol, veh/h	86	299	225	24	22	86
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	118	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	89	89	93	93
Heavy Vehicles, %	2	2	2	2	1	1
Mvmt Flow	91	315	253	27	24	92

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	280	0	-	0	764	267
Stage 1	-	-	-	-	267	-
Stage 2	-	-	-	-	497	-
Critical Hdwy	4.12	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.218	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1283	-	-	-	373	774
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	613	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1283	-	-	-	347	774
Mov Cap-2 Maneuver	-	-	-	-	347	-
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	613	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1283	-	-	-	619
HCM Lane V/C Ratio	0.071	-	-	-	0.188
HCM Control Delay (s)	8	-	-	-	12.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.7

Intersection						
Int Delay, s/veh	0.8					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	313	240	6	15	7
Future Vol, veh/h	10	313	240	6	15	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	83	83	85	85	56	56
Heavy Vehicles, %	2	2	2	2	5	5
Mvmt Flow	12	377	282	7	27	13

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	289	0	-	0	687	286
Stage 1	-	-	-	-	286	-
Stage 2	-	-	-	-	401	-
Critical Hdwy	4.12	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.218	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1273	-	-	-	408	746
Stage 1	-	-	-	-	756	-
Stage 2	-	-	-	-	670	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1273	-	-	-	404	746
Mov Cap-2 Maneuver	-	-	-	-	404	-
Stage 1	-	-	-	-	749	-
Stage 2	-	-	-	-	670	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	13.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1273	-	-	-	473
HCM Lane V/C Ratio	0.009	-	-	-	0.083
HCM Control Delay (s)	7.9	-	-	-	13.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	224	33	8	185	17	22	1	4	7	0	28
Future Vol, veh/h	35	224	33	8	185	17	22	1	4	7	0	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	135	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	78	78	78	79	79	79	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	311	46	10	237	22	28	1	5	9	0	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	259	0	0	357	0	0	718	711	334	703	723	248
Stage 1	-	-	-	-	-	-	432	432	-	268	268	-
Stage 2	-	-	-	-	-	-	286	279	-	435	455	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1306	-	-	1202	-	-	344	358	708	352	352	791
Stage 1	-	-	-	-	-	-	602	582	-	738	687	-
Stage 2	-	-	-	-	-	-	721	680	-	600	569	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1306	-	-	1202	-	-	317	341	708	336	335	791
Mov Cap-2 Maneuver	-	-	-	-	-	-	317	341	-	336	335	-
Stage 1	-	-	-	-	-	-	579	560	-	710	680	-
Stage 2	-	-	-	-	-	-	683	673	-	572	547	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.3	16.5	11.2
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	346	1306	-	-	1202	-	-	622
HCM Lane V/C Ratio	0.099	0.037	-	-	0.009	-	-	0.069
HCM Control Delay (s)	16.5	7.9	-	-	8	0	-	11.2
HCM Lane LOS	C	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	0	1	0	0	5	4	147	0	1	121	74
Future Vol, veh/h	40	0	1	0	0	5	4	147	0	1	121	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	33	33	33	75	75	75	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	160	0	4	0	0	15	5	196	0	1	159	97

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	424	416	208	418	464	196	256	0	0	196	0	0
Stage 1	210	210	-	206	206	-	-	-	-	-	-	-
Stage 2	214	206	-	212	258	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	540	527	832	545	495	845	1309	-	-	1377	-	-
Stage 1	792	728	-	796	731	-	-	-	-	-	-	-
Stage 2	788	731	-	790	694	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	528	524	832	540	493	845	1309	-	-	1377	-	-
Mov Cap-2 Maneuver	528	524	-	540	493	-	-	-	-	-	-	-
Stage 1	789	727	-	793	728	-	-	-	-	-	-	-
Stage 2	771	728	-	785	693	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.7	9.3	0.2	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1309	-	-	533	845	1377	-	-
HCM Lane V/C Ratio	0.004	-	-	0.308	0.018	0.001	-	-
HCM Control Delay (s)	7.8	0	-	14.7	9.3	7.6	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.3	0.1	0	-	-

Intersection						
Int Delay, s/veh	0.4					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	1	1	143	104	18
Future Vol, veh/h	8	1	1	143	104	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	1	1	155	113	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	270	113	133	0	-	0
Stage 1	113	-	-	-	-	-
Stage 2	157	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	719	940	1452	-	-	-
Stage 1	912	-	-	-	-	-
Stage 2	871	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	718	940	1452	-	-	-
Mov Cap-2 Maneuver	718	-	-	-	-	-
Stage 1	911	-	-	-	-	-
Stage 2	871	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1452	-	737	-	-
HCM Lane V/C Ratio	0.001	-	0.013	-	-
HCM Control Delay (s)	7.5	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	91	90	81	43	476	110	54	307	11
v/c Ratio	0.29	0.21	0.18	0.06	0.41	0.10	0.10	0.26	0.01
Control Delay	14.4	17.0	8.3	7.4	14.8	0.8	8.1	13.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.4	17.0	8.3	7.4	14.8	0.8	8.1	13.3	0.0
Queue Length 50th (ft)	10	23	5	8	139	0	8	52	0
Queue Length 95th (ft)	47	56	33	17	212	1	23	163	0
Internal Link Dist (ft)	325		382		1358			1104	
Turn Bay Length (ft)		132		916		838	640		605
Base Capacity (vph)	467	435	815	774	1184	1074	538	1226	946
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.21	0.10	0.06	0.40	0.10	0.10	0.25	0.01

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	119	101	146	88	326	132	64	439	27
v/c Ratio	0.40	0.23	0.26	0.19	0.38	0.16	0.10	0.49	0.03
Control Delay	16.9	17.4	8.2	9.3	17.4	1.7	7.8	17.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.9	17.4	8.2	9.3	17.4	1.7	7.8	17.2	0.1
Queue Length 50th (ft)	16	25	10	14	96	0	10	127	0
Queue Length 95th (ft)	53	55	40	34	170	16	27	229	0
Internal Link Dist (ft)	325		382		1358			1104	
Turn Bay Length (ft)		202		916		838	640		605
Base Capacity (vph)	404	436	768	475	1036	962	641	1036	962
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.23	0.19	0.19	0.31	0.14	0.10	0.42	0.03

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	92	91	82	43	480	111	54	309	11
v/c Ratio	0.29	0.21	0.18	0.06	0.42	0.11	0.10	0.26	0.01
Control Delay	14.4	17.1	8.3	7.4	14.9	0.9	8.1	13.4	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.4	17.1	8.3	7.4	14.9	0.9	8.1	13.4	0.0
Queue Length 50th (ft)	10	23	5	8	141	0	8	52	0
Queue Length 95th (ft)	47	57	33	17	214	2	23	163	0
Internal Link Dist (ft)	325		382		1358			1104	
Turn Bay Length (ft)		132		916		838	640		605
Base Capacity (vph)	467	434	816	774	1183	1073	535	1226	946
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.21	0.10	0.06	0.41	0.10	0.10	0.25	0.01

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	121	102	148	89	329	133	66	442	27
v/c Ratio	0.42	0.25	0.27	0.19	0.36	0.15	0.11	0.51	0.03
Control Delay	17.2	18.2	8.2	9.7	16.9	1.7	8.2	18.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.2	18.2	8.2	9.7	16.9	1.7	8.2	18.4	0.1
Queue Length 50th (ft)	16	25	10	14	97	0	10	128	0
Queue Length 95th (ft)	53	55	40	34	172	16	27	231	0
Internal Link Dist (ft)	325		382		1358			1104	
Turn Bay Length (ft)		202		916		838	640		605
Base Capacity (vph)	388	404	735	467	1002	937	614	987	926
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.25	0.20	0.19	0.33	0.14	0.11	0.45	0.03

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	92	140	92	43	480	144	60	309	11
v/c Ratio	0.31	0.35	0.21	0.06	0.51	0.16	0.12	0.32	0.01
Control Delay	14.9	19.3	8.1	7.5	16.5	2.0	8.4	14.4	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.9	19.3	8.1	7.5	16.5	2.0	8.4	14.4	0.0
Queue Length 50th (ft)	10	36	5	8	141	0	9	52	0
Queue Length 95th (ft)	47	82	34	17	214	12	25	163	0
Internal Link Dist (ft)	325		382		1358			1104	
Turn Bay Length (ft)		132		916		838	640		605
Base Capacity (vph)	423	405	735	707	1122	1027	492	1164	908
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.35	0.13	0.06	0.43	0.14	0.12	0.27	0.01

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	121	141	155	89	329	196	78	442	27
v/c Ratio	0.42	0.35	0.29	0.19	0.36	0.23	0.13	0.51	0.03
Control Delay	17.4	19.8	8.0	9.7	16.9	3.7	8.3	18.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.4	19.8	8.0	9.7	16.9	3.7	8.3	18.4	0.1
Queue Length 50th (ft)	16	36	10	14	97	0	12	129	0
Queue Length 95th (ft)	53	72	41	34	172	37	31	231	0
Internal Link Dist (ft)	325		382		1358			1104	
Turn Bay Length (ft)		202		916		838	640		605
Base Capacity (vph)	381	405	737	467	1001	941	613	987	925
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.35	0.21	0.19	0.33	0.21	0.13	0.45	0.03

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	110	146	123	51	561	145	73	361	13
v/c Ratio	0.38	0.34	0.25	0.08	0.60	0.16	0.19	0.41	0.02
Control Delay	16.0	19.9	7.6	7.5	19.7	2.0	10.0	17.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.0	19.9	7.6	7.5	19.7	2.0	10.0	17.6	0.1
Queue Length 50th (ft)	13	43	7	8	177	0	11	119	0
Queue Length 95th (ft)	53	85	40	20	261	12	29	184	0
Internal Link Dist (ft)	325		382		1358			1104	
Turn Bay Length (ft)		132		916		838	640		605
Base Capacity (vph)	391	425	676	640	1013	945	383	1013	814
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.34	0.18	0.08	0.55	0.15	0.19	0.36	0.02

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	145	156	198	107	384	195	104	518	32
v/c Ratio	0.54	0.39	0.34	0.27	0.46	0.24	0.18	0.57	0.04
Control Delay	21.1	21.6	8.0	11.5	19.1	3.6	8.9	20.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.1	21.6	8.0	11.5	19.1	3.6	8.9	20.0	0.1
Queue Length 50th (ft)	22	44	14	17	124	0	17	162	0
Queue Length 95th (ft)	63	79	47	40	196	36	39	#316	0
Internal Link Dist (ft)	325		382		1358			1104	
Turn Bay Length (ft)		202		916		838	640		605
Base Capacity (vph)	349	404	816	395	959	909	586	959	905
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.39	0.24	0.27	0.40	0.21	0.18	0.54	0.04

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	131	216	148	43	473	149	79	361	13
v/c Ratio	0.41	0.50	0.26	0.07	0.51	0.17	0.16	0.37	0.01
Control Delay	15.5	22.2	7.0	7.9	17.5	2.2	8.8	14.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.5	22.2	7.0	7.9	17.5	2.2	8.8	14.7	0.0
Queue Length 50th (ft)	14	59	7	7	140	0	12	65	0
Queue Length 95th (ft)	52	106	35	20	251	21	31	184	0
Internal Link Dist (ft)	325		382		1358			1104	
Turn Bay Length (ft)		202		916		838	640		605
Base Capacity (vph)	430	434	813	595	1022	952	485	1064	983
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.50	0.18	0.07	0.46	0.16	0.16	0.34	0.01

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	145	194	206	107	384	258	117	518	32
v/c Ratio	0.53	0.46	0.34	0.27	0.46	0.30	0.20	0.57	0.04
Control Delay	21.0	22.9	7.8	11.6	19.1	3.5	9.2	20.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.0	22.9	7.8	11.6	19.1	3.5	9.2	20.0	0.1
Queue Length 50th (ft)	22	56	14	17	124	0	19	162	0
Queue Length 95th (ft)	63	96	47	40	196	41	43	#316	0
Internal Link Dist (ft)	325		382		1358			1104	
Turn Bay Length (ft)		202		916		838	640		605
Base Capacity (vph)	357	421	847	396	959	940	583	959	905
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.46	0.24	0.27	0.40	0.27	0.20	0.54	0.04

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	131	235	147	43	473	158	80	361	13
v/c Ratio	0.41	0.53	0.25	0.07	0.51	0.18	0.17	0.37	0.01
Control Delay	15.3	23.0	7.0	7.9	17.5	2.6	8.9	14.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.3	23.0	7.0	7.9	17.5	2.6	8.9	14.7	0.0
Queue Length 50th (ft)	14	65	7	7	140	0	12	65	0
Queue Length 95th (ft)	52	115	35	20	251	25	31	184	0
Internal Link Dist (ft)	325		382		1358			1104	
Turn Bay Length (ft)		202		916		838	640		605
Base Capacity (vph)	440	441	831	594	1025	954	484	1067	985
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.53	0.18	0.07	0.46	0.17	0.17	0.34	0.01

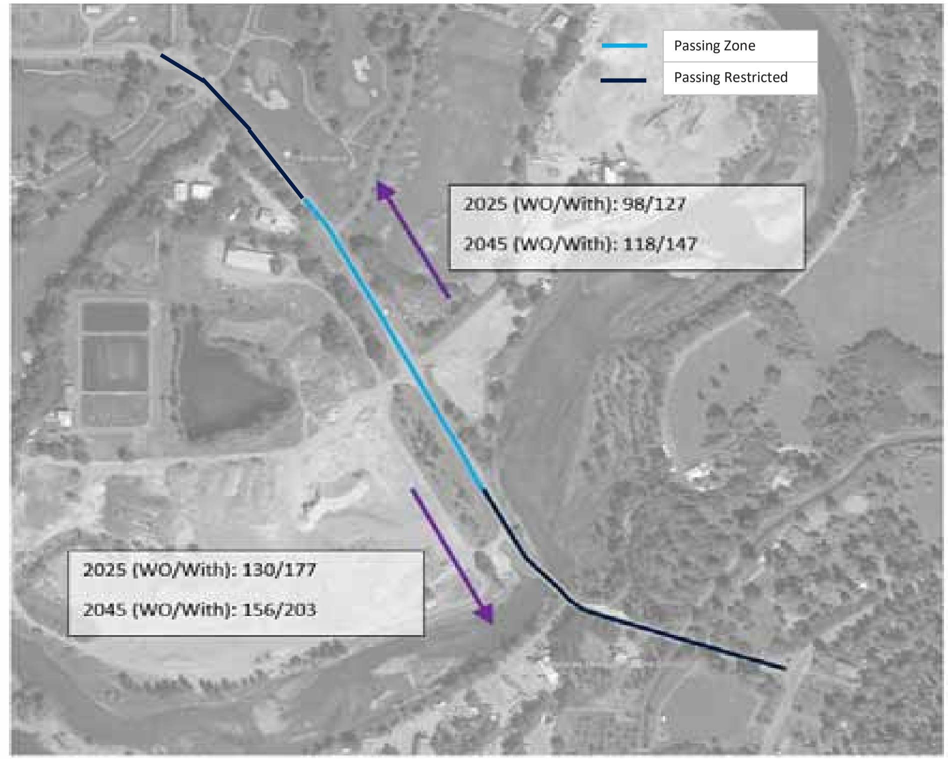
Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	145	207	208	107	384	277	121	518	32
v/c Ratio	0.53	0.48	0.34	0.27	0.46	0.32	0.21	0.57	0.04
Control Delay	20.9	23.4	7.7	11.6	19.1	3.5	9.3	20.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.9	23.4	7.7	11.6	19.1	3.5	9.3	20.0	0.1
Queue Length 50th (ft)	22	60	14	17	124	0	20	162	0
Queue Length 95th (ft)	64	102	47	40	196	42	44	#316	0
Internal Link Dist (ft)	325		382		1358			1104	
Turn Bay Length (ft)		202		916		838	640		605
Base Capacity (vph)	361	427	848	397	959	949	582	959	905
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.48	0.25	0.27	0.40	0.29	0.21	0.54	0.04

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Section	Passing	Year	Direction	Development	Volume	HV%	Follower Density, followers/mi/ln	LOS
1	Passing Restricted	2025	EB	Without	130	1%	1.5	A
				With	177	12%	2.4	A
			WB	Without	98	1%	0.9	A
				With	127	12%	1.4	A
		2045	EB	Without	156	1%	1.9	A
				With	203	12%	2.9	B
			WB	Without	118	1%	1.3	A
				With	147	12%	1.8	A
2	Passing Zone	2025	EB	Without	130	1%	1.2	A
				With	177	12%	1.9	A
			WB	Without	98	1%	0.7	A
				With	127	12%	1.2	A
		2045	EB	Without	156	1%	1.6	A
				With	203	12%	2.4	A
			WB	Without	118	1%	1.0	A
				With	147	12%	1.5	A



LOS	Follower Density (followers/mi/ln) Higher-Speed Highways Posted Speed Limit ≥ 50 mi/h	Follower Density (followers/mi/ln) Lower-Speed Highways Posted Speed Limit < 50 mi/h
A	≤ 2.0	≤ 2.5
B	> 2.0 – 4.0	> 2.5 – 5.0
C	> 4.0 – 8.0	> 5.0 – 10.0
D	> 8.0 – 12.0	> 10.0 – 15.0
E	> 12.0	> 15.0
F	Demand exceeds capacity	Demand exceeds capacity

HCM 7th Edition – LOS criteria

HCS Two-Lane Highway Report

Project Information

Analyst	BT	Date	11/17/2023
Agency	SEH	Analysis Year	2025
Jurisdiction	La Plata	Time Analyzed	
Project Description	Roberts RV Resort TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1120
Lane Width, ft	11	Shoulder Width, ft	2
Speed Limit, mi/h	35	Access Point Density, pts/mi	14.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	188	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	12.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	32.6
Speed Slope Coefficient (m)	2.27566	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.48474	PF Power Coefficient (p)	0.64391
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1120	-	-	31.8

Vehicle Results

Average Speed, mi/h	31.8	Percent Followers, %	39.7
Segment Travel Time, minutes	0.40	Follower Density (FD), followers/mi/ln	2.4
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/mi/ln	LOS
1	9	0.01	2.4	A

HCS Two-Lane Highway Report

Project Information

Analyst	BT	Date	11/17/2023
Agency	SEH	Analysis Year	2025
Jurisdiction	La Plata	Time Analyzed	
Project Description	Roberts RV Resort TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1120
Lane Width, ft	11	Shoulder Width, ft	2
Speed Limit, mi/h	35	Access Point Density, pts/mi	14.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	135	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	12.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	32.6
Speed Slope Coefficient (m)	2.27566	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.48474	PF Power Coefficient (p)	0.64391
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1120	-	-	32.0

Vehicle Results

Average Speed, mi/h	32.0	Percent Followers, %	33.6
Segment Travel Time, minutes	0.40	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/mi/ln	LOS
1	7	0.00	1.4	A

HCS Two-Lane Highway Report

Project Information

Analyst	BT	Date	11/17/2023
Agency	SEH	Analysis Year	2025
Jurisdiction	La Plata	Time Analyzed	
Project Description	Roberts RV Resort TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1120
Lane Width, ft	11	Shoulder Width, ft	2
Speed Limit, mi/h	35	Access Point Density, pts/mi	14.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	138	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	1.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	33.0
Speed Slope Coefficient (m)	2.29552	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.48822	PF Power Coefficient (p)	0.64431
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1120	-	-	32.4

Vehicle Results

Average Speed, mi/h	32.4	Percent Followers, %	34.0
Segment Travel Time, minutes	0.39	Follower Density (FD), followers/mi/ln	1.5
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/mi/ln	LOS
1	7	0.00	1.5	A

HCS Two-Lane Highway Report

Project Information

Analyst	BT	Date	11/17/2023
Agency	SEH	Analysis Year	2025
Jurisdiction	La Plata	Time Analyzed	
Project Description	Roberts RV Resort TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1120
Lane Width, ft	11	Shoulder Width, ft	2
Speed Limit, mi/h	35	Access Point Density, pts/mi	14.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	104	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	1.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	33.0
Speed Slope Coefficient (m)	2.29552	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.48822	PF Power Coefficient (p)	0.64431
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1120	-	-	32.7

Vehicle Results

Average Speed, mi/h	32.7	Percent Followers, %	29.3
Segment Travel Time, minutes	0.39	Follower Density (FD), followers/mi/ln	0.9
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	5	0.00	0.9	A

HCS Two-Lane Highway Report

Project Information

Analyst	BT	Date	11/17/2023
Agency	SEH	Analysis Year	2045
Jurisdiction	La Plata	Time Analyzed	
Project Description	Roberts RV Resort TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1120
Lane Width, ft	11	Shoulder Width, ft	2
Speed Limit, mi/h	35	Access Point Density, pts/mi	14.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	216	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	12.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	32.6
Speed Slope Coefficient (m)	2.27566	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.48474	PF Power Coefficient (p)	0.64391
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1120	-	-	31.7

Vehicle Results

Average Speed, mi/h	31.7	Percent Followers, %	42.5
Segment Travel Time, minutes	0.40	Follower Density (FD), followers/mi/ln	2.9
Vehicle LOS	B		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/mi/ln	LOS
1	11	0.01	2.9	B

HCS Two-Lane Highway Report

Project Information

Analyst	BT	Date	11/17/2023
Agency	SEH	Analysis Year	2045
Jurisdiction	La Plata	Time Analyzed	
Project Description	Roberts RV Resort TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1120
Lane Width, ft	11	Shoulder Width, ft	2
Speed Limit, mi/h	35	Access Point Density, pts/mi	14.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	156	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	12.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	32.6
Speed Slope Coefficient (m)	2.27566	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.48474	PF Power Coefficient (p)	0.64391
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1120	-	-	31.9

Vehicle Results

Average Speed, mi/h	31.9	Percent Followers, %	36.2
Segment Travel Time, minutes	0.40	Follower Density (FD), followers/mi/ln	1.8
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/mi/ln	LOS
1	8	0.01	1.8	A

HCS Two-Lane Highway Report

Project Information

Analyst	BT	Date	11/17/2023
Agency	SEH	Analysis Year	2045
Jurisdiction	La Plata	Time Analyzed	
Project Description	Roberts RV Resort TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1120
Lane Width, ft	11	Shoulder Width, ft	2
Speed Limit, mi/h	35	Access Point Density, pts/mi	14.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	166	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	1.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	33.0
Speed Slope Coefficient (m)	2.29552	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.48822	PF Power Coefficient (p)	0.64431
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1120	-	-	32.2

Vehicle Results

Average Speed, mi/h	32.2	Percent Followers, %	37.4
Segment Travel Time, minutes	0.39	Follower Density (FD), followers/mi/ln	1.9
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	8	0.01	1.9	A

HCS Two-Lane Highway Report

Project Information

Analyst	BT	Date	11/17/2023
Agency	SEH	Analysis Year	2045
Jurisdiction	La Plata	Time Analyzed	
Project Description	Roberts RV Resort TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1120
Lane Width, ft	11	Shoulder Width, ft	2
Speed Limit, mi/h	35	Access Point Density, pts/mi	14.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	126	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	1.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	33.0
Speed Slope Coefficient (m)	2.29552	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.48822	PF Power Coefficient (p)	0.64431
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1120	-	-	32.5

Vehicle Results

Average Speed, mi/h	32.5	Percent Followers, %	32.4
Segment Travel Time, minutes	0.39	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/mi/ln	LOS
1	6	0.00	1.3	A

HCS Two-Lane Highway Report

Project Information

Analyst	BT	Date	11/17/2023
Agency	SEH	Analysis Year	2025
Jurisdiction	La Plata	Time Analyzed	
Project Description	Roberts RV Resort TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1140
Lane Width, ft	11	Shoulder Width, ft	2
Speed Limit, mi/h	35	Access Point Density, pts/mi	14.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	188	Opposing Demand Flow Rate, veh/h	135
Peak Hour Factor	0.94	Total Trucks, %	12.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	32.6
Speed Slope Coefficient (m)	1.99468	Speed Power Coefficient (p)	0.56003
PF Slope Coefficient (m)	-1.26817	PF Power Coefficient (p)	0.69113
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1140	-	-	32.1

Vehicle Results

Average Speed, mi/h	32.1	Percent Followers, %	33.0
Segment Travel Time, minutes	0.40	Follower Density (FD), followers/mi/ln	1.9
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	10	0.00	1.9	A

HCS Two-Lane Highway Report

Project Information

Analyst	BT	Date	11/17/2023
Agency	SEH	Analysis Year	2025
Jurisdiction	La Plata	Time Analyzed	
Project Description	Roberts RV Resort TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1140
Lane Width, ft	11	Shoulder Width, ft	2
Speed Limit, mi/h	35	Access Point Density, pts/mi	14.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	135	Opposing Demand Flow Rate, veh/h	188
Peak Hour Factor	0.94	Total Trucks, %	12.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	32.6
Speed Slope Coefficient (m)	2.01643	Speed Power Coefficient (p)	0.54260
PF Slope Coefficient (m)	-1.28761	PF Power Coefficient (p)	0.68675
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1140	-	-	32.3

Vehicle Results

Average Speed, mi/h	32.3	Percent Followers, %	27.8
Segment Travel Time, minutes	0.40	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/mi/ln	LOS
1	7	0.00	1.2	A

HCS Two-Lane Highway Report

Project Information

Analyst	BT	Date	11/17/2023
Agency	SEH	Analysis Year	2025
Jurisdiction	La Plata	Time Analyzed	
Project Description	Roberts RV Resort TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1140
Lane Width, ft	11	Shoulder Width, ft	2
Speed Limit, mi/h	35	Access Point Density, pts/mi	14.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	138	Opposing Demand Flow Rate, veh/h	104
Peak Hour Factor	0.94	Total Trucks, %	1.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	33.0
Speed Slope Coefficient (m)	1.99989	Speed Power Coefficient (p)	0.57236
PF Slope Coefficient (m)	-1.25886	PF Power Coefficient (p)	0.69424
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1140	-	-	32.7

Vehicle Results

Average Speed, mi/h	32.7	Percent Followers, %	27.3
Segment Travel Time, minutes	0.40	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/mi/ln	LOS
1	7	0.00	1.2	A

HCS Two-Lane Highway Report

Project Information

Analyst	BT	Date	11/17/2023
Agency	SEH	Analysis Year	2025
Jurisdiction	La Plata	Time Analyzed	
Project Description	Roberts RV Resort TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1140
Lane Width, ft	11	Shoulder Width, ft	2
Speed Limit, mi/h	35	Access Point Density, pts/mi	14.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	104	Opposing Demand Flow Rate, veh/h	138
Peak Hour Factor	0.94	Total Trucks, %	1.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	33.0
Speed Slope Coefficient (m)	2.01595	Speed Power Coefficient (p)	0.55886
PF Slope Coefficient (m)	-1.27344	PF Power Coefficient (p)	0.69091
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1140	-	-	32.9

Vehicle Results

Average Speed, mi/h	32.9	Percent Followers, %	23.4
Segment Travel Time, minutes	0.39	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/mi/ln	LOS
1	5	0.00	0.7	A

HCS Two-Lane Highway Report

Project Information

Analyst	BT	Date	11/17/2023
Agency	SEH	Analysis Year	2045
Jurisdiction	La Plata	Time Analyzed	
Project Description	Roberts RV Resort TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1140
Lane Width, ft	11	Shoulder Width, ft	2
Speed Limit, mi/h	35	Access Point Density, pts/mi	14.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	216	Opposing Demand Flow Rate, veh/h	156
Peak Hour Factor	0.94	Total Trucks, %	12.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	32.6
Speed Slope Coefficient (m)	2.00382	Speed Power Coefficient (p)	0.55258
PF Slope Coefficient (m)	-1.27638	PF Power Coefficient (p)	0.68927
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1140	-	-	32.0

Vehicle Results

Average Speed, mi/h	32.0	Percent Followers, %	35.8
Segment Travel Time, minutes	0.40	Follower Density (FD), followers/mi/ln	2.4
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/mi/ln	LOS
1	11	0.01	2.4	A

HCS Two-Lane Highway Report

Project Information

Analyst	BT	Date	11/17/2023
Agency	SEH	Analysis Year	2045
Jurisdiction	La Plata	Time Analyzed	
Project Description	Roberts RV Resort TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1140
Lane Width, ft	11	Shoulder Width, ft	2
Speed Limit, mi/h	35	Access Point Density, pts/mi	14.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	163	Opposing Demand Flow Rate, veh/h	0
Peak Hour Factor	0.94	Total Trucks, %	12.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	32.6
Speed Slope Coefficient (m)	1.87419	Speed Power Coefficient (p)	0.67576
PF Slope Coefficient (m)	-1.15539	PF Power Coefficient (p)	0.71947
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1140	-	-	32.3

Vehicle Results

Average Speed, mi/h	32.3	Percent Followers, %	26.9
Segment Travel Time, minutes	0.40	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/mi/ln	LOS
1	8	0.00	1.4	A

HCS Two-Lane Highway Report

Project Information

Analyst	BT	Date	11/17/2023
Agency	SEH	Analysis Year	2045
Jurisdiction	La Plata	Time Analyzed	
Project Description	Roberts RV Resort TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1140
Lane Width, ft	11	Shoulder Width, ft	2
Speed Limit, mi/h	35	Access Point Density, pts/mi	14.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	166	Opposing Demand Flow Rate, veh/h	126
Peak Hour Factor	0.94	Total Trucks, %	1.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	33.0
Speed Slope Coefficient (m)	2.01019	Speed Power Coefficient (p)	0.56364
PF Slope Coefficient (m)	-1.26823	PF Power Coefficient (p)	0.69209
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1140	-	-	32.5

Vehicle Results

Average Speed, mi/h	32.5	Percent Followers, %	30.6
Segment Travel Time, minutes	0.40	Follower Density (FD), followers/mi/ln	1.6
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/mi/ln	LOS
1	8	0.00	1.6	A

HCS Two-Lane Highway Report

Project Information

Analyst	BT	Date	11/17/2023
Agency	SEH	Analysis Year	2045
Jurisdiction	La Plata	Time Analyzed	
Project Description	Roberts RV Resort TIS	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1140
Lane Width, ft	11	Shoulder Width, ft	2
Speed Limit, mi/h	35	Access Point Density, pts/mi	14.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	126	Opposing Demand Flow Rate, veh/h	166
Peak Hour Factor	0.94	Total Trucks, %	1.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	33.0
Speed Slope Coefficient (m)	2.02758	Speed Power Coefficient (p)	0.54945
PF Slope Coefficient (m)	-1.28389	PF Power Coefficient (p)	0.68857
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1140	-	-	32.7

Vehicle Results

Average Speed, mi/h	32.7	Percent Followers, %	26.5
Segment Travel Time, minutes	0.40	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/mi/ln	LOS
1	6	0.00	1.0	A

Appendix C

Base Camp Traffic Impact Study – Eagle County, CO (December, 2020)

M E M O R A N D U M

DATE: **February 25, 2019**
REVISED ***August 1, 2019***
REVISED ***December 30, 2020***

TO: **Tambi Katieb**

CC: **Shawn Colby**

FROM: **Dan Cokley, PE, PTOE, SGM**

RE: **Traffic Impact Study**
Base Camp – Eagle
Eagle County, CO

COLORADO LICENSED
DANIEL J. COKLEY
29799
12.30.20
PROFESSIONAL ENGINEER

This Traffic Impact Study addresses an Eagle County engineering request for a Traffic Impact Study (TIS) for this proposed Campground / RV Park to be located at 3220 Brush Creek Road, Eagle County, CO. The Eagle County Land Use Regulations Section 4-620.G require Traffic Impact Studies for proposed developments that are expected to generate more than four hundred (400) vehicle trips per day. This development will generate less traffic, but we are providing an abbreviated TIS that includes the following scope:

- Existing Roadway Conditions
- Existing Traffic Volumes
- Sight distance analysis
- Trip Generation and anticipated vehicle sizes
- Directional Distribution/Traffic Assignment
- Internal Circulation
- Future Traffic Volumes
- Anticipated non-vehicular traffic routes & connections to the Town of Eagle
- Auxiliary turn lane analysis
- Summary of Findings

This study will provide recommendations for the development of a safe driveway access to Brush Creek Road.

Existing Site and Roadway Conditions

The proposed Base Camp Eagle will be located at 3220 Brush Creek Road, southeast of the Town of Eagle. The site is currently residential / agricultural use and shown shaded in red in the Google Earth image on the following page.

Figure 1. Project Area

Access to the site will be provided using an improved access located slightly south of the existing driveway and aligned with the main driveway for the property across Brush Creek Road (Butter Crunch Farm second driveway). The access is located approximately 2.5 miles southeast of downtown Eagle. No turn lanes or pedestrian facilities exist along Brush Creek Road at the access intersection.

Brush Creek Road is a two-lane asphalt collector roadway, approximately 20-22 feet in width, with 1-2-foot gravel shoulders and a posted speed of 40 mph in the vicinity of the access. Brush Creek Road is classified as a Rural Major Collector per Eagle County Article 4. For the purposes of this study and application of the State Highway Access Code, it is classified as a rural highway, R-B using CDOT Access Category standards.

Recent development applications within the Brush Creek Road corridor have resulted in several associated Traffic Impact Studies, the most recent being Frost Creek TIS by McDowell Engineering, latest revision 1/24/17. This study will use the Frost Creek TIS as a reference for existing and future traffic volumes.

Existing Traffic Volumes

Peak hour traffic volumes (2015) from the Frost Creek TIS were reviewed and estimated near the site access along Brush Creek Road. The peak hour two-way volumes are approximately 70 vph AM, 75 vph PM, and 125 vph Saturday. Those values were obtained by interpolating between the Sylvan Lake Rd and Frost Creek Road intersections with Brush Creek Road, the volumes and the interpolation are provided in the Appendix.

Existing Access Sight Distance
The sight distance was analyzed for the access driveway intersection with Brush Creek Road. The analysis reviewed the access as one-way stop-controlled intersection and was based upon the guidance of AASHTO, A Policy on Geometric Design of Highways and Streets, 2018, 7th Edition, (Ch 9, Intersections). The Policy provides for guidance on decision point and construction of the sight triangle. Using Table 9-7 (Left Turn, Case B1) and Table 9-9 (Right Turn, Case B2), the sight distance requirements for the 40-mph posted speed are 445 ft and 385 ft respectively. The current sight distance is at least 600 feet.

The Policy states that the vertex of the sight triangle (decision point) should be located 14.5 ft from the edge of traveled way, the decision point typically represents the location of the driver's eye (at a height of 3.5 ft) when stopped at a major road intersection. The driver should have the ability to see a 6" high object at the center of the travel lane. The sight triangle is constructed using these parameters, and objects that could obscure the driver's vision should be located outside of this sight triangle. The sight distance in each direction at the access is documented below.

Sight Access looking southeast

Sight Access looking northwest

Trip Generation

The proposed campground development consists of 29 RV sites, 20 tent sites and 4 group tent sites (8 equivalent single tent sites) for a total of 57 camp sites as shown in the conceptual site plan provided below. The dump station shown in the site plan will be available to campground users only.

ITE's *Trip Generation (10th Edition)* provides trip generation rates for a Campground and RV Park facility (ITE Code 416) that have 3-6 associated studies for weekday AM and PM peak hour for locations in Rhode Island, Vermont, and Washington from 1990-2010.

Local and more recent trip generation information, including weekend volumes are more useful and preferred for use in this study. It was determined that McDowell Engineering performed a local Trip Generation study at the KOA Campground in Silt, Colorado, located south and west of I-70 exit 97. The trip generation count was completed in July 2016 and consisted of counting RV's, passenger vehicles and trucks / trailers, the generation rates are provided in Passenger Car Equivalents (PCEs). It is noted that there is no pedestrian connection between the KOA Campground and the Town of Silt, which is located to the north of the I-70 interchange. The diamond interchange has (2) 12-ft lanes and 1 ft paved shoulders. The raw data for this KOA study is provided as an attachment.

The traffic type and use are similar, consisting of passenger vehicles and recreational vehicles, with trailers for boats, four-wheelers or campers. A vehicle and a trailer combination have a passenger car equivalent (PCE) of 2. The resulting trip generation is shown in the Table below.

TRIP GENERATION TABLE																	
Base Camp Eagle																	
			Average	Design Hour Rates						Average	Design Hour Traffic					
	Number	*ITE*	Saturday	AM	AM	PM	PM	SAT	SAT	Saturday	AM	AM	PM	PM	SAT	SAT
Base Camp	of Sites	*Code*	Rate	Entering	Exiting	Entering	Exiting	Entering	Exiting	Traffic	IN	OUT	IN	OUT	IN	OUT
Camp / RV	57	*	2.36	0.14	0.12	0.16	0.09	0.30	0.33	135	8	7	9	5	17	19
									TOTAL TRIPS:	**135**	**8**	**7**	**9**	**5**	**17**	**19**
Directional Distribution				*55%*	*45%*	*64%*	*36%*	*48%*	*52%*							
Average Rate (in PCE's)				*0.26*	*0.26*	*0.25*	*0.25*	*0.63*	*0.63*							
**KOA Camground count 7/20/16 (Silt, CO)*																
SHAC - Vehicles or combination > 20 ft = 2 PCE's																

Trip Distribution and Assignment

The distribution and assignment of site generated trips are based upon the primary access and activities oriented toward Eagle, with the understanding users will maintain significant traffic toward Sylvan Lake and the National Forest for recreation. Existing Saturday directional distribution is approximately 55% (N) / 45% (S) at Brush Creek Road and Sylvan Lake Road near the Town of Eagle, and 40% (N) / 60% (S) at Brush Creek Road and Frost Creek Road. The existing distributions are calculated from the existing traffic volume figure provided as an attachment.

For this analysis, the trip distribution was conservatively split 60% (N) toward Eagle and 40% (S) toward Sylvan Lake. The following Table shows the assignment of traffic PCE's generated during the Design hour.

	TRIP DISTRIBUTION TABLE						
	Base Camp Eagle						
	Trip Distribution		AM	PM	SAT		
	To/From Eagle (N)		60%	60%	60%		
	To/From Sylvan (S		40%	40%	40%		
	Based primary access and activities toward Eagle						
			Design Hour Traffic PCE's				
			AM		PM		SAT	
Turning	***Movement***		IN	OUT	IN	OUT	IN	OUT
SB	Left	IN	5		5		10	
WB	Right	OUT		4		3		11
WB	Left	OUT		3		2		8
NB	Right	IN	3		4		7	
TOTAL PCE MOVEMENTS:			8	7	9	5	17	19

Internal Circulation
Based upon the Trip Generation volumes, the proposed access can safely operate as a two-way, two-lane access. The development is proposed to provide two-way internal traffic circulation to the restroom and dump station sites. Beyond that, generally to the north, the circulation is defined by one-way loops. Clear signage showing "Do Not Enter", One-Way", Two-Way" will be provided to maintain safety within the sight.

Future Traffic Volumes
Peak hour traffic volumes (2035) from the Frost Creek TIS were reviewed and estimated near the site access along Brush Creek Road. The peak hour two-way volumes are approximately 450 vph AM, 415 vph PM, and 500 vph Saturday. Those values were obtained by interpolating between the Sylvan Lake Rd and Frost Creek Road intersections with Brush Creek Road, the volumes and the interpolation are provided as an attachment.

Anticipated non-vehicular traffic routes & connections to the Town of Eagle
While separate non-vehicular connections to the property do not currently exist, the applicant and Town of Eagle have discussed proximity to both the existing Haymeadow and Wall trail systems.

As discussed with the Planning Commission and Board of Trustees in pre-application meetings held in July 2019, it is the goal of the applicant to promote a "Park Once" guest preference to accessing amenities in Town via alternative means (hiking, biking, etc.) due to the planned connectivity to the campground and minor RV park. To that end, management will actively discourage the use of Brush Creek Road for walking and biking.

Further, the applicant has support for the project by the Haymeadow project team, where a number of future trails are planned and will also serve visitors at Base Camp Eagle.

The applicant will continue working with Town and Haymeadow officials on timing of these connections to coincide with the opening of Base Camp Eagle. The proximity to downtown and Eagle Ranch (< 1mile) will further reduce vehicle trips to and from Eagle. The planned trail connections will provide trip reductions as traffic on Brush Creek Road continues to increase. Because many users are drawn to the Eagle area for mountain and road biking, the opportunity for trip reductions will be in the 5-10% range in the future. Those trip reductions are not considered in this analysis.

Auxiliary Lane Requirements
Auxiliary turn lane requirements for County Road accesses are typically analyzed using the CDOT State Highway Access Code based on the anticipated peak hour volumes, the speed limit and geometry of the highway adjacent to the access, and the classification of the highway. For analysis purposes, the Brush Creek Road speed limit adjacent to the site is 40 mph along an R-B highway. Based on the *State Highway Access Code (SHAC)*,

Auxiliary Lane Requirements
(8) Auxiliary turn lanes shall be installed according to the criteria below.
- *a) A left turn deceleration lane with taper and additional storage length is required for any access with a projected peak hour left ingress turning volume greater than 10 vph.*
- *b) A right turn deceleration lane with taper is required for any access with a projected peak hour right ingress turning volume greater than 25 vph.*
- *c) A right turn acceleration lane with taper is required for any access with a projected peak hour right turning volume greater than 50 vph when the posted speed on the highway is*

<u>45 mph or greater</u> and the highway has only one lane for through traffic in the direction of the right turn. A right turn acceleration lane is not required on multi-lane highways of this category.

d) A <u>left turn acceleration lane</u> with taper may be required if it would be a benefit to the safety and operation of the roadway or as determined by subsection 3.5. A left turn acceleration lane is generally not required where: the <u>posted speed is less than 45 mph</u>, or the intersection is signalized, or the acceleration lane would interfere with the left turn ingress movements to any other access.

Based upon the *SHAC* and the trip distribution table provided above, auxiliary turn lanes are not required. The proposed intersection can safely operate as a two-way, two-lane access.

Summary of Findings
Brush Creek Road has a capacity at Level of Service C reportedly up to 7500 vpd without additional improvements. Base Camp Eagle is estimated to generate approximately 72 weekday and 113 Saturday vpd (in PCE's), about 2% of the total roadway capacity.

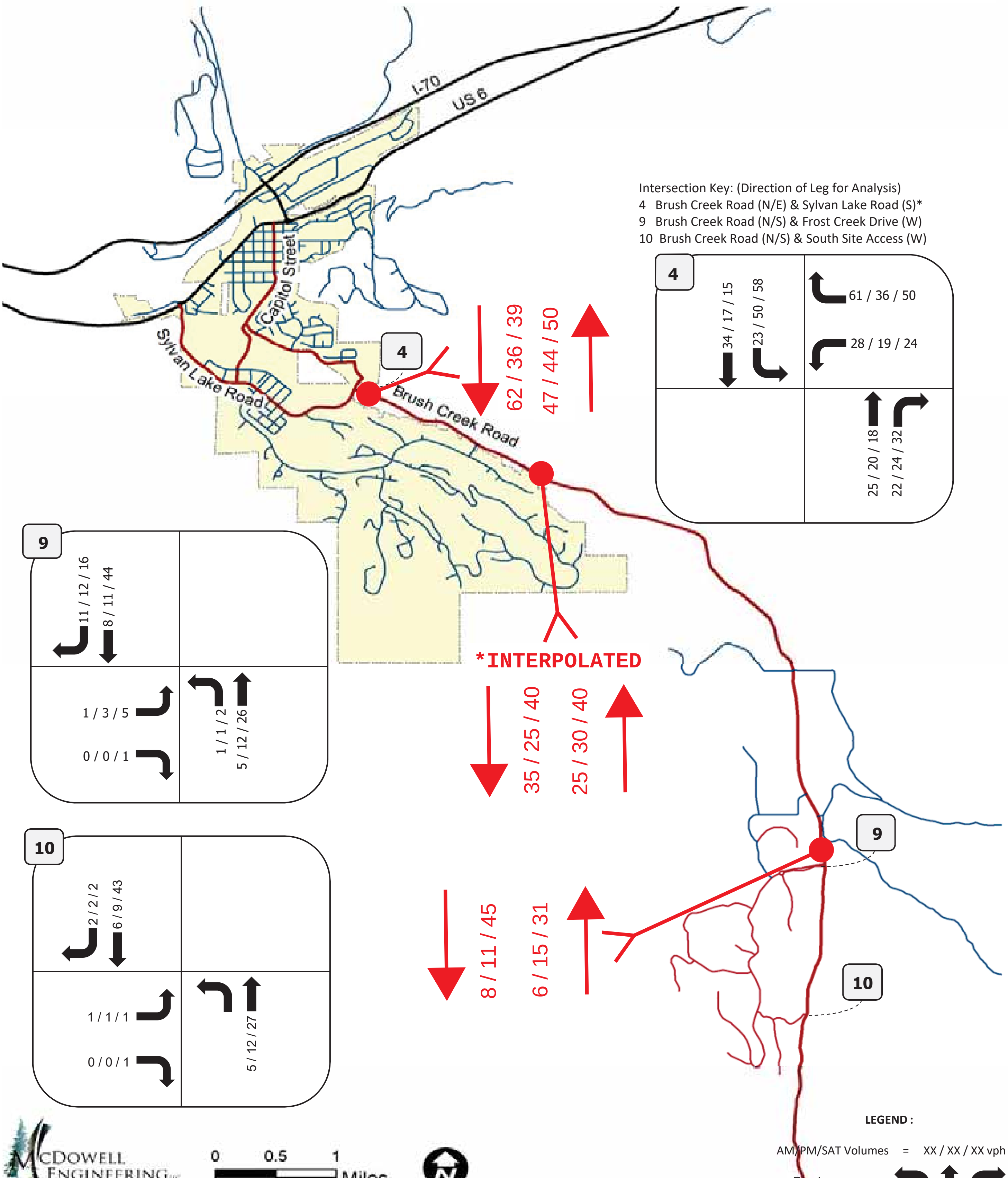
As a primary access to Brush Creek, Sylvan Lake, and the National Forest; Brush Creek Road experiences its heaviest volumes on summer weekends. Peak hour Saturday two-way volumes as interpolated from the Frost Creek Study are anticipated to increase from 80 vph in 2015 to 450 vph near Base Camp Eagle. Saturday peak hour site-generated volume is estimated at 31 vph.

The proposed access driveway has adequate sight distance for entering the roadway and does not require turn lanes based upon the auxiliary lane requirements per the SHAC. The sight distance triangle discussed in this TIS should be implemented as part of the site access design.

<u>Attachments:</u>

- 2015 Traffic Volumes, reference Frost Creek TIS
- 2035 Traffic Volumes, reference Frost Creek TIS
- Comparable Campground Trip Generation Calculations, KOA Silt CO by McDowell Engineering
- Base Camp Eagle – Project Location and Trail Access
- Frost Creek TIS, 1/24/17 by McDowell Engineering

Figure 5: Year 2015 Existing Traffic INTERPOLATED VALUES AT 3220 BRUSH CREEK ROAD*

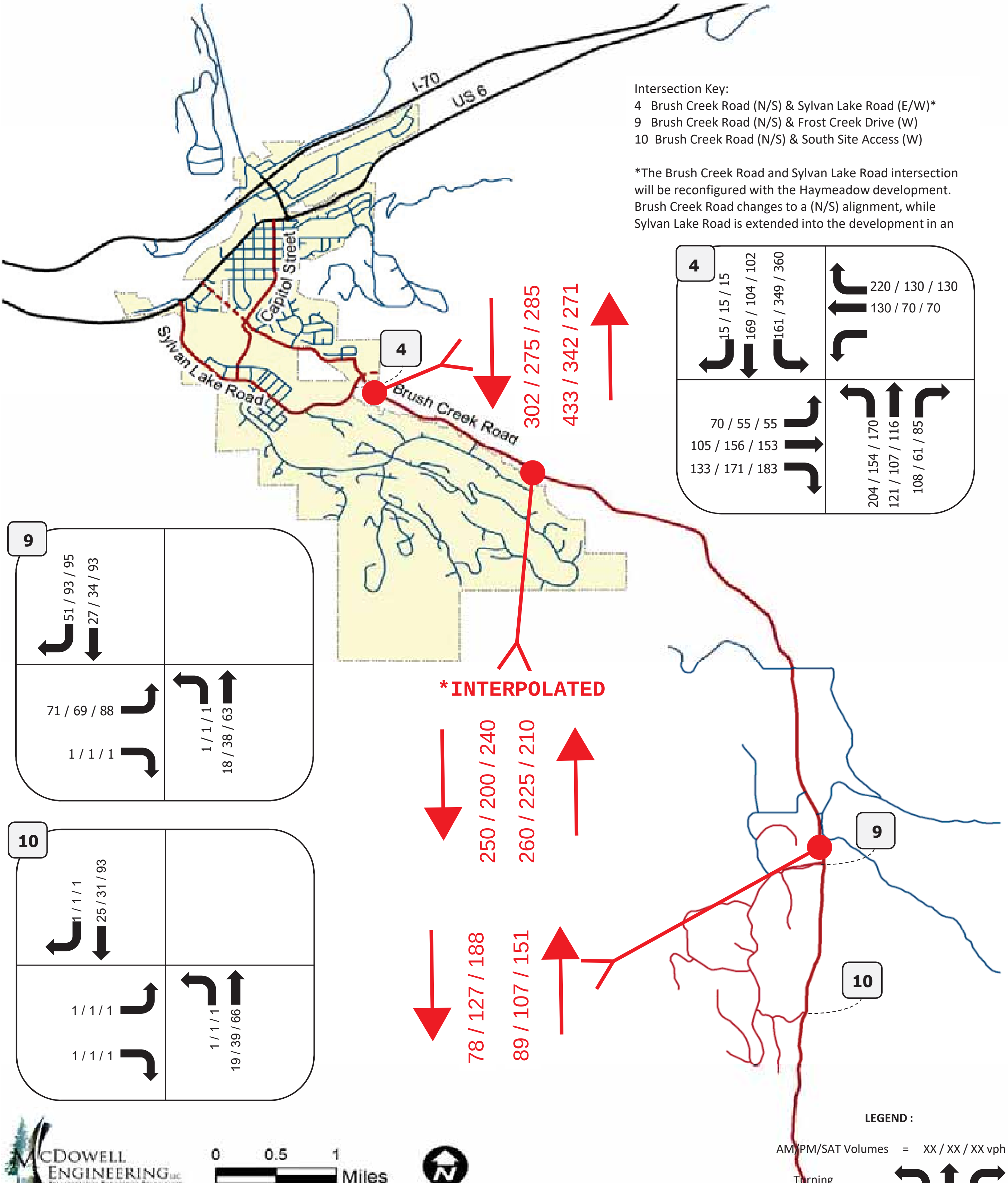


McDowell Engineering LLC

Project Number: M1158
Prepared By: KJS
Frost Creek, Eagle, Colorado

January 11, 2017

Figure 7: Year 2035 Background Traffic *INTERPOLATD VALUES AT 3220 BRUSH CREEK ROAD



Project Number: M1158
Prepared By: KJS
Frost Creek, Eagle, Colorado

January 11, 2017

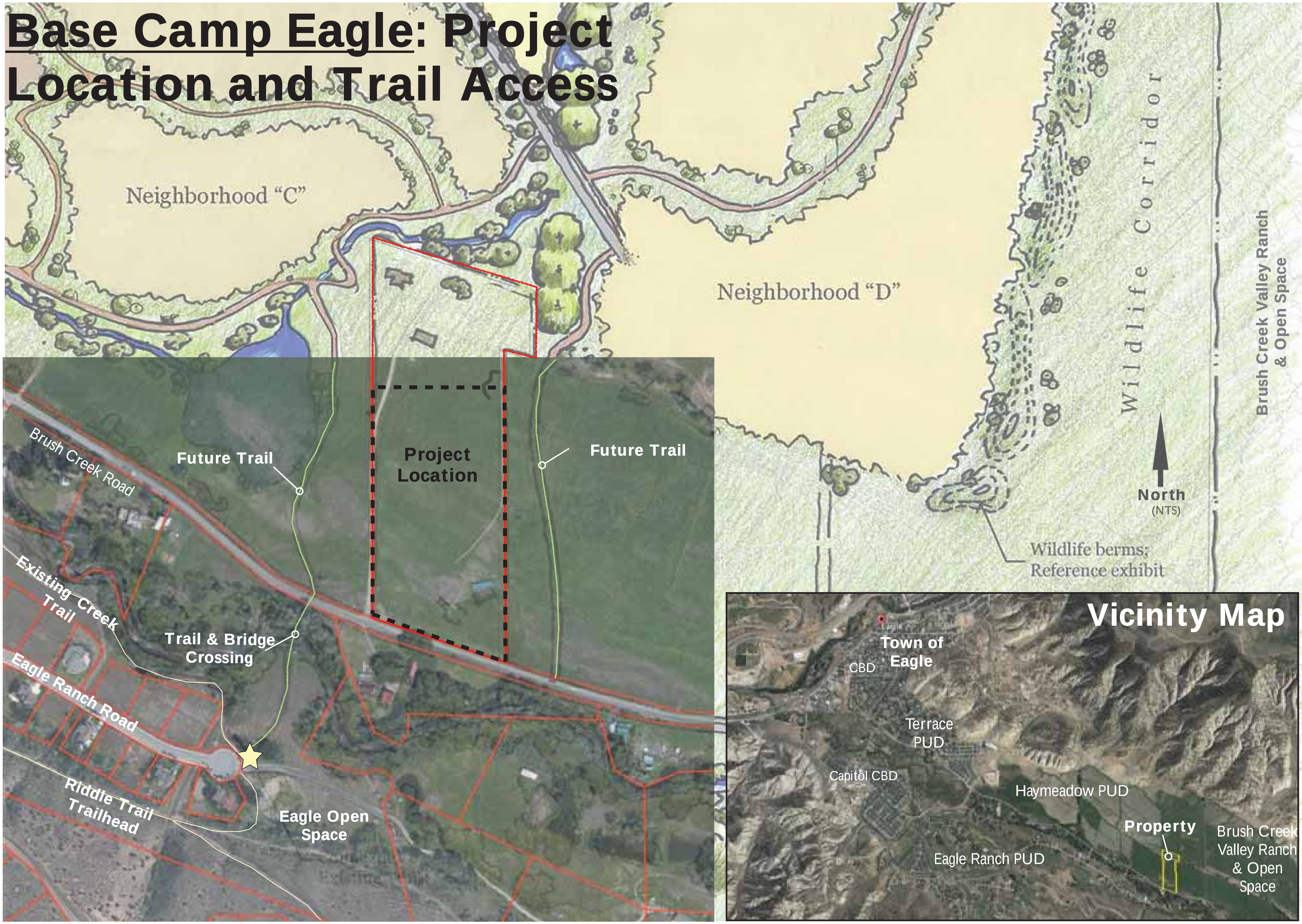
Project Number:	M1231
Prepared By:	KJS
Date:	7/20/2016
Revised:	

Table 1 - Comparable Campground Trip Generation Calculations
KOA Campground
Silt, Colorado
Observed Site-Generated Traffic[1]

		Trip Generation Rates					Average Weekday	Average Saturday	Morning Peak Hour				Evening Peak Hour				Saturday Peak Hour			
									Inbound		Outbound		Inbound		Outbound		Inbound		Outbound	
ITE Code	Units	AM Peak Hour	PM Peak Hour	SAT Peak Hour	Average Weekday	Average Saturday	Trips (vpd)	Trips (vpd)	% Trips	Trips	% Trips	Trips	% Trips	Trips	% Trips	Trips	% Trips	Trips	% Trips	Trips
Exising Land Use																				
Campground[2]	73 Units	0.15	0.15	0.37	1.51	2.36	110	172	55%	6	45%	5	64%	7	36%	4	48%	13	52%	14
# Cars/Pickups										2		1		4		0		6		2
# Large Vehicles (Campers or RVs)										4		4		3		4		7		12
Trucks in PCEs[2]										8		8		6		8		14		24
Total PCEs[2] at driveway		0.26	0.25	0.63						10		9		10		8		20		26

[1] Values obtained from *KOA Campground in Silt, CO.*
[2] Passenger Car Equivalents are based upon Section 2.3(4)(e) of the State of Colorado's State Highway Access Code

Base Camp Eagle: Project Location and Trail Access



Transportation Impact Study

for

Frost Creek
Eagle, Colorado

November 30, 2015
Revised March 25, 2016
Revised January 12, 2017
Revised January 24, 2017

PREPARED FOR:
BCP-ARR, LLC c/o Meriwether Companies
3390 Valmont Road, Suite 1
Boulder, CO 80302
Contact: Garrett Simon

PREPARED BY:
McDowell Engineering, LLC
PO Box 4259
Eagle, CO 81631
970.623.0788
Contact: Kari J. McDowell Schroeder, PE, PTOE
Project Number: M1182

Statement of Engineering Qualifications

Kari J. McDowell Schroeder, PE, PTOE is a Transportation and Traffic Engineer for McDowell Engineering, LLC. Ms. McDowell Schroeder has over twenty years of extensive traffic and transportation engineering experience. She has completed numerous transportation studies and roadway design projects throughout the State of Colorado. Ms. McDowell Schroeder is a licensed Professional Engineer in the State of Colorado and has her certification as a Professional Traffic Operations Engineer from the Institute of Transportation Engineers.

Traffic Impact Study for Frost Creek

Table of Contents

Tables and Figures

1.0 Project Description

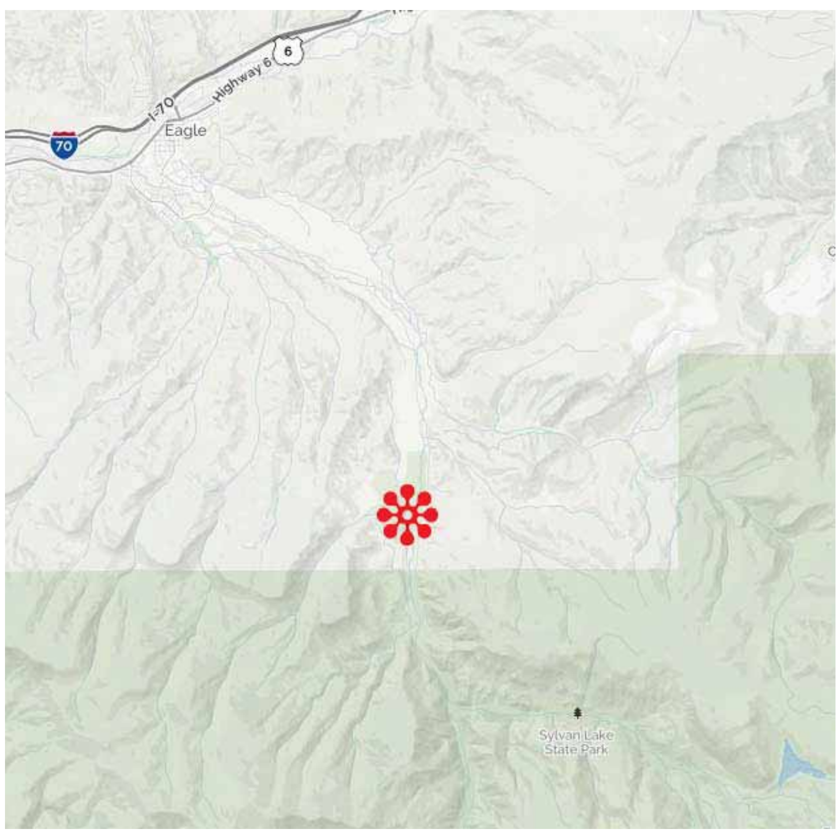
McDowell Engineering has prepared this Transportation Impact Study for the proposed resubdivision of the Frost Creek development. The purpose of this study is to forecast and analyze the impacts of the additional traffic volumes associated with the proposed increase in the number of residential units. Recommendations to mitigate any traffic impacts are also included. The analysis complies with Eagle County and Town of Eagle standards.

The Frost Creek project was originally approved in 2005 under the name of Adam's Rib. This approval included 97 single family homes, 25 accessory dwelling units, a private 18-hole golf course, and private 2,300 square foot recreation center. The original traffic analysis was covered in LSC's 2004 *Adam's Rib Traffic Study*[1].

Membership rates and housing construction remained low through Year 2013. The property was sold to a new ownership group in 2014. As such, Frost Creek is looking to resubdivide in order to meet current market conditions. Frost Creek is proposing 40 additional single family homes and eight additional rental cabins. In addition, this application proposes to remove 25 of the previously approved accessory dwelling units.

Frost Creek is located within unincorporated Eagle County. It is three miles south of the Town of Eagle on Brush Creek Road. Refer to the Area Map in ***Figure 1***.

Figure 1: Area Map



1.1 Project Access

Both accesses to Frost Creek have been constructed and are currently in operation.

The primary Frost Creek access to Brush Creek Road is located on the northeastern side of the property. Frost Creek Drive is located 1,800 feet south of the Bruce Creek/Salt Creek access to Brush Creek Road. There is a guard station at the Frost Creek Drive entrance.

A secondary access at the southeastern end of the site connects with the golf maintenance facility and southern home sites to Brush Creek Road. The internal roadway network connects the two Brush Creek Road accesses. In the event of an emergency, there is a secondary egress from the site available.

The access locations are depicted in the site plan - ***Figure 2***.

1.2 Traffic Study Scope

This traffic study evaluates peak hour traffic operations at the following intersections:

- Brush Creek Road & Sylvan Lake Road
- Brush Creek Road & Frost Creek Drive
- Brush Creek Road & South Site Access

In addition, the study evaluates the capacity and HCM Level of Service of Brush Creek Road between Ouzel Lane and the project site.

- Brush Creek Road south of Ouzel Lane
- Brush Creek Road, 1750 feet south of the water tower
- Brush Creek Road north of Frost Creek Drive
- Brush Creek Road south of Frost Creek Drive

The traffic study scope was requested by Eagle County in January 2017. The Traffic Study Scoping Form can be found in the **Appendix**.

Figure 2: Site Plan

The re-subdivision of Squires Lane is not included in this application.

2.0 Existing Conditions

2.1 Description of Existing Transportation System

Brush Creek Road is the primary roadway serving the site. The roadway is currently a paved, two-lane major collector with a posted speed limit of 35mph in the vicinity of the site. Brush Creek Road is the equivalent to the Colorado Department of Transportation (CDOT) access category, R-B, rural highway.

There are plans for a Brush Creek Road extension that will extend Brush Creek Road west of the Capitol Street intersection. This extension will connect through to US 6 (Grand Avenue.) It is proposed to be a paved, two-lane road. The intersection with Capitol Street is currently controlled by an all-way (3-way) stop.

Sylvan Lake Road extends through the Eagle Ranch commercial area, connecting US 6 (Grand Avenue) to Brush Creek Road. In the vicinity of Brush Creek Road, it is a two-lane, paved collector street. The roadway section is wider in the Eagle Ranch commercial area to accommodate on-street parking. The intersection of US 6 is controlled by a roundabout.

Capitol Street extends south from US 6 (Grand Avenue) and downtown Eagle to Sylvan Lake Road. It is a two-lane, paved roadway with on-street parking in the developed areas at both ends. In downtown there are drainage dips that cross the roadway and regulate traffic speed. The intersections at both ends are controlled by stop signs on Capitol Street. Northbound traffic approaching US 6 is limited to a right-out only movement.

Signage restricts trucks from using Capitol Street and directs them to use alternate routes.

US 6 (Grand Avenue) is a two-lane, paved highway though Eagle. It connects to the communities of Gypsum/Dotsero to the west and Edwards/Avon to the east. US 6 is currently a State Highway. It is classified as a NR-B highway, non-rural arterial and access to the roadway is controlled by an Access Management Plan.

However, CDOT and the Town of Eagle are currently in the devolution process for US 6. The roadway is anticipated to be turned over to the Town in July 2016.

2.2 Traffic Data Collection

Traffic data was collected at the following intersections in late September and early October of 2015.

- Brush Creek Road & Sylvan Lake Road
- Brush Creek Road & Frost Creek Drive
- Brush Creek Road & South Site Access

Turning movement counts were collected from 7:00 – 9:00am and 4:00 – 6:00pm on a weekday and from 11:00am – 1:00pm on a Saturday. School was in session.

In addition road tube counts were taken on Brush Creek Road, south of Frost Creek Drive on August 26 – 30, 2015.

There was construction activity on the Brush Creek Bridge, west of the US 6/Sylvan Lake Road roundabout throughout the count period. However, a fully functioning and traffic-controlled temporary bridge was in place. Therefore, the traffic data collected is considered accurate.

There were mountain bike events in the Town of Eagle on two of the Saturdays that were counted. However, similar sporting events occur frequently in the Town, and are considered typical weekend traffic.

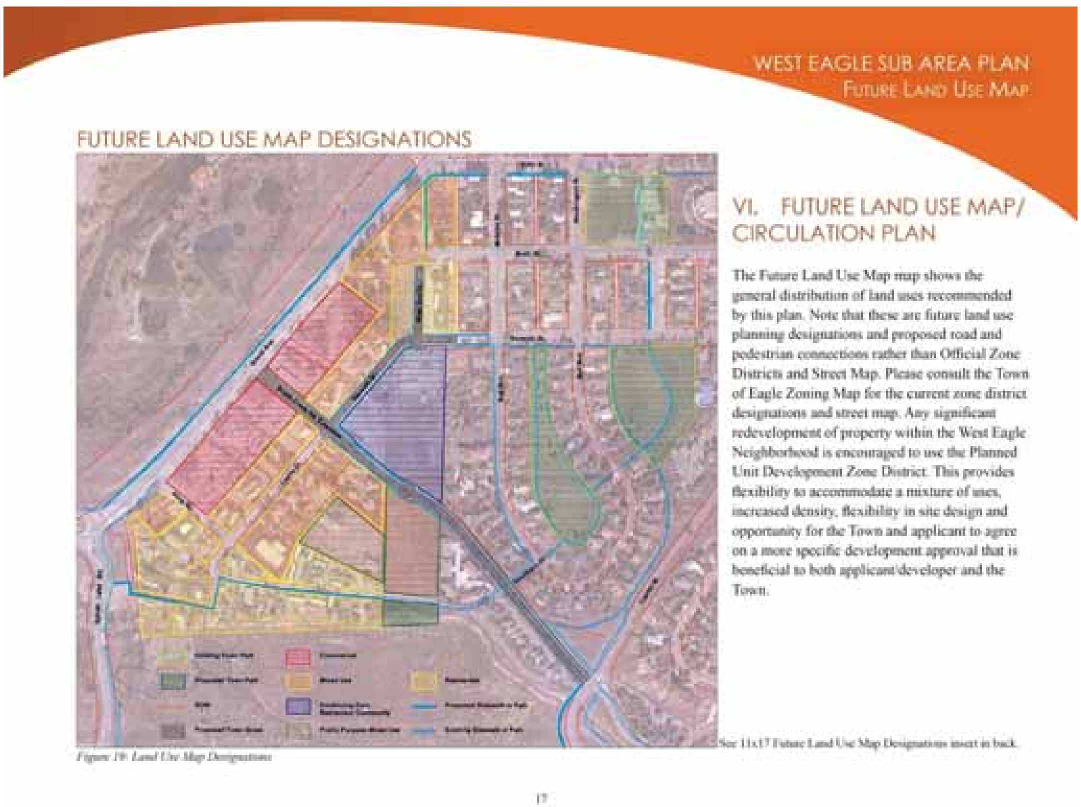
It was noted that there were several illegal northbound left turn movements observed at the intersection of US 6 and Capitol Street. This movement was as high as 6vph during the Saturday peak hour. The movement is restricted by a small median island on Capitol Street. However, it is physically possible to make an illegal left turn onto US 6 from this location.

3.0 Future Traffic Projections

3.1 Background Infrastructure Assumptions

Brush Creek Road Extension: The Town of Eagle has plans to construct the Brush Creek Road extension from Capitol Street to US 6 in the future. This will not be completed by Year 2016, but is anticipated prior to the long range planning Year 2035. An excerpt from the Town of Eagle's *West Eagle Sub Area Plan*[2] is shown in ***Figure 3***. Per the *Haymeadow Traffic Study*[3], the intersections on either end of the Brush Creek Road extension will require a roundabout.

Figure 3: Haymeadow Development's Proposed Brush Creek Road/Sylvan Lake Road


WEST EAGLE SUB AREA PLAN
FUTURE LAND USE MAP

FUTURE LAND USE MAP DESIGNATIONS

VI. FUTURE LAND USE MAP/ CIRCULATION PLAN

The Future Land Use Map map shows the general distribution of land uses recommended by this plan. Note that these are future land use planning designations and proposed road and pedestrian connections rather than Official Zone Districts and Street Map. Please consult the Town of Eagle Zoning Map for the current zone district designations and street map. Any significant redevelopment of property within the West Eagle Neighborhood is encouraged to use the Planned Unit Development Zone District. This provides flexibility to accommodate a mixture of uses, increased density, flexibility in site design and opportunity for the Town and applicant to agree on a more specific development approval that is beneficial to both applicant/developer and the Town.

Figure 19: Land Use Map Designations

See 11x17 Future Land Use Map Designations insert in back.

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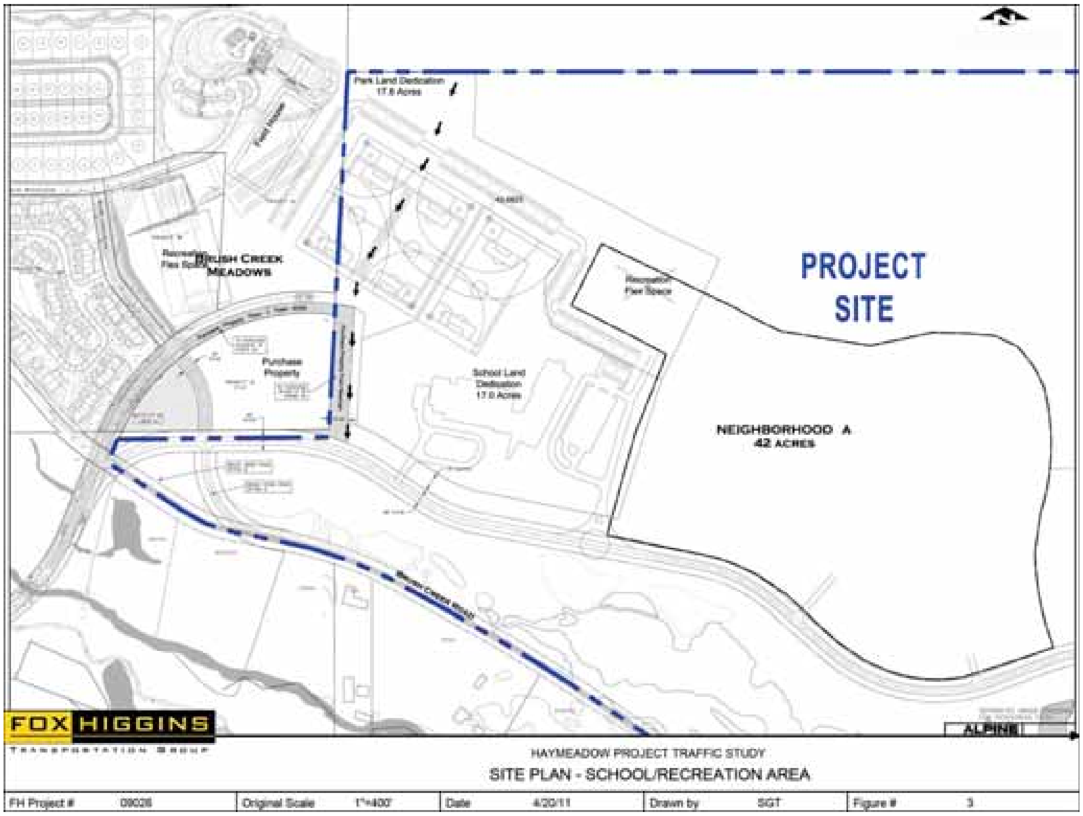
Brush Creek Road and Sylvan Lake Road Improvements: The Haymeadow Development, located on the northeast corner of Brush Creek Road and Sylvan Lake Road is proposing improvements to this intersection as part of their development. The improvements will shift the Brush Creek Road alignment from the current configuration to a north/south orientation. ***Figure 4*** is an excerpt from the *Haymeadow Traffic Study*[3] that depicts the proposed intersection alignment.

Figure 4: Haymeadow Development's Proposed Brush Creek Road/Sylvan Lake Road Alignment



3.2 Background Traffic Growth

The Year 2035 has been selected as the long term planning horizon for this study. Estimates of daily and peak background traffic conditions have been made for the study area.

Traffic Forecasting: Per the County's request, a 3.00% annual growth rate was applied to all traffic on Brush Creek Road. The Year 2035 long range traffic projections also include the buildout of development that has already been approved by the Town of Eagle or Eagle County.

- Eagle Ranch
- Haymeadow
- Adam's Rib – Frost Creek and Salt Creek

The Year 2015 existing traffic volumes can be found in **Figure 5**. Year 2016 and Year 2035 background traffic volumes can be found in **Figure 6** and **Figure 7**, respectively.

Traffic Operations Evaluation: Year 2016 and Year 2035 background traffic were evaluated at all study intersections using the projection information and *Highway Capacity Manual*[7] (*HCM*) analysis procedures. This is described in ***Section 4.5*** of this report.

Figure 5: Year 2015 Existing Traffic

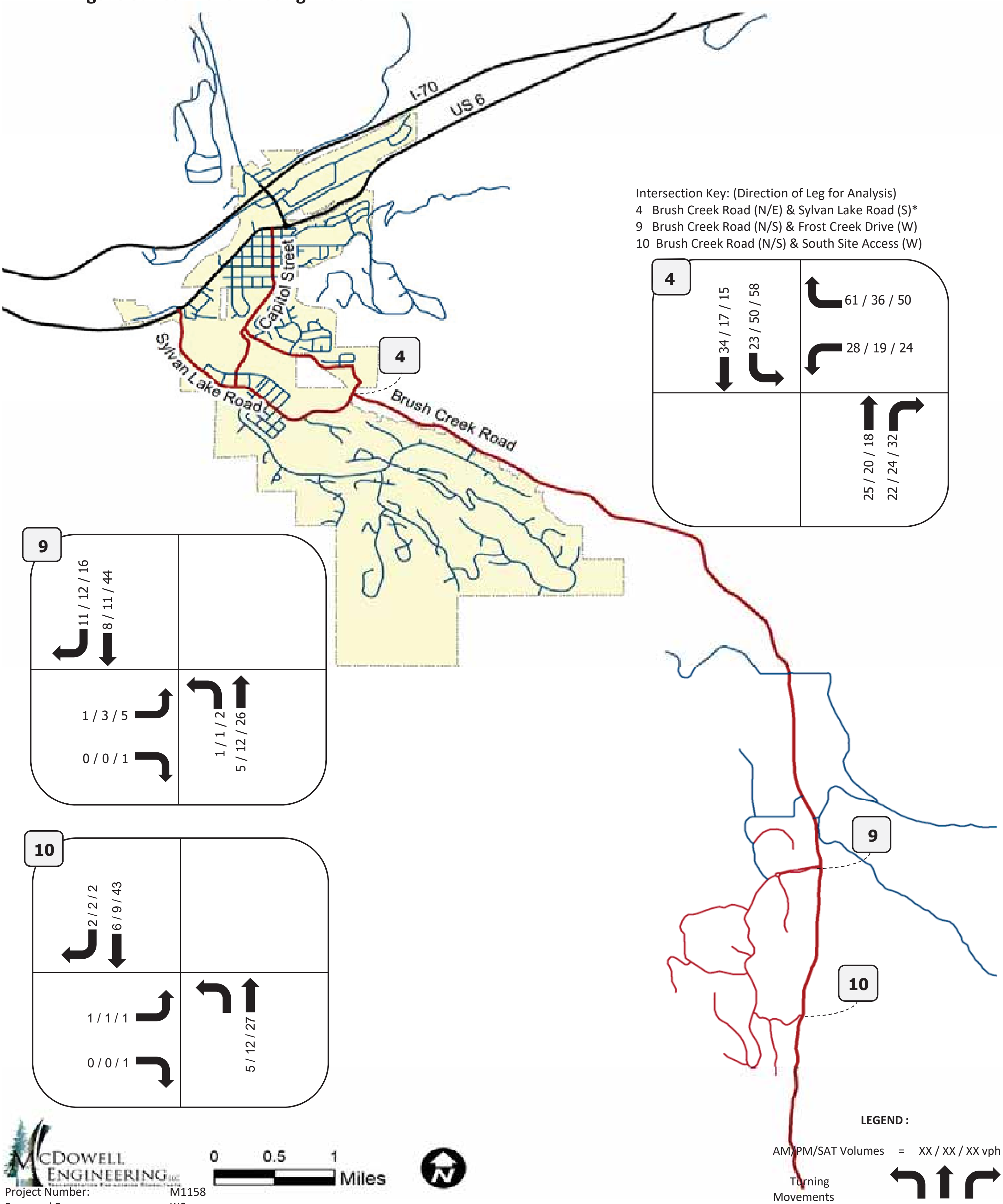


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Figure 6: Year 2016 Background Traffic

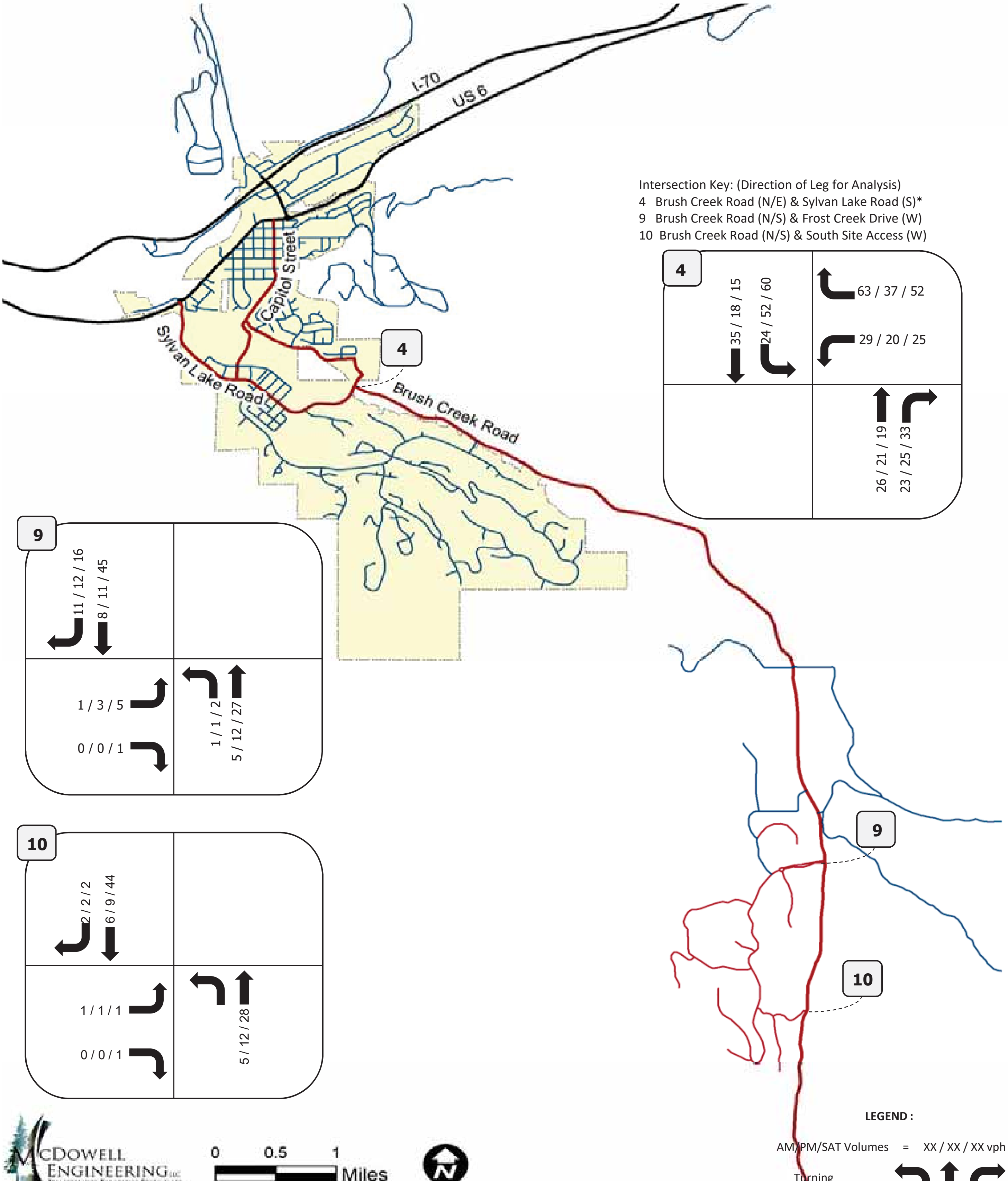

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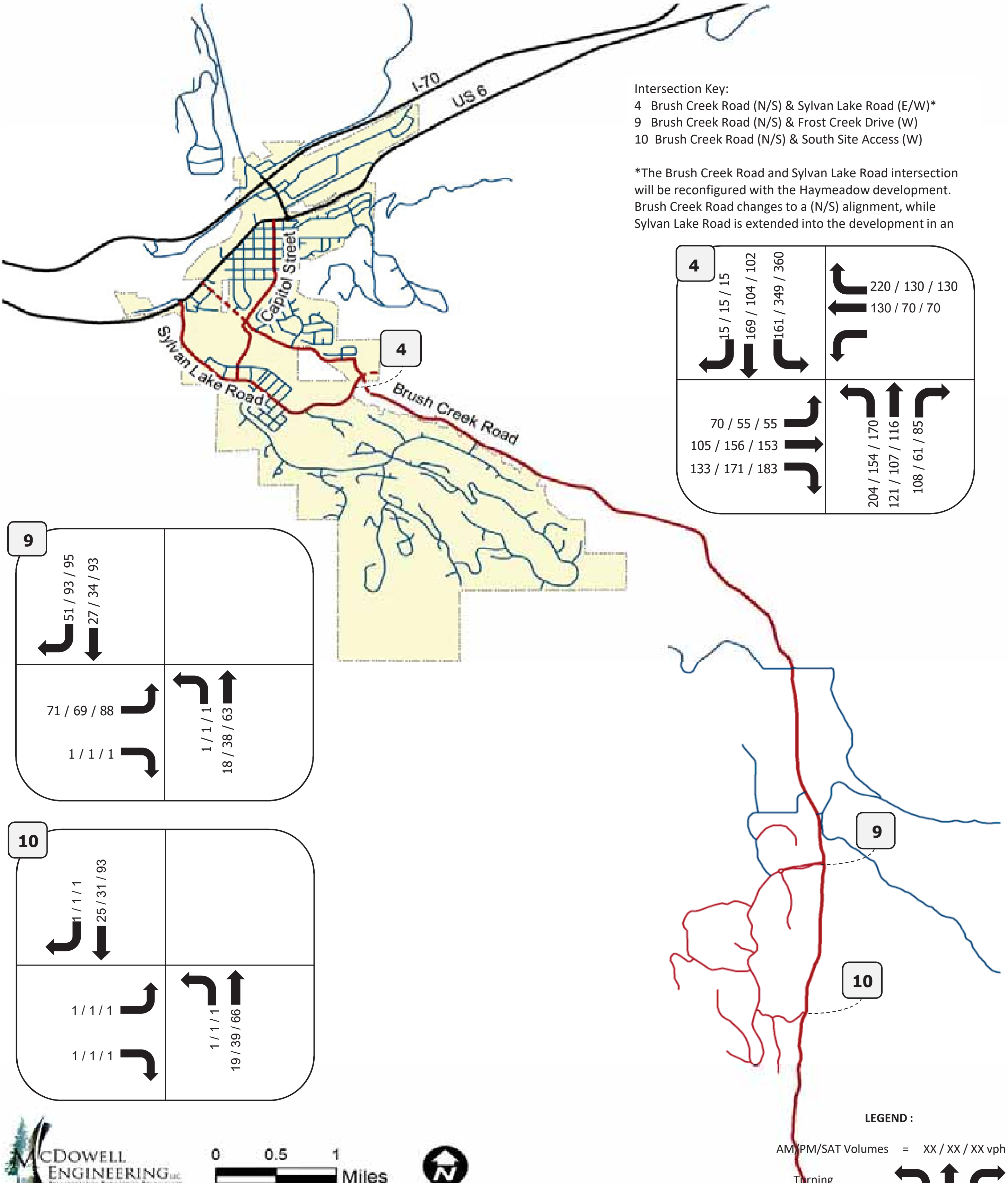
Figure 7: Year 2035 Background Traffic



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4.0 Project Traffic

4.1 Trip Generation For Proposed Land Use

Existing Project Operations Description: The previously approved use for Frost Creek is only partially built out. At the time of the traffic data collection for this project, there were six single family homes, one single family home under construction, 5 cabins, and 116 Frost Creek facility members.

The clubhouse restaurant was open to the public during the Saturday peak hour counts. It should be noted that clubhouse, pro shop, and restaurant are all ancillary uses under the 'golf course' trip generation rates. Therefore, the restaurant traffic does not need to be added singularly to the overall trip generation calculations. This fact is supported by the Observed Trip Comparison in ***Section 4.2***.

Future Project Operations Description: In total, the project is anticipated to have 137 single family homes, 8 cabins, the golf course, and clubhouse.

The applicant is projecting a total of 425 Frost Creek members. This may consist of approximately 150 resident members, and 275 non-resident members. The property is anticipating the employment of 10 full time staff and up to an additional 41 seasonal staff and 16 part time staff.

4.2 Trip Generation For Proposed Land Use

Observed Trip Comparison: The current Frost Creek traffic counts were compared to the anticipated traffic for the existing membership. Using a proportional share of the membership traffic for the golf course and recreation center, the site should expect a Saturday peak of 32 vehicles per hour (vph.)

However, the observed traffic was lower than anticipated for the current level of development. Only 28vph at both site accesses were observed. At the current time, the 13% difference is insignificant. However, with buildout of the project, this could equate to a significant reduction in actual traffic vs. the projected traffic. Therefore, trip generation calculations could be considered conservative analysis for a number of reasons.

- Although the clubhouse restaurant is open to the public, the golf course and recreational facility are private and restricted to members and their guests only. The ITE data does not specify public vs. private golf courses and community recreation facilities.

- Members and guests are utilizing on-site facilities (internal trip reduction) and not leaving the site frequently.

- County staff directed the analysis assume 100% full time residences on site which yields a higher trip generation rate. In actuality, only a portion of the homes are currently and anticipated to be occupied year-round.

Trip Generation Analysis: A trip generation analysis was prepared based upon the 9th Edition of ITE's *Trip Generation Manual*[9]. The Frost Creek analysis assumes no transit, ridesharing, bicycle commuting, or telecommuting mode split adjustment. In addition, no adjustments were taken for internal trip reductions between the residences and golf course or recreation facility.

In addition, the County staff directed the analysis assume 100% full time residences on site. As such, this study provides a conservative estimate for vehicular trip generation.

The applicant is also proposing the addition of 8 cabins that are made available for members to rent. These homes were also analyzed using the multi-family residential trip generation rates.

The trip generation analysis results can be found in **Table 1 – Project Trip Generation**. This table adds the previously approved land uses to the proposed additional 40 homes, 8 cabins, and removal of 25 accessory dwelling units to arrive at a total traffic projection for the entire site.

As presented in **Table 1**, the additional residential lots and cabins created by the proposed resubdivision are anticipated to create an additional 234 vehicle trips during an average weekday. Daily trips could be anticipated to be 300vpd on a weekend. The peak hour traffic could anticipate an additional 20 trips during the morning peak hour, 28 trips during the evening peak hour, and 30 trips during the Saturday peak hour.

4.3 Directional Distribution

Directional trip distribution estimates are used to assign the new site traffic to the existing roadway network. For this study, a detailed estimate of the trip distribution pattern for the Frost Creek development has been prepared as illustrated in ***Figure 8*** for Year 2016 and ***Figure 9*** for Year 2035. The Year 2035 scenario assumes that the Brush Creek Road extension has been constructed from Capitol Street to US 6, as described in ***Section 3.1***.

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PREPARED BY: KJS
DATE: 9/20/2015
REVISED: 1/24/2017

Table 1 - Project Trip Generation
(Assumes 100% Full Time Residences)
Frost Creek, Eagle, Colorado
Estimated Project-Generated Traffic[1]

ITE Code		Units	AM Peak Hour Rate[2]	PM Peak Hour Rate[2]	Saturday Peak Hour Rate[4]	Avg. Weekday Rate	Avg. Saturday Rate[4]	Average Weekday Trips (vpd)	Average Saturday[4] Trips (vpd)	Morning Peak Hour Inbound % Trips	Morning Peak Hour Inbound Trips	Morning Peak Hour Outbound % Trips	Morning Peak Hour Outbound Trips	Evening Peak Hour Inbound % Trips	Evening Peak Hour Inbound Trips	Evening Peak Hour Outbound % Trips	Evening Peak Hour Outbound Trips	Saturday Peak Hour[4] Inbound % Trips	Saturday Peak Hour[4] Inbound Trips	Saturday Peak Hour[4] Outbound % Trips	Saturday Peak Hour[4] Outbound Trips
Currently Approved Use: [3]																					
#210 Single Family Home	97	dwelling units			0.93		9.91	928	961		18		54		62		36	54%	49	46%	41
#230 Multi-Family Residential (Accessory Dwelling Units) (5 were converted to ex. cabins)	30	dwelling units			0.47		5.67	176	170		2		11		11		5	54%	8	46%	6
Clubhouse - #495 Community Recreation Center	2.3	ksf[5]			1.07		9.10	53	21		2		1		1		3	54%	1	46%	1
Private Golf Course - #430 Golf Course	18	holes			4.59		40.63	643	731		32		8		22		28	49%	40	51%	42
	127	dwelling units						1,800	1,884		54		74		96		72		98		91
Proposed Additional Use:																					
100% Primary Residences - #210 Single Family Home	40	dwelling units	0.77	1.02	0.93	9.52	9.91	381	396	26%	8	74%	23	64%	26	36%	15	54%	20	46%	17
0% Recreational Second Homes - #260 Recreational Homes	0	dwelling units	0.30	0.31	0.36	3.16	3.07	-	-	49%	0	51%	0	44%	0	56%	0	48%	0	52%	0
Remove all ADUs from previous approval	-25	dwelling units			0.47		5.67	-147	-142		-2		-9		-9		-4		-6		-5
Rental Cabins - #230 Multi-Family Residential	8	dwelling units			0.47		5.67	-	45	49%	0	51%	0	44%	0	56%	0	48%	2	52%	2
	23	dwelling units						234	300		6		14		17		11		16		14
Frost Creek Total	**150**	**dwelling units**						**2,034**	**2,184**		**60**		**88**		**113**		**83**		**114**		**105**
Proposed Percentage (%) Increase	18%							13%	16%		12%		18%		18%		15%		16%		15%
Year 2016 - 10% Residential Buildout & 50% Membership Rate								510	534		19		23		26		26		29		29

[1] Values obtained from *Trip Generation, 9th Edition,* Institute of Transportation Engineers, 2012.
[2] Based upon ITE's *Trip Generation* Rates for Peak Hour of Generator.
[3] Based upon LSC Transportation Consultants' September 30, 2004 *Adam's Rib Ranch Traffic Study*. Included for informational purposes only. '*' denotes data that was not provided in the original 2004 report.
[4] This information was not provided in LSC's 2004 Traffic Study. Therefore, ITE's *Trip Generation Rates* were applied.
[5] ksf = 1,000 square feet

Figure 8: Year 2016 Directional Distribution

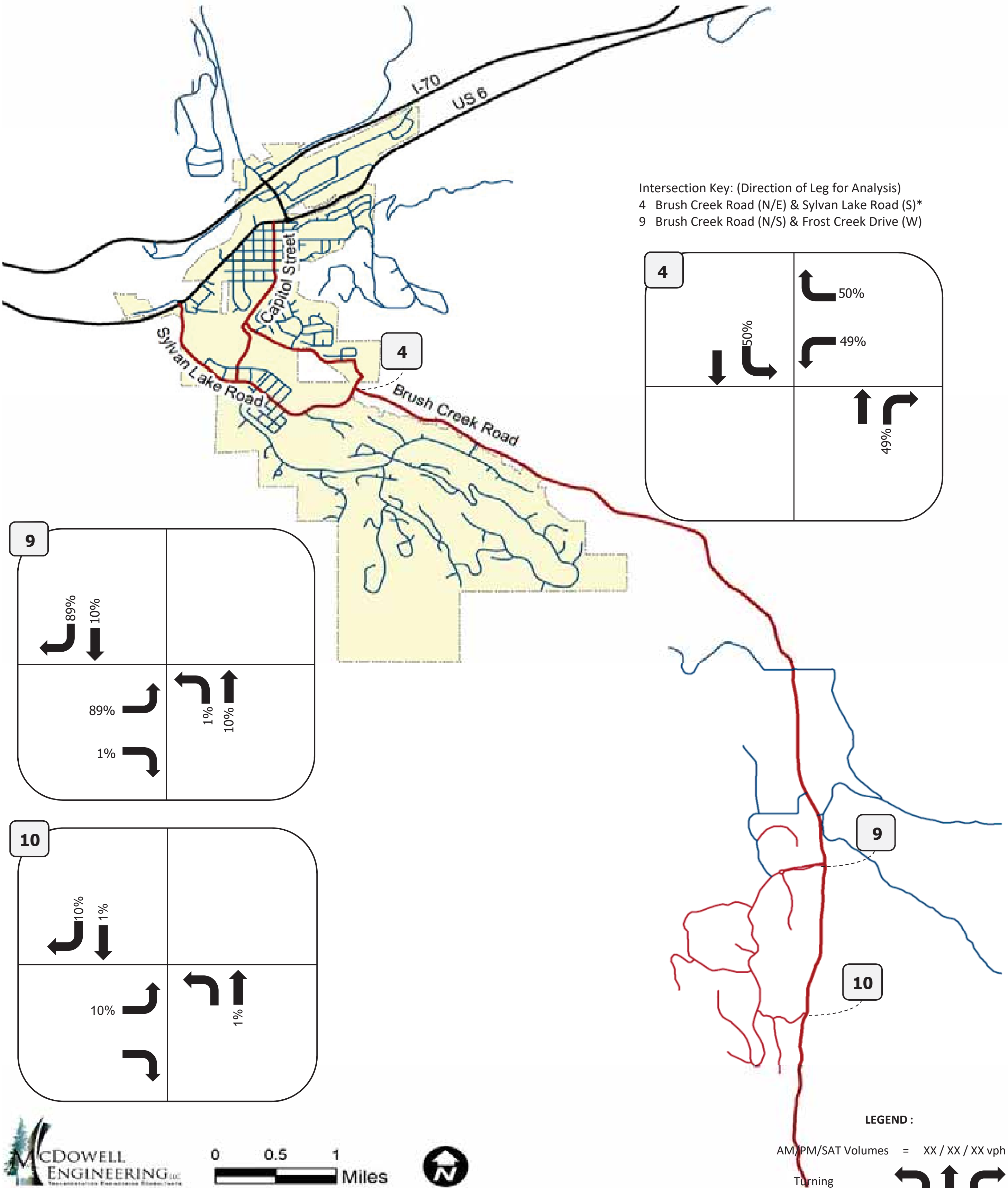

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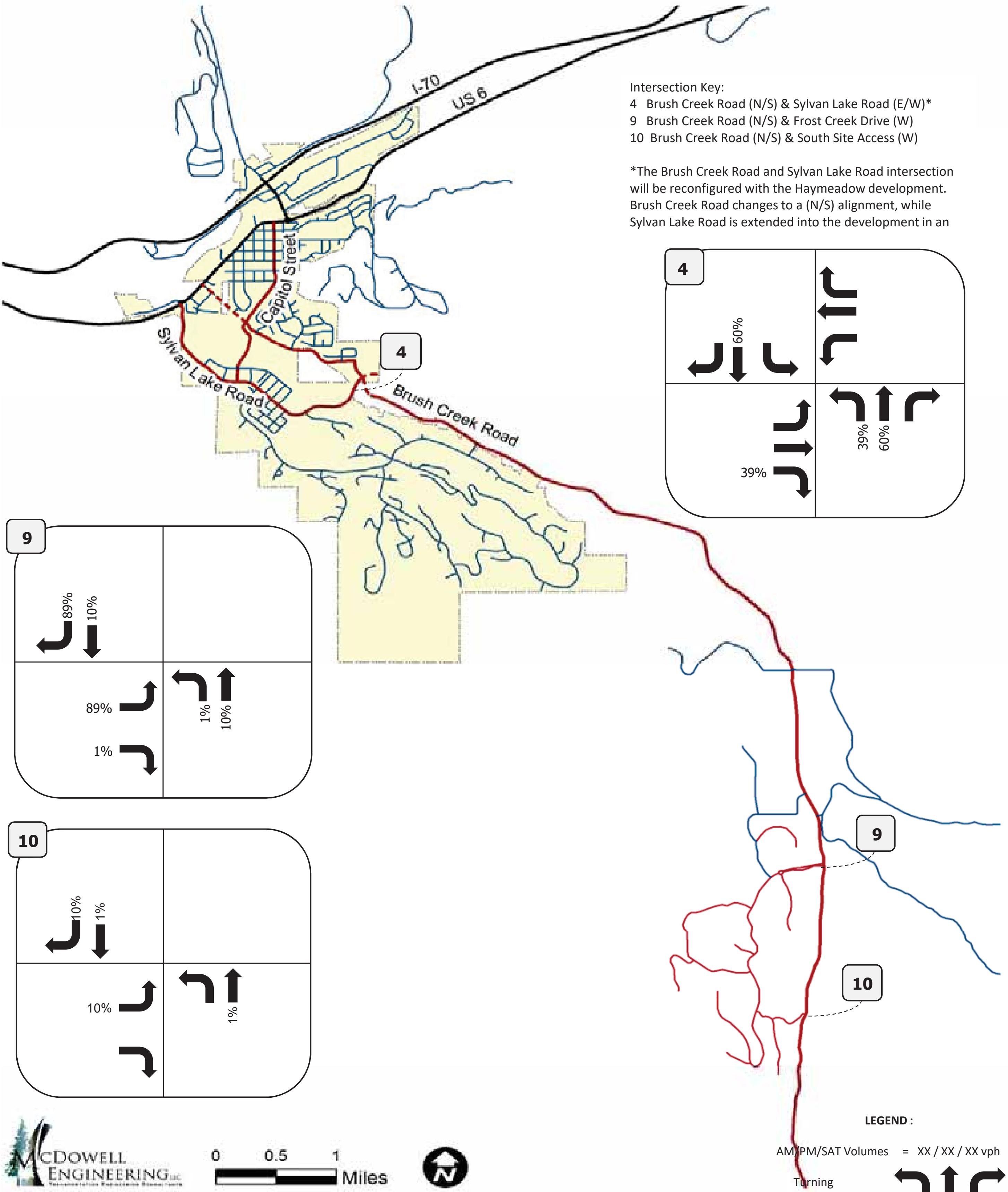
Figure 9: Year 2035 Directional Distribution



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4.4 Traffic Assignment and Total Traffic

When the trip generation expected for this site is applied to the estimated trip distribution, the result is the anticipated assignment of trips on the roadway system.

Figure 10 depicts the Year 2016 vehicle trips on the greater roadway network that are anticipated from the proposed Frost Creek resubdivision. ***Figure 11*** shows the resubdivision's total traffic assignment for Year 2035.

The Year 2016 total traffic is the sum of Year 2016 background traffic **(Figure 6)** with the project-generated traffic **(Figure 10)** and can be seen in **Figure 12**.

Similarly, Year 2035 total traffic is the sum of Year 2035 existing traffic **(Figure 7)** with the project-generated traffic **(Figure 11)** and can be seen in **Figure 13.**

Figure 10: Year 2016 Project-Generated Traffic Assignment

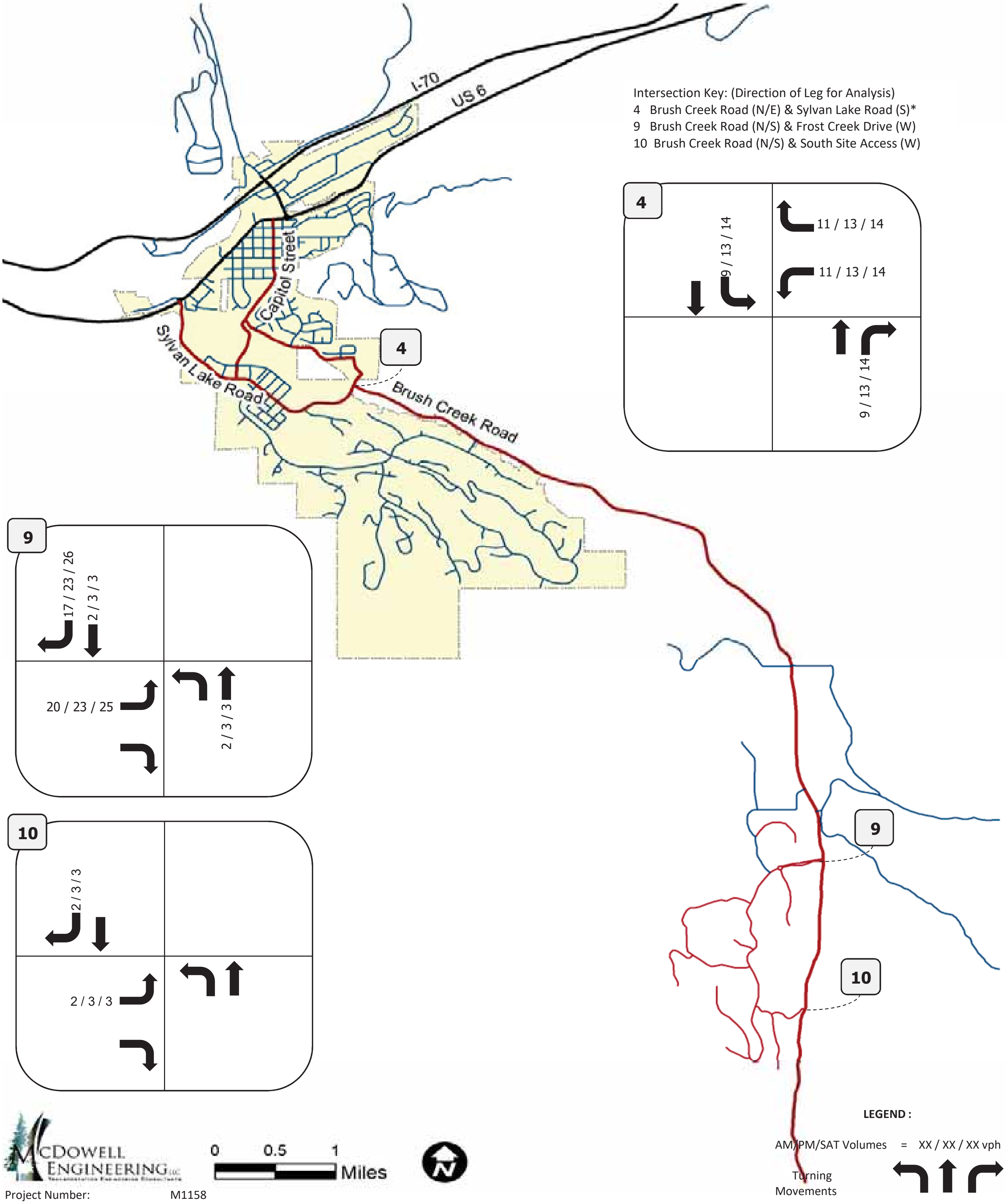

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Figure 11: Year 2035 Project-Generated Traffic Assignment

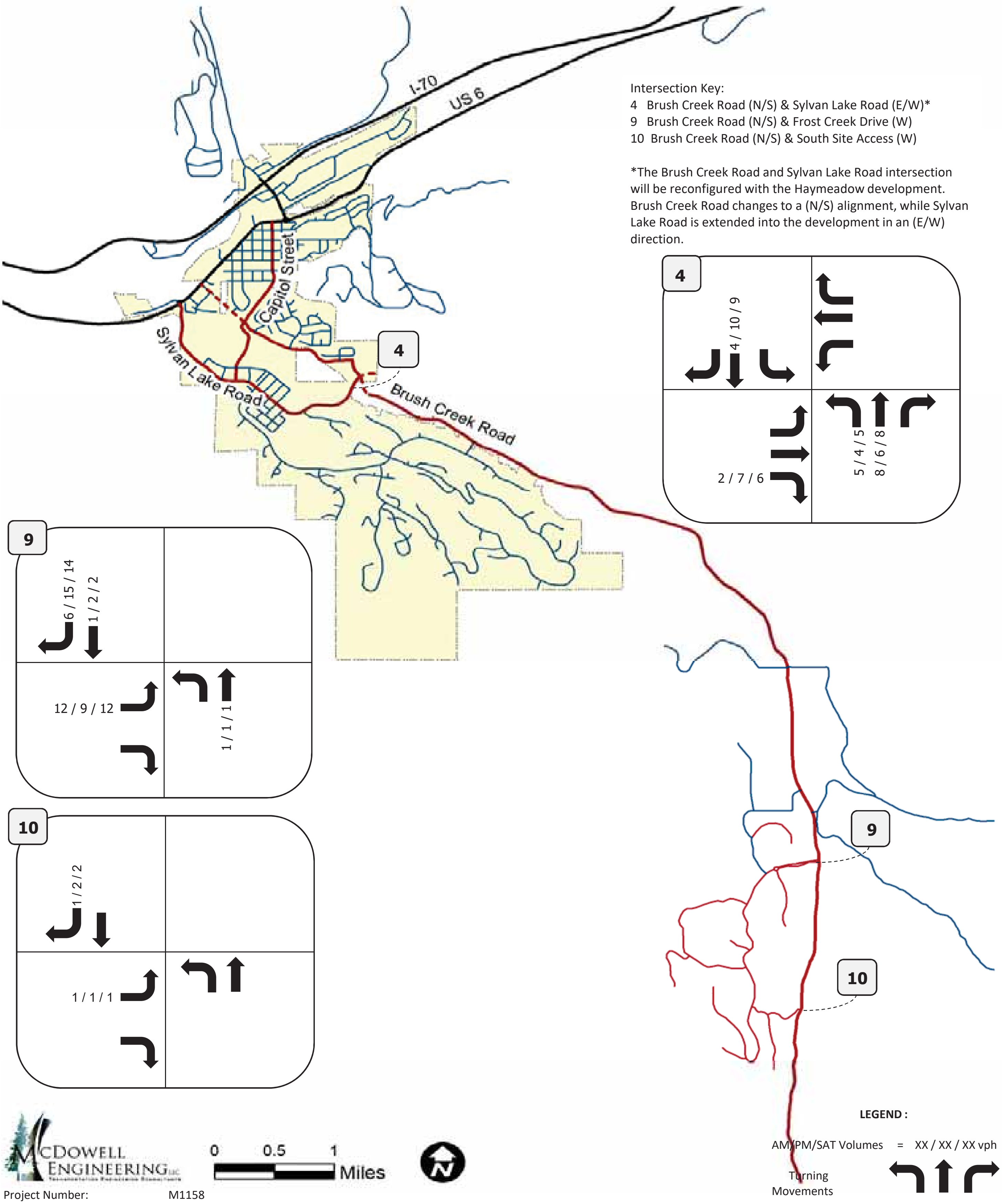

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Figure 12: Year 2016 Total Traffic

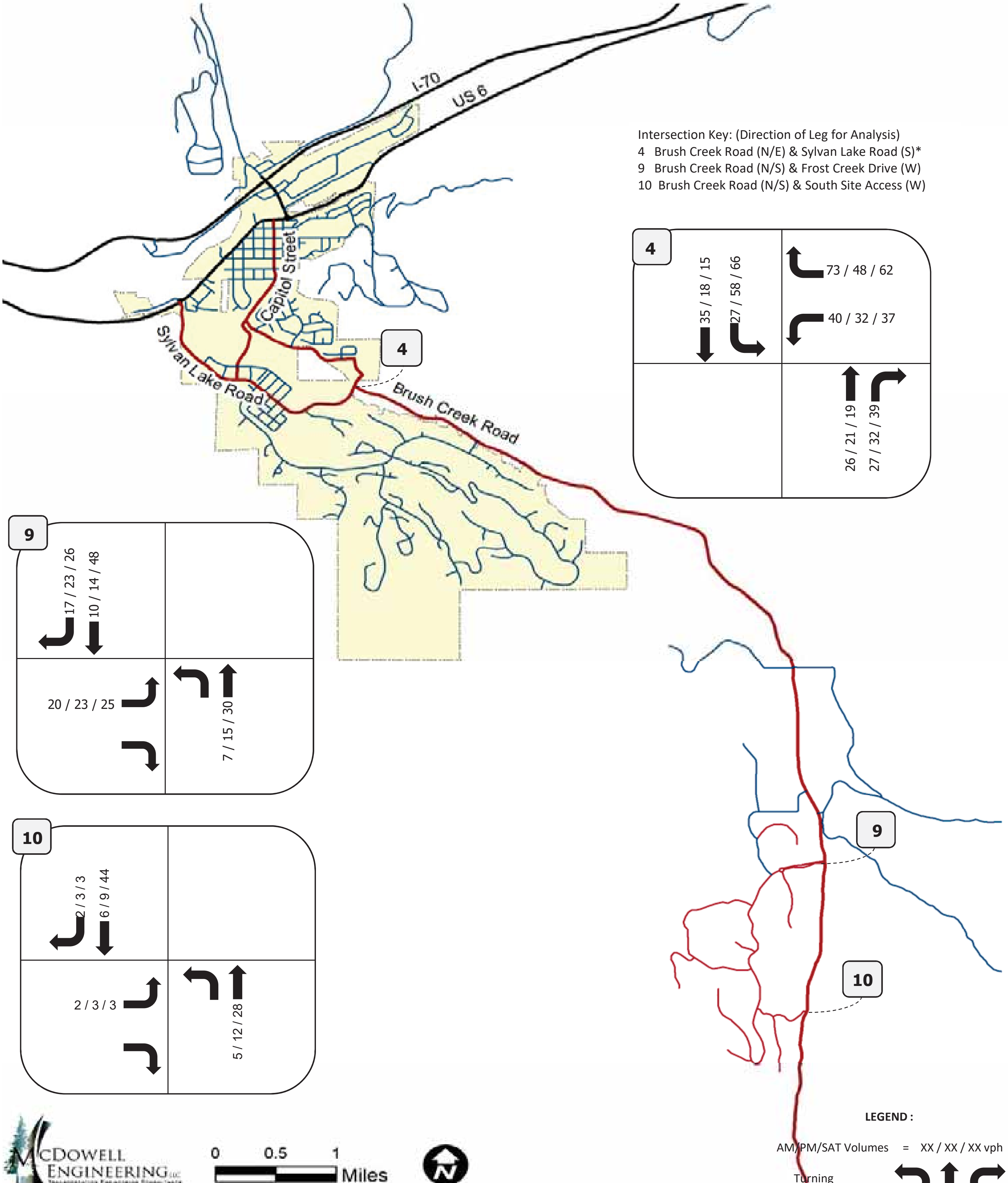

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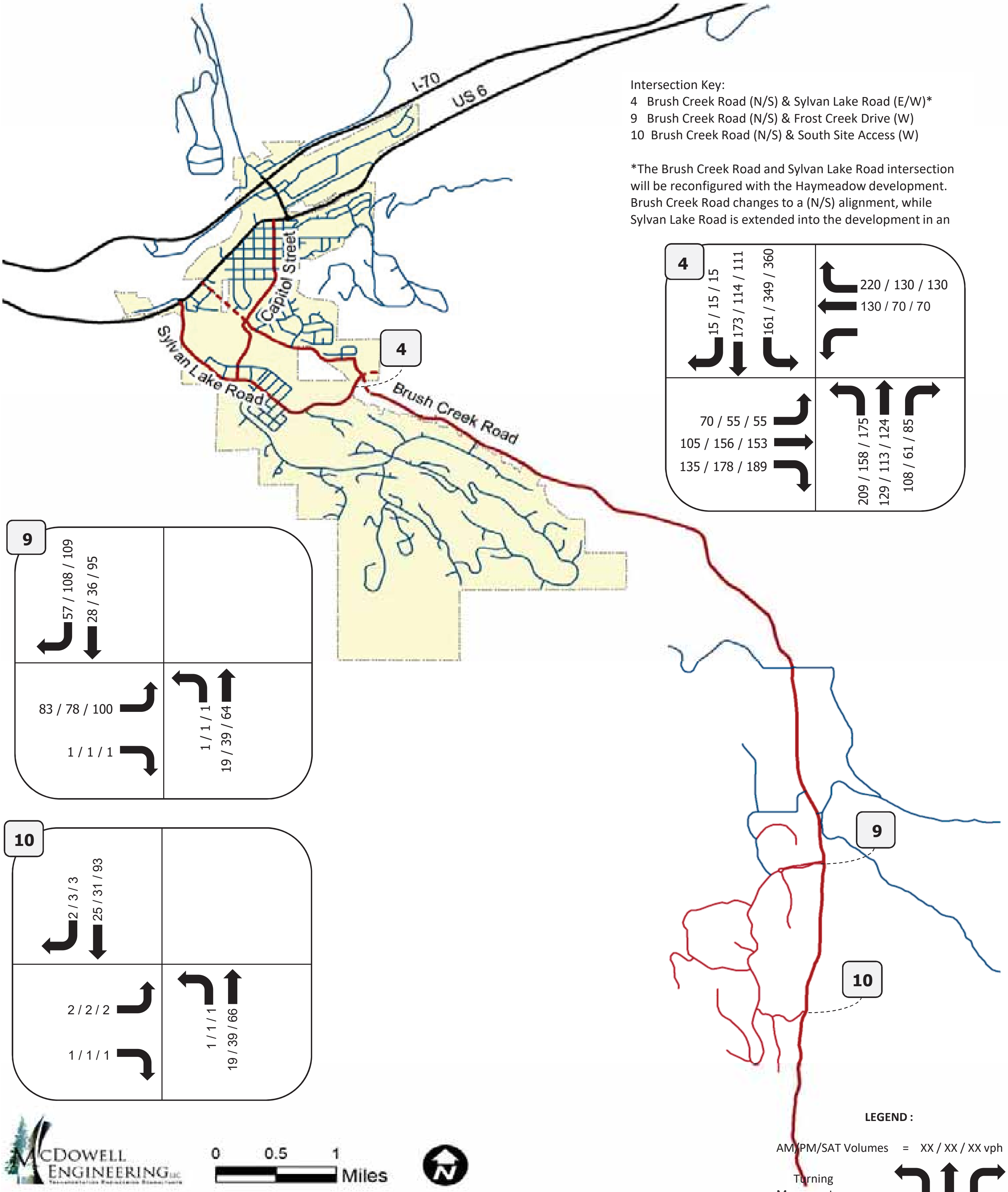
Figure 13: Year 2035 Total Traffic



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4.5 Intersection Operations and HCM Analysis

Intersection Level of Service: Using *Highway Capacity Manual 2010*[7] (HCM) methodology, Synchro Version 8 software was used to determine the delay and Level-of-Service (LOS) at the stop-controlled intersections. Similarly, Rodel Roundabout Analysis Software was used to model the HCM roundabout capacity.

A table summarizing the Total Traffic Level of Service for each intersection analyzed can be foundp25 in ***Table 2***.

Table 2: Intersection HCM Level of Service

Intersection		Traffic Control	Approach	Existing Traffic Year 2015 Level of Service (Delay in Seconds)			Background Traffic Year 2016 Level of Service (Delay in Seconds)			Background Traffic Year 2035 Level of Service (Delay in Seconds)			Total Traffic Year 2016 Level of Service (Delay in Seconds)			Total Traffic Year 2035 Level of Service (Delay in Seconds)		
#	Name			AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
4	Brush Creek/Sylvan Lake	WB Stop	WB	A (9.1)	A (9.1)	A (9.2)	A (9.2)	A (9.1)	A (9.3)				A (9.3)	A (9.3)	A (9.5)			
			NB	A (0)	A (0)	A (0)	A (0)	A (0)	A (0)				A (0)	A (0)	A (0)			
			SB	A (3)	A (5.5)	A (5.9)	A (3)	A (5.5)	A (5.9)				A (3.2)	A (5.7)	A (6.1)			
		NB/SB Stop	EB							F (2372)	F (291.1)	F (1565)				F (2360)	F (320.7)	F (1561)
			WB							E (45.2)	E (41.4)	F (52.4)				E (49.4)	E (44.8)	F (57.6)
			NB							A (3.8)	A (3.7)	A (3.6)				A (3.8)	A (3.7)	A (3.6)
			SB							A (3.9)	A (6.1)	A (6.3)				A (3.9)	A (6.0)	A (6.2)
9	Brush Creek/ Frost Creek	EB Stop	EB	A (8.6)	A (8.7)	A (8.9)							A (8.7)	A (8.7)	A (9)	A (9.1)	A (9.3)	B (10.1)
			NB	A (1.2)	A (0.6)	A (0.5)							A (1)	A (0.5)	A (0.5)	A (0.4)	A (0.2)	A (0.1)
			SB	A (0)	A (0)	A (0)							A (0)	A (0)	A (0)	A (0)	A (0)	A (0)
10	Brush Creek/South Access	EB Stop	EB	A (8.6)	A (8.6)	A (8.7)							A (8.6)	A (8.8)	A (8.8)	A (8.6)	A (8.7)	A (9.2)
			NB	A (0)	A (0)	A (0)							A (0)	A (0)	A (0)	A (0.3)	A (0.2)	A (0.1)
			SB	A (0)	A (0)	A (0)							A (0)	A (0)	A (0)	A (0)	A (0)	A (0)

Brush Creek Road & Sylvan Lake Road: The intersection is anticipated to be re-aligned and constructed as a roundabout with the Haymeadow Development. The intersection was analyzed as an east-west, stop-controlled intersection. Side street traffic is anticipated to have excessive queues with this configuration. Therefore, this intersection should be constructed as a roundabout. With these improvements, this intersection is anticipated to operate at a Level of Service A through Year 2035.

Brush Creek Road & Frost Creek Drive: The intersection is currently operating at an acceptable LOS A. It is expected to continue to operate at an acceptable Level of Service through Year 2035.

The 95th percentile queue is not anticipated to exceed one vehicle at the site egress through Year 2035.

Brush Creek Road & South Site Access: The intersection is currently operating at an acceptable LOS A. It is expected to continue to operate at an acceptable Level of Service through Year 2035.

The 95th percentile queue is not anticipated to exceed one vehicle at the site egress through Year 2035.

4.6 Roadway Segment Operations and HCM Analysis

Intersection Level of Service: Using *Highway Capacity Manual 2010*[7] (HCM), the current and forecasted roadway segment Levels of Service were determined for multiple scenarios. This methodology uses numerous inputs such as the roadway width, shoulder width, speeds, terrain, traffic volumes, percentage of heavy vehicles, ability to pass others, amount of traffic peaks, and access spacing to determine the anticipated percent of time spent following a vehicle. The Level of Service for roadway segments is based upon this factor, the percent of time spent following another vehicle.

The analysis segments were based upon data collection locations and areas of change in roadway characteristics such as geometry or volumes. **Figure 14** depicts the general location of each Brush Creek Road segment, as numbered below.

1. Brush Creek Road south of Ouzel Lane
2. Brush Creek Road, 1750 feet South of the Water Tower
3. Brush Creek Road north of Frost Creek Drive
4. Brush Creek Road south of Frost Creek Drive

Figure 14: Brush Creek Road Segment Analysis

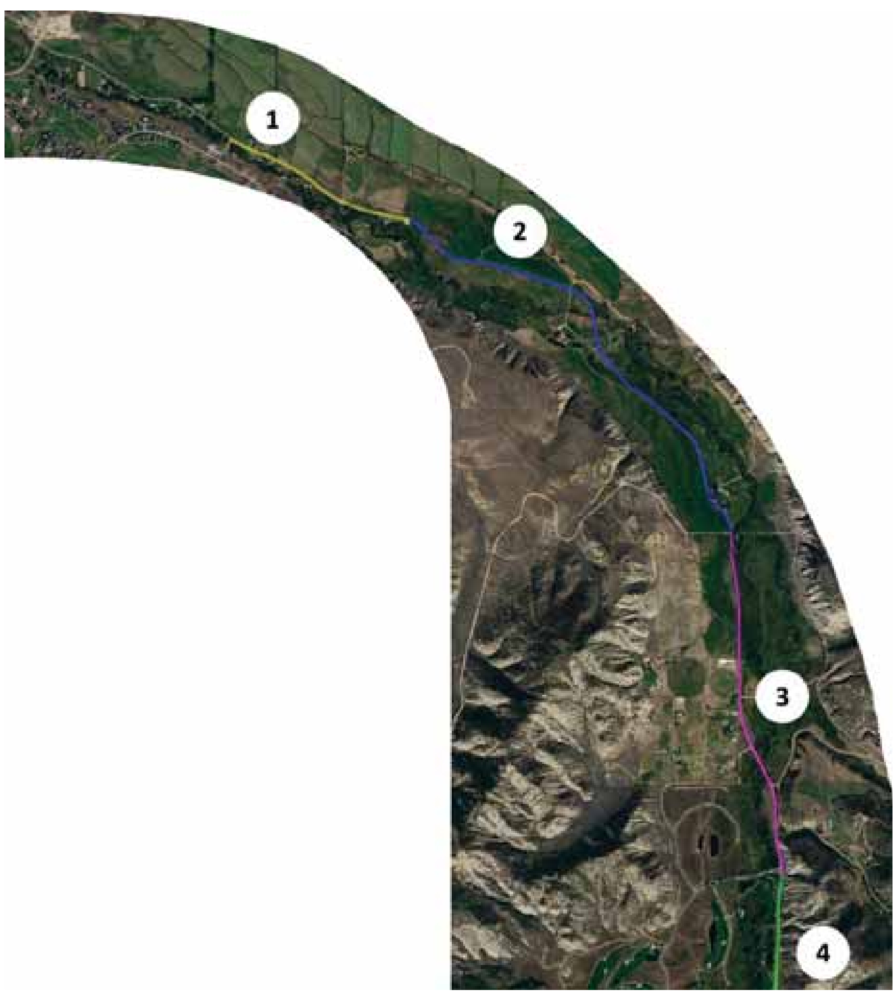

Table 3 summarizes the traffic volumes, forecasts, and Levels of Service for each roadway segment. Eagle County's requirement for a roadway segment is a Level of Service C or better.

<u>Brush Creek Road south of Ouzel Lane</u>: The segment of Brush Creek Road south of Ouzel Lane is currently operating at a Level of Service A. With the three percent forecasted annual growth (and impacts of previously approved development projects in the area) this segment of Brush Creek Road is anticipated to operate at a Level of Service B through Year 2035 with or without the addition of Frost Creek's proposed resubdivision.

<u>Brush Creek Road, 1750 feet south of the water tower</u>: The segment of Brush Creek Road south of the water tower is currently operating at a Level of Service A. With the three percent forecasted annual growth (and impacts of previously approved development projects in the area) this segment of Brush Creek Road is anticipated to operate at a Level of Service B through Year 2035 with or without the addition of Frost Creek's proposed resubdivision.

<u>Brush Creek Road north of Frost Creek Drive</u>: The segment of Brush Creek Road north of Frost Creek drive is currently operating at a Level of Service A. With the three percent forecasted annual growth (and impacts of previously approved development projects in the area) this segment of Brush Creek Road is anticipated to operate at a Level of Service A through Year 2035 with or without the addition of Frost Creek's proposed resubdivision.

<u>Brush Creek Road south of Frost Creek Drive</u>: The segment of Brush Creek Road north of Frost Creek drive is currently operating at a Level of Service A. With the three percent forecasted annual growth (and impacts of previously approved development projects in the area) this segment of Brush Creek Road is anticipated to operate at a Level of Service A through Year 2035 with or without the addition of Frost Creek's proposed resubdivision.

<u>Capacity and Buildout of Brush Creek Road</u>: Previous analysis was performed using the Town of Eagle's buildout projections for the Brush Creek Road corridor. At full buildout, Brush Creek Road is anticipated to operate at a Level of Service C or better to approximately Hardscrabble Road. Near the Frost Creek development, Brush Creek Road is anticipated to operate at a Level of Service B or better.

The existing Brush Creek Road (from Ouzel Lane to Sylvan Lake State Park) is capable of adequately handling future traffic volumes through the Town's Year 2055 buildout growth model.

<u>Percentage Impact to Brush Creek Road</u>: Based upon Eagle County's Level of Service C requirement for roadway segments, Brush Creek Road is capable of handling 7,200 – 7,500 vpd without any additional improvements, such as shoulder widening, etc.

With the conservative assumption of 100% full time residents, the proposed Frost Creek PUD amendment represents 3.2% of Brush Creek Road's total roadway capacity. The proposed amendment is approximately 5.2% of the total projected Year 2035 Brush Creek Road traffic south of Ouzel Lane. North of Frost Creek Drive, the proposed amendment is approximately 6.7% of the total projected Year 2035 Brush Creek Road traffic.

Table 3: Brush Creek Road Daily Traffic Projections & HCM Level of Service

1/24/2017

McDowell Engineering

	Existing Traffic[1] 2015	Existing Traffic[1] 2016	Year 2016 Background Traffic[2] 2016	Frost Creek (Proposed Resubdivision)[3] 2016	Year 2016 Total Traffic[4] 2016	*Subtotal Year 2035 Background Traffic [2] 2035*	*Eagle Ranch [5]*	*Haymeadow [5]*	*Frost Creek (Previously Approved Adam's Rib) [5]*	Year 2035 Background Traffic[6] 2035	Frost Creek (Proposed Resubdivision)[3] 2035	Year 2035 Total Traffic[7] 2035	Buildout Condition Brush Creek Road[8] 2055	Brush Creek Road Segment Capacity - LOS C/D Threshold (Assumes no improvements.)
South of Ouzel Lane														
Northbound Design Hour Volume (vph)		69	69	10	79	*121*	*7*	*8*	*71*	207	10	217	337	360
Southbound Design Hour Volume (vph)		61	61	17	78	*107*	*4*	*8*	*95*	214	17	231	337	360
Average Daily Traffic (vpd)		1317	1317	232	1549	*2309*	*105*	*75*	*1782*	4271	232	4503	6747	**7200**
HCM Segment Level of Service		**A**	-	-	**-**	-	-	-	-	**B**	-	**B**	**C**	**C/D Threshold**
1750 feet South of Water Tower														
Northbound Design Hour Volume (vph)		64	64	10	74	*112*	*7*	*8*	*71*	198	10	208	332	375
Southbound Design Hour Volume (vph)		75	75	17	92	*132*	*4*	*8*	*95*	239	17	256	332	375
Average Daily Traffic (vpd)		1288	1288	232	1520	*2259*	*105*	*75*	*1782*	4221	232	4453	6647	**7500**
HCM Segment Level of Service		**A**	-	-	**-**	-	-	-	-	**B**	-	**B**	**C**	**C/D Threshold**
North of Frost Creek Drive														
Northbound Design Hour Volume (vph)	31		32	10	42	*56*	*7*	*8*	*71*	142	10	152	225	362
Southbound Design Hour Volume (vph)	60		62	17	79	*108*	*4*	*8*	*95*	215	17	232	225	362
Average Daily Traffic (vpd)	705		726	232	958	*1273*	*105*	*75*	*1782*	3235	232	3467	4496	**7240**
HCM Segment Level of Service	**A**		-	-	**-**	-	-	-	-	**A**	-	**A**	**B**	**C/D Threshold**
South of Frost Creek														
Northbound Design Hour Volume (vph)	27		28	1	29	*49*	*7*	*8*	*1*	65	1	66	55	360
Southbound Design Hour Volume (vph)	44		45	1	46	*79*	*4*	*8*	*1*	92	1	93	55	360
Average Daily Traffic (vpd)	481		495	2	497	*869*	*105*	*75*	*18*	1067	2	1069	1104	**7200**
HCM Segment Level of Service	**A**		-	-	**-**	-	-	-	-	**A**	-	**A**	**A**	**C/D Threshold**

[1]Existing traffic data: June 2016 south of Ouzel Lane, June 2016 south of Water Tower, August 26, 2015 south of Frost Creek Drive AADT is an average of Aug. 27 - 30, 2015

[2]Year 2015 or 2016 existing traffic + 3.0% annual growth rate

[3]This conservatively assumes that all homes in the proposed application are constructed immediately.

[4]Year 2016 background traffic + Frost Creek Proposed Resubdivision

[5]From respective traffic studies for Eagle Ranch, Haymeadow, and Adams Rib. Adam's Rib = 1,800vpd. 1% to south = 18vpd. 99% to north = 1,782vpd.

[6]Subtotal Year 2035 background traffic + approved developments

[7]Year 2035 background traffic + Frost Creek Proposed Resubdivision

[8]Buildout projections are based upon the Town of Eagle's water/traffic model. Assumes 10% dhv and 50/50 directional split.

[9]Brush Creek Road's capacity is based upon Eagle County's HCM Level of Service C/D threshold requirement for a segment of road. Assumes no widening or improvements to existing conditions.

3.00% Annual Growth Rate on Brush Creek Road

4.1 Brush Creek Road Crash Data

Brush Creek Road is historically safer than a typical average 2-lane rural, mountainous highway. Based upon the State's official crash data for the corridor, Brush Creek Road has had eight crashes in the past five years over a 10-mile stretch of roadway. This equates to a crash rate that is below the State's 20th percentile rate. In comparison to equivalent roadways in the State, Brush Creek Road has a low potential for crash reduction.[2] The crash data and State's crash rate data are included in the **Appendix**.

From the State's crash data:

- 1 accident was snow/weather related
- 1 accident was alcohol related
- 1 accident was from a wild animal
- 2 accidents were from the driver being preoccupied or inexperienced
- 3 accidents involved speeding

4.2 Brush Creek Road Speed Data

As part of the traffic data collection for this project, we recorded traffic speeds on Brush Creek Road. The 85th percentile speeds (an industry standard speed metric) are 10-15mph over the posted speed limit. Widening Brush Creek Road will increase traffic speeds on the roadway. Widening to 12' lanes with 6' shoulders can be anticipated to increase speeds by 3.4mph. Widening to 12' lanes with 2' shoulder can be anticipated to increase speeds by 2.1mph.[3]

4.3 State Highway Access Impacts

Section 2.6(3) of the *State Highway Access Code* (*Access Code*) requires a new access permit when there is a land use change and/or the driveway volume is anticipated to increase by more than twenty percent. The addition of 30 trips per hour to the greater roadway network does not trigger the need for a State Highway Access Permit. Refer to **Table 4**.

Table 4: US 6 Percentage of Impact from Proposed Frost Creek Amendment

Intersection	Frost Creek Peak Hour Traffic Assignment to Intersection	Year 2035 Background Traffic Volume or State Highway Access Permit Volume*	Percentage Impact to Leg
US 6 & Eby Creek Road (South Leg)	0vph	242vph	0%
US 6 & Capitol Street (South Leg)	3vph	266vph	1.1%
US 6 & Sylvan Lake Road /Violet Lane (South Leg)	9vph	205vph 1,340vph*	4.4% 0.7%*
US 6 & Future Brush Creek Road Extension (South Leg)	11vph	702vph	1.6%

4.4 Brush Creek Road Extension

Eagle County requested a summary of the project impacts to Eagle's roadway network if the Brush Creek Road Extension is not constructed by Year 2035.

The previous November 2015 and March 2016 studies assumed that 35% of site-generated traffic would use the Brush Creek Road extension once it was constructed. If this traffic could only use Capitol Street to Sylvan Lake Road to access greater Eagle and US 6, 21vph would be redistributed. The original studies assumed that without the Brush Creek Road extension, the traffic was split 50/50 between Sylvan Lake Road and Brush Creek Road. An additional 10vph on Capitol Street or Sylvan Lake Road will not alter the outcome of the previous study.

4.5 Brush Creek Road Turn Lane Analysis

Eagle County refers to the *State Highway Access Code*[10] to provide regulation for auxiliary lanes. Brush Creek Road has an equivalent CDOT classification of an R-B, rural highway. With a posted speed limit of 35mph, right turn deceleration lanes are required when the peak hour turning volume exceeds 25vph. A left turn deceleration lane is required when the peak hour turning volume exceeds 10vph.

The project has previously constructed a southbound right deceleration lane for Frost Creek Drive. The turn lane totals 310 feet in length. At a posted 35mph, the existing lane can accommodate up to 190vph making the southbound right turning movement into Frost Creek Drive. At buildout, the project is anticipated to have 99vph during the Saturday peak hour making this turn. Therefore, no modifications to the existing southbound right turn lane are required.

No other access turning volumes meet the requirements for constructing turn lanes at the site accesses.

4.6 Access Design Criteria

The existing access points appear to have been constructed per Eagle County's *Eagle County Land Use Regulations*[11] (*ECLUR*) Section 4-620.j Geometric Standards.

4.7 Sight Distance

The proposed primary Frost Creek site access locations have adequate sight distance in both directions that well exceed the 595' requirement in Table 4-2 of the *Access Code*.

4.8 Internal Circulation and Travel Speeds

The 95th percentile queue at the site egress is not expected to exceed one vehicle (25 feet) through the project buildout.

The internal Frost Creek roadway system is narrow at 20 to 24-feet. There are sufficient horizontal and vertical curves in the roadway system that will require drivers to maintain 25mph residential speeds.

5.0 Recommendations and Conclusions

McDowell Engineering has prepared this Transportation Impact Study for the proposed resubdivision of the Frost Creek development. The purpose of this study is to forecast and analyze the impacts of the additional traffic volumes associated with the proposed increase in the number of residential units. The Frost Creek project was originally approved in 2005 under the name of Adam's Rib. This approval included 97 single family homes, 25 accessory dwelling units, a private 18-hole golf course, and private 2,300 recreation center. The original traffic analysis was covered in LSC's 2004 *Adam's Rib Traffic Study*[1].

Trip Generation: With the proposed resubdivision, the applicant is proposing 40 additional single family homes and 8 cabins. The cabins will be available for members or their guests to rent. In addition, the applicant is proposing to remove 25 accessory dwelling units that were originally approved in 2004. The additional residential lots and cabins created by the proposed resubdivision will create an additional 234 vehicle trips on an average weekday, including 30 trips during the Saturday peak hour.

Eagle County requested that this project was analyzed with the assumption that all residents live in their home year-round. This yields a very conservative analysis as this area/demographic is typically 78% second homes.

Data Collection: Traffic data was collected in late September and early October of 2015. The observed traffic at the Frost Creek site accesses was lower than anticipated for the current level of development.

Background Traffic Projections: Per the County's request, a 3.00% annual growth rate was applied to all traffic on Brush Creek Road. The Year 2035 long range traffic projections also include the buildout of development that has already been approved by the Town of Eagle or Eagle County. These are Eagle Ranch, Haymeadow, and Adam's Rib – Frost Creek and Salt Creek.

Background Infrastructure Improvements: The Town of Eagle has plans to construct the Brush Creek Road extension from Capitol Street to US 6 in the future. In addition, the Haymeadow Development is proposing improvements to the Brush Creek Road and Sylvan Lake Road intersection as part of their development. The improvements will shift the Brush Creek Road alignment from the current configuration to a north/south orientation. These infrastructure improvements have been modelled in the Year 2035 analysis.

Necessary Infrastructure Improvements: The existing Frost Creek Drive access has a southbound right turn deceleration lane that is 310 feet in length. This turn lane is adequate to accommodate the full buildout of the proposed Frost Creek development. No additional off-site roadway improvements are required. The timing of Frost Creek's final buildout does not affect these recommendations.

Brush Creek Road is currently operating at Level of Service A. With the three percent forecasted annual growth (and impacts of previously approved development projects in the area) the lower (northern) segments of Brush Creek Road are anticipated to operate at a Level of Service B through Year 2035 with or without the addition of Frost Creek's proposed resubdivision. Near the Frost Creek development, Brush Creek Road is anticipated to operate at a Level of Service A through Year 2035 with or without the addition of Frost Creek's proposed resubdivision.

Previous analysis was performed using the Town of Eagle's buildout projections for the Brush Creek Road corridor. At full buildout, Brush Creek Road is anticipated to operate at a Level of Service C or better to approximately Hardscrabble Road. Near the Frost Creek development, Brush Creek Road is anticipated to operate at a Level of Service B or better.

The existing Brush Creek Road (from Ouzel Lane to Sylvan Lake State Park) is capable of adequately handling future traffic volumes through the Town's Year 2055 buildout growth model.

Based upon Eagle County's Level of Service C requirement for roadway segments, Brush Creek Road is capable of handling 7,200 – 7,500 vpd without any additional improvements, such as shoulder widening, etc.

The proposed Frost Creek PUD amendment represents 3.2% of Brush Creek Road's total roadway capacity.

<u>Summary:</u> The proposed Frost Creek development is anticipated to be successfully accommodated into the greater Eagle County and Town of Eagle roadway network with the above recommendations.

The findings of this study, using the County's traffic analysis methodology, confirm the findings of the original November 2015 and March 2016 reports. The conclusions of the analysis have not changed.

6.0 Appendix

Reference Documents

1. *Adam's Rib Traffic Study*. LSC Transportation Consultants, September 2004.
2. *West Eagle Sub Area Plan.* Town of Eagle, September 2011.
3. *Haymeadow Traffic Impact Study*. Fox Tuttle Transportation Group, August 2013.
4. *I-70 Eagle Interchange Upgrade Feasibility Study*. PBS&J, April 2009.
5. OTIS Traffic Data. Colorado Department of Transportation. http://apps.coloradodot.info/dataaccess/
6. *Projected Brush Creek Growth Model.* Town of Eagle, Updated November 2015.
7. *Highway Capacity Manual.* Transportation Research Board, 2010.
8. *The Social and Economic Effect of Second Homes.* Northwest Colorado Council of Governments, June 2004.
9. *Trip Generation, 9th Edition.* Institute of Transportation Engineers, 2012.
10. *State Highway Access Code.* State of Colorado, 2002.
11. *Eagle County Land Use Regulations.* Eagle County, 2012.

Included Documents

1. Traffic Study Scoping Correspondence with Eagle County and the Town of Eagle
2. Traffic Counts
3. CDOT OTIS Traffic Data
4. Excerpts from Referenced Reports for Background Traffic
5. Brush Creek Road Crash Data
6. HCM Reports
    a. Intersections:
        i. Brush Creek Road & Sylvan Lake Road
        ii. Brush Creek Road & Frost Creek Drive
        iii. Brush Creek Road & South Site Access
    b. Roadway Segments:
        i. Brush Creek Road south of Ouzel Lane
        ii. Brush Creek Road, 1750 feet south of the water tower
        iii. Brush Creek Road north of Frost Creek Drive
        iv. Brush Creek Road south of Frost Creek Drive

Appendix D

Dalton Ranch West Traffic Impact Study (July, 2022)

Dalton Ranch West
Traffic Impact Study

373 CR 252 Durango, CO
Parcel # 559715200057
La Plata County, CO

July 29th, 2022

Prepared by:
Short Elliott Hendrickson, Inc.
934 Main Ave. Unit C
Durango, CO 81301

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APPENDIX F: Access Permit 506073
APPENDIX G: Synchro 2042 Reports

1. EXECUTIVE SUMMARY

The purpose of this Traffic Impact Study is to evaluate the traffic generated by the proposed development of the Dalton Ranch West Development Project on Trimble Lane. The development project is located within La Plata County approximately 1,400 feet east of the US 550/Trimble Lane (CR 252) intersection. The project is situated on 19.76 acres of vacant land, which was formerly the property of the US Forest Service and was used for livestock grazing and staging of emergency response teams.

a. DEVELOPMENT LAND USE DESCRIPTIONS

The proposed project will include the development of Single Family Homes on the property, with a total of 51 residential lots. The proposed land use corresponds to the ITE Code 210, Single-Family Detached Housing.

b. PREVIOUS STUDIES

This traffic study references the Trimble Crossing Traffic Impact Study dated June 10th, 2004, which was used to design and construct the existing US 550 and CR 252 signal and auxiliary lanes. It also accounts for the proposed development of 29 RV Motorcoach sites on the adjacent Willow Springs property, which is currently being routed through the La Plata County Land Use and Development process via their Planning Department.

c. PRINCIPAL FINDINGS

- A left turn deceleration lane is warranted at the West Dalton Ranch access onto CR 252.
- No additional turn lane storage is warranted.
- Dalton Ranch West will account for 3.55% of the total capacity provided by the Trimble Lane/US 550 signalized intersection; therefore, the conclusion of this Study is that an Amendment to the CDOT Access Permit is not necessary. However, combined with the 1.07% of total capacity utilized by Willow Springs for a total of 4.66%; the Developer has included an Access Permit submission.
- Per the requirements of the Trimble Crossing Fair Share Reimbursement Agreement, the Developer will be required to provide $56,394.00 to cover the generated traffic of the proposed development.

2. INTRODUCTION

The purpose of this Traffic Study is to evaluate the traffic impacts to Trimble Lane at the proposed project access locations. Additionally, this Study will determine the project's financial obligations as described in the La Plata County Board of County Commissioners staff report for project number 2010-0120 Trimble Crossing Fair Share Reimbursement Agreement. The proposed project is located approximately 1,400 feet east of the intersection of Trimble Lane (CR 252) and US 550. The objectives include the following:

- Estimate traffic generation.
- Evaluation of auxiliary lane requirements.
- Impacts to stacking and CR 252 and US 550
- Fair Share Reimbursement.

Road improvements and a signalized intersection at Trimble Lane and US 550 were constructed as a part of the 2007 Trimble Crossing development. The Trimble Crossing Traffic Impact Study dated June

10th, 2004 was the original analysis and planning document that served as the basis for the infrastructure as it exists today.

a. SITE AND STUDY AREA

This Traffic Study was prepared for the proposed Dalton Ranch West subdivision on Trimble Lane (CR 252). The proposed development plan will cover approximately 19.76 acres. This Traffic Study focuses on the proposed access location. This Traffic Study also estimates the total percentage of traffic introduction at the previously improved intersection of Trimble Lane (CR 252) and US 550.

The project location map and a preliminary site plan exhibit has been included in **Appendix A.**

b. DEVELOPMENT LAND USE DESCRIPTIONS

Table 1 shows an itemized list of proposed land uses for the project.

Table 1: Dalton Ranch West Land Use Descriptions

LAND USE	ITE LAND USE CODE	ITE CODE	UNITS	QUANTITY
Single Family Homes	Single-Family Detached Housing	210	Units	51

The land use of the proposed development can be used with transportation engineering analyses to estimate the projected traffic volumes that will be generated by the Dalton Ranch West. Note: the office and pavilion associated with the project are for internal use only and will generate no additional traffic.

c. EXISTING ROADWAY

Trimble Lane (CR 252)

Trimble Lane is a 35-mph county road that has been improved to a three-lane section with turn pockets to serve the existing Trimble Crossing prior to this project. Approximately 1275-ft east of the US 550 Trimble Lane intersection, the road tapers down from a three-lane section to a two-lane roadway beginning just west of the Trimble Crossing and Willow Springs west property line, which is roughly 625’ west of the proposed Dalton Ranch West access point. Trimble Lane/CR 252 continues east where it serves Dalton Ranch and crosses the Animas River and ties into County Road 250.

Sight Distance Requirements are as follows:

Left turn from stop onto CR 252 (AASHTO, Table 9-6) = 390’ (35mph)
Right turn from stop onto CR 252 (AASHTO, Table 9-8) = 335’ (35mph)

Measured Sight Distance

- Primary Access looking west = 1300’
- Primary Access looking east = 600’

Therefore, each access has sufficient sight distance along CR 252 (Trimble Lane)

Accesses along CR 252 include the following:

1. Trimble Crossing A = 420’ East of US 550
2. Trimble Crossing B = 230’ East of Trimble Crossing A
3. Willow Springs = 290’ East of Trimble Crossing B

These intersections were previously approved by CDOT and La Plata County, when the Trimble Crossing TIS was completed in 2007 and as a part of Access Permit 506073. The CDOT Access Code provides for one (1) access per parcel for a Rural Highways. Willow Springs and Dalton Ranch West will each have one main access onto CR 252 that will be evenly spaced between adjacent property access points. Willow Springs and Dalton Ranch West will each also have an Emergency access to adjacent properties to allow for connectivity between Trimble Crossing and Willow Springs, plus Dalton Ranch West and North Dalton Ranch.

With the current R-B Designation and 35 mph speed limit, CR 252 would yield standard deceleration lanes of 310’ + Storage. SEH would recommend that the County continue to monitor the roadway as properties developing in the area to complete speed studies to determine if a reduction in the speed limit would be warranted. If it is found that the 85th percentile of speed along the roadway is 25 mph, the decel lengths would be 180’ + Storage, or 30 mph, the decel lengths would be 250’ + Storage.

3. TRIP GENERATION AND PEAK HOUR VOLUMES

Trip generation represents the amount of traffic generated by a development. A trip is defined as a one-way vehicle movement with either the origin or destination within the proposed development. The Trip Generation Manual, also known as the ITE Manual, written by the Institute of Transportation Engineers (ITE), 10th Edition (2020), was used to estimate the projected traffic volume by the proposed development. The land use types from the ITE that were used for determining the appropriate trip generation rates, vehicular rates, and directional distributions are shown in Table 2.

Table 2: Land Use Descriptions and Trip Generation Rates

ITE LAND USE	TRIPS PER UNIT			PEAK HOUR			
				AM		PM	
	UNITS	AM	PM	IN	OUT	IN	OUT
Single-Family Detached Housing	SITE	0.76	1.00	26%	74%	64%	36%

Table 3 shows the individual traffic produced by the proposed development based on the listed criteria and values from table 2. It includes the following: the ITE Land Use, the corresponding number of units, and the traffic volumes entering “IN” and exiting “OUT” for the AM Peak Hour, PM Peak Hour, and Daily. The full printout of the ITE trip generation has been provided as **Appendix C**.

Table 3: Project Traffic Volumes

ITE LAND USE	TOTAL TRIPS			PEAK HOUR TRIP DISTRIBUTION			
				AM		PM	
	QUANT	AM	PM	IN	OUT	IN	OUT
Single-Family Detached Housing	51	39	51	10	29	33	18

One purpose of this Traffic Study is to study the additional traffic generated by the project in the study area and to determine if improvements to the existing infrastructure are needed. To do this, it is necessary to analyze the performance of the access points during the time of day when there is the most congestion and traffic in the area. The “peak hour” volume is the morning or afternoon 60-minute period that has the highest density of traffic. CDOT requires that the peak hour volumes be analyzed to determine auxiliary lane requirements as well as turn lane storage lengths.

4. TRIP DISTRIBUTION AND TRIP ASSIGNMENT

Trip distributions and estimated peak hour trips from the Trimble Crossing Traffic Impact Study were used as the baseline for estimated peak hour traffic assignments. Trips generated by Dalton Ranch West project as outlined in section 4 were added to these values at US 550 to determine if additional turn lane storage length was necessary.

. The following assumptions were made:

- Trimble Crossing development will eventually reach “full-buildout” and generate the full amount of traffic estimated in the Trimble Crossing Traffic Impact Study
- 90% of the Dalton Ranch West generated traffic will access the development via the intersection of US 550 and CR 252 (Trimble Lane) to/from the West.
- 10% of the Dalton Ranch West generate traffic will access the develop via CR 252 (Trimble Lane) to/from the East.

An exhibit illustrating the AM and PM vehicle directional volumes to/from Dalton Ranch West is shown in **Figure 1 on Page 6.**

5. AUXILLARY LANES

The State of Colorado State Highway Access Code, (Volume 2, March 2002) was used to determine the requirement of auxiliary lanes at the proposed access points.

According to the CDOT State Highway Access Code, the following criteria require the construction of auxiliary lanes for a 35mph Rural Highway (R-B):

- Left turn deceleration lane: 10 vehicles/hour
- Right turn deceleration lane: 50 vehicles/hour

Table 4 shows the storage length requirements provided by the Access Code.

Table 4: Storage Length Requirements (CDOT State Highway Access Code, Table 4-8)

Turning Vehicles Per Peak Hour	below 30	30	60	100	200	300
Required Lane Length in Feet	25	40	50	100	200	300

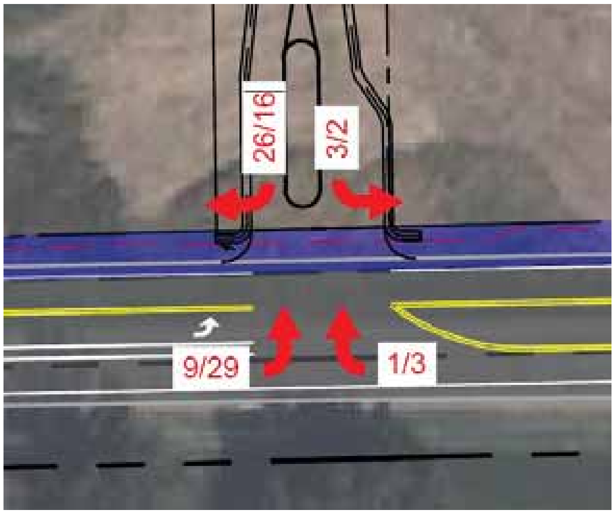
Table 5 shows the left turns for the proposed main access point. As shown in the table, the anticipated number of peak hour left turns will trigger the requirement for an auxiliary left turn lane from Trimble Lane (CR 252) into the Dalton Ranch West subdivision.

This auxiliary lane will be constructed as apart of the Dalton Ranch West project and will meet La Plata County and CDOT design standards and specifications.

Table 5: Left turn lane requirements under existing and proposed conditions at project entrances.

Dalton Ranch West - Auxilary Lane Warrants			
Movement	**Period**		**ADDT'L TURN LANE REQUIREMENTS?**
	AM	**PM**	
Left Turns	9	29	Yes - Left Decel
Right Turns	1	3	No

Figure 1. Dalton Ranch West Turning Movements



6. US 550/TRIMBLE LANE INTERSECTION IMPACT ANALYSIS

The following has been extracted from the State Highway Access Code section 2.3.5.a-b:

“When the land use will generate a DHV of 100 vehicles or more, or when considered necessary or desirable by the issuing authority or Department for exceptional reasons, the applicant shall provide a traffic impact study. The scope of the study shall be commensurate with the scale and scope of probable operational and safety impacts to the general street system. (b) When a traffic impact study is required, the study shall be completed and sealed by a Colorado registered professional engineer. Selected items from the following list may be excluded if not applicable to the situation and exclusion is specifically authorized by the issuing authority. The contents and extent of a traffic impact study depend on the location and size of the proposed development and the conditions prevailing in the surrounding area. Larger developments proposed in congested areas obviously require more extensive traffic analysis, whereas smaller sites may only require a minimal analysis of traffic on site and at immediately adjacent intersections. In determining how large a study area to include, a general guideline is to carry the analysis out at least as far as those areas where newly generated site traffic represents 5 percent or more of roadway’s peak hour capacity. **Where site generated traffic will be less than 5 percent of the roadway capacity, the intersections adjacent to the site should, at a minimum, be analyzed.** The study area boundaries may also be influenced by impacts other than pure capacity relationships such as neighborhood short cuts, traffic noise and hours of operation.”

Table 6: Dalton Ranch West Intersection Impact Analysis

DALTON RANCH WEST INTERSECTION IMPACT ANALYSIS		
Intersection Total Capacity	ADT	13538
Existing Traffic - 2018 counts with 3% growth	ADT	3140
Remaining Intersection Capacity (1)	ADT	10700
Willow Springs Trip Generate (ITE)	ADT	145
Dalton Ranch West Trip Generation (ITE)	ADT	482
Remaining Intersection Capacity (2)	ADT	9771
Dalton Ranch West % of Intersection Capacity	%	3.56%

Per Table 7 – below, the proposed Dalton Ranch West will generate roughly 3.5% of the existing capacity at US 550 and CR 252. Per the Willow Springs RV Park report, they will generate 1.07% of the existing capacity at US 550 and CR 252.

Table 7: Comparison of Dalton Ranch West Traffic vs. 2019 CDOT Counts

Comparision of Exisitng (2019) US 550 & CR 252 Total Traffic vs.Dalton Ranch West Projection					
				Dalton Ranch West Projection	Percentage
14-Aug-19					
Wednesday	8:00am to 9:00am	880	VPH	22	2.50%
Wednesday	12:00pm to 1:00pm	1024	VPH	NA	
Wednesday	4:15pm to 5:15pm	1133	VPH	29	2.56%
15-Aug-19					
Thursday	8:00am to 9:00am	931	VPH	22	2.36%
Thursday	12:00pm to 1:00pm	1066	VPH	NA	
Thursday	4:15pm to 5:15pm	1226	VPH	29	2.37%

See Appendix D for CDOT Peak Hour Data

SEH also counted left turns from CR 252 onto US 550 at the request of CDOT to determine if there would be a stacking issue with associated with the existing left turn lane from CR 252 onto US 550. The existing turn lane is roughly 140' from the stop bar behind the RR crossing to the end of the full width section. This length is adequate for up to 7 passenger vehicles. It should be noted that additional storage is available in front of the RR tracks, which was observed to be used by drivers. However, that will not be considered within this analysis.

SEH analyzed 373 signal Cycles during AM and PM Peak hours on June 2nd (Weds), June 3rd (Thurs) and June 4th (Fri) of 2021. During that time, no more than 5 vehicles queued in the CR 252 turn lane, which occurred only 8 times or 2.14% of the time. Similarly, 4 vehicles queued in the CR 252 turn lane 12 times or 3.22% of the time. Over two thirds of the cycles observed had 0 or 1 left turns onto US 550 from CR 252, leaving the remaining 25% (approximately) of cycles with 2 or 3 left turns. See Table 8.

Table 8. Left turn Analysis of CR 252

CR 252 Left Turn Analysis, June 2nd - 4th 2021				
Queued Vehicles	Number	Percentage	% Less than Vehicles	
0	90	24.13%	24.13%	Zero
1	163	43.70%	67.83%	1 or Less
2	70	18.77%	86.60%	2 or Less
3	30	8.04%	94.64%	3 or Less
4	12	3.22%	97.86%	4 or Less
5	8	2.14%	100.00%	5 or less
Total Cycles	373			

Per Table 3. Dalton Ranch West will generate 16 out bound trips per hour from the 51 SF homes, which will result in 16 x 90% = 14 Westbound AM Peak hour trips to the Signal.

Given the existing turn lane has a capacity for 7 vehicles to queue, which is not currently occurring, and the Dalton Ranch West Development will generate a left (assuming all Dalton Ranch West traffic would turn south, which will not be the case) roughly every 4.5 minutes, or 2.14 cycles with a 120 second signal cycle length. It can reasonably be assumed, that the potential left turns generated by the Dalton Ranch will utilize the left turn pocket and begin to increase the vehicles stacking at the intersection.

In table 9, the total number of cycles 373 was divided by 6 to account for a Willow Springs RV trip arriving every 12 minutes or every 6th cycle. It would be expected based on Table 8 that 24.13% of the time there would be no traffic in the left turn lane when an additional Willow Springs vehicle arrived at the signal, 43.70% there would be one vehicle queued, and so on.

Updating the table to include the Willow Springs turns, yields roughly similar expected percentages where there are limited left turns. For Example, 93.30% of the time, there will be fewer than 3 left turns, with is down slightly from 94.64% of the time without the development.

Table 9. Left turn Analysis of CR 252 with Willow Springs RV included

CR 252 Left Turn Analysis, with Willow Springs RV included				
Queued Vehicles	**Number**	**Percentage**	**% Less than Vehicles**	
0	75	20.12%	20.12%	Zero
1	151	40.45%	60.56%	1 or Less
2	85	22.91%	83.48%	2 or Less
3	37	9.83%	93.30%	3 or Less
4	15	4.02%	97.32%	4 or Less
5	9	2.32%	99.64%	5 or less
6	1	0.27%	100.00%	6 or less
Total Cycles	373			

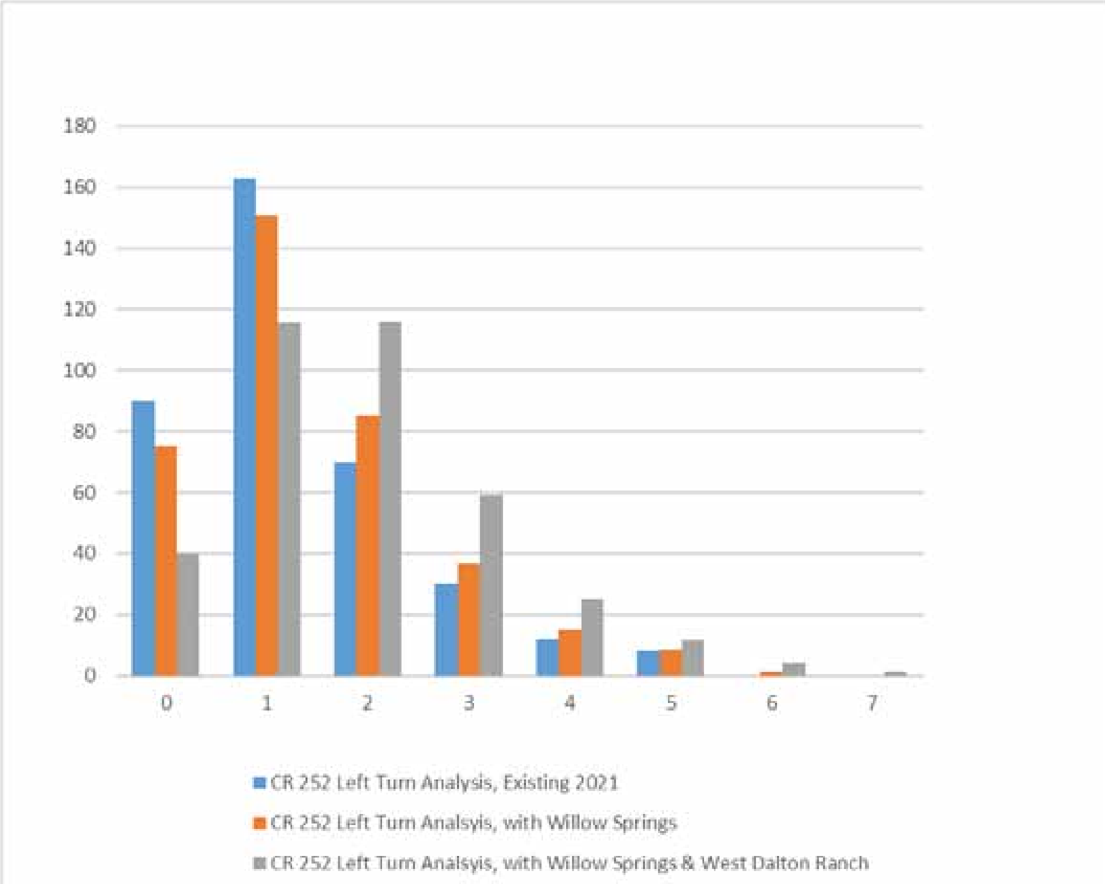
In table 10, the total number of cycles 373 was divided by 2.15 to account for a Dalton Ranch West trip arriving every 4.5 minutes or every 2.15 cycles. It would be expected based on Table 9 that 20.13% of the time there would be no traffic in the left turn lane when an additional Dalton Ranch West vehicle arrived at the signal, 40.45%% there would be one vehicle queued, and so on.

Table 10. Left turn Analysis of CR 252 with Willow Springs RV and Dalton Ranch West Traffic included

CR 252 Left Turn Analsyis, with Willow Springs & West Dalton Ranch				
Queed Vehicles	**Number**	**Percentage**	**% Less than Vehicles**	
0	40	10.76%	10.76%	Zero
1	116	30.98%	41.74%	1 or Less
2	116	31.07%	72.81%	2 or Less
3	59	15.92%	88.73%	3 or Less
4	25	6.72%	95.45%	4 or Less
5	12	3.11%	98.56%	5 or Less
6	4	1.08%	99.64%	6 or Less
7	1	0.36%	100.00%	7 or Less
Total Cycles	**373**	**100.00%**		

Updating the table to include the Willow Springs and West Dalton Ranch turns, yields roughly similar expected percentages where there are limited left turns. For Example, 88.73% of the time, there will be fewer than 3 left turns, with is down slightly from 94.64% of the time without the development.

Chart 1. Shift in Left Turn stacking due to Willow Springs RV Park and Dalton Ranch West Project



In summary, the CR 252 left turn lane will remain generally free of any type of congestion or overuse, as indicated by our analysis. Rarely, if ever will there be 5, 6, 7 or more vehicles expected to stack in the existing CR 252 (Trimble Lane) left turn pocket and vehicles above that number would not have a detrimental impact to CDOT's facilities.

SEH also utilized CDOT's 2019 Counts to project 2022 and 2042 traffic, plus Willow Springs, plus Dalton Ranch West project traffic. Per CDOT's OTIS system, the ADT in 2022 will be roughly 9100, which is expected to grow to 9900 in 2042, or roughly 10%. This translates to roughly 0.50% growth per year, which was used to project future AM/PM counts.

Table 71: AM Peak Hour Calculations

Summary of Traffic Counts (AM)												
	CR 203			CR 252			US 550					
Period	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2019 Counts (CDOT)	9	18	55	71	12	49	24	296	88	40	213	5
2022 Counts (0.50% Growth)	9	18	56	72	12	50	24	300	89	41	216	5
Willow Springs	0	0	0	17	0	12	0	0	5	3	0	0
Dalton Ranch West	0	0	0	16	0	10	0	0	5	4	0	0
2022 Existing and Projects	**9**	**18**	**56**	**105**	**12**	**72**	**24**	**300**	**99**	**48**	**216**	**5**
2042 Growth (0.50% Growth)	10	20	62	80	13	55	27	332	99	45	239	6
2042 Existing and Projects	**10**	**20**	**62**	**113**	**13**	**77**	**27**	**332**	**109**	**52**	**239**	**6**

Table 82: PM Peak Hour Calculations

Summary of Traffic Counts (PM)												
	CR 203			CR 252			US 550					
Period	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2019 Counts (CDOT)	4	21	42	88	25	52	73	268	129	60	386	12
2022 Counts (0.50% Growth)	4	23	46	96	27	57	80	292	141	65	421	13
Willow Springs	0	0	0	11	0	7	0	0	17	12	0	0
Dalton Ranch West	0	0	0	16	0	10	0	0	17	12	0	0
2022 Existing and Projects	**4**	**23**	**46**	**123**	**27**	**74**	**80**	**292**	**175**	**89**	**421**	**13**
2042 Growth (0.50% Growth)	5	25	51	106	30	63	88	323	155	72	465	14
2042 Existing and Projects	**5**	**25**	**51**	**133**	**30**	**80**	**88**	**323**	**189**	**96**	**465**	**14**

The intersection as whole is functioning at a Level of Service (LOS) of B, according to the 2022 counts and the 2042 projected counts, in both the am peak period and the pm peak period. With the increase in traffic due to the facilities and the predicted growth of the area this intersection should not be impacted. See Appendix G for Synchro Reports.

7. ACCIDENT DATA

CDOT Traffic Data indicates that there were three (3) accidents reported between 12/31/2008 and 12/31/2018. One on the accidents involved Property Damage Only, while the other two injured 5 individuals. No fatalities were reported during the 15-year data period.

By type of accident, there were two (2) reported rear-ends and one (1) reported sideswipe. In two (2) of the incidents, the driver was pre-occupied and one (1) had no apparent contributing factor. None of the accidents involved a westbound vehicle, or the CR 252 leg of the intersection.

From 2004 the AADT of roughly 9,300 vehicles on US 550 has grown to roughly 10,000 AADT in 2019. This indicates that the US 550/CR 252 intersection has likely had roughly 9,500 vehicles/day utilize the intersection. Multiplying 9,500 AADT by 365 days x 15 years yields over 52,000,000 vehicles during that time. Dividing that 52,000,000 vehicles by the 3 reported accidents yields an accident roughly every 17,000,000 vehicles or every 5 years.

In summary accident data for the US 550/CR 252 intersection does not indicate a safety issue or apparent geometric deficiency.

See Appendix D for CDOT Accident Data.

8. ESAL CALCULATIONS

Trautner's 12/23/2021 Geotechnical Report made recommendations for various road sections. Per the design drawings the road section will be 4-inches of Asphalt on, 4-inches of Class 6, on 8-inches of Class 2; which will support 100,000 ESALs based on the Geotechnical Report. The projected ESALs of roughly 44,000 is shown on Table 12 below.

Table 92: AM Peak Hour Calculations

Dalton Ranch West - Internal Roads ESAL Summary						
Vehicle Type	ADT	Percentage	Type	ESAL Factor	20-Year ESALS	ESALs/Drive Lane
Passenger Vehicles/Day	467	97	Passenger Vehicles	0.0003	1,023	511
Trucks/Day	14	3	Three Axle Truck	0.85	86,870	43,435
					Total ESALs	**43,946**

9. US 550/TRIMBLE LANE INTERSECTION FAIR SHARE REIMBURSEMENT OBLIGATIONS

This project is subject to the fair share reimbursement of the US 550 at Trimble Lane intersection improvements constructed as a part of the 2007 Trimble Crossing development. A La Plata County Board of County Commissioners staff report outlines the agreements enacted for this requirement. In summary, Trimble Crossing, LLC paid for the signal improvements necessary for development to occur in the study area. The Trimble Crossing Fair Share Reimbursement Agreement was created to allow for future development to pay back this initial investment as development occurs, adding to the traffic at the intersection. A unit price per generated daily trip was created as the framework of this development by dividing the construction costs of the intersection by the estimated total capacity of the intersection as described in the Trimble Crossing Traffic Impact Study. Table 10 displays the fair share reimbursement cost per ADT as well as Dalton Ranch West's reimbursement obligation.

Table 13: Dalton Ranch West Intersection Impact Analysis and Fair Share Reimbursement Obligations

DALTON RANCH WEST INTERSECTION IMPACT ANALYSIS AND FAIR SHARE REIMBURSEMENT OBLIGATIONS		
US 550/Trimble Lane Intersection Total Cost	US Dollars	$ 1,583,769.00
Intersection Total Capacity	ADT	13,538
Fair Share Reimbursement Cost Per ADT	US Dollars	$ 117.00
Dalton Ranch West Trip Generation (ITE)	ADT	482
Dalton Ranch West Reimbursement Obligation	US Dollars	$ 56,394.00

10. CONCLUSIONS & RECOMMENDATIONS

In conclusion, the ITE Trip Generation Manual was used to estimate the traffic created by the Dalton Ranch West project. The project will generate a total ADT of 482 trips, with ten (10) trips are expected to enter the development with twenty nine (29) trips exiting the development in the AM peak hour. Thirty two (32) trips are expected to enter the development and nineteen (19) trips are expected to exit the development in the PM peak hour.

The turning volumes expected from this development (9/29) left turns into the development in the (am/pm) peak hours will trigger a left turn auxiliary lane, which the developer is proposing to construct.

Per our analysis ad findings, the project does not warrant the construction of additional auxiliary lanes or improvement/re-striping of the CR 252 left turn lane storage already provided on Trimble Lane (CR 252).

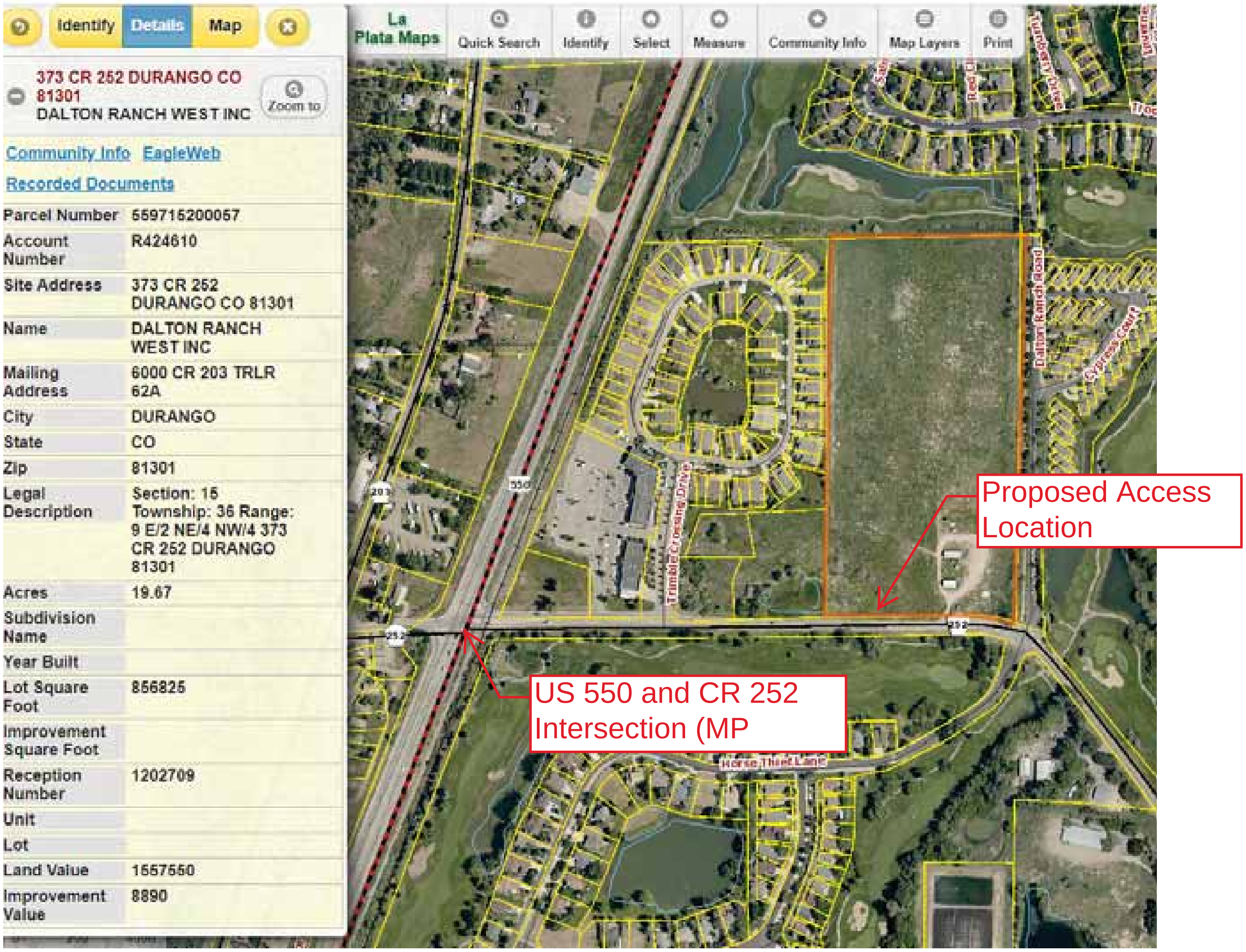
The project traffic is expected to produce traffic at the signalized intersection of US 550 at Trimble Lane equivalent to 3.56% the intersection's total capacity. No significant delay at the intersection would be experienced with the inclusion of this project with 9,771 ADT remaining as the intersection's design capacity.

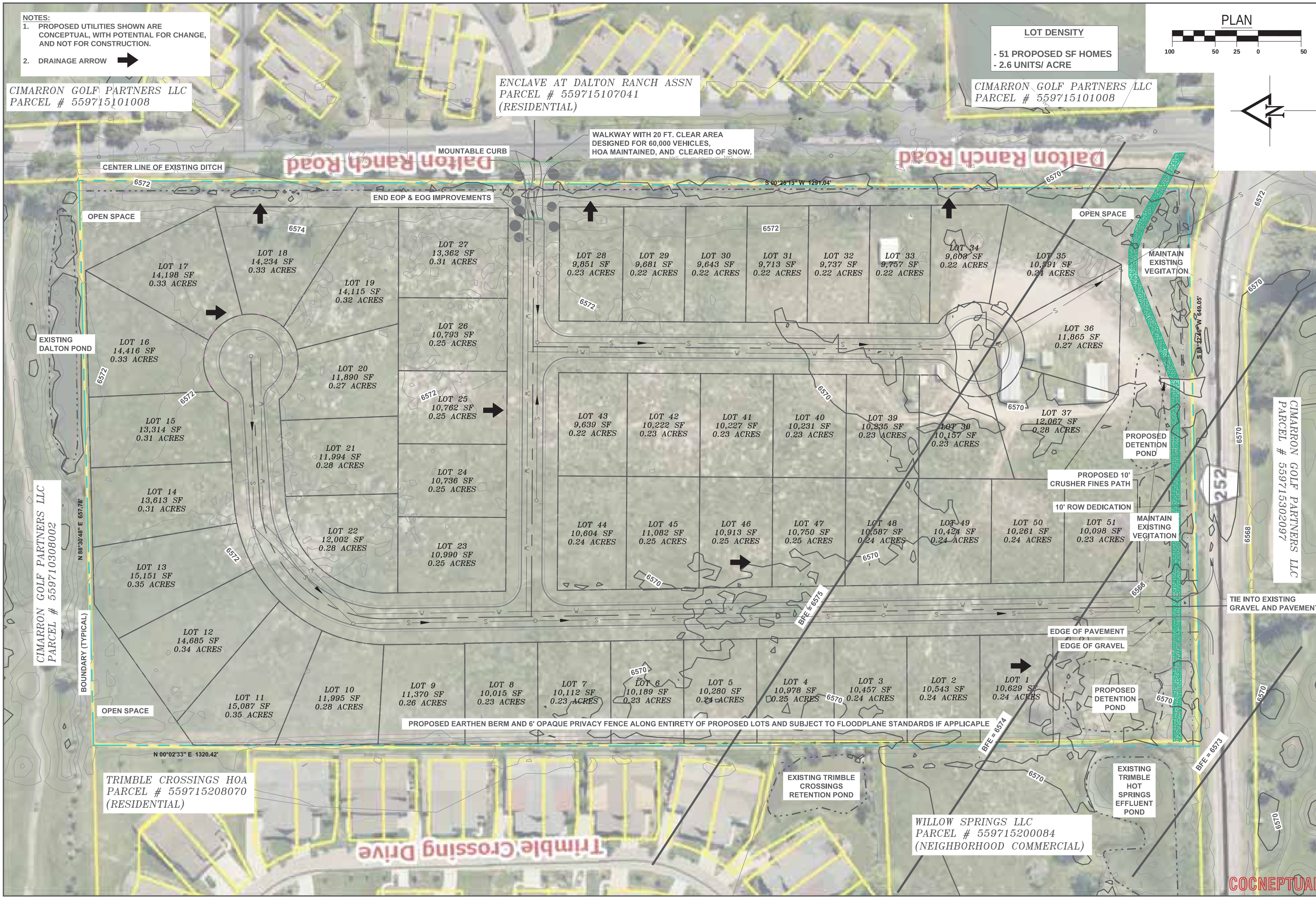
Because this project is subject the terms outlined in the Trimble Crossing Fair Share Reimbursement agreement, $117.00 per generated daily trip are to be applied to this development. At 145 ADT, this project will be required to contribute $56,394.00 towards the reimbursement agreement.

APPENDIX A:

Proximity Map & Site Plan

Dalton Ranch West Property Map





CALL 811
TWO WORKING DAYS
BEFORE YOU DIG

DISCIPLINE
OWNER: ERIC FLORA
APPLICANT: NANCY DOSDALL
SURVEYOR: DZC SURVEYING
ARCHITECT: N/A
ENGINEER: STEVE WINTERS

DALTON RANCH WEST
SKETCH PLAN
51 SINGLE FAMILY LOTS

Short Elliott Hendrickson, Inc.
934 Main Avenue, Unit C
Durango, Colorado 81301
Phone: (970) 385-4546
Fax: (970) 385-4502

SEH

Drawn: SW
Drafted: MK
Checked: SW

Date of Submittal
11/17/2021

1 OF 1

File Name: R:\Current Projects\Land Projects 3\Willow Crossing RV Park (USE X DRIVE)\ACAD\Exhibits\DWG\E phase - concept_FINAL.10.26 Plotted: 11/17/2021 1:09 PM Plot Style: SEH.STB Plotted By: MATT KLEINERT

APPENDIX B:

Trimble Crossing Fair Share Reimbursement Agreement – LPC Staff Report

LA PLATA COUNTY BOARD OF COUNTY COMMISSIONERS
DECEMBER 21, 2010 – 10:00 AM
LA PLATA COUNTY COURTHOUSE
COMMISSIONERS' MEETING ROOM

STAFF REPORT
PROJECT NAME: TRIMBLE CROSSING FAIR SHARE REIMBURSEMENT AGREEMENT AMENDMENT #1
PROJECT NUMBER: 2010-0120

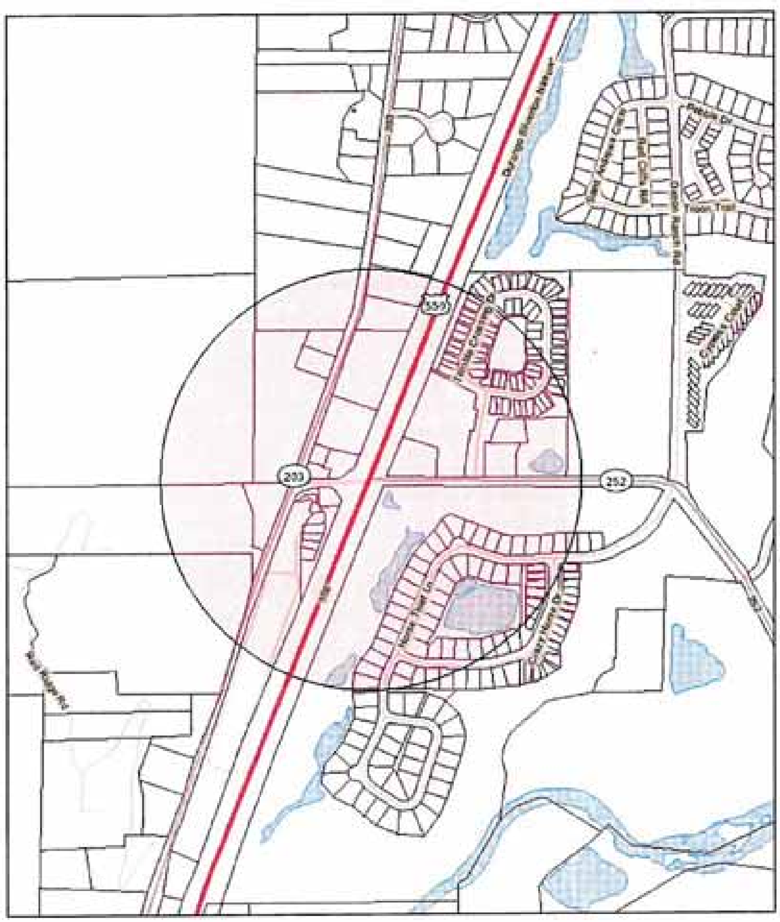
Project action requires the presence of the applicant or formally designated agent.

I. APPLICANT
Trimble Crossing LLC
700 Main Avenue, Suite G
Durango, CO 81301

AGENT
Mel Goodman
700 Main Avenue, Suite G
Durango, CO 81301

II. PROJECT LOCATION

The improvements constructed as part of the Trimble Crossing Development and subject to the reimbursement agreement are the intersection improvements and traffic signals located at Trimble Lane and US HWY 550 in Section 15, Township 36 North, Range 9 West.



III. PROJECT DESCRIPTION

Trimble Crossing LLC is desirous of extending the duration of an existing fair share reimbursement agreement, Project 2008-0085, from the previous maximum allowed by code of 10 years to the current maximum allowed by code of 15 years per LPLUC 82-99(1)e.

The Trimble Crossing Fair Share Reimbursement Agreement, project 2008-0085, provides the ability of the developer of Trimble Crossing to recover a portion of the cost associated with the construction of improvements required as part of the Trimble Crossing SUP, project 2003-0315, and Trimble Crossing Subdivision, project 2004-0248. The improvements were specifically to the intersection of Trimble Lane (CR 252) and US HWY 550 and included a railroad crossing, turn lanes, and signalization. It should be noted the improvements were designed for a 20 year estimated traffic projection and are estimated to be valid until December 31, 2026.

The Trimble Crossing Fair Share Reimbursement Agreement and associated Final Cost Recovery Statement, approved by the BOCC on April 22, 2008, identified potentially benefitted property owners, permitted the maximum duration of the agreement as allowed by code, 10 years, and established the amount of reimbursement per average daily trip ($117) for new developments identified on the benefitted property owners list. Since then, LPLUC Sec 82-99(e)(1) has been amended, Resolution 2010-23, to allow up to 15 years for the duration of a fair share reimbursement obligation. The applicant is not proposing any other modifications to the agreement aside from the 10 to 15 year extension, from a date of April 22, 2018 to April 22, 2023.

IV. ADJACENT LAND OWNER NOTIFICATION AND RESPONSE

Potentially benefitted property owners, as identified during the review and approval of the original Trimble Crossing Fair Share Reimbursement Agreement, project 2008-0085, were notified of the proposed amendment. To date, one comment has been received from those landowners notified and is attached for your review. No neighborhood compatibility meeting was held

V. AGENCY COMMENTS

Agencies were sent request for comment approximately two business days from the date of submittal, September 28, 2010.

1. **La Plata County Attorney**

   Although no formal comments are included for review, staff and the applicant have worked closely with the County Attorney's Office.

2. **La Plata County Finance Department**

   Declined comment.

3. **La Plata County Planning Engineering Division**

   Dated December 21, 2010

   *"**Project Understanding***

   Trimble Crossing installed numerous road improvements at the intersection of State Hwy 550 and CR 252 including a traffic signal and railroad crossing gates. The improvements created excess capacity at the intersection that adjoining properties could benefit from when they redevelop. A fair share reimbursement agreement was approved in 2008 under project number 2008-0085 that requires future developers to payback Trimble Crossing. Under La Plata Code, at that time, only a 10-year agreement was allowed. Since that time, our code has changed which allows developers a 15-year payback agreement. The developer is seeking an amendment to his fairshare agreement to extend to 15-years and the developer's traffic study supports the extension to the year 2023. We would support the extension.

After consideration by the BoCC and prior to recording the Recovery Statement

1. All exhibits are recorded with the recovery statement or cross-referenced on the recovery statement. The recovery statement shall include the original developer's mailing address. LPLUC 82-99 (d) (7)

2. Recording of cost recovery statement. As soon as practicable after the board's issuance of its final determination, the original developer shall prepare and submit to the county clerk and recorder for recording a notice of fair share reimbursement in the chain of title for each benefitted property in the form provided by the director. Recording of the notice of fair share reimbursement is merely a statement that a unique government land use regulation may apply to a property; said notice is not a lien or any other type of encumbrance on the chain of title for said property. Such notice shall include the original developer's mailing address and specify it is valid only for a period of time as approved by the board. LPLUC 82-99 (d) (7)"

Dated October 29, 2010

*"**Project Understanding***

Trimble Crossing installed numerous road improvements at the intersection of State Hwy 550 and CR 252 including a traffic signal and railroad crossing gates. The improvements created excess capacity at the intersection that adjoining properties could benefit from when they redevelop. A fair share reimbursement agreement was approved in 2008 under project number 2008-0085 that requires future developers to payback Trimble Crossing. Under La Plata Code, at that time, only a 10-year agreement was allowed. Since that time, our code has changed which allows developers a 15-year payback agreement. The developer is seeking an amendment to his fairshare agreement to extend to 15-years and the developer's traffic study supports the extension to the year 2023. We would support the extension.

Prior to PC Consideration

A signed and stamped letter from Russell Engineering stating the exact date for the traffic study's 20-year projection. (Was it December 31, 2023 or January 1, 2023 or another date?).

Prior to BoCC Consideration

We would recommend the following:

- *A referral be sent to our county attorney to draft the amendment, review the submitted recovery statement and possibly standardize the recovery statement for all developers.*

We would recommend the recovery statements include:

- *Location of project*
- *Project numbers and dates for the actual development and fair share reimbursement hearings*
- *Expiration dates and justifications for the expiration date (in this case it would be 2023 year as referenced in the 2004 Russell Traffic Study)*
- *A copy of the La Plata Code regarding Fair Share Reimbursements should be attached to the recovery statement (this would help future developers and county staff to know the exact code and requirements. Codes do change and having the exactly one to follow would be helpful.).*

After consideration by the BoCC and prior to recording the Recovery Statement

All exhibits are recorded with the statement or cross-referenced by the recovery statement."

4. **La Plata County Public Works Department**
   Although no formal comments are included for review, the Planning Engineering Division's comments incorporate any concerns/comments from Public Works.

V. PLANNING COMMISSION RECOMMENDATION

The Planning Commission reviewed the project on December 9, 2010 and unanimously voted to forward a recommendation of approval to the BOCC the based on 2 findings and 3 conditions. The applicant has addressed any conditions required prior to review by the BOCC. Please refer to the attached draft minutes from the December 9, 2010 meeting for details. The vote was:

Wayne Buck:	Yes	Michelina Ceglia:	Yes	Wanda Cason:	Yes
Travis Craig:	Yes	David Black:	Yes		

VI. DEPARTMENT RECOMMENDATION

The Board of County Commissioners may vote to continue the project, approve the project with or without conditions, or deny the project.

The Planning Department recommends that Project No 2010-0120 Trimble Crossing Fair Share Reimbursement Agreement Amendment #1, be APPROVED based on the following Findings and Conditions:

Findings:

1. The intersection improvements were designed and built for a 20 year traffic projection and is estimated to be valid until December 31, 2026 (Trimble Crossing Traffic Study, Russell Engineering, dated June 10, 2004).
2. The request for the duration of a fair share reimbursement obligation for 15 years to a date of April 22, 2023 is consistent with LPLUC 82-99(e)(1).

Conditions:

1. No more than 30 days after approval by the BOCC, the Final Cost Recovery Statement and associated exhibits, developed in conjunction with the applicant and staff, shall be signed by the developer and a copy provided to the County Planning Department.
2. No more than 30 days after approval by the BOCC, the developer shall prepare and submit to the County Clerk and Recorder for recording a revised notice of fair share reimbursement in the chain of title for each benefitted property in the form provided by the director. Recording of the notice of fair share reimbursement is merely a statement that a unique government land use regulation may apply to a property; said notice is not a lien or any other type of encumbrance on the chain of title for said property. Such notice shall include the original developer's mailing address and specify it is valid only for a period of time as approved by the board (LPLUC 82-99(d)(7))

ATTACHMENTS

- Draft PC Minutes dated December 9, 2010
- Narrative
- Final Cost Recovery Statement as approved by the BOCC on April 22, 2008
- Draft Final Cost Recovery Statement dated January 4, 2011
- Draft Notice to Benefitted Property Owners
- Affected Property Owner Correspondence
- Location Map

END OF DEPARTMENT REPORT

Trimble Crossing Development, LLC
Cost Recovery Statement
January 4, 2011

Trimble Crossing Development, LLC submits this Cost Recovery Statement pursuant to the La Plata County Land Use Code Section 82-99, **as Amended by Resolution 2010-23 on April 20, 2010**, in support of the Fair Share Reimbursement agreement for utilization of improvements created by Trimble Crossing Development, LLC, and states as follows:

1. The improvements are located at the intersection of Highway 550 North and Trimble Lane in Durango, Colorado, constructed under project number 2008-0085, and are generally described as the traffic control signal, railroad crossing controls, and highway intersection improvements, all as specified by the Colorado Department of Transportation. ("Improvements")
2. On April 22, 2008 in Project Number 2008-0085, the La Plata County Board of County Commissioners approved a reimbursement agreement under Code Section 82-99 that established the following:
   a. the approved total cost for the Improvements is $1,583,769.00. The Board further accepted the finding that the total traffic capacity for the Improvements is 13,538 vehicle trips per day and that the Original Developer, Trimble Crossing Development, LLC will generate a maximum of 2,838 vehicle trips per day which leaves a net capacity of 10,700 vehicle trips per day.
   b. The vehicle trips per day have a reimbursement cost of $117.00 per trip ($1,538,769.00/13,538) to be paid by "Subsequent Developers" of "Benefitted Properties" as those terms are defined in the Code.
   c. The period of reimbursement by Subsequent Developers is ten years beginning April 22, 2008
3. On April 20, 2010, the La Plata County Land Use Code Section 82-99 was amended by Resolution 3010-23, a copy of said Resolution and Amended Code Section being attached hereto as Exhibit "A" The Amendment establishes the maximum period of reimbursement for improvements at fifteen years.
4. The Improvements have been certified by Russell Engineering, Inc. to have been designed and built to accommodate a 20 year projection of growth as required by the Colorado Department of Transportation and the Board of County Commissioners has accepted this finding.
5. Pursuant to order of the Board of Commissioners on January 4, 2011, the period of reimbursement for the Improvements created by Trimble Crossing Development, LLC was established at fifteen years commencing April 22, 2008 and expiring April 21, 2023.
6. A Notice, in the form attached hereto as Exhibit"B", to Benefitted Property Owners, as determined by the La Plata County Board of County Commissioners on April 22, 2008, shall be recorded with the La Plata County Clerk.

Trimble Crossing Development, LLC

Melvyn J. Goodman, attorney in fact

Notice to Benefitted Property Owners

This property is designated as a Benefitted Property under the Order of the La Plata County Board of Commissioners dated January 4, 2011 in Project Number 2010-0120 and is subject to potential reimbursement to the Original Developer for a proportionate portion of the costs of construction of the intersection Improvements at the intersection of Highway 550 North and Trimble Lane, Durango, Colorado.

This Notice applies **only** if this property is subdivided or commercially developed after April 22, 2008 and before April 21, 2023. The details of the potential reimbursement are described in the Cost Recovery Statement dated January 4, 2011 which is attached (without exhibits). Exhibits to the Cost Recovery Statement are available from the La Plata County Community Development Department, 1060 E. 2nd Avenue, Durango, Colorado 81301

Trimble Crossing Development, LLC, Original Developer

Melvyn J. Goodman, Attorney in Fact

Trimble Crossing Development. LLC
Project #2008-0085

Application for Amendment #1 to Final Cost Recovery Statement
Under La Plat County Land Use Code Section 82-99
Fair Share Reimbursement For Improvements

Narrative

Trimble Crossing Development, LLC hereby applies for Amendment #1 to the Final Cost Recovery Statement approved by the La Plata County Board of Commissioners on April 22, 2008 in the above referenced Project Number 2008-0085. The Application for Amendment is predicated on the following:

1. The improvements completed by Trimble Crossing Development, LLC consist of the work defined in the Development Improvement Agreement with La Plata County dated April 7, 2007, and is generally described as the traffic control signal and highway 550 North intersection improvements at the intersection of Highway 550 North and Trimble Lane, Durango, Colorado. The specific improvements and the costs associated with such improvements are described in the Final Cost Recovery Statement approved April 22, 2008, a copy of which is attached.

2. A location map identifying the location of the improvements in La Plata County is attached to this Narrative.

3. This Application for Amendment #1 to the Final Cost Recovery Statement does not seek any amendment to the costs and expenses previously submitted and approved by the Board of County Commissioners on April 22, 2008, and does not seek any adjustment to the Average Daily Trip cost of $117.00 as established therein.

4. Project #2008-0085 was processed under the La Plata County Code Section 82-99 which, at the date of approval of the Final Cost Recovery Statement, April 22, 2008, permitted a maximum ten (10) year "Duration of Fair Share Reimbursement Obligation".

5. The La Plata County Code Section 82-99 was amended, April 22, 2010 and the duration of fair share reimbursement obligation as specified in 82-99(e)(1) states, "A secondary developer's obligation to reimburse an original developer for a fair share of the costs of the installed improvement shall exist for a period of time determined by the board, but in no event greater than fifteen years beginning on the date of completion of the relevant improvement" This Application seeks to adjust the period of reimbursement from ten years to fifteen years from the date of completion of the improvements.

6. The improvements were constructed in compliance with the State of Colorado, State Highway Access Code, which required that the improvements be adequate for traffic estimated at the 20th year projections. Attached to this Application for Amendment of the Final Cost Recovery statement is the Certification of Russell Engineering, Inc., of Durango. Colorado that the improvements were constructed in accordance with the Colorado

Department of Transportation requirements. This Certification confirms that the intersection improvements have a minimum of a 20 year useful life.

7. The improvements as constructed and certified exceed the maximum fifteen year period of reimbursement as permitted under the revised code section.

Accordingly, Trimble Crossing Development, LLC hereby seeks this Amendment #1 to the Final Cost Recovery Statement to require any secondary developer of benefitted property to reimburse fair share costs for any development occurring within fifteen years of the completion of the improvements which were completed and approved on April 22, 2008.

Trimble Crossing Development, LLC
By Melvyn J. Goodman, Attorney in Fact
700 Main Avenue
Suite G
Durango, Colorado 81301

APPENDIX C:
ITE Trip Generation Printout

Development Name:	**Dalton Ranch West**	**Development Access:**	**Trimble Lane**
Date Received:		**Highway Access:**	**Hwy 550 (EX)**
Date Reviewed:		**County Road:**	**CR 252 (R-B)**
Engineer:	**Steve Winters**		

Appendix C				TRIP RATES AND VOLUMES																				
Development Type	Land Use Code	# Of Units	KSF	Weekday			AM Peak Hour of Adj Traffic 7AM and 9AM			PM Peak Hour of Adj Traffic 4 PM and 6PM			Weekday AM Peak Hour of Generator			Weekday PM Peak Hour of Generator			Saturday			Saturday Peak Hour of Generator		
				*	In	Out		In	Out		In	Out		In	Out		In	Out		In	Out		In	Out
Single-Family Detached Housing	210	51		9.44	50%	50%	0.74	25%	75%	0.99	63%	37%	0.76	26%	74%	1.00	64%	36%	9.54	50%	50%	0.93	54%	46%
					241	241		9	28		32	19		10	29		33	18		243	243		26	22
					In	**Out**		**In**	**Out**		**In**	**Out**		**In**	**Out**		**In**	**Out**		**In**	**Out**		**In**	**Out**
			Trip Volumes		**241**	**241**		**9**	**28**		**32**	**19**		**10**	**29**		**33**	**18**		**243**	**243**		**26**	**22**
			Total ADT			**481**																		

APPENDIX D:
2019 Counts and 2008 to 2018 Accident Data

Location: 22 US 550 & TRIMBLE LN AM
Date: Wednesday, August 14, 2019
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

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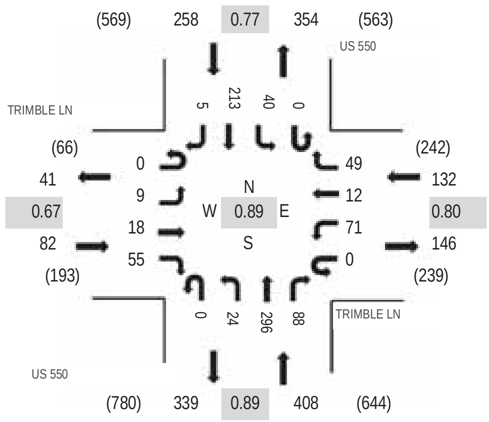
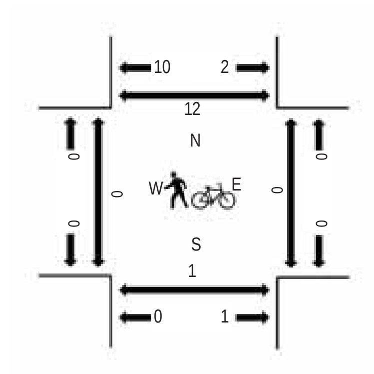
Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	TRIMBLE LN Eastbound U-Turn	Left	Thru	Right	TRIMBLE LN Westbound U-Turn	Left	Thru	Right	US 550 Northbound U-Turn	Left	Thru	Right	US 550 Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
7:00 AM	0	0	4	14	0	12	0	7	0	7	32	4	0	6	50	0	136	768	0	0	0	1
7:15 AM	0	0	3	16	0	20	1	7	0	1	35	12	0	10	61	0	166	824	0	0	0	0
7:30 AM	0	6	5	33	0	23	3	7	0	3	52	14	0	7	96	1	250	865	0	0	0	0
7:45 AM	0	4	4	22	0	21	2	7	0	7	52	17	0	7	73	0	216	850	0	0	0	0
8:00 AM	0	2	5	13	0	22	6	6	0	4	51	19	0	7	55	2	192	880	0	0	0	1
8:15 AM	0	2	5	17	0	16	1	9	0	5	80	22	0	7	42	1	207		0	0	0	0
8:30 AM	0	2	2	12	0	13	2	16	0	6	76	30	0	13	62	1	235		0	0	0	0
8:45 AM	0	3	6	13	0	20	3	18	0	9	89	17	0	13	54	1	246		0	0	0	0
Count Total	0	19	34	140	0	147	18	77	0	42	467	135	0	70	493	6	1,648		0	0	0	2
Peak Hour	0	9	18	55	0	71	12	49	0	24	296	88	0	40	213	5	880		0	0	0	1

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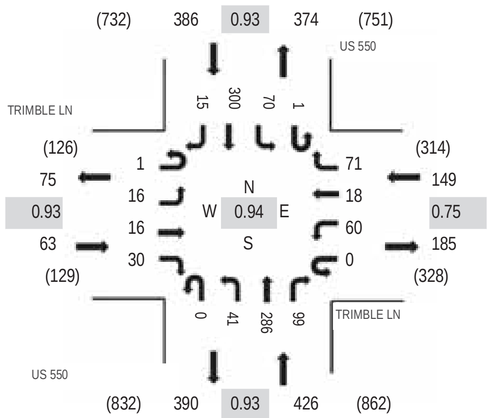
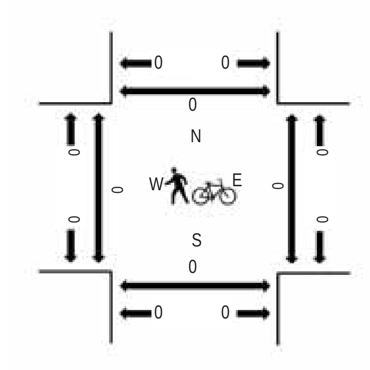
Location: 22 US 550 & TRIMBLE LN Noon
Date: Wednesday, August 14, 2019
Peak Hour: 12:00 PM - 01:00 PM
Peak 15-Minutes: 12:45 PM - 01:00 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	TRIMBLE LN Eastbound U-Turn	Left	Thru	Right	TRIMBLE LN Westbound U-Turn	Left	Thru	Right	US 550 Northbound U-Turn	Left	Thru	Right	US 550 Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
11:00 AM	0	2	4	8	0	20	5	12	0	7	89	20	0	8	75	4	254	1,013	0	0	0	0
11:15 AM	0	2	6	9	0	21	4	9	0	7	91	19	0	7	88	2	265	1,009	0	0	0	0
11:30 AM	0	0	4	12	0	34	2	20	0	11	65	24	0	12	83	2	269	986	0	0	0	0
11:45 AM	0	0	5	14	0	23	3	12	0	4	75	24	0	10	55	0	225	977	0	0	0	0
12:00 PM	1	1	10	7	0	11	5	18	0	8	74	13	0	18	79	5	250	1,024	0	0	0	0
12:15 PM	0	5	2	8	0	15	4	22	0	8	62	31	0	17	63	5	242		0	0	0	0
12:30 PM	0	4	2	12	0	18	4	15	0	11	68	22	0	12	88	4	260		0	0	0	0
12:45 PM	0	6	2	3	0	16	5	16	0	14	82	33	1	23	70	1	272		0	0	0	0
Count Total	1	20	35	73	0	158	32	124	0	70	606	186	1	107	601	23	2,037		0	0	0	0
Peak Hour	1	16	16	30	0	60	18	71	0	41	286	99	1	70	300	15	1,024		0	0	0	0

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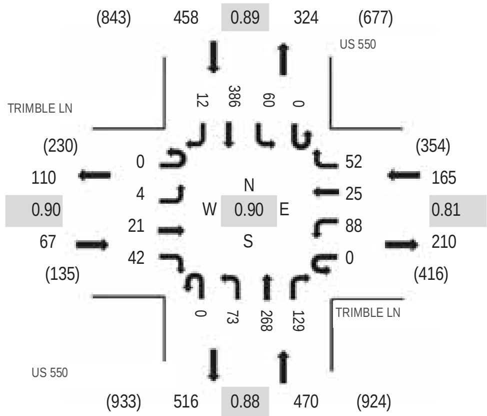
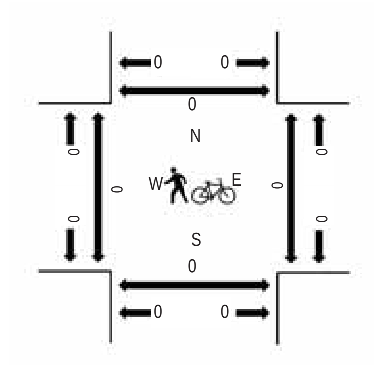
Location: 22 US 550 & TRIMBLE LN PM
Date: Wednesday, August 14, 2019
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:15 PM - 04:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	TRIMBLE LN Eastbound U-Turn	Left	Thru	Right	TRIMBLE LN Westbound U-Turn	Left	Thru	Right	US 550 Northbound U-Turn	Left	Thru	Right	US 550 Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
4:00 PM	0	2	5	6	0	21	3	12	0	16	67	33	0	19	109	1	294	1,160	0	0	0	0
4:15 PM	0	1	6	9	0	31	9	14	0	25	67	37	0	18	104	3	324	1,133	0	0	0	0
4:30 PM	0	1	4	12	0	19	7	15	0	16	66	33	0	12	98	3	286	1,099	0	0	0	0
4:45 PM	0	0	6	15	0	17	6	11	0	16	68	26	0	11	75	5	256	1,095	0	0	0	0
5:00 PM	0	0	8	10	0	21	8	17	0	15	59	22	0	13	89	5	267	1,096	0	0	0	0
5:15 PM	0	1	3	12	0	22	10	12	0	19	72	39	0	23	70	7	290		0	0	0	0
5:30 PM	0	0	11	10	0	13	10	18	0	17	85	32	0	11	72	3	282		0	0	0	0
5:45 PM	0	1	7	5	0	20	11	27	0	13	61	20	0	17	73	2	257		0	0	0	1
Count Total	0	6	50	79	0	164	64	126	0	137	545	242	0	124	690	29	2,256		0	0	0	1
Peak Hour	0	4	21	42	0	88	25	52	0	73	268	129	0	60	386	12	1,160		0	0	0	0

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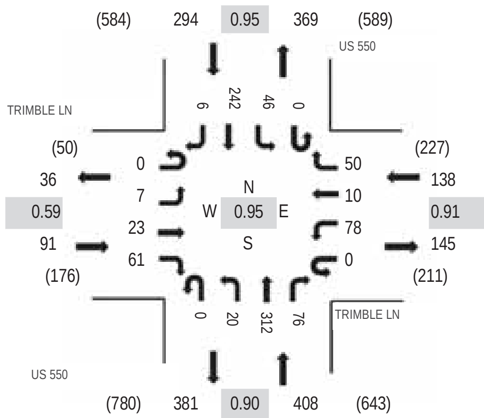
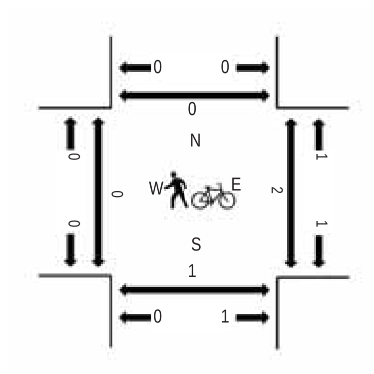
Location: 22 US 550 & TRIMBLE LN AM
Date: Thursday, August 15, 2019
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	TRIMBLE LN Eastbound U-Turn	Left	Thru	Right	TRIMBLE LN Westbound U-Turn	Left	Thru	Right	US 550 Northbound U-Turn	Left	Thru	Right	US 550 Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
7:00 AM	0	1	0	11	0	9	0	2	0	2	33	7	0	3	55	1	124	699	0	0	0	0
7:15 AM	0	1	4	18	0	19	1	7	0	1	35	8	0	3	74	0	171	794	0	0	0	0
7:30 AM	0	5	2	22	0	16	0	6	0	1	60	6	0	8	73	0	199	858	0	0	0	1
7:45 AM	0	1	3	17	0	20	1	8	0	7	61	14	0	8	65	0	205	891	0	0	0	0
8:00 AM	0	0	3	11	0	21	4	9	0	5	68	21	0	12	63	2	219	931	0	0	0	0
8:15 AM	0	1	4	13	0	22	2	8	0	4	87	22	0	10	61	1	235		0	0	0	0
8:30 AM	0	5	9	25	0	19	1	14	0	5	73	13	0	12	54	2	232		0	0	0	0
8:45 AM	0	1	7	12	0	16	3	19	0	6	84	20	0	12	64	1	245		0	0	0	0
Count Total	0	15	32	129	0	142	12	73	0	31	501	111	0	68	509	7	1,630		0	0	0	1
Peak Hour	0	7	23	61	0	78	10	50	0	20	312	76	0	46	242	6	931		0	0	0	0

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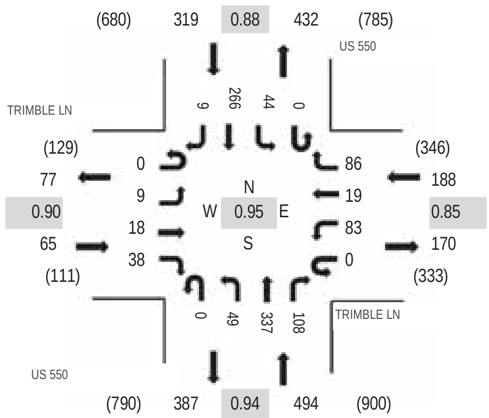
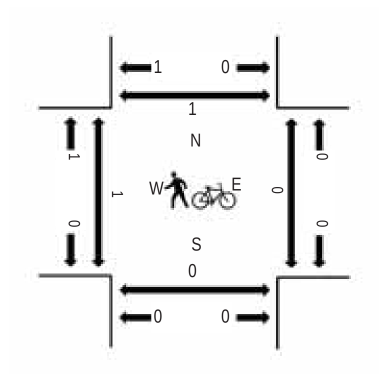
Location: 22 US 550 & TRIMBLE LN Noon
Date: Thursday, August 15, 2019
Peak Hour: 12:00 PM - 01:00 PM
Peak 15-Minutes: 12:15 PM - 12:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	TRIMBLE LN Eastbound U-Turn	Left	Thru	Right	TRIMBLE LN Westbound U-Turn	Left	Thru	Right	US 550 Northbound U-Turn	Left	Thru	Right	US 550 Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
11:00 AM	0	1	1	5	0	14	3	12	0	8	70	21	0	12	69	2	218	971	0	0	0	0
11:15 AM	0	0	10	2	0	23	3	18	0	7	83	21	0	24	77	2	270	1,013	0	0	0	0
11:30 AM	0	2	2	10	0	24	2	16	0	11	66	27	0	15	64	2	241	1,023	0	0	0	0
11:45 AM	0	3	3	7	0	24	5	14	0	4	68	20	0	7	84	3	242	1,061	0	0	0	0
12:00 PM	0	2	5	8	0	16	5	18	0	15	100	17	0	13	58	3	260	1,066	0	0	0	0
12:15 PM	0	2	7	9	0	27	4	24	0	4	80	28	0	13	79	3	280		0	0	0	0
12:30 PM	0	1	2	11	0	15	5	27	0	14	85	29	0	9	78	3	279		0	0	0	0
12:45 PM	0	4	4	10	0	25	5	17	0	16	72	34	0	9	51	0	247		1	0	0	1
Count Total	0	15	34	62	0	168	32	146	0	79	624	197	0	102	560	18	2,037		1	0	0	1
Peak Hour	0	9	18	38	0	83	19	86	0	49	337	108	0	44	266	9	1,066		1	0	0	1

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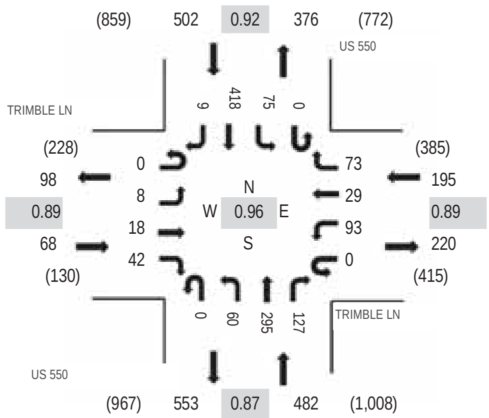
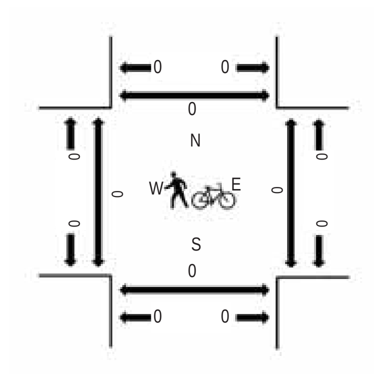
Location: 22 US 550 & TRIMBLE LN PM
Date: Thursday, August 15, 2019
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:15 PM - 04:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	TRIMBLE LN Eastbound U-Turn	Left	Thru	Right	TRIMBLE LN Westbound U-Turn	Left	Thru	Right	US 550 Northbound U-Turn	Left	Thru	Right	US 550 Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
4:00 PM	0	3	3	12	0	33	2	12	0	16	70	28	0	19	111	2	311	1,247	0	0	0	0
4:15 PM	0	2	1	6	0	21	14	22	0	14	78	30	0	19	115	3	325	1,226	0	0	0	0
4:30 PM	0	1	6	13	0	22	8	19	0	18	85	36	0	21	91	2	322	1,206	0	0	0	0
4:45 PM	0	2	8	11	0	17	5	20	0	12	62	33	0	16	101	2	289	1,138	0	0	0	0
5:00 PM	0	1	2	12	0	28	8	22	0	22	73	28	0	18	69	7	290	1,135	0	0	0	0
5:15 PM	0	2	6	11	0	18	7	23	0	21	70	36	0	11	96	4	305		0	0	0	0
5:30 PM	0	2	5	8	0	16	10	15	0	10	84	31	0	10	61	2	254		0	0	0	0
5:45 PM	0	1	2	10	0	20	7	16	0	32	87	32	0	14	65	0	286		0	0	0	0
Count Total	0	14	33	83	0	175	61	149	0	145	609	254	0	128	709	22	2,382		0	0	0	0
Peak Hour	0	8	18	42	0	93	29	73	0	60	295	127	0	75	418	9	1,247		0	0	0	0

Location: 22 US 550 & TRIMBLE LN Noon
Date: Saturday, August 17, 2019
Peak Hour: 11:00 AM - 12:00 PM
Peak 15-Minutes: 11:15 AM - 11:30 AM

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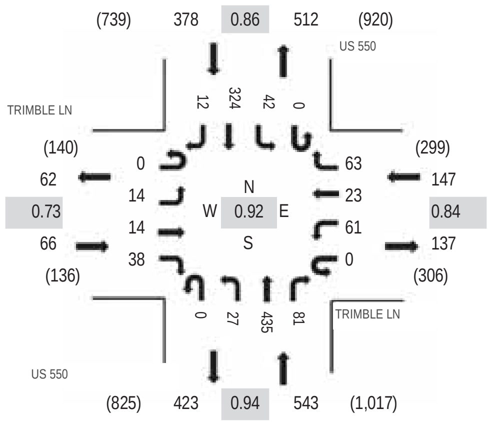
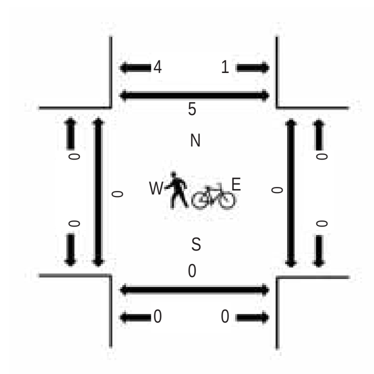
Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	TRIMBLE LN Eastbound U-Turn	Left	Thru	Right	TRIMBLE LN Westbound U-Turn	Left	Thru	Right	US 550 Northbound U-Turn	Left	Thru	Right	US 550 Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
11:00 AM	0	3	2	9	0	11	3	22	0	5	125	10	0	6	68	4	268	1,134	0	0	0	0
11:15 AM	0	4	4	10	0	30	6	11	0	8	107	30	0	15	83	1	309	1,114	0	0	0	0
11:30 AM	0	3	4	8	0	14	7	14	0	7	103	20	0	12	99	3	294	1,098	0	0	0	0
11:45 AM	0	4	4	11	0	6	7	16	0	7	100	21	0	9	74	4	263	1,036	0	0	0	0
12:00 PM	0	2	4	7	0	15	8	14	0	12	69	26	0	12	77	2	248	1,057	0	0	0	0
12:15 PM	0	3	6	16	0	12	7	23	0	15	92	28	0	17	73	1	293		0	0	0	0
12:30 PM	0	1	5	10	0	10	9	9	0	13	78	18	0	11	68	0	232		0	0	0	1
12:45 PM	0	3	6	7	0	21	5	19	0	5	95	23	0	13	86	1	284		0	0	0	1
Count Total	0	23	35	78	0	119	52	128	0	72	769	176	0	95	628	16	2,191		0	0	0	2
Peak Hour	0	14	14	38	0	61	23	63	0	27	435	81	0	42	324	12	1,134		0	0	0	0

Location: Accident History for TRIMBLE **From:** 12/31/2008 **To:** 12/31/2018

Severity

PDO:	1	
INJ:	2	5 :Injured
FAT:	0	0 :Killed
Total:	**3**	

Number of Vehicles

One Vehicle:	0
Two Vehicles:	2
Three or More:	1
Unknown:	0
Total:	**3**

Location

On Road:	3
Off Road Left:	0
Off Road Right:	0
Off Road at Tee:	0
Off in Median:	0
Unknown:	0
Total:	**3**

Lighting Conditions

Daylight:	3
Dawn or Dusk:	0
Dark - Lighted:	0
Dark - Unlighted:	0
Unknown:	0
Total:	**3**

Weather Conditions

None:	3
Rain:	0
Snow/Sleet/Hail:	0
Fog:	0
Dust:	0
Wind:	0
Unknown:	0
Total:	**3**

Crash Rates

PDO:	N/A *
INJ:	N/A *
FAT:	N/A **
Total:	**N/A** *

* MVMT
** 100 MVMT

Crash Type

Overturning:	0	Bridge Abutment:	0
Other Non Collision:	0	Column/Pier:	0
Pedestrians:	0	Culvert/Headwall:	0
Broadside:	0	Embankment:	0
Head On:	0	Curb:	0
Rear End:	2	Delineator Post:	0
Sideswipe (Same):	1	Fence:	0
Sideswipe (Opposite):	0	Tree:	0
Approach Turn:	0	Large Boulders or Rocks:	0
Overtaking Turn:	0	Barricade:	0
Parked Motor Vehicle:	0	Wall/Building:	0
Railway Vehicle:	0	Crash Cushion:	0
Bicycle:	0	Mailbox:	0
Motorized Bicycle:	0	Other Fixed Object:	0
Domestic Animal:	0	Total Fixed Objects:	0
Wild Animal:	0	Rocks in Roadway:	0
Light/Utility Pole:	0	Vehicle Cargo/Debris:	0
Traffic Signal Pole:	0	Road Maintenance Equipment:	0
Sign:	0	Involving Other Object:	0
Bridge Rail:	0	Total Other Objects:	0
Guard Rail:	0	Unknown:	0
Cable Rail:	0	**Total:**	**3**
Concrete Barrier:	0		

Mainline/Ramps/Frontage Roads

Mainline:	3
Crossroad (A):	0

Frontage/Ramp Intersections

M:	0	N:	0	O:	0	P:	0

Ramps

B:	0	F:	0	J:	0
C:	0	G:	0	K:	0
D:	0	H:	0	T:	0
E:	0	I:	0		

Left Frontage Rd (L):	0
Rt Frontage Rd (R):	0
HOV Lanes (V):	0
Unknown:	0
Total:	**3**

Road Description

At Intersection:	1
At Driveway Access:	0
Intersection Related:	2
Non Intersection:	0
In Alley:	0
Roundabout:	0
Ramp:	0
Parking Lot:	0
Unknown:	0
Total:	**3**

Road Conditions

Dry:	3
Wet:	0
Muddy:	0
Snowy:	0
Icy:	0
Slushy:	0
Foreign Material:	0
With Road Treatment:	0
Dry w/Icy Road Treatment:	0
Wet w/Icy Road Treatment:	0
Snowy w/Icy Road Treatment:	0
Icy w/Icy Road Treatment:	0
Slushy w/Icy Road Treatment:	0
Unknown:	0
Total:	**3**

Location: Accident History for TRIMBLE **From:** 12/31/2008 **To:** 12/31/2018

Vehicle Type	Veh 1	Veh 2	Veh 3
Passenger Car/Van:	1	2	1
Passenger Car/Van w/Trl:	0	0	0
Pickup Truck/Utility Van:	0	0	0
Pickup Truck/Utility Van w/Trl:	0	0	0
SUV:	1	0	0
SUV w/Trl:	0	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Bus > 15 People:	0	0	0
School Bus < 15 People:	0	0	0
Non School Bus < 15 People:	0	0	0
Motorhome:	0	0	0
Motorcycle:	1	1	0
Bicycle:	0	0	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	0	0	0
Other:	0	0	0
Unknown:	0	0	0
Total:	3	3	1

Vehicle Movement	Veh 1	Veh 2	Veh 3
Going Straight:	2	0	0
Slowing:	0	1	0
Stopped in Traffic:	0	1	1
Making Right Turn:	0	0	0
Making Left Turn:	0	1	0
Making U-Turn:	0	0	0
Passing:	1	0	0
Backing:	0	0	0
Enter/Leave Parked Position:	0	0	0
Starting in Traffic:	0	0	0
Parked:	0	0	0
Changing Lanes:	0	0	0
Avoiding Object/Veh in Road:	0	0	0
Weaving:	0	0	0
Wrong Way:	0	0	0
Other:	0	0	0
Unknown:	0	0	0
Total:	3	3	1

Contributing Factor	Veh 1	Veh 2	Veh 3
No Apparent Contributing Factor:	1	3	1
Asleep at the Wheel:	0	0	0
Illness:	0	0	0
Distracted by Passenger:	0	0	0
Driver Inexperience:	0	0	0
Driver Fatigue:	0	0	0
Driver Preoccupied:	2	0	0
Driver Unfamilar with Area:	0	0	0
Driver Emotionally Upset:	0	0	0
Evading Law Enforcement Officier:	0	0	0
Physical Disability:	0	0	0
Unknown:	0	0	0
Total:	3	3	1

Direction	Veh 1	Veh 2	Veh 3
North:	1	1	0
Northeast:	0	0	0
East:	1	1	1
Southeast:	0	0	0
South:	1	1	0
Southwest:	0	0	0
West:	0	0	0
Northwest:	0	0	0
Unknown:	0	0	0
Total:	3	3	1

Condition of Driver	Veh 1	Veh 2	Veh 3
No Impairment Suspected:	3	3	1
Alcohol Involved:	0	0	0
RX, Medication, or Drugs Involved:	0	0	0
Illegal Drugs Involved:	0	0	0
Alcohol and Drugs Involved:	0	0	0
Driver/Pedestrian not Observed:	0	0	0
Unknown:	0	0	0
Total:	3	3	1

APPENDIX E:
Trimble Crossing TIS - 2004

TRIMBLE CROSSING:
TRAFFIC IMPACT STUDY

Russell Engineering, Inc.

Resubmitted:
June 10, 2004

Prepared By:

Russell Engineering
1022 ½ Main Avenue
Durango, CO 81301
Phone: 970. 385. 4546

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EXECUTIVE SUMMARY

The purpose of this traffic study is to evaluate the Trimble Crossing mixed development from a traffic circulation standpoint. The development project is located within La Plata County. Study objectives include documentation of existing & growth traffic conditions, and an evaluation of traffic conditions projected with the site development.

Site & Study Area

Russell Engineering, Inc. has prepared this Traffic Study for the proposed Trimble Crossing. The proposed development plan covers approximately 21 acres located on the northeast corner of the intersection of County Road 252(Trimble Lane) and Highway 550.

Development Land Use Descriptions

The development will consist of approximately 20.5 acres and 64 multi-family residential units. The land will be divided up into commercial retail, a restaurant, a general office, and a gas station.

Principal Findings

- A traffic signal for the intersection of CR 252 & US 550 is warranted according to the 2003 Intersection Analysis and Prioritization Study CDOT Region 5 for the existing traffic volumes without the development traffic.
- Future road improvements will improve the LOS at the intersection, however, a traffic signal will still be warranted.

I. Introduction

The purpose of this traffic study is to evaluate the Trimble crossing development from a traffic circulation standpoint. The development project is located within La Plata County. Study objectives include documentation of existing & growth traffic conditions and an evaluation of traffic conditions projected with the site development.

A. Site & Study Area

Russell Engineering, Inc. has prepared this Traffic Study for the proposed Trimble Crossing mixed development. The proposed development plan covers approximately 21 acres located on the northeast corner of the intersection of County Road 252(Trimble Lane) and Highway 550. The project is north of Durango, east of Trimble Hot Springs, and adjacent to Dalton Ranch golf course. U.S. Highway 550 and the Durango & Silverton Narrow Gauge Railroad parallel the western boundary of the property. The project is located in a tract of Section 15, Township 36N, Range 9W. The proposed project will combine approximately 20.5 acres with a smaller tract of 0.5 acres. The traffic analysis study area is outlined in Exhibit A1.

The traffic study focuses on the following intersections:

Commercial Entrance (new access) & County Road 252 (CR 240)
Residential Entrance (new access) & County Road 252 (CR 240)
US Highway 550 & CR 252 (Trimble Lane)

B. Development Land Use Descriptions

Shown below is an itemized list of the proposed land uses, phasing and densities:

Phase I

Zone 2	4.56 acres
Proposed Multi-Family Residential	19 units
Zone 3	10.67 acres
Proposed Multi-Family Residential	45 units

Phase II

Zone 1	5.23 acres
Proposed Commercial	33250 sq. ft
Proposed Quality Restaurant	4750 sq. ft
Proposed General Office	6675 sq. ft
Proposed Commercial Pad Site (Service Station)	6 fuel pumps

A site map of Trimble Crossing is shown on Exhibit A2.

The proposed development will create additional traffic at the intersection of CR 252 and HWY 550. The area of proposed development can be used with transportation engineering analysis to estimate the projected traffic volumes that will be generated by the Trimble Crossing development.

C. Existing Roadway

Currently on US Highway 550 there exist left and right turn deceleration lanes and right and left turn acceleration lanes for traffic traveling southbound. For traffic traveling northbound there are right turn acceleration and deceleration lanes. CR 252 exists without exclusive turning lanes. The Colorado Department of Transportation (CDOT) has awarded a construction contract to improve the intersection of US Highway 550 and CR 252 with the addition of left and right acceleration and deceleration lanes by the summer of 2004. Currently there are stop signs for vehicles entering onto US Highway 550 from CR 252 while CR 240 traffic flows freely.

II. Project Trip Generation and Design Hour Volumes

Trip generation represents the amount of traffic generated by a development. A trip is defined as a one-way vehicle movement with either the origin or destination within the proposed development. The Trip Generation Manual, also known as the ITE Manual, written by the Institute of Transportation Engineers (ITE), 6th Edition (1997), was used to estimate the projected traffic volume by the proposed development. The ITE Manual provides rates of vehicle trips per day or hour for each ITE Land Use Code based on criteria such as number of units, acreage, 1,000 square feet of Gross Floor Area (GFA) or Gross Leasable Area (GLA). The rates consist of vehicle trips per day (VPD) or vehicle trips per hour (VPH) per unit of the criteria listed above. Rates are generally provided for the Average Daily Traffic (ADT), as well as the AM and PM Peak Hour Traffic for each Land Use Code. The AM and PM Peak Hour Traffic Rates represent times of one hour between 7 and 9 a.m. and one hour between 4 and 6 p.m. on a weekday, during the peak hour of adjacent traffic. The land use descriptions and the ITE Land Use Codes used for determining the appropriate trip generation rates are shown in Tables 1 & 2.

Table 1 Land Use Descriptions and ITE Land Use Codes

Proposed Land Uses and Densities			
Land Use Description	**ITE Land Use (Code)**	**Proposed Size or # of Units**	**Units**
Multi-Family Residential	Residential Condominium/ Townhouse(# 230)	64	dwelling units
Office	General Office Building (# 710)	6675	sq. ft
Commercial	Shopping Center (# 820)	33250	sq. ft
Restaurant	Quality Restaurant (# 831)	4750	sq. ft
Gas Station	Gasoline Service Station with Convenience Market (# 845)	6	fuel pumps

The ITE Land Use Code corresponding to the Multi-Family Residential is *Residential Condominium / Townhouse* (#230). The Land Use Code was the closet corresponding code based on the number of dwelling units.

The ITE Land Use Code corresponding to the Office is *General Office Building* (#710). The Land Use Code was the closet corresponding code based on the average 1000 sq. feet gross leasable area (GLA).

The ITE Land Use Code corresponding to the Commercial is *Shopping Center* (#820).

The ITE Land Use Code corresponding to the Restaurant is *Quality Restaurant* (#831). The Land Use Code was the closet corresponding code based on the average 1000 sq. feet gross leasable area (GLA).

The ITE Land Use Code corresponding to the Gas Station is *Service Station/with Convenience Store* (#845). The Land Use Code in this case represents its trip generation rates dependent on the number of fuel pumps.

In addition to the land use-specific rates, directional distributions are also given by the ITE Manual. During an average day, the total directional distribution of vehicle trips per day is generally 50% "entering" & 50% "exiting". This equal directional distribution corresponds to vehicles arriving for the use of the proposed development, and then leaving, such that each vehicle that enters also exits. However, during AM and PM Peak Hours of the day, the distribution is generally not an equal split and varies according to the proposed type of land use and corresponding ITE Land Use Codes. In the AM Peak Hour, the majority of vehicles will be leaving home to go to work; during the PM Peak Hour the majority will be arriving home from work. Table 5 depicts the use of the ITE Manual land use-specific vehicular rates and directional distributions used to estimate the anticipated traffic volumes generated by the proposed development of Trimble Crossing.

Table 2 Trip Generation Rates (ITE Manual, 1997)

ITE Land Use (Code)	Trip per Hour per Unit							Peak Hour					
								AM		PM		Daily	
	UNITS	AM	AM RED.	PM	PM RED.	Daily	IN (%)	OUT (%)	IN (%)	OUT (%)	IN (%)	OUT (%)
Res. Condo/ Townhouse(# 230)	DU	0.44	0.43	0.54	0.50	5.86	17	83	67	33	50	50
General Office Building (# 710)	SF	1.56	1.53	1.49	1.37	11.01	88	12	17	83	50	50
Shopping Center (# 820)	SF	1.03	1.01	3.74	3.44	42.92	61	39	48	52	50	50
Quality Restaurant (# 831)	SF	5.57	5.46	9.02	8.30	89.95	82	18	62	38	50	50
Gasoline Service Station with Convenience Market (# 845)	FP	10.56	10.35	13.57	12.48	162.7 8	50	50	50	50	50	50

Assumptions:

- Internal Trip Reductions according to State of Colorado, State Highway Access Code, 2.3.4 (B) for mixed use developments, internal trip reductions will not exceed 2 and 8 percent for the AM and PM Peak Hour.

Table 3 shows the individual traffic produced by the proposed development based on the listed criteria. It includes the following: the ITE Land Use Code, the corresponding number of units, and the traffic volumes entering "IN" and exiting "OUT" for the AM Peak Hour, PM Peak Hour, and Daily.

Table 3 Project Traffic Volumes

Summary of Trip Generation Calculation								
LAND USE CODE	# UNITS	AM PEAK HOUR		PM PEAK HOUR		DAILY		
		IN	OUT	IN	OUT	IN	OUT	ADT
# 230	64	5	23	21	11	188	188	376
# 710	6.675	9	1	2	8	37	37	74
# 820	33.250	20	13	55	59	714	714	1428
# 831	4.750	21	5	24	15	214	214	428
# 845	6	31	31	37	37	488	488	976
		86	**73**	**139**	**130**	**1641**	**1641**	**3282**

The proposed development is projected to generate 3282 ADT with 159 vehicles "entering" and "exiting" during the AM Peak Hour and 269 vehicles "entering" and "exiting" during the PM Peak Hour.

III. Trip Distribution

The trip distributions are based on site location, location of employment and recreational opportunities, and the proximity to the regional highway system. A figure illustrating the directional splits is shown in Exhibit B.

Assumptions:

- Turning movements recorded by CDOT in the year 2002 (See appendix A-2003 Intersection Analysis and Prioritization study for CR 252 & HWY 550) were used to predict future turning movements of project traffic.
- Residential traffic uses the East Entrance; 10% to and from the East and 90% to and from the West.
- All other traffic uses the West Entrance; 10% to and from the East and 90% to and from the West.
- Total westbound traffic is distributed based on existing AM and PM Peak Hour Turn Movement distributions.(See exhibit F-Existing Turning Movements)

	TRIMBLE WESTBOUND			
TIME	RIGHT	THRU	LEFT	TOTALS
8:45-9:45 AM	27%	4%	69%	100%
4:45-5:45 PM	22%	15%	63%	100%

- The distribution of the inbound traffic eastbound on CR 252 (southbound left, eastbound through, and northbound right) was used to model the splits for the eastbound project traffic. (See exhibit F-Existing Turning Movements)

	TRIMBLE EASTBOUND			
TIME	RIGHT	THRU	LEFT	TOTALS
8:45-9:45 AM	72%	10%	18%	100%
4:45-5:45 PM	78%	3%	19%	100%

- The Daily "IN" and "OUT" trip distributions for the westbound traffic used the total existing Turn Movements from the times of 7-10 am, 11-2 pm, and 3-6 pm given by CDOT. (See exhibit F-Existing Turning Movements)

	TRIMBLE WESTBOUND			
TIME	RIGHT	THRU	LEFT	TOTALS
TOTAL DAILY	162	85	552	799
TOTAL %	20%	11%	69%	100%

IV. Trip Assignment

The traffic impact analysis represents the percent generated trips at each driveway. The directional splits were applied to the developed traffic volumes to determine the following trip assignments shown in table 4. Traffic AM & PM splits for westbound traffic were determined using the existing AM & PM turning movements for westbound traffic. The Daily splits for westbound traffic were determined using the percentages for the total traffic accounted for between the hours of 7-10 am, 11-2 pm, and 3-6 pm given by CDOT. (See exhibit F-Existing Turning Movements)

Table 4 Percent Generated Trip

PROJECT TRAFFIC AT INTERSECTIONS							
	AM PEAK HOUR		PM PEAK HOUR		DAILY		TOTAL
	IN	OUT	IN	OUT	IN	OUT	ADTS
WEST ENTRANCE TRAFFIC	81	50	118	119	1453	1453	2906
10% To / From East	8	5	12	12	145	145	290
90% To / From West	73	45	106	107	1308	1308	2616
EAST ENTRANCE TRAFFIC	5	23	21	11	188	188	376
10% To / From East	0	2	2	1	19	19	38
90% To / From West	5	21	19	10	169	169	338
WESTBOUND "OUT"/EASTBOUND "IN" TRAFFIC	78	66	125	117	1477	1477	2954
NORTHBOUND	56	18	97	25	295	295	590
THROUGH	8	3	4	18	163	163	326
SOUTHBOUND	14	45	24	74	1019	1019	2038

Exhibit C represents the AM & PM Peak Hour traffic assignments. Exhibit D represents the Average Daily Trip assignment.

V. Existing & Projected Traffic Volumes

A. Existing Daily, AM & PM Peak Hour Traffic Volumes

Existing counts must be prorated to the anticipated build out year of 2006. The existing ADT was taken from the CDOT traffic database and the La Plata County traffic database. Both sources supplied ADT information up to the year 2003. The existing counts were prorated from the year 2003 to 2006 using a 3-yr growth factor derived from the 20-yr growth factor obtained from CDOT. Table 5 shows the existing daily traffic volumes for CR 252 and HWY 550 for the year 2006 and exhibit E represents the volumes in diagram form. See Exhibit H for further detail and sources of the ADT.

Table 5 Existing Daily Traffic Volumes (ADT)

ROAD	LOCATION	2006 ADT COUNT
CR 252	EAST OF HWY 550	2645
CR 252	WEST OF CR 250	1444
US 550	NORTH TRIMBLE	8317
US 550	SOUTH TRIMBLE	9331

Existing AM & PM Peak Hour traffic turn movements at the intersection of US HWY 550 & CR 252 were recorded by CDOT on August 20th, 2002. Turn movements were recorded from 7:00 am to 6:00 pm at 15 minute intervals. The AM Peak Hour was established by CDOT as the time interval from 8:45 am to 9:45 am. The PM Peak Hour was established by CDOT as the time interval from 4:45 pm to 5:45 pm. The Peak Hour turning movements were prorated from the year 2002 to the estimated build out year of 2006, deriving a 4-yr growth factor derived from the 20-yr growth factor obtained from CDOT. Sources for the 20-yr growth factor are cited in exhibit H. The 2006 Existing peak hour volumes were then adjusted from August to the peak month of July using a seasonal factor of 1.14. The recorded turn movements are attached in appendix A and shown in spreadsheet format in Exhibit F. Illustrations of the peak hour turn movements are shown in Exhibit G.

B. Projected Daily, AM & PM Peak Hour Traffic Volumes

Table 6 below represents the Projected Total Daily Traffic Volumes. The Project ADT was found using the trip generation manual. The existing ADT are the same as listed above in table 5. The Project Daily Traffic Volumes were taken from table 4 using existing traffic distributions. Exhibit H shows the Project & Existing Average Daily trips in spreadsheet format while Exhibit I represents the ADT in diagram form.

Table 6 Projected Daily Traffic Volumes

ROAD	LOCATION	2006 PROJECT ADT	2006 EXISTING ADT	2006 EXISTING & PROJECT ADT
CR 252	EAST OF HWY 550	2954	2645	5599
CR 252	WEST OF CR 250	328	1444	1772
US 550	NORTH TRIMBLE	590	8317	8907
US 550	SOUTH TRIMBLE	2038	9331	11369

The projected AM and PM Peak Hour traffic volumes include the existing traffic volumes plus the generated development traffic. Exhibit K illustrates the peak hour traffic volumes while Exhibit J represents the projected traffic volumes in spreadsheet format.

C. Future Projected "Background" Daily, AM & PM Traffic Volumes (Not including Project Traffic)

Future projected "Background" traffic volumes listed in Table 7, represent the traffic volumes already using the roadway system without the proposed development traffic 20 years into the future from the built out year of 2006 to 2026. The growth factors used were determined from the Colorado Department of Transportation Region 5 Traffic and Safety 2003 Intersection Analysis and Prioritization Study for US Highway 550 & CR 252 (CR 252) and the CDOT traffic database (HWY 550). Exhibit H shows the traffic volumes in spreadsheet format and Exhibit L illustrates the "background" traffic volumes.

Table 7 Future Projected "Background" Daily Traffic Volumes

ROAD	LOCATION	2006 EXISTING ADT	2026 GROWTH ADT
CR 252	EAST OF HWY 550	2645	3862
CR 252	WEST OF CR 250	1444	2108
US 550	NORTH TRIMBLE	8317	12392
US 550	SOUTH TRIMBLE	9331	13623

The AM and PM traffic volumes for the year 2026 projected "background" traffic are shown in spreadsheet format in Exhibit J and illustrated in Exhibit M.

D. Total Projected Daily, AM & PM Peak Hour Traffic Volumes for Horizon Study Year (20 years in future)

To assess future conditions, the project generated traffic and the area wide growth through a 20-year study period from year 2006 to 2026 is analyzed. The growth factors used were determined from the Colorado Department of Transportation Region 5 Traffic and Safety 2003 Intersection Analysis and Prioritization Study for US Highway 550 & CR 252 (CR 252) and the CDOT traffic database (HWY 550). Total projected daily traffic volumes represent the growth & project traffic volumes. Table 8 below shows the average daily trips for growth & project traffic.

Table 8 Total Projected Daily Traffic Volumes

ROAD	LOCATION	2026 FUTURE "BACKGROUND" ADT	2026 GROWTH & PROJECT ADT
CR 252	EAST OF HWY 550	3862	6816
CR 252	WEST OF CR 250	2108	2436
US 550	NORTH TRIMBLE	12392	12982
US 550	SOUTH TRIMBLE	13623	15661

Exhibit H represents the traffic volumes in spreadsheet format while Exhibit N illustrates the total projected daily traffic volumes.

Total projected AM & PM Peak Hour traffic volumes represent the growth & project traffic volumes. Exhibit J represents the traffic volumes in spreadsheet format while Exhibit O illustrates the total projected traffic volumes.

VI. Capacity and Level of Service (LOS) Analysis

The 2000 Highway Capacity Manual (HCM) (Transportation Research Board special Report 209) is the current technical guide to the evaluation of traffic operations. The HCM defines Level of Service (LOS) as a qualitative measurement used to characterize operational conditions of roadways using six designations (LOS A through LOS F). The criteria covered in the definition of LOS include speed and travel time, comfort/convenience, traffic interruptions, and freedom to maneuver. The LOS definition also states that it is the user's perception of the operational conditions within the traffic stream that dictates the ranges of qualitative measures included in each LOS designation.

The intersection of the traffic study has been evaluated using MCTRANS HCS 2000 software. Appendix B contains the HCM calculations. The LOS for the intersection analyzed at different stages is shown below in table 9.

Table 9 LOS Classifications

DIFFERENT STAGES OF THE INTERSECTION	LEVEL OF SERVICE			
	AM PEAK HOUR		PM PEAK HOUR	
	WESTBOUND	EASTBOUND	WESTBOUND	EASTBOUND
EXISTING	C	B	F	C
EXISTING & PROJECT	E	C	F	C
GROWTH	F	D	F	F
GROWTH & PROJECT	F	E	F	F

VII. Traffic Signal Analysis

A traffic study was recently performed by CDOT in 2003 analyzing the traffic signal warrants at the intersection of CR 252 & HWY 550, therefore there is no need to perform a traffic signal analysis (See appendix A). According to this study, Warrant 9 (Four Hour Volumes) is satisfied based on existing traffic volumes and therefore warrants a traffic signal. Based on growth traffic volumes alone, Warrant 11 (Peak Hour Volume) and Warrant 9 are satisfied and therefore warrant a traffic signal. A LOS analysis was preformed using McTrans HCS200 on the signalized intersection based on the project and area wide growth over a 20 year period. The results are shown in Table 10 and the calculations can be found in Appendix B. A total cycle length of 67 seconds was assumed; full east and west bound movement for18 seconds on CR 252, full north and southbound movement for 38 seconds on HWY 550 and a protected left turn movement for 11 seconds for southbound traffic on HWY 550. The Growth & Project traffic volumes for the PM Peak hour were analyzed to give the worst case scenario.

Table 10 LOS Classifications

DIFFERENT STAGES OF THE INTERSECTION	LEVEL OF SERVICE			
	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
GROWTH & PROJECT	C	C	B	A

VIII. Storage Requirements

The storage requirements for the turning lanes on CR 252 & HWY 550 have been determined using the State Highway Access Code

Turn Lanes on Highway 550:

Highway 550 is classified as an Expressway, Major Bypass (E-X) per State Highway Access Category Assignment Schedule, May 16th 2002. Methods for determining the deceleration lane lengths are referred to in the State of Colorado, State Highway Access Code, Volume 2, Code of Colorado Regulations 601-1, March 2002. The PM Peak Hour volume was used to account for the largest turning movements including the site-generated traffic and 20-year growth traffic.

The right and left turn deceleration lane and the right turn acceleration lane lengths on Highway 550 per CDOT improvement plans, do not meet the existing condition requirement for category E-X. The posted speed limit at the intersection is currently 55 mph therefore, according to table 4-6 the deceleration length alone should be 600 ft without the taper length and the acceleration lane length should be 960 ft without the taper length. The taper ratio is 18.5:1 over a 12 ft distance yielding a required additional deceleration lane length of 222 ft. The storage length for the southbound left turn deceleration lane must be increased from 40 to 50 ft because of the peak hour volume increase from 31 to 69 due to project & 20-yr growth conditions. As for the acceleration lane, an acceleration length of 960 ft is required with the addition of 222 ft for the taper length. The required lengths needed for each lane are shown in a table below:

55 MPH POSTED SPEED LIMIT	SOUTHBOUND LEFT TURN DECEL. LANE	NORTHBOUND RIGHT TURN DECEL. LANE	NORTHBOUND RIGHT TURN ACCEL. LANE
DECEL. LENGTH	600	600	0
ACCEL. LENGTH	0	0	960
TAPER RATIO: 18.5:1	222	222	222
STORAGE (TABLE 4-6, ACCESS CODE)	50	0	0
TOTAL LENGTH	872	822	1182

With the installation of a signal at the intersection and the recent auxiliary lane improvements, it is our opinion that the 600 ft deceleration length for the turning lanes called out per CDOT plans will be adequate to serve the project & 20-year growth traffic conditions.

Turn Lanes on County Road 252:

The left turn lane lengths on CR 252 were determined based on the table 4-8 (Access Code). The table below lists the required and proposed storages.

LEFT TURN DECELERATION LANES ON CR 252			
	WEST ENTRANCE	EAST ENTRANCE	WESTBOUND LEFT TURN
VOL/HR	106	19	100
REQUIRED STORAGE	100	25	100
PROPOSED STORAGE	100	150	141

The storage length for the left turn deceleration lane for traffic headed westbound has been increased from 137 ft to 141 ft since the previously submitted report (see attached site plan).

IX. Accident Data

The Colorado Department of Transportation traffic accident records (see Appendix C) for the period from December 31, 1996 to December 31, 2001 for the intersection of US Highway 550 and County Road 252 from mile marker 30.13 to mile marker 30.53 indicates a total of 18 accidents occurring. There were no fatal accidents, 13 with injuries, and 11 resulted in property damage. The proposed improvements to be complete this summer will also greatly improve the safety of the intersection.

X. Future Road Improvements

As of the spring of 2004, major road improvements will be done to the intersection of CR 252 & US 550 including the addition of acceleration and deceleration lanes. The following additions will be made:

- US 550 Northbound: left turn and right turn acceleration and deceleration lanes
- US 550 Southbound: left turn and right turn acceleration and deceleration lanes

However, the traffic signal will still be warranted even after the improvements are made.

XI. County Road Classifications

LaPlata County Code, Development Standards and Specifications, Division 3, Roads and Bridges classifies county roads based on ADT, design speed, ROW width, surface width, shoulder width, and maximum grade. Table 11 below states the classification of CR 252 & US 550.

Table 11 Classification of County Roads

DIFFERENT STAGES	US HWY 550				TRIMBLE (CR 252)			
	NORTH TRIMBLE		SOUTH TRIMBLE		EAST HWY 550		WEST CR 250	
	ADT	TYPE	ADT	TYPE	ADT	TYPE	ADT	TYPE
EXISTING	7834	MAJOR ARTERIAL	8816	MAJOR ARTERIAL	2645	MINOR ARTERIAL	1444	MINOR COLLECTOR
GROWTH	12392	MAJOR ARTERIAL	13623	MAJOR ARTERIAL	3862	MINOR ARTERIAL	2108	MAJOR COLLECTOR
EXISTING & PROJECT	8907	MAJOR ARTERIAL	11369	MAJOR ARTERIAL	5599	MAJOR ARTERIAL	1772	MAJOR COLLECTOR
GROWTH & PROJECT	12982	MAJOR ARTERIAL	15661	MAJOR ARTERIAL	6816	MAJOR ARTERIAL	2436	MAJOR COLLECTOR

XI. Summary, Conclusions, and Recommendations

A traffic signal for the intersection of CR 252 & US 550 is warranted according to the 2003 Intersection Analysis and Prioritization Study for the existing traffic volumes not including the development traffic. The LOS reports show that the growth traffic volumes alone, not including the project traffic, will decrease the LOS all traffic. Future road improvements will increase the LOS at the intersection, however, a traffic signal will still be warranted. Additional improvements will need to be made to the CDOT improvements. The classification of CR 252 at the intersection will change from a minor arterial to become a major arterial based on project & 20-yr growth traffic volumes alone.

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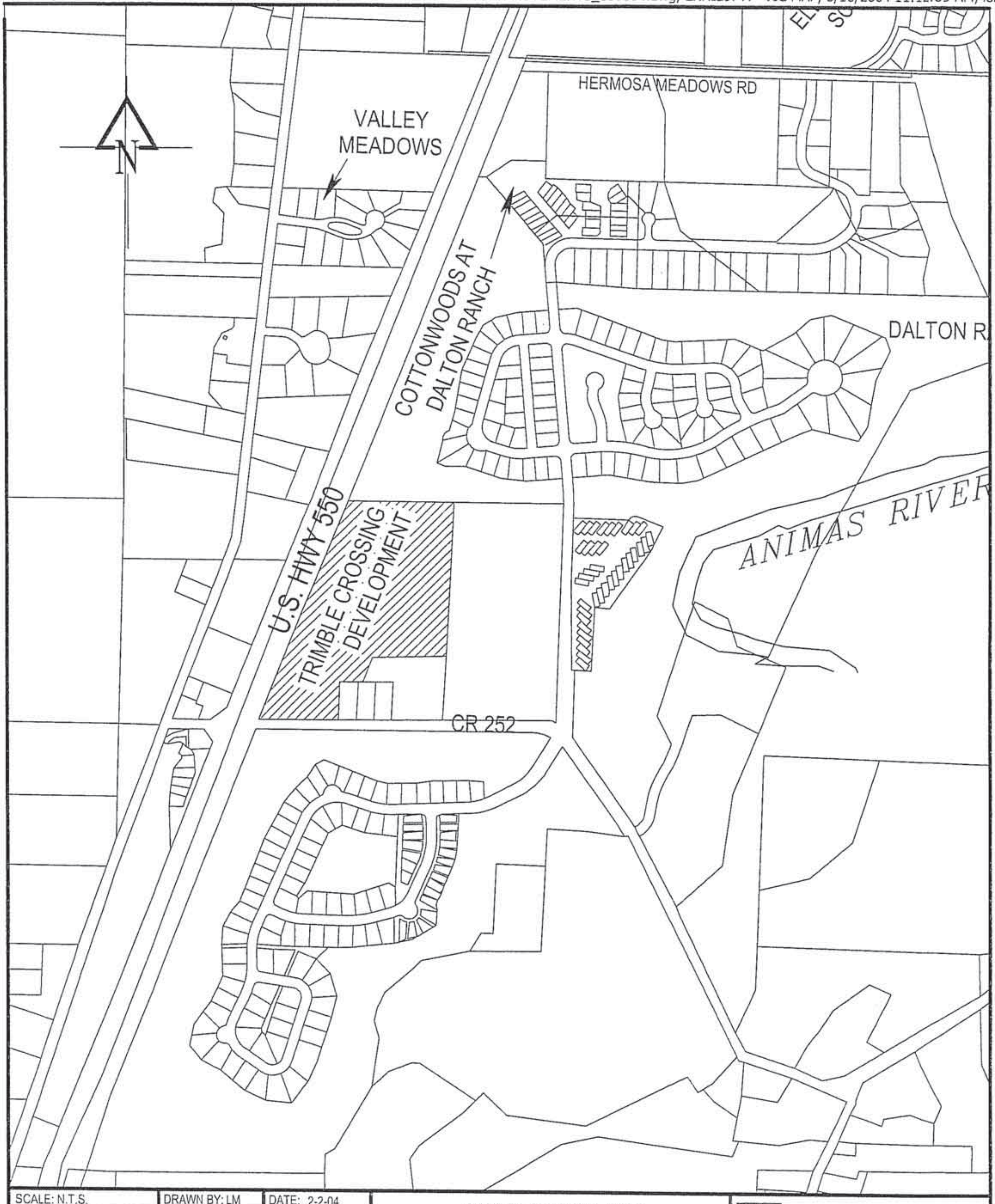

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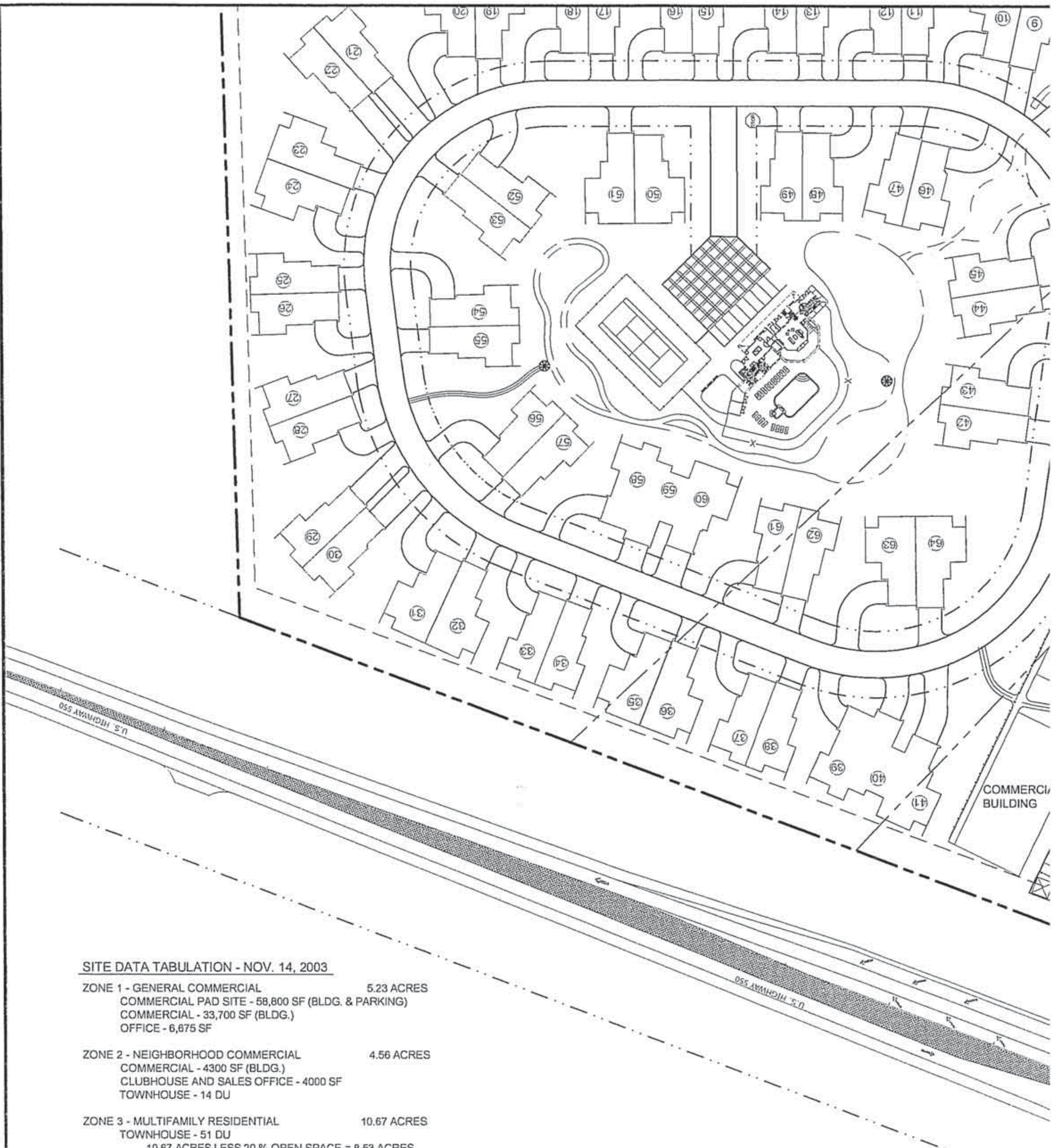
ACAD FILE:		CHECKED:
REVISIONS:		

TRIMBLE CROSSING
TRAFFIC IMPACT STUDY

EXHIBIT A1
VICINITY MAP

Russell Engineering, Inc.
Civil Engineering Services
1022 1/2 Main Avenue
Durango, Colorado 81301
Phone: (970) 385-4546
Fax: (970) 385-4502



SITE DATA TABULATION - NOV. 14, 2003

ZONE 1 - GENERAL COMMERCIAL 5.23 ACRES
COMMERCIAL PAD SITE - 58,800 SF (BLDG. & PARKING)
COMMERCIAL - 33,700 SF (BLDG.)
OFFICE - 6,675 SF

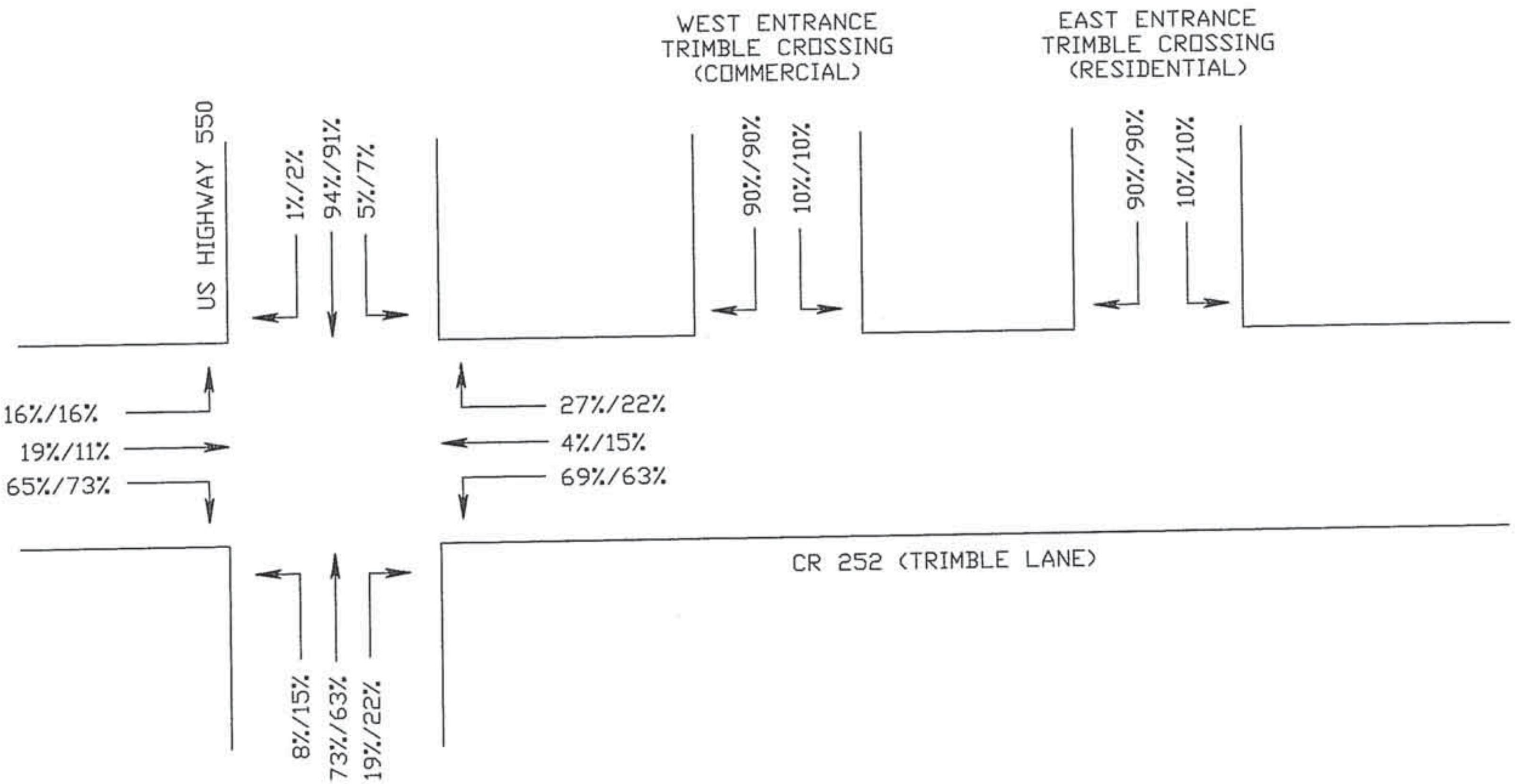
ZONE 2 - NEIGHBORHOOD COMMERCIAL 4.56 ACRES
COMMERCIAL - 4300 SF (BLDG.)
CLUBHOUSE AND SALES OFFICE - 4000 SF
TOWNHOUSE - 14 DU

ZONE 3 - MULTIFAMILY RESIDENTIAL 10.67 ACRES
TOWNHOUSE - 51 DU
10.67 ACRES LESS 20 % OPEN SPACE = 8.53 ACRES
NET DENSITY: 51 DU/8.53 AC. = 5.98 DU/AC

COMMERCIAL PARKING SUMMARY
COMMERCIAL BLDG. TOTAL* - 38,000SF
12.5% RESTAURANT - 4,750 SF @ 1/100= 47.5 SPACES
87.5% RETAIL - 33,250 SF @1/200 = 166.25 SPACES
OFFICE - 6,675 SF @ 1/300 = 22.25 SPACES
TOTAL PARKING REQUIRED = 236 SPACES

*PAD SITE WILL INCLUDE PARKING TO MEET BUILDING USE REQUIREMENTS
*SEVEN ADDITIONAL PARKING SPACES PROVIDED IN GENERAL COMMERCIAL ZONE FOR SALES OFFICE IN NEIGHBORHOOD COMMERCIAL ZONE

TRIMBLE CROSSING
EXISTING & PROPOSED PROJECT
AM AND PM PEAK HOUR DIRECTIONAL
SPLITS



Proposed Turn Movements at the intersection of US 550 and CR 252 (Trimble Lane) follow the same pattern as the existing turn movements that were recorded.

27%/20% represents AM/PM Peak Hour Distributions

Russell Engineering, Inc.
Civil Engineering Services
1022 1/2 Main Avenue
Durango, Colorado 81301
Phone: (970) 385-4546
Fax: (970) 385-4502

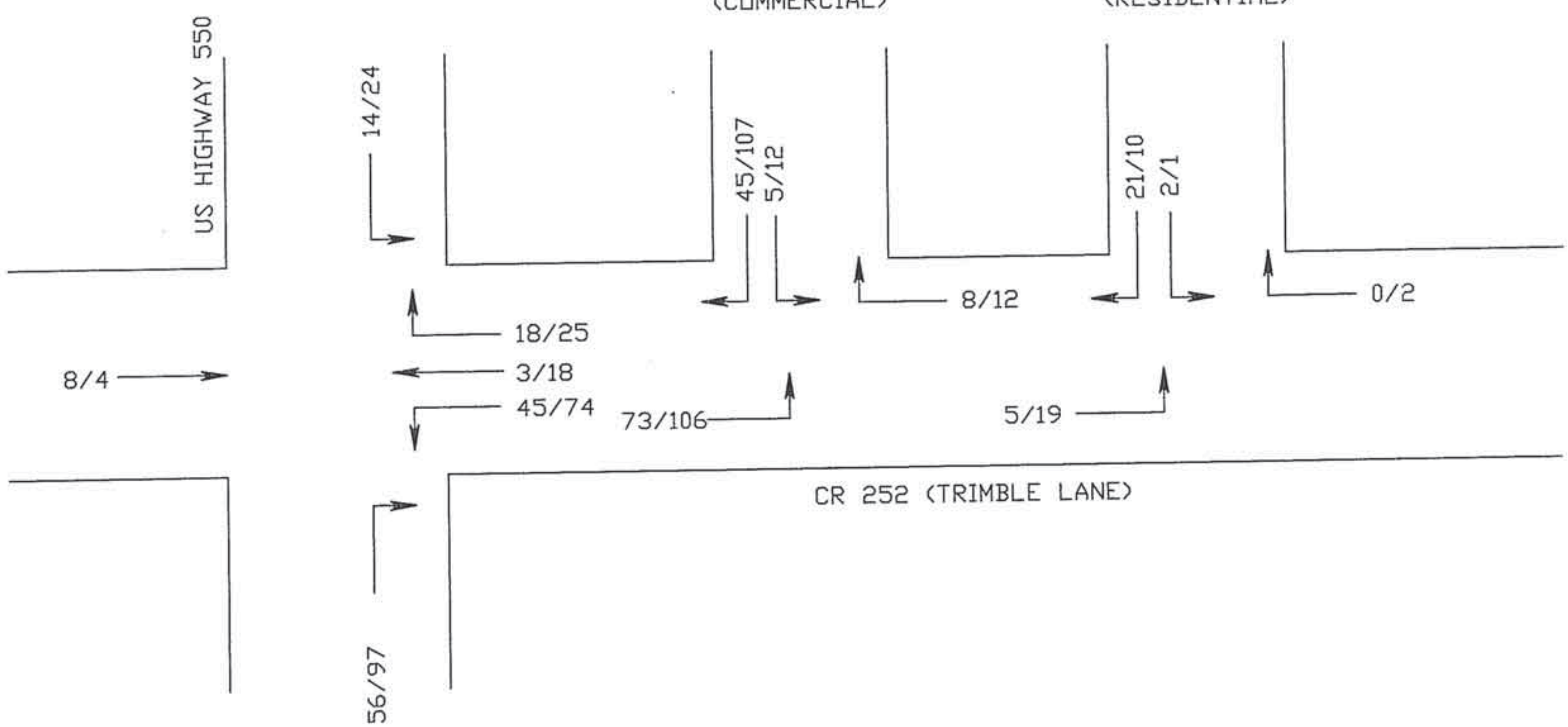
TRIMBLE CROSSING
TRAFFIC IMPACT STUDY

EXHIBIT B
PROJECT AM & PM SPLITS

SCALE: N.T.S.	DRAWN BY: LM	DATE: 2-2-04
ACAD FILE:		CHECKED:
REVISIONS:		

"I:\Land Projects 3\TRIMBLE CROSSING\TRAFFIC STUDY\PROPOSED PROJECTTURN MOVEMENTS_060804.dwg, EXHIBIT B PROJECT AM PM DIRECTIONAL SPLITS, 6/

TRIMBLE CROSSING
PROPOSED PROJECT AM AND PM PEAK HOUR TRIP DISTRIBUTIONS



8/12 represents AM/PM Peak Hour Distributions (VPH)

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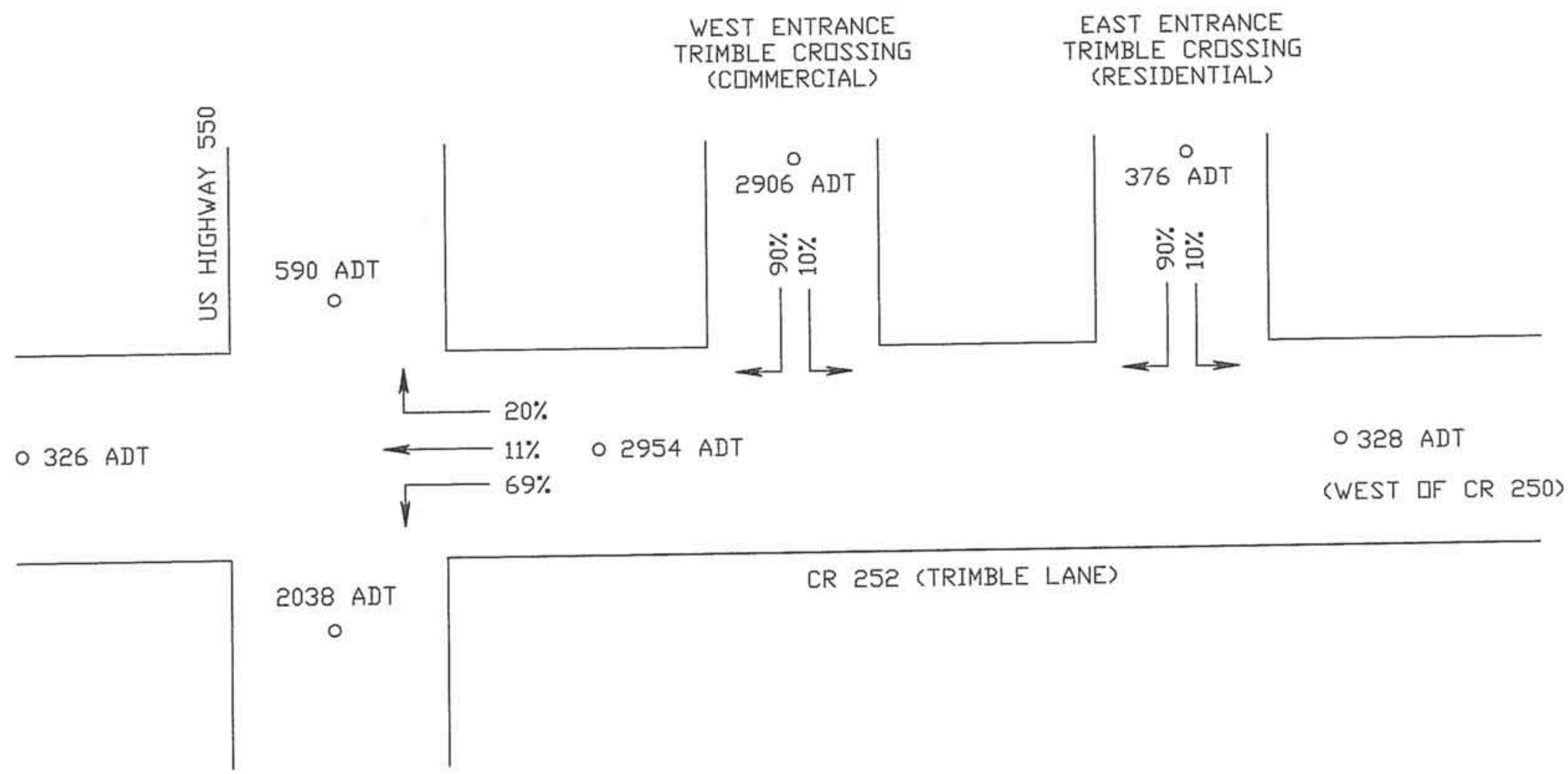
Civil Engineering Services
1022 1/2 Main Avenue
Durango, Colorado 81301
Phone: (970) 385-4546
Fax: (970) 385-4502

TRIMBLE CROSSING
TRAFFIC IMPACT STUDY

EXHIBIT C
PROJECT AM & PM DISTRIBUTIONS

SCALE: N.T.S.	DRAWN BY: LM	DATE: 2-2-04
ACAD FILE:		CHECKED:
REVISIONS:		

TRIMBLE CROSSING
PROJECT AVERAGE DAILY TRIPS
(ADT)



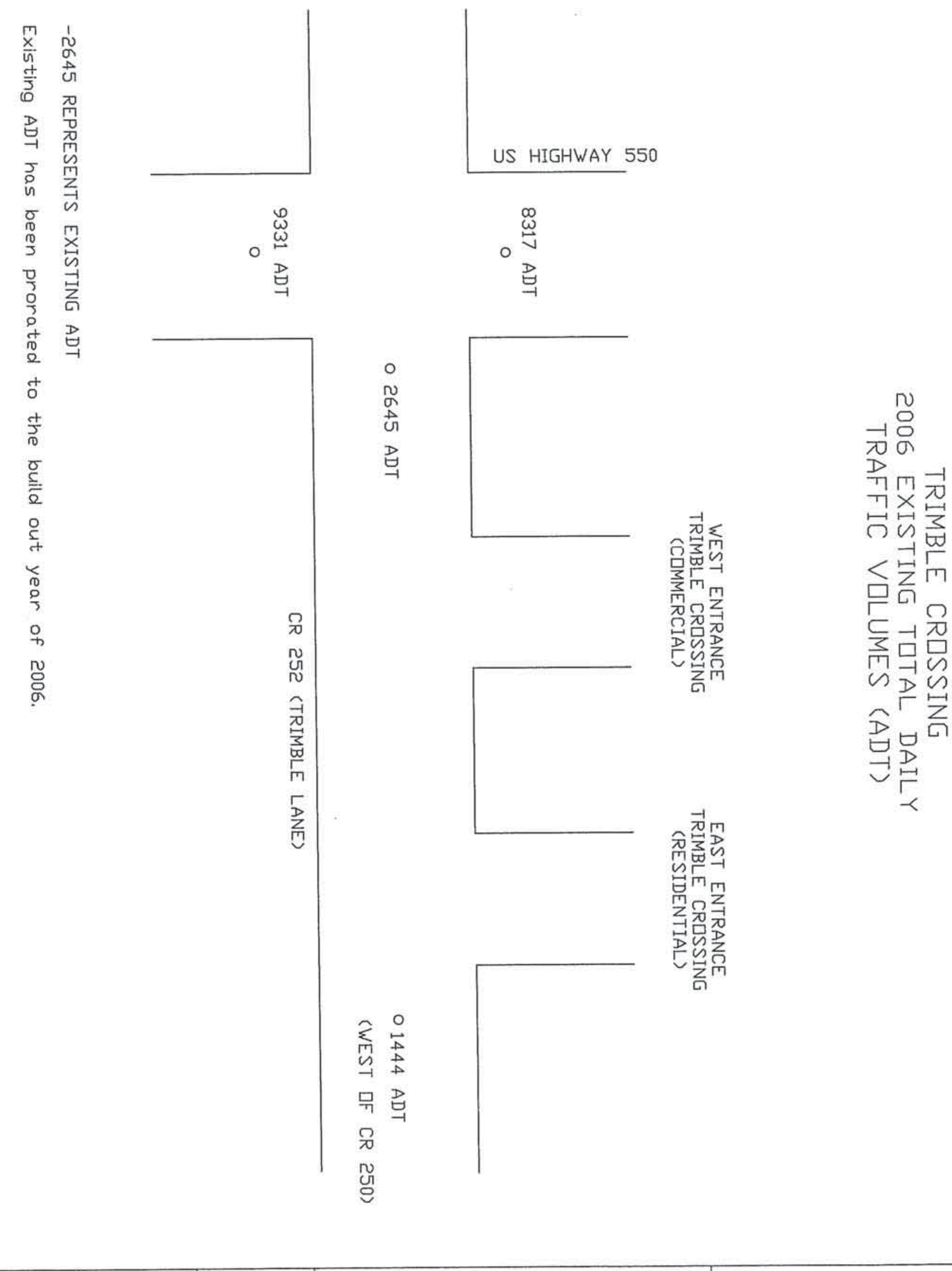
Proposed Turn Movements at the intersections the proposed entrances & CR 252 (Trimble Lane) follow an assumed pattern based on location of business/commercial,schools, & places of interest. Turn movements at the intersection of US 550 & CR 252 are assumed to follow a similiar pattern to the existing turn movements. Detailed calculations of the project generated ADTs & their directional splits are shown in exhibit F-Existing Turning Movements
The distributions for the ADTs at the entrances take on the same 90%/10% split as the AM & PM peak hour movements.

SCALE: N.T.S.	DRAWN BY: LM	DATE: 2-2-04
ACAD FILE:		CHECKED:
REVISIONS:		

TRIMBLE CROSSING
TRAFFIC IMPACT STUDY

EXHIBIT D
PROJECT ADT

Russell Engineering, Inc.
Civil Engineering Services
1022 1/2 Main Avenue
Durango, Colorado 81301
Phone: (970) 385-4546
Fax: (970) 385-4502



SCALE: N.T.S.	DRAWN BY: LM	DATE: 6-8-04	**TRIMBLE CROSSING** **TRAFFIC IMPACT STUDY**	**Russell Engineering, Inc.** Civil Engineering Services 1022 1/2 Main Avenue Durango, Colorado 81301 Phone: (970) 385-4546 Fax: (970) 385-4502
ACAD FILE:		CHECKED:		
REVISIONS:			**EXHIBIT E** **EXISTING ADT**	

EXHIBIT F - EXISTING TURNING MOVEMENTS

LOCATION: 550 & TRIMBLE LANE

	US 550 SOUTHBOUND				TRIMBLE WESTBOUND				US 550 NORTHBOUND				TRIMBLE EASTBOUND			
TIME	RIGHT	THRU	LEFT	TOTALS	RIGHT	THRU	LEFT	TOTALS	RIGHT	THRU	LEFT	TOTALS	RIGHT	THRU	LEFT	TOTALS
(1) SEASONAL FACTOR	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
(2) PRORATE TO 2006	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
8:45-9:45 AM	3	294	14	311	22	3	57	82	55	209	24	288	28	8	7	43
2006 AM EXISTING	**4**	**362**	**17**	**383**	**27**	**4**	**70**	**101**	**68**	**257**	**30**	**355**	**34**	**10**	**9**	**53**
(1) SEASONAL FACTOR	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
(2) PRORATE TO 2006	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
4:45-5:45 PM	7	326	25	358	20	14	59	93	104	299	70	473	27	4	6	37
2006 PM EXISTING	**9**	**401**	**31**	**441**	**25**	**17**	**73**	**115**	**128**	**368**	**86**	**582**	**33**	**5**	**7**	**46**

(1) SEASONAL FACTOR VIA COMMUNICATION WITH CDOT, MELINDA ICE EMAIL, 6/3/04 "TRAFFIC IMPACT STUDY COMMENTS
(2) PRORATE TO 2006 CDOT TRAFFIC DATABASE, FOR HWY 550, DERIVED FROM 20-YR GROWTH FACTOR (4-yr growth factor = 1.02^4 = 1.08)

PERCENTAGES

TIME	RIGHT	THRU	LEFT	TOTALS	RIGHT	THRU	LEFT	TOTALS	RIGHT	THRU	LEFT	TOTALS	RIGHT	THRU	LEFT	TOTALS
8:45-9:45 AM	1%	94%	5%	100%	27%	4%	69%	100%	19%	73%	8%	100%	65%	19%	16%	100%
4:45-5:45 PM	2%	91%	7%	100%	22%	15%	63%	100%	22%	63%	15%	100%	73%	11%	16%	100%

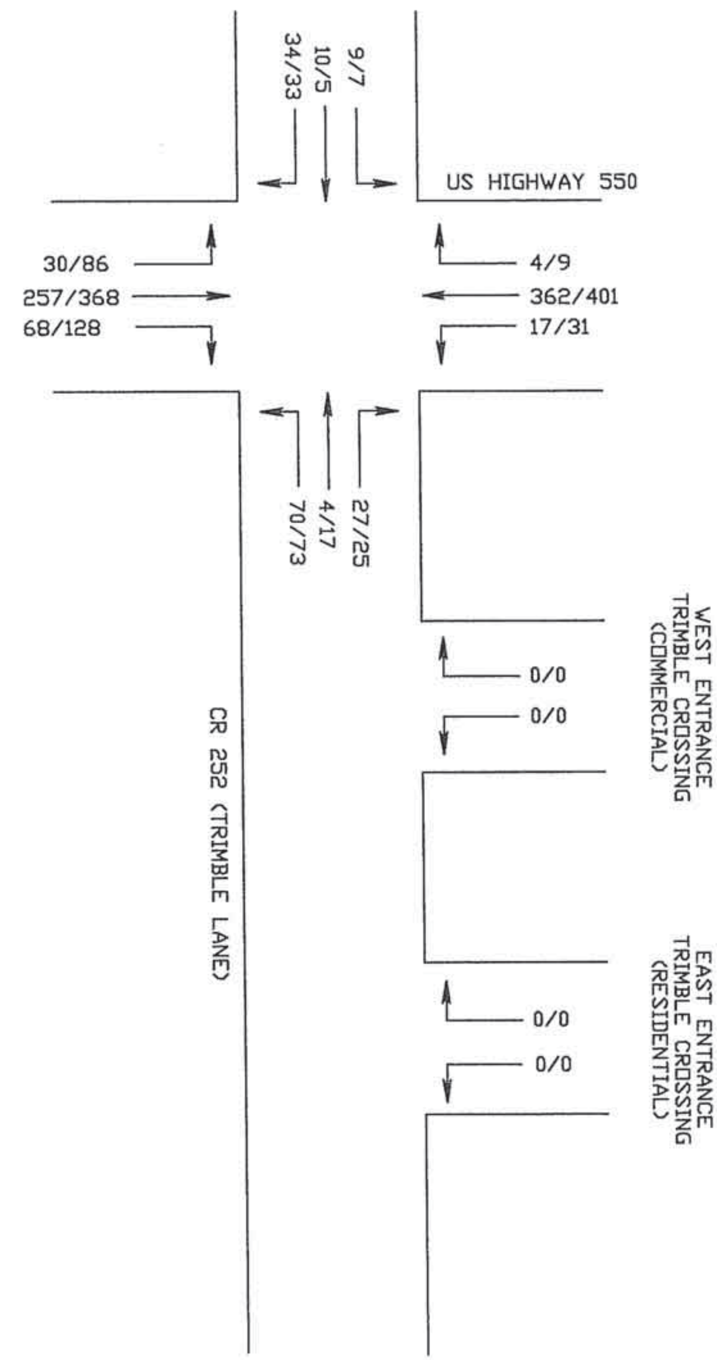
EASTBOUND	NORTH BOUND RIGHT	EAST BOUND THRU	SOUTH BOUND LEFT	TOTALS
AM	68	10	17	95
PM	128	5	31	164
	PERCENTAGES			
AM	72%	10%	18%	100%
PM	78%	3%	19%	100%

*DISTRIBUTIONS BETWEEN TRAFFIC HEADED EASTBOUND ON CR 252

GRAND TOTALS-(CDOT 2003 INTERSECTION ANALYSIS STUDY)

	US 550 SOUTHBOUND				TRIMBLE WESTBOUND				US 550 NORTHBOUND				TRIMBLE EASTBOUND			
TIME	RIGHT	THRU	LEFT	TOTALS	RIGHT	THRU	LEFT	TOTALS	RIGHT	THRU	LEFT	TOTALS	RIGHT	THRU	LEFT	TOTALS
DAILY (7-9:45 PM)	13	717	46	776	46	13	178	237	145	570	71	786	98	16	10	124
% TOTAL	2%	92%	6%	100%	20%	5%	75%	100%	18%	73%	9%	100%	79%	13%	8%	100%
DAILY (11-1:45 PM)	24	667	68	759	55	29	191	275	194	680	91	965	93	18	14	125
% TOTAL	3%	88%	9%	100%	20%	11%	69%	100%	20%	70%	10%	100%	74%	14%	12%	100%
DAILY (3-5:45 PM)	33	874	65	972	61	43	183	287	222	796	151	1169	75	31	19	125
% TOTAL	3%	90%	7%	100%	20%	15%	64%	100%	19%	68%	13%	100%	60%	25%	15%	100%
TOTAL DAILY	**70**	**2258**	**179**	**2507**	**162**	**85**	**552**	**799**	**561**	**2046**	**313**	**2920**	**266**	**65**	**43**	**374**
% TOTAL	**3%**	**90%**	**7%**	**100%**	**20%**	**11%**	**69%**	**100%**	**19%**	**70%**	**11%**	**100%**	**71%**	**17%**	**12%**	**100%**

TRIMBLE CROSSING
2006 EXISTING AM AND PM PEAK HOUR TURNING
MOVEMENT VOLUMES



4/17 represents Existing AM/PM Peak Hour Turn Movements (VPH)

Existing volumes have been prorated and seasonally adjusted from Aug 2003 to July 2006 (anticipated build out year). The original existing turn movements and the growth & seasonal factors are shown in exhibit F-Existing Turn Movements.

SCALE: N.T.S.	DRAWN BY: LM	DATE: 6-8-04
ACAD FILE:		CHECKED:
REVISIONS:		

TRIMBLE CROSSING
TRAFFIC IMPACT STUDY

EXHIBIT G
EXISTING AM & PM MOVEMENTS

Russell Engineering, Inc.
Civil Engineering Services
1022 1/2 Main Avenue
Durango, Colorado 81301
Phone: (970) 385-4546
Fax: (970) 385-4502

EXHIBIT H - EXISTING , GROWTH, & PROJECT ADT COUNTS

ROAD	LOCATION	2000 START/STOP DATE	2000 ADT COUNT	2001 START/STOP DATE	2001 ADT COUNT	2002 START/STOP DATE	2002 ADT COUNT	2003 START/STOP DATE	2003 ADT COUNT	(1) 2006 ADT	(2) 20 YR GROWTH FACTOR	2026 ADT	PROJECT ADT	EXISTING & PROJECT 2006 ADT	GROWTH & PROJECT 2026 ADT
CR 252	EAST OF HWY 550	7/13 - 7/17	2623	10/04-10/09	2112			7/21/2003	2499	2645	1.46	3862	2954	5599	6816
CR 252	WEST OF CR 250	7/13 - 7/17	1993	10/04-10/09	1045			7/21/2003	1364	1444	1.46	2108	328	1772	2436
US 550	NORTH TRIMBLE					2002	6564		7834	8317	1.49	12392	590	8907	12982
US 550	SOUTH TRIMBLE					2002	6912		8816	9331	1.46	13623	2038	11369	15661

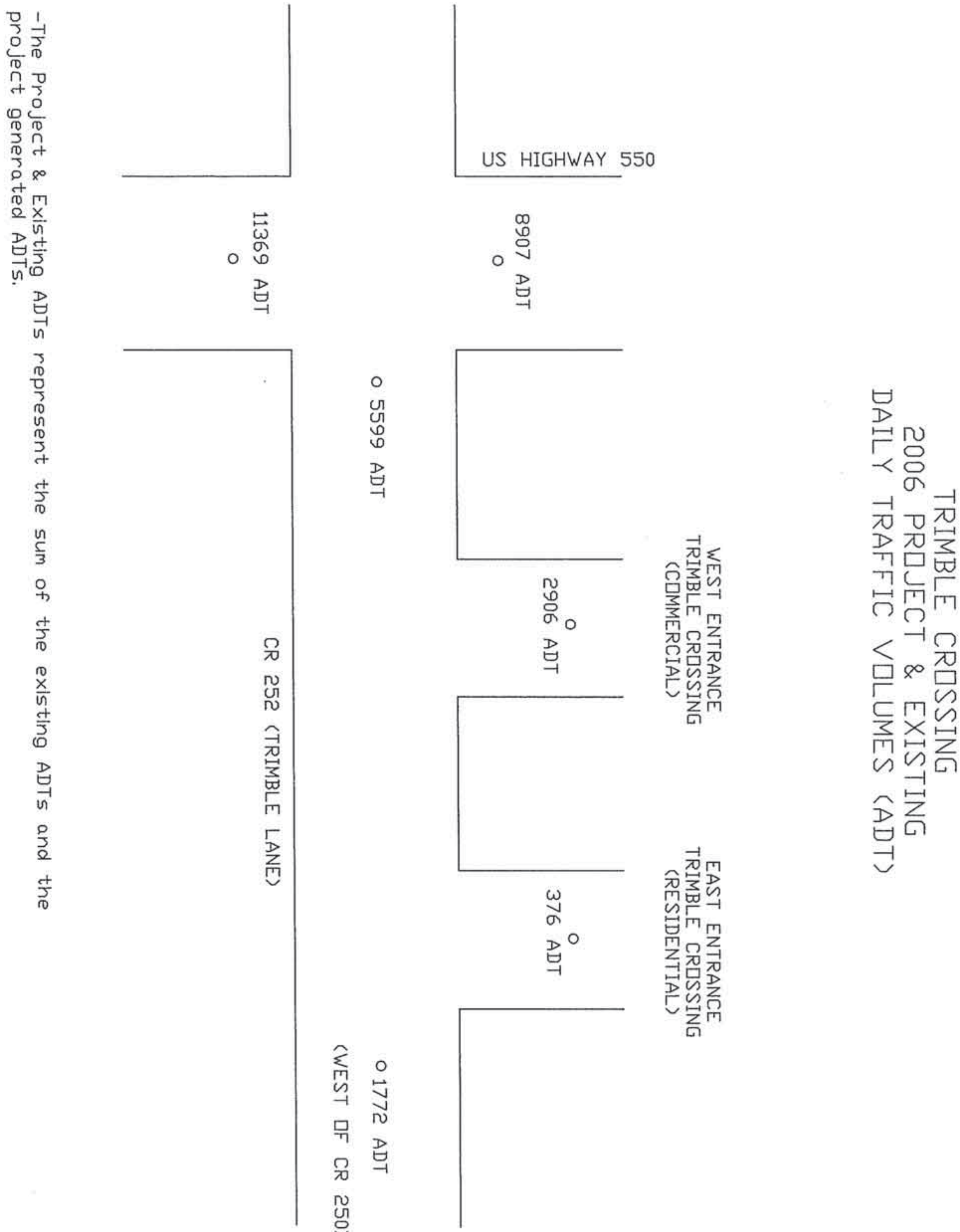
ADTS FOR HWY 550 CAME FROM THE CDOT WEBPAGE UNDER THE STATS & DATA UNDER THE TRAFFIC COUNTS

ADTS FOR CR 252 CAME FROM LA PLATA COUNTY ADT COUNTS FOR 2000 THROUGH 2004

(1). 2006 ADT COUNTS WERE PRORATED USING A GROWTH FACTOR DERIVED FROM THE 20 YEAR GROWTH FACTOR

(2). 20 YR GROWTH FACTORS USED FOR CR 252 WERE DERIVED FROM THE 20 YEAR GROWTH FACTORS THAT WERE USED BY CDOT FOR THE CDOT REGION 5 INTERSECTION STUDY
20 YR GROWTH FACTORS FOR HWY 550 CAME FROM THE CDOT WEBPAGE USING THE FUTURE TRAFFIC VOLUME CALCULATOR (SEE APPENDIX D FOR FUTURE CALCULATOR PRINTOUT)

W:\Land Projects 3\TRIMBLE CROSSING\TRAFFIC STUDY\PROPOSED PROJECTTURN MOVEMENTS_060804.dwg, EXHIBIT I - PROJECT & EXISTING ADT, 6/8/2004 10:



SCALE: N.T.S.	DRAWN BY: LM	DATE: 6-8-04
ACAD FILE:		CHECKED:
REVISIONS:		

TRIMBLE CROSSING
TRAFFIC IMPACT STUDY

EXHIBIT I
EXISTING & PROJECT ADT

Russell Engineering, Inc.
Civil Engineering Services
1022 1/2 Main Avenue
Durango, Colorado 81301
Phone: (970) 385-4546
Fax: (970) 385-4502

EXHIBIT J - GROWTH TRAFFIC DISTRIBUTIONS

AM PEAK HOUR

INTERSECTION OF US 550 & TRIMBLE LANE

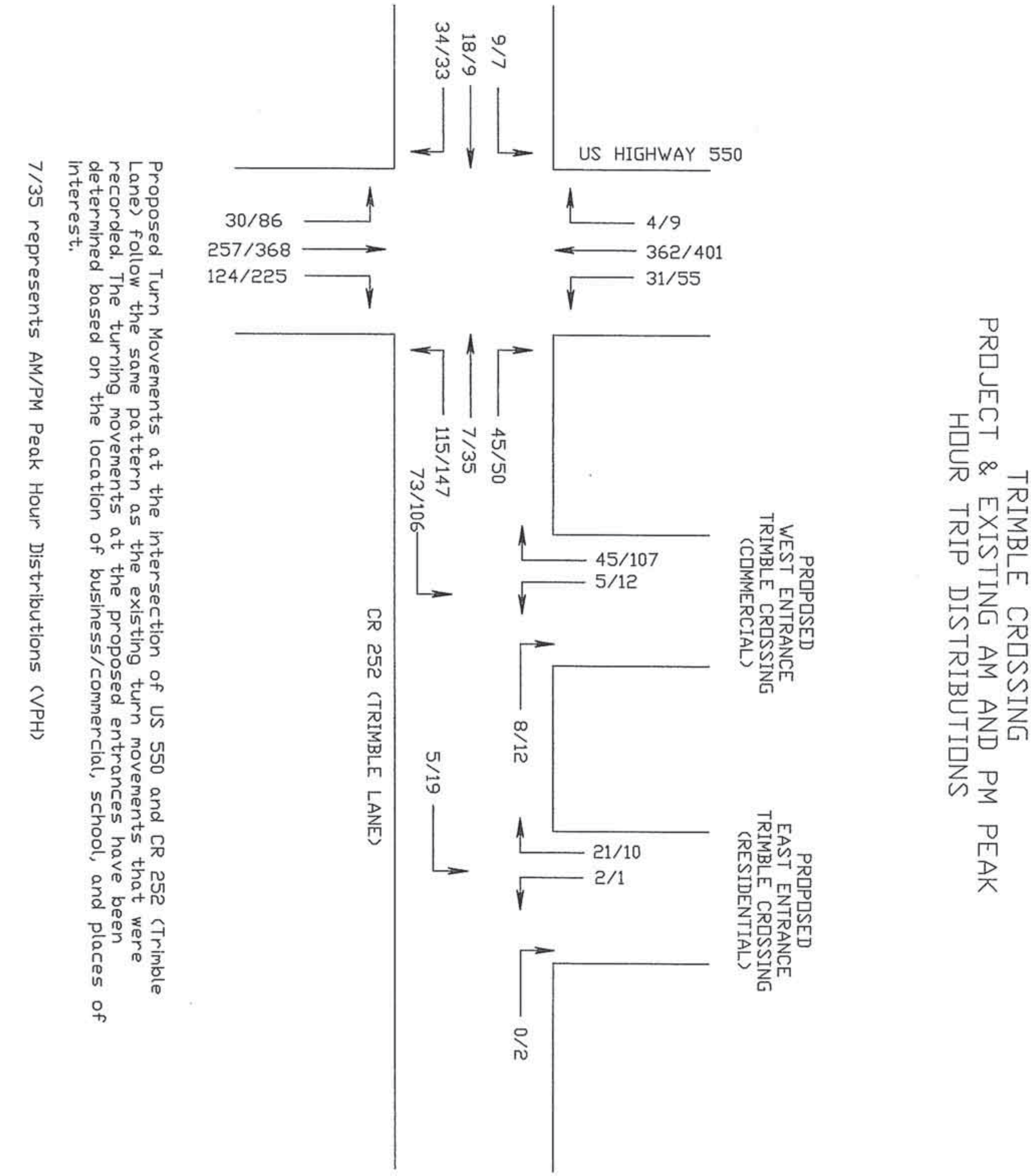
	US 550 SOUTHBOUND				TRIMBLE WESTBOUND				US 550 NORTHBOUND				TRIMBLE EASTBOUND			
	RIGHT	THRU	LEFT	TOTAL	RIGHT	THRU	LEFT	TOTAL	RIGHT	THRU	LEFT	TOTAL	RIGHT	THRU	LEFT	TOTAL
PROJECT	0	0	14	14	18	3	45	66	56	0	0	56	0	8	0	8
*GROWTH FACTOR	1.46	1.46	1.46		1.46	1.46	1.46		1.49	1.49	1.49		1.45	1.45	1.45	
EXISTING	4	362	17	383	27	4	70	101	68	257	30	355	34	10	9	53
EXISTING & PROJECT	4	362	31	397	45	7	115	167	124	257	30	411	34	18	9	61
GROWTH	6	529	25	560	39	6	102	147	101	383	45	529	49	15	13	77
GROWTH & PROJECT	**6**	**529**	**39**	**574**	**57**	**9**	**147**	**213**	**157**	**383**	**45**	**585**	**49**	**23**	**13**	**85**

PM PEAK HOUR

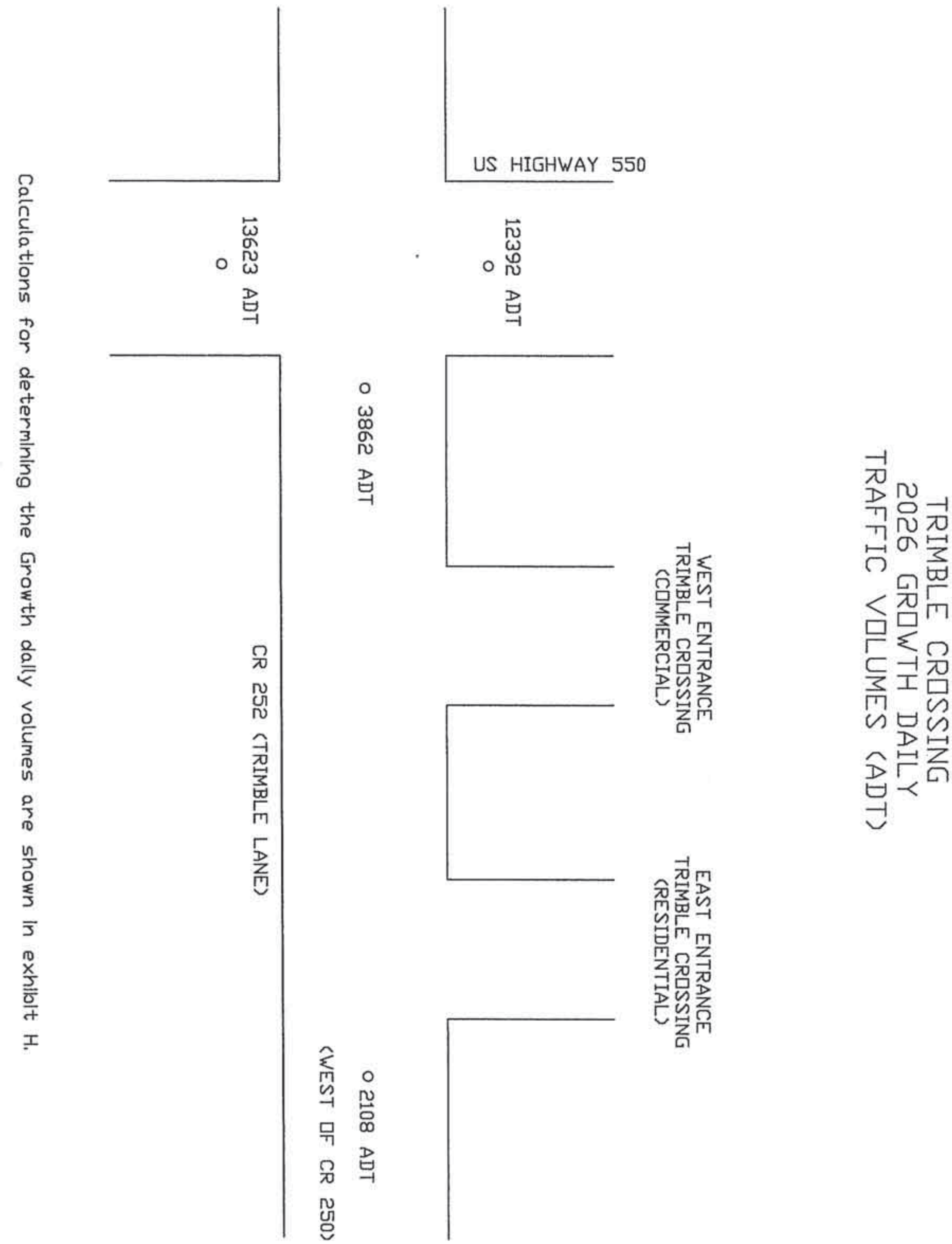
INTERSECTION OF US 550 & TRIMBLE LANE

	US 550 SOUTHBOUND				TRIMBLE WESTBOUND				US 550 NORTHBOUND				TRIMBLE EASTBOUND			
	RIGHT	THRU	LEFT	TOTAL	RIGHT	THRU	LEFT	TOTAL	RIGHT	THRU	LEFT	TOTAL	RIGHT	THRU	LEFT	TOTAL
PROJECT	0	0	24	24	25	18	74	117	97	0	0	97	0	4	0	4
GROWTH FACTOR	1.46	1.46	1.46		1.46	1.46	1.46		1.49	1.49	1.49		1.45	1.45	1.45	
EXISTING	9	401	31	441	25	17	73	115	128	368	86	582	33	5	7	46
EXISTING & PROJECT	9	401	55	465	50	35	147	232	225	368	86	679	33	9	7	50
GROWTH	13	585	45	643	37	25	107	169	191	548	128	867	48	7	10	65
GROWTH & PROJECT	**13**	**585**	**69**	**667**	**62**	**43**	**181**	**286**	**288**	**548**	**128**	**964**	**48**	**11**	**10**	**69**

Assumptions:
Existing Traffic = existing counts
Growth = Existing * Growth factor
Project Traffic = trip generated traffic
* 20-Year Growth factor for Trimble Lane (CR 252), reference CDOT REGION 5 TRAFFIC AND SAFETY
20 YR GROWTH FACTORS FOR HWY 550 CAME FROM THE CDOT WEBPAGE USING
THE FUTURE TRAFFIC VOLUME CALCULATOR (SEE APPENDIX D FOR FUTURE CALCULATOR PRINTOUT)

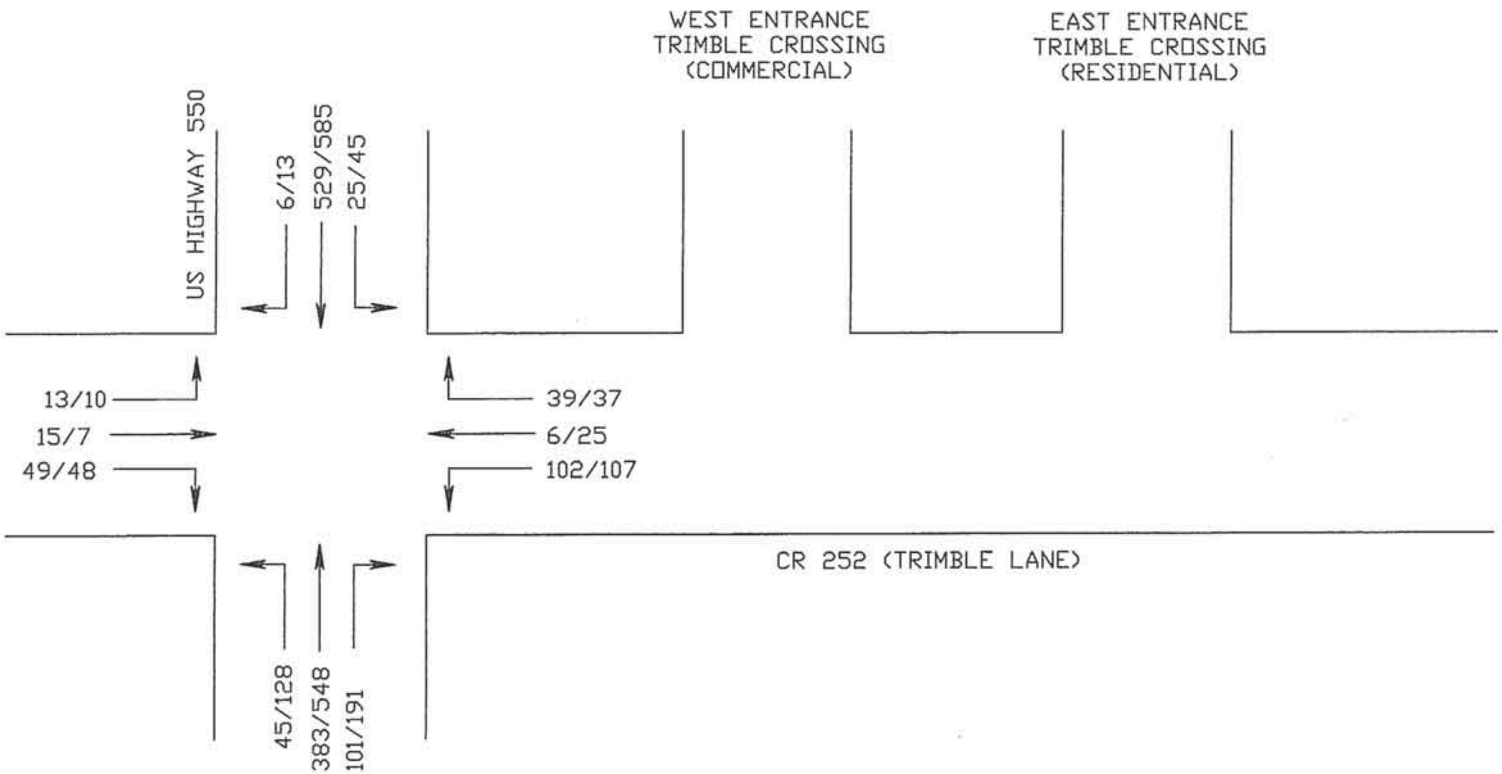


SCALE: N.T.S.	DRAWN BY: LM	DATE: 6-8-04	TRIMBLE CROSSING TRAFFIC IMPACT STUDY	Russell Engineering, Inc.
ACAD FILE:		CHECKED:		Civil Engineering Services
REVISIONS:			EXHIBIT K EXISTING & PROJECT AM & PM	1022 1/2 Main Avenue Durango, Colorado 81301 Phone: (970) 385-4546 Fax: (970) 385-4502



SCALE: N.T.S.	DRAWN BY: LM	DATE: 6-8-04	**TRIMBLE CROSSING** **TRAFFIC IMPACT STUDY**	**Russell Engineering, Inc.** Civil Engineering Services
ACAD FILE:		CHECKED:		1022 1/2 Main Avenue Durango, Colorado 81301
REVISIONS:			**EXHIBIT L** **GROWTH ADT**	Phone: (970) 385-4546 Fax: (970) 385-4502

TRIMBLE CROSSING
2026 GROWTH AM AND PM
PEAK HOUR TURNING MOVEMENT VOLUMES



The Growth AM & PM Peak Hour Turning Movements were determined based on a 20 year growth factor and were added to the project generated traffic. Detailed calculations are shown in the exhibit J-Growth Traffic Distributions

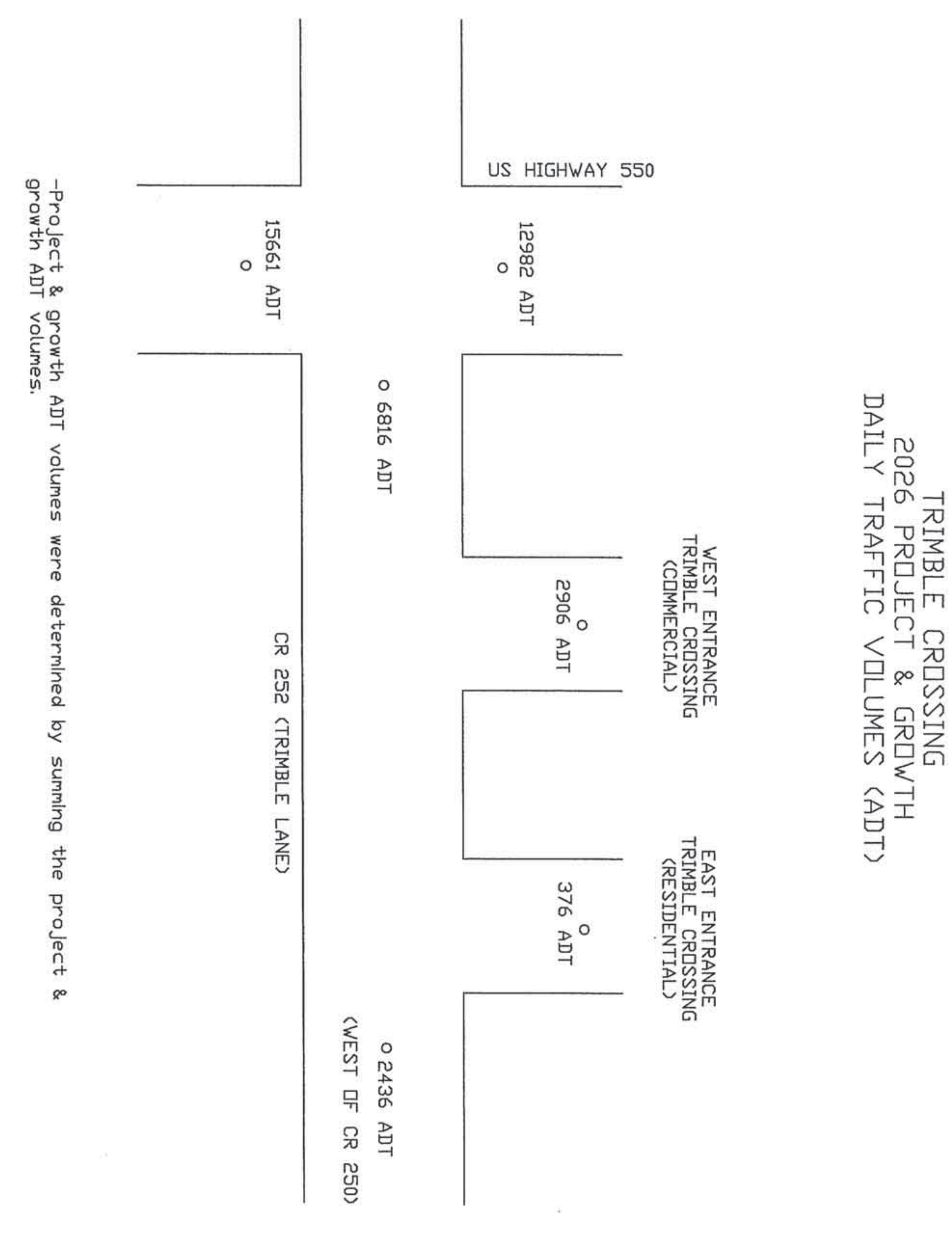
6/25 represents AM/PM Peak Hour Distributions

SCALE: N.T.S.	DRAWN BY: LM	DATE: 6-8-04
ACAD FILE:		CHECKED:
REVISIONS: REVISED THE NORTHBOUND TURNING MOVEMENTS TO MATCH EXHIBIT J- GROWTH AND TRAFFIC DISTRIBUTIONS		

TRIMBLE CROSSING
TRAFFIC IMPACT STUDY

EXHIBIT M
GROWTH AM & PM MOVEMENTS

Russell Engineering, Inc.
Civil Engineering Services
1022 1/2 Main Avenue
Durango, Colorado 81301
Phone: (970) 385-4546
Fax: (970) 385-4502



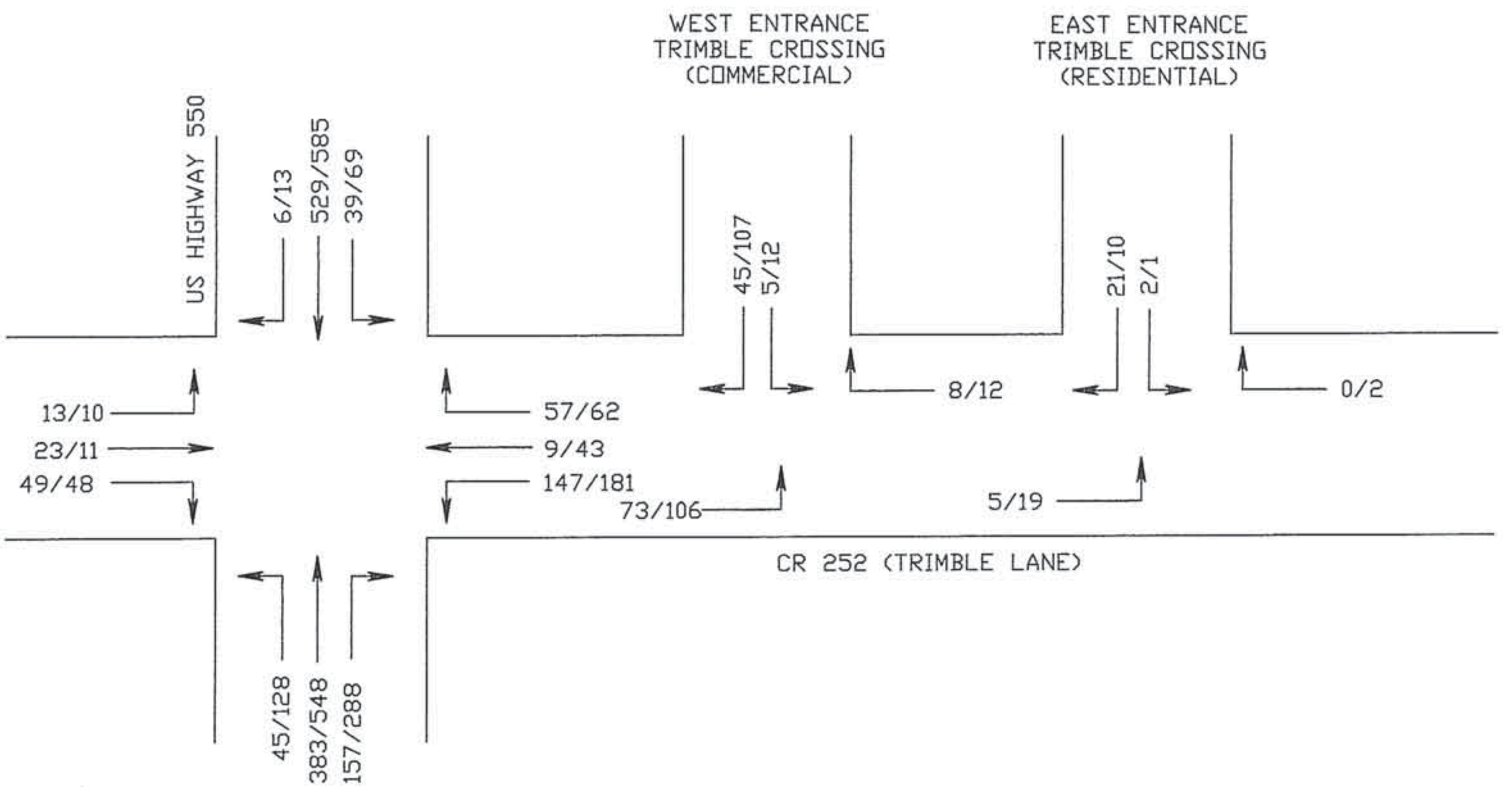
SCALE: N.T.S.	DRAWN BY: LM	DATE: 6-8-04
ACAD FILE:		CHECKED:
REVISIONS:		

TRIMBLE CROSSING
TRAFFIC IMPACT STUDY

EXHIBIT N
PROJECT & GROWTH ADT

Russell Engineering, Inc.
Civil Engineering Services
1022 1/2 Main Avenue
Durango, Colorado 81301
Phone: (970) 385-4546
Fax: (970) 385-4502

TRIMBLE CROSSING
2026 PROJECT & GROWTH AM AND PM
PEAK HOUR TURNING MOVEMENT VOLUMES



Project & growth AM and PM Peak Hour Turning movements were added together.
(see exhibit J-Growth Traffic Distributions

17/8 represents project & growth AM/PM Peak Hour Distributions

SCALE: N.T.S.	DRAWN BY: LM	DATE: 6-8-04	TRIMBLE CROSSING TRAFFIC IMPACT STUDY	Russell Engineering, Inc.
ACAD FILE:		CHECKED:		Civil Engineering Services
REVISIONS:			EXHIBIT O PROJECT & GROWTH AM & PM	1022 1/2 Main Avenue, Durango, Colorado 81301, Phone: (970) 385-4546, Fax: (970) 385-4502

APPENDIX A

2003 Intersection Analysis and Prioritization Study for Cr 252 & US 550,
CDOT Region 5

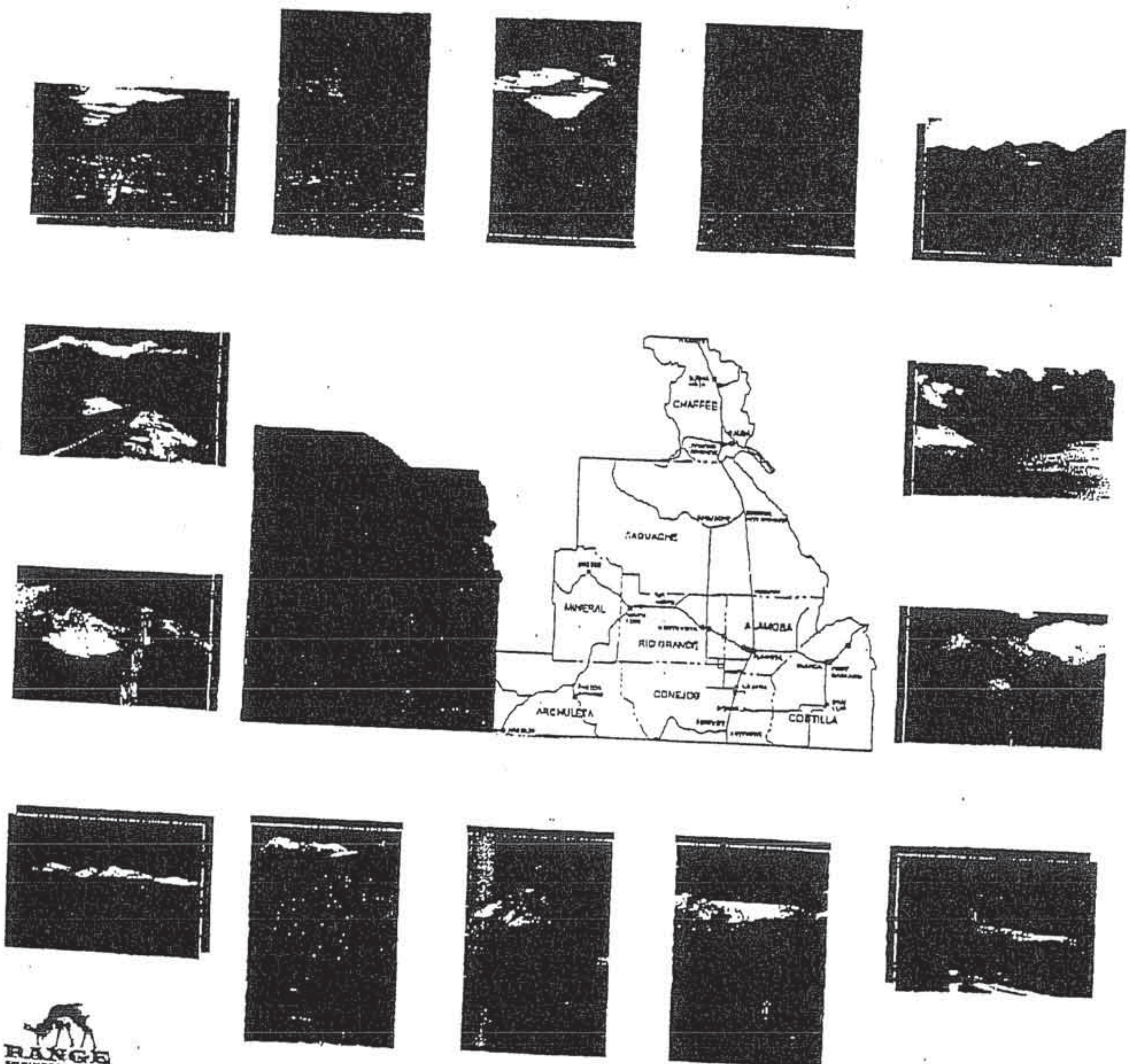
Appendix - West

2003 INTERSECTION ANALYSIS AND PRIORITIZATION STUDY

DOT
DEPARTMENT OF TRANSPORTATION

CDOT Region 5

February 28, 2003



RANGE ENGINEERING INC.

SEH

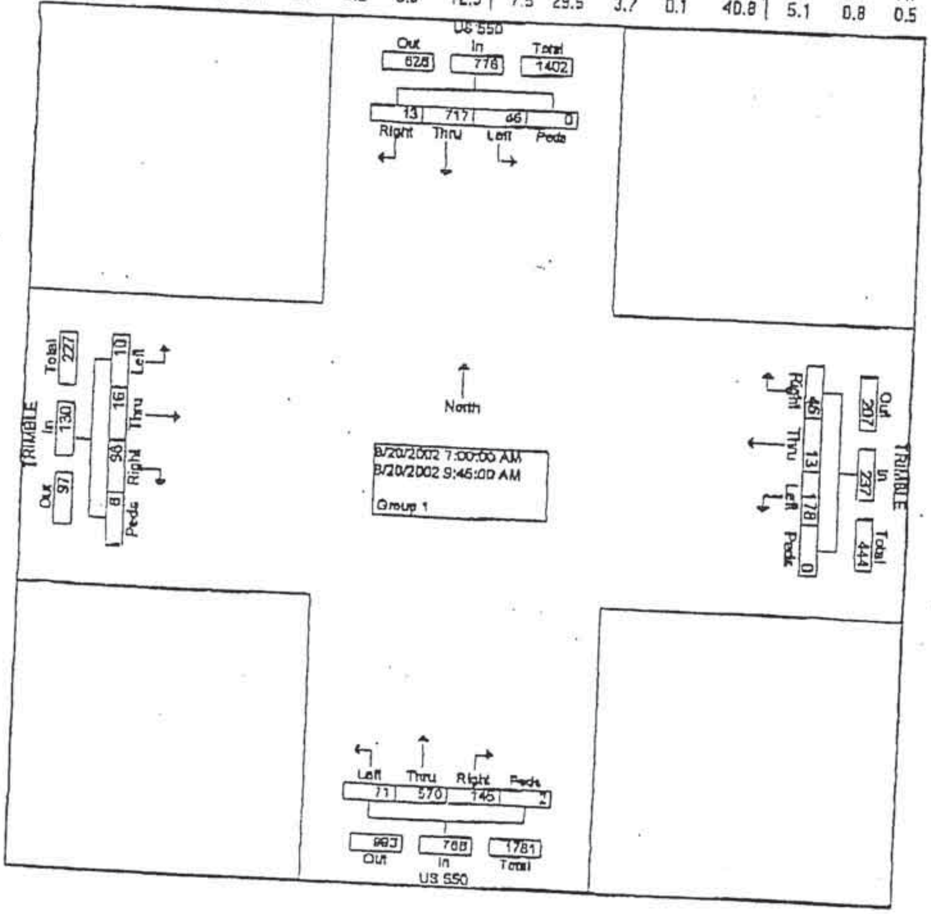
(18)

Rocky Mountain Counts, LLC.
1106 Cherry Ct.
Ft. Lupton, CO 80621
Phone (303) 641-0445 Fax (303) 857-9191

File Name : 550TRIMBLEAM
Site Code : 00000000
Start Date : 08/20/2002
Page No : 1

Groups Printed- Group 1

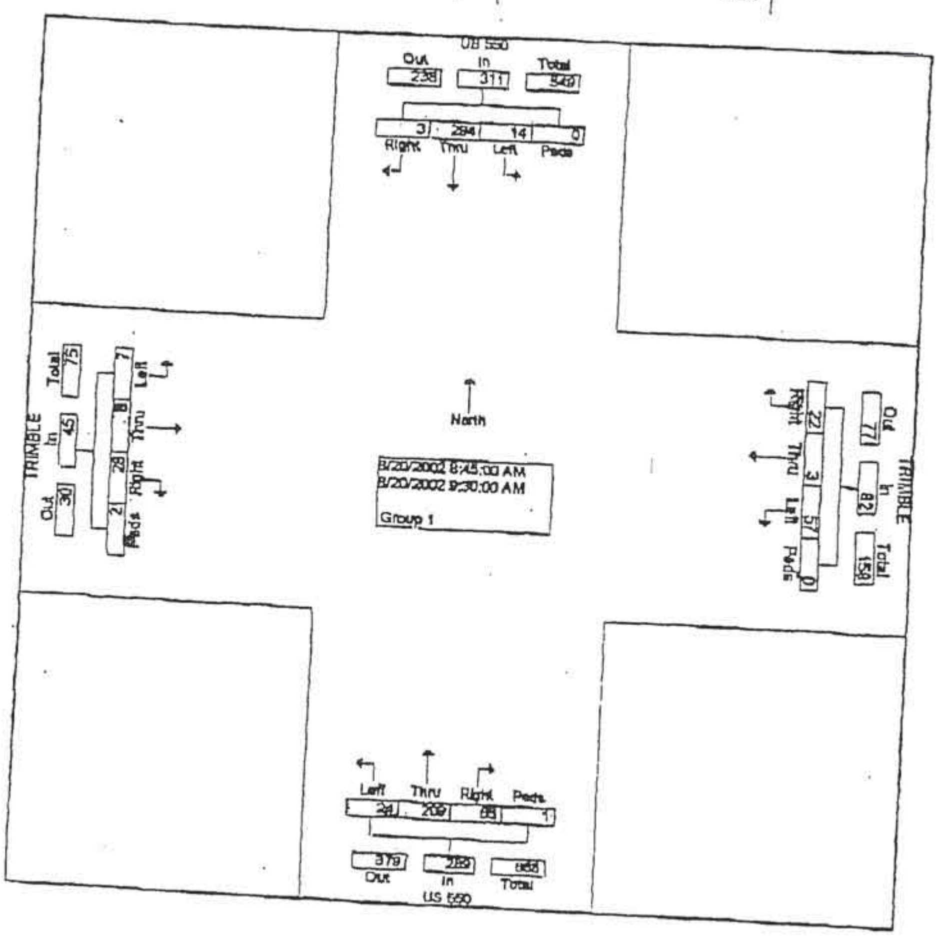
	US 550 Southbound					TRIMBLE Westbound					US 550 Northbound					TRIMBLE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	1	22	1	0	24	1	0	9	0	10	5	9	4	0	18	9	0	1	0	10	62
07:15 AM	2	52	3	0	57	2	3	11	0	16	4	39	3	0	46	9	0	2	1	12	131
07:30 AM	0	81	2	0	83	5	0	29	0	34	7	49	1	0	57	18	3	0	0	21	195
07:45 AM	3	69	4	0	76	3	1	16	0	20	16	72	5	1	94	9	2	0	0	11	201
Total	6	224	10	0	240	11	4	65	0	80	32	169	13	1	215	45	5	3	1	54	589
08:00 AM	0	45	6	0	51	4	0	14	0	18	17	44	8	0	69	8	1	0	0	9	147
08:15 AM	0	44	5	0	49	4	2	12	0	18	16	49	7	0	72	9	0	0	2	11	150
08:30 AM	1	70	6	0	77	3	2	21	0	26	12	68	9	0	89	8	2	0	1	11	203
08:45 AM	1	47	2	0	50	5	0	12	0	17	8	53	6	0	67	5	1	1	0	7	141
Total	2	206	19	0	227	16	4	59	0	79	53	214	30	0	297	30	4	1	3	38	641
09:00 AM	0	78	1	0	79	2	1	10	0	13	14	43	7	0	64	7	2	2	0	11	167
09:15 AM	1	100	5	0	106	7	1	10	0	18	16	45	4	0	65	7	5	1	2	15	204
09:30 AM	1	69	6	0	76	8	1	25	0	34	17	68	7	1	93	9	0	3	0	12	215
09:45 AM	3	40	5	0	48	2	2	9	0	13	13	31	10	0	54	0	0	0	0	0	115
Total	5	287	17	0	309	19	5	54	0	78	60	187	28	1	276	23	7	6	2	38	701
Grand Total	13	717	46	0	776	46	13	178	0	237	145	570	71	2	788	98	16	10	6	130	1931
Apprch %	1.7	92.4	5.9	0.0		19.4	5.5	75.1	0.0		18.4	72.3	9.0	0.3		75.4	12.3	7.7	4.6		
Total %	0.7	37.1	2.4	0.0	40.2	2.4	0.7	9.2	0.0	12.3	7.5	29.5	3.7	0.1	40.8	5.1	0.8	0.5	0.3	6.7	



Rocky Mountain Counts, LLC.
1106 Cherry Ct.
Ft. Lupton, CO 80621
Phone (303) 641-0445 Fax (303) 857-9191

File Name : 550TRIMBLEAM
Site Code : 00000000
Start Date : 08/20/2002
Page No : 2

	US 550 Southbound					TRIMBLE Westbound					US 550 Northbound					TRIMBLE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Intersection	08:45 AM																				
Volume	3	294	14	0	311	22	3	57	0	82	55	209	24	1	289	28	8	7	2	45	727
Percent	1.0	94.5	4.5	0.0		26.8	3.7	69.5	0.0		19.0	72.3	8.3	0.3		62.2	17.8	15.6	4.4		
09:30 Volume	1	69	6	0	76	8	1	25	0	34	17	68	7	1	93	9	0	3	0	12	215
Peak Factor																					0.845
High Int.	09:15 AM					09:30 AM					09:30 AM					09:15 AM					
Volume	1	100	5	0	106	8	1	25	0	34	17	68	7	1	93	7	5	1	2	15	
Peak Factor					0.733					0.603					0.777					0.750	

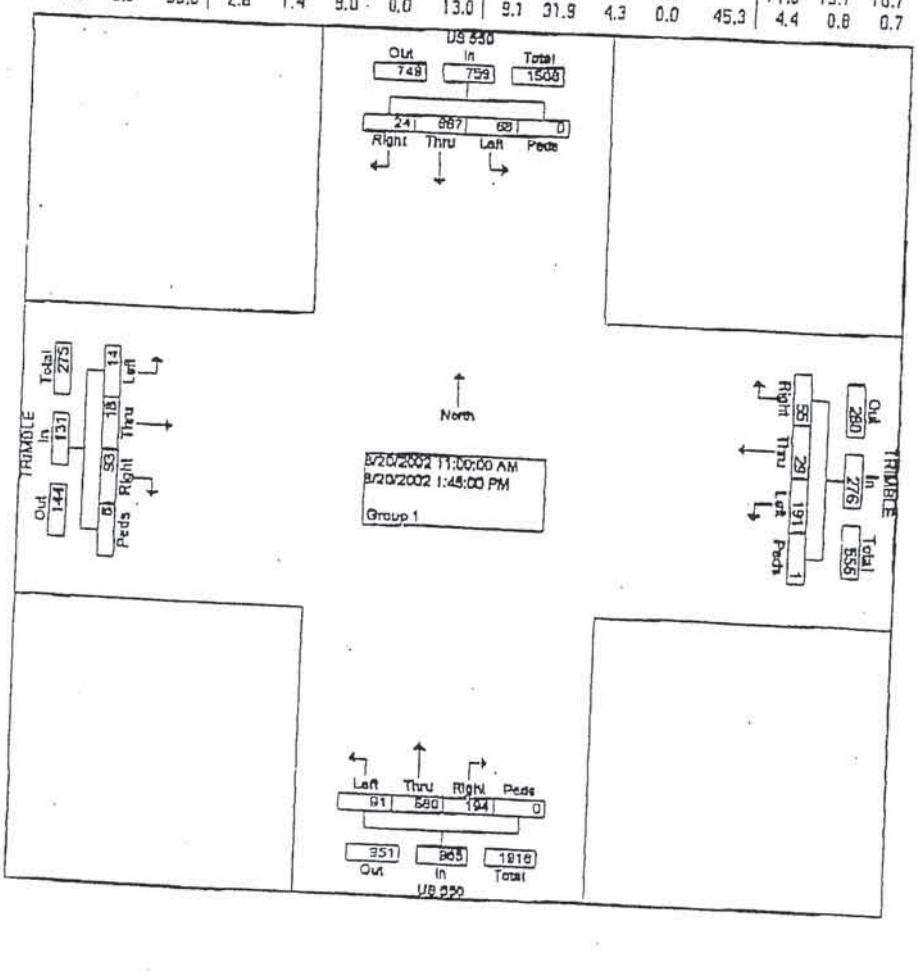


Rocky Mountain Counts, LLC.
1106 Cherry Ct.
Ft. Lupton, CO 80621
Phone (303) 641-0445 Fax (303) 857-9191

File Name : 550TRIMBLE
Site Code : 00000000
Start Date : 08/20/2002
Page No : 1

Groups Printed- Group 1

	US 550 Southbound					TRIMBLE Westbound					US 550 Northbound					TRIMBLE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
11:00 AM	1	46	3	0	50	2	2	23	0	27	14	56	8	0	78	11	1	0	0	12	167
11:15 AM	1	48	5	0	54	3	0	16	0	19	13	49	6	0	68	13	2	0	0	15	156
11:30 AM	1	70	7	0	78	6	4	9	1	20	9	50	6	0	65	6	1	0	0	7	170
11:45 AM	2	68	8	0	78	4	3	17	0	24	17	59	5	0	81	6	2	3	0	11	194
Total	5	232	23	0	260	15	9	65	1	90	53	214	25	0	292	36	6	3	0	45	687
12:00 PM	3	51	9	0	63	9	3	17	0	29	15	48	4	0	67	8	1	3	0	12	171
12:15 PM	1	59	6	0	66	6	0	18	0	24	16	74	10	0	100	8	2	0	0	10	200
12:30 PM	0	39	10	0	49	1	4	22	0	27	17	47	9	0	73	4	0	2	1	7	156
12:45 PM	3	75	6	0	84	6	5	17	0	28	13	69	17	0	99	7	0	0	0	7	218
Total	7	224	31	0	262	22	12	74	0	108	61	238	40	0	339	27	3	5	1	36	745
01:00 PM	3	37	4	0	44	1	2	10	0	13	20	41	2	0	63	4	3	1	5	13	133
01:15 PM	4	66	5	0	75	10	1	20	0	31	21	72	14	0	107	3	2	1	0	6	219
01:30 PM	3	66	4	0	73	3	1	10	0	14	24	61	6	0	91	8	4	2	0	14	192
01:45 PM	2	42	1	0	45	4	4	12	0	20	15	54	4	0	73	15	0	2	0	17	155
Total	12	211	14	0	237	18	8	52	0	78	80	228	26	0	334	30	9	6	5	50	699
Grand Total	24	667	68	0	759	55	29	191	1	276	194	680	91	0	965	93	18	14	6	131	2131
Apprch %	3.2	87.9	9.0	0.0		19.9	10.5	69.2	0.4		20.1	70.5	9.4	0.0		71.0	13.7	10.7	4.6		
Total %	1.1	31.3	3.2	0.0	35.6	2.6	1.4	9.0	0.0	13.0	9.1	31.9	4.3	0.0	45.3	4.4	0.8	0.7	0.3	6.1	

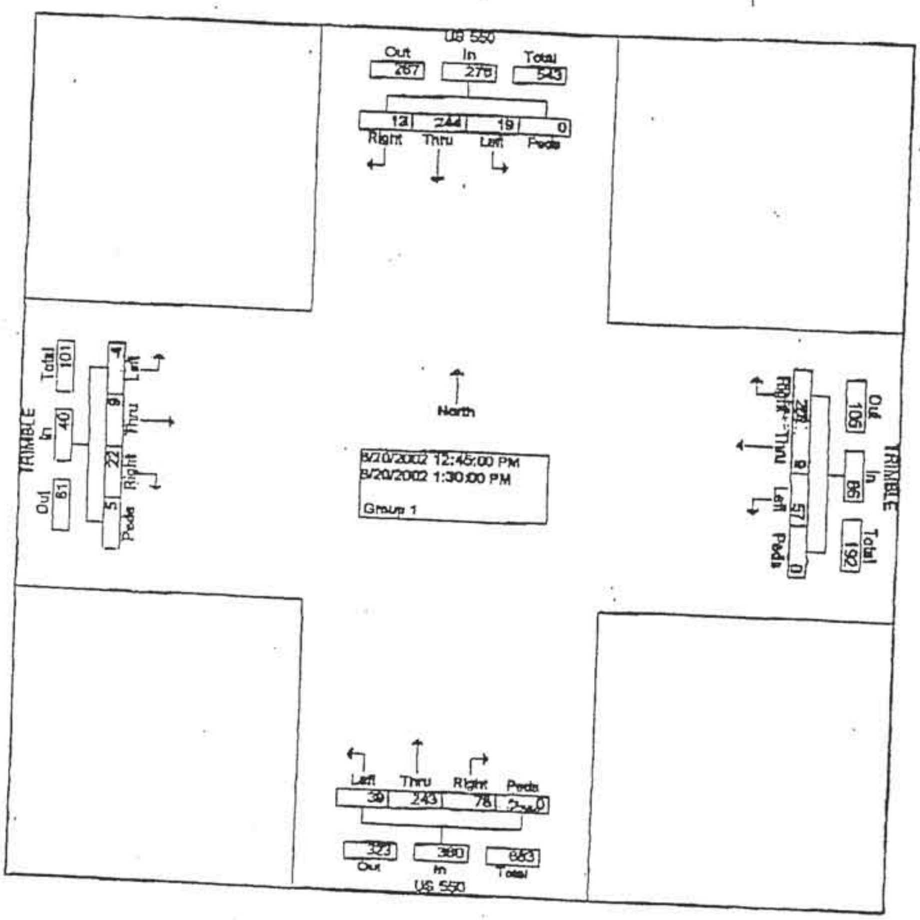


Received Fax : Nov 17 2003 11:16AM Fax Station : RUSSELL ENG INC P. 6

Rocky Mountain Counts, LLC.
1106 Cherry Ct.
Ft. Lupton, CO 80621
Phone (303) 641-0445 Fax (303) 857-9191

File Name : 550TRIMBLE
Site Code : 00000000
Start Date : 08/20/2002
Page No : 2

US 550 Southbound					TRIMBLE Westbound					US 550 Northbound					TRIMBLE Eastbound					
Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
From 11:00 AM to 01:45 PM - Peak 1 of 1																				
12:45 PM																				
13	244	19	0	276	20	9	57	0	86	78	243	39	0	360	22	9	4	5	40	762
4.7	88.4	6.9	0.0		23.3	10.5	66.3	0.0		21.7	67.5	10.8	0.0		55.0	22.5	10.0	12.5		
4	66	5	0	75	10	1	20	0	31	21	72	14	0	107	3	2	1	0	6	219
																				0.870
12:45 PM					01:15 PM					01:15 PM					01:30 PM					
3	75	6	0	84	10	1	20	0	31	21	72	14	0	107	8	4	2	0	14	
				0.821					0.694					0.841					0.714	

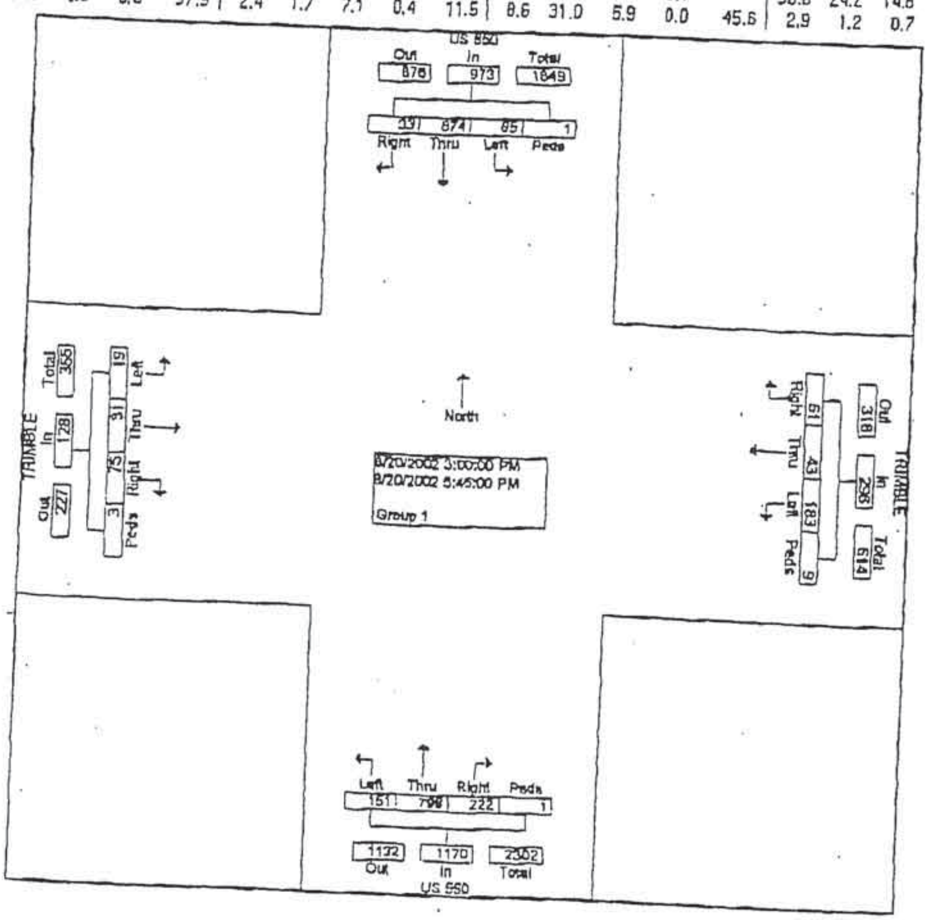


Rocky Mountain Counts, LLC.
1106 Cherry Ct.
Ft. Lupton, CO 80621
Phone (303) 641-0445 Fax (303) 857-9191

File Name : 550TRIMBLEPM
Site Code : 00000000
Start Date : 08/20/2002
Page No : 1

Groups Printed- Group 1

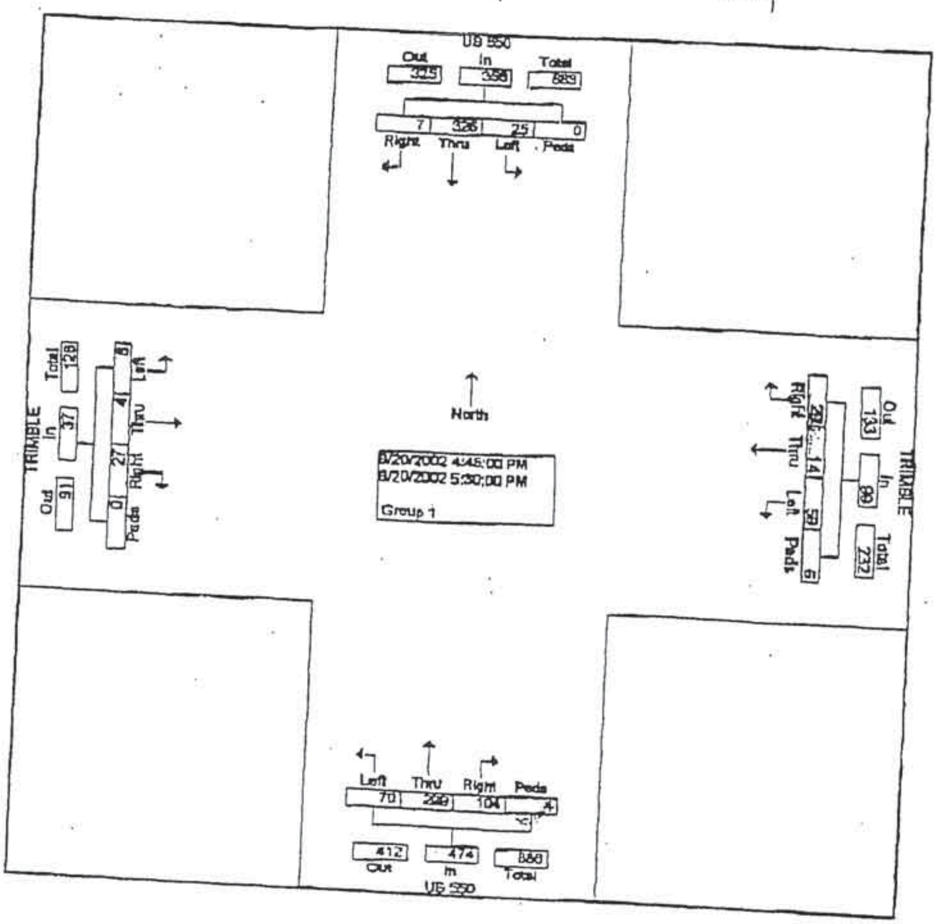
	US 550 Southbound					TRIMBLE Westbound					US 550 Northbound					TRIMBLE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
03:00 PM	1	71	2	0	74	5	2	13	0	20	15	44	8	0	67	4	2	3	0	9	170
03:15 PM	2	63	5	0	70	9	5	16	0	32	18	48	5	0	71	10	1	1	0	12	185
03:30 PM	2	58	4	0	64	3	4	28	0	35	20	60	8	0	88	7	2	1	0	10	197
03:45 PM	9	69	2	0	80	2	0	7	0	9	3	77	18	0	98	7	2	3	0	12	199
Total	14	261	13	0	288	19	11	66	0	96	56	229	39	0	324	28	7	8	0	43	751
04:00 PM	3	85	8	0	96	10	6	11	1	28	19	91	11	0	121	3	6	1	0	10	255
04:15 PM	1	64	7	1	73	4	5	21	0	30	18	54	9	0	81	4	5	2	0	11	195
04:30 PM	0	69	10	0	79	6	4	13	2	25	14	68	11	0	93	5	4	0	0	9	206
04:45 PM	3	90	5	0	98	7	5	20	0	32	16	70	16	0	102	5	1	1	0	7	239
Total	7	308	30	1	346	27	20	65	3	115	67	283	47	0	397	17	16	4	0	37	895
05:00 PM	2	68	7	0	77	5	2	13	0	20	34	65	16	1	116	4	2	1	0	7	220
05:15 PM	0	89	4	0	93	3	4	14	3	24	26	94	14	0	134	11	1	1	0	13	264
05:30 PM	2	79	9	0	90	5	3	12	3	23	28	70	24	0	122	7	0	3	0	10	245
05:45 PM	8	69	2	0	79	2	3	13	0	18	11	55	11	0	77	8	5	2	3	18	192
Total	12	305	22	0	339	15	12	52	6	85	99	284	65	1	449	30	8	7	3	48	927
Grand Total	33	874	65	1	973	61	43	183	9	296	222	796	151	1	1170	75	31	19	3	128	2567
Apprch %	3.4	89.8	6.7	0.1		20.6	14.5	61.8	3.0		19.0	68.0	12.9	0.1		58.6	24.2	14.8	2.3		
Total %	1.3	34.0	2.5	0.0	37.9	2.4	1.7	7.1	0.4	11.5	8.6	31.0	5.9	0.0	45.6	2.9	1.2	0.7	0.1	5.0	



Rocky Mountain Counts, LLC.
1106 Cherry Ct.
Ft. Lupton, CO 80621
Phone (303) 641-0445 Fax (303) 857-9191

File Name : 550TRIMBLEPM
Site Code : 00000000
Start Date : 08/20/2002
Page No : 2

	US 550 Southbound					TRIMBLE Westbound					US 550 Northbound					TRIMBLE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Intersection	04:45 PM																				
Volume	7	326	25	0	358	20	14	59	6	99	104	299	70	1	474	27	4	6	0	37	968
Percent	2.0	91.1	7.0	0.0		20.2	14.1	59.6	6.1		21.9	63.1	14.8	0.2		73.0	10.8	16.2	0.0		
05:15 Volume	0	89	4	0	93	3	4	14	3	24	26	94	14	0	134	11	1	1	0	13	264
Peak Factor																					0.917
High Int.	04:45 PM					04:45 PM					05:15 PM					05:15 PM					
Volume	3	90	5	0	98	7	5	20	0	32	26	94	14	0	134	11	1	1	0	13	
Peak Factor					0.913					0.773					0.884					0.712	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱		✥			↰	↱	↰	↑	↱
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	8	28	57	3	22	24	209	55	14	292	[illegible]
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (veh/h)	8	10	34	68	4	26	29	251	65	17	353	[illegible]
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
vC, conflicting volume	723	761	353	735	698	251	356			317		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.2	6.6	6.3	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	97	97	95	77	99	97	98			99		
cM capacity (veh/h)	312	317	680	297	344	776	1175			1216		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	18	34	98	280	66	17	353	4
Volume Left	8	0	68	29	0	17	0	0
Volume Right	0	34	26	0	66	0	0	[illegible]
cSH	315	680	359	1175	1700	1216	1700	1700
Volume to Capacity	0.06	0.05	0.27	0.02	0.04	0.01	0.21	0.00
Queue Length (ft)	5	4	27	2	0	1	0	0
Control Delay (s)	17.1	10.6	18.8	1.0	0.0	8.0	0.0	0.0
Lane LOS	C	B	C	A		A		
Approach Delay (s)	12.9		18.8	0.8		0.4		
Approach LOS	B		C					

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	44.3%	ICU Level of Service	A

HCM Unsignalized Intersection Capacity Analysis
18: Trimble Lane & US 550

11/7/2002

Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	9	22	57	9	20	[illegible]	248	[illegible]	19	[illegible]	[illegible]
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (veh/h)	5	11	26	58	11	24	47	292	94	23	293	[illegible]
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
vC, conflicting volume	755	817	296	755	739	292	308			385		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.2	6.6	6.3	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	98	96	96	76	97	97	96			98		
cM capacity (veh/h)	288	288	735	285	320	736	1224			1146		

Volume Total	16	262	103	338	94	23	293	16
Volume Left	5	0	68	47	0	23	0	0
Volume Right	0	26	24	0	94	0	0	16
cSH	288	735	337	1224	1700	1146	1700	1700
Volume to Capacity	0.05	0.04	0.31	0.04	0.06	0.02	0.17	0.01
Queue Length (ft)	4	3	32	3	0	2	0	0
Control Delay (s)	18.2	10.1	20.3	1.4	0.0	8.2	0.0	0.0
Lane LOS	C	B	C	A		A		
Approach Delay (s)	13.1		20.3	1.1		0.6		
Approach LOS	B		C					

Average Delay		3.7		
Intersection Capacity Utilization		55.8%	ICU Level of Service	A

HCM Unsignalized Intersection Capacity Analysis
18: Trimble Lane & US 550 11/7/2002

Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	6	4	27	59	14	20	70	299	104	25	329	7
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (veh/h)	7	5	32	71	17	24	84	359	125	30	391	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
vC, conflicting volume	1010	1103	391	1018	986	359	400			484		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.2	6.6	6.3	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	96	97	95	61	92	96	93			97		
cM capacity (veh/h)	179	186	647	183	218	674	1132			1054		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	12	32	112	443	125	30	391	8
Volume Left	7	0	71	84	0	30	0	0
Volume Right	9	32	24	0	125	0	0	8
cSH	182	647	223	1132	1700	1054	1700	1700
Volume to Capacity	0.07	0.05	0.50	0.07	0.07	0.03	0.23	0.00
Queue Length (ft)	5	4	63	6	0	2	0	0
Control Delay (s)	26.2	10.9	36.2	2.2	0.0	8.5	0.0	0.0
Lane LOS	D	B	E	A		A		
Approach Delay (s)	15.9		36.2	1.7		0.6		
Approach LOS	C		E					

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	67.1%	ICU Level of Service	E

Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	8	28	57	3	22	24	209	55	14	92	5
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (veh/h)	12	14	48	98	5	38	41	359	94	21	[illegible]	[illegible]
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
vC, conflicting volume	1035	1089	505	1049	1000	359	510			458		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.2	6.6	6.3	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	93	93	91	41	98	94	96			98		
cM capacity (veh/h)	182	198	557	166	224	674	1030			1081		

Volume Total	26	48	141	400	94	24	505	15
Volume Left	12	0	98	41	0	24	0	0
Volume Right	0	48	38	0	94	0	0	25
cSH	190	557	210	1030	1700	1081	1700	1700
Volume to Capacity	0.14	0.09	0.67	0.04	0.06	0.02	0.30	0.00
Queue Length (ft)	12	7	103	3	0	2	0	0
Control Delay (s)	26.9	12.1	51.2	1.3	0.0	8.4	0.0	0.0
Lane LOS	D	B	F	A		A		
Approach Delay (s)	17.2		51.2	1.0		0.4		
Approach LOS	C		F					

Average Delay	7.4		
Intersection Capacity Utilization	72.4%	ICU Level of Service	C

US 550 at Cornelli Lane

Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	9	22	57	9	20	9	248	78	19	244	13
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (veh/h)	7	15	38	98	15	34	67	417	134	33	419	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
vC, conflicting volume	1078	1170	419	1081	1058	417	441			551		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.2	6.6	6.3	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	96	91	94	37	92	95	94			97		
cM capacity (veh/h)	159	171	623	155	200	625	1092			994		

Volume Total	22	38	148	484	134	33	419	22
Volume Left	7	0	98	67	0	33	0	0
Volume Right	0	38	34	0	134	0	0	22
cSH	167	623	194	1092	1700	994	1700	1700
Volume to Capacity	0.13	0.06	0.76	0.06	0.08	0.03	0.25	0.01
Queue Length (ft)	11	5	127	5	0	3	0	0
Control Delay (s)	29.8	11.1	66.2	1.8	0.0	8.7	0.0	0.0
Lane LOS	D	B	F	A		A		
Approach Delay (s)	18.1		66.2	1.4		0.6		
Approach LOS	C		F					

Average Delay		9.2		
Intersection Capacity Utilization		72.7%	ICU Level of Service	C

HCM Unsignalized Intersection Capacity Analysis
18: Trimble Lane & US 550

11/7/2002

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Lane Configurations		↰	↱		✥			↰	↱	↰	↑	↱
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	6	4	27	59	14	29	70	299	101	25	25	7
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (veh/h)	10	7	46	101	24	34	120	514	179	43	560	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
vC, conflicting volume	1446	1579	560	1451	1412	514	572			692		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.2	6.6	6.3	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	86	92	91	0	79	94	88			95		
cM capacity (veh/h)	73	89	518	79	112	551	976			880		

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Volume Total	17	46	160	634	179	43	560	12
Volume Left	10	0	101	120	0	43	0	0
Volume Right	0	46	34	0	179	0	0	12
cSH	79	518	103	976	1700	880	1700	1700
Volume to Capacity	0.22	0.09	1.55	0.12	0.11	0.05	0.33	0.01
Queue Length (ft)	19	7	302	10	0	4	0	0
Control Delay (s)	63.0	12.6	364.1	3.1	0.0	9.3	0.0	0.0
Lane LOS	F	B	F	A		A		
Approach Delay (s)	26.2		364.1	2.4		0.6		
Approach LOS	D		F					

[illegible]			
Average Delay	37.7		
Intersection Capacity Utilization	88.8%	ICU Level of Service	D

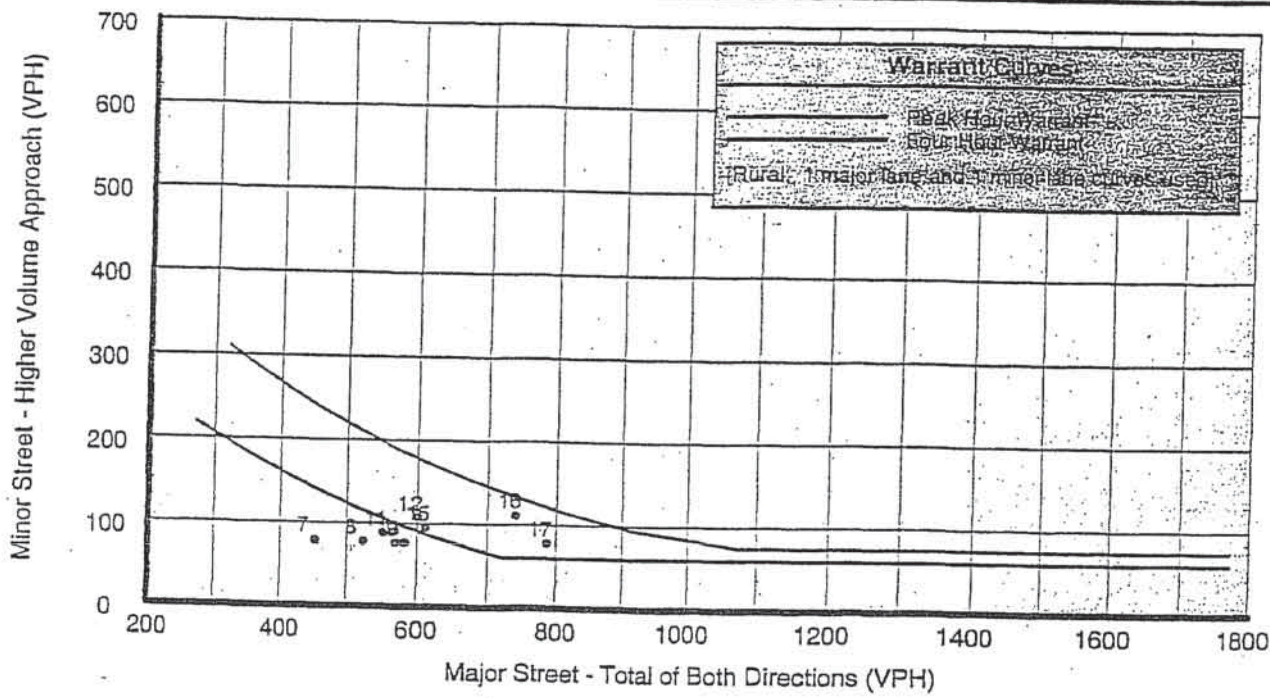
CDOT Region 5 Intersection Study

Year 2002 Raw Counts (Collected: 8/20/02)

SEH, Inc.

Study Name : US550@TrimbleLn_02
Study Date : 11/19/02
Page No. : 2

Signal Warrants - Summary



Analysis of 8-Hour Volume Warrants:

Hour Begin	Major Total	Higher Minor Vol	Dir	Warrant 1 Major Crit	Warrant 1 Minor Crit	Warrant 1 Meets?	Warrant 2 Major Crit	Warrant 2 Minor Crit	Warrant 2 Meets?	Warrant 8 Major Crit	Warrant 8 Minor Crit	Warrant 8 Meets?
00:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
01:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
02:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
03:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
04:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
05:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
06:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
07:00	454	80	WB	[illegible]	105-No	Major	525-No	[illegible]	Minor	[illegible]	84-No	Major
08:00	524	79	WB	[illegible]	105-No	Major	525-No	[illegible]	Minor	[illegible]	84-No	Major
09:00	584	78	WB	[illegible]	105-No	Major	[illegible]	[illegible]	[illegible]	[illegible]	84-No	Major
10:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
11:00	552	89	WB	[illegible]	105-No	Major	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12:00	601	108	WB	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13:00	571	78	WB	[illegible]	105-No	Major	[illegible]	[illegible]	[illegible]	[illegible]	84-No	Major
14:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
15:00	612	96	WB	[illegible]	105-No	Major	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16:00	742	112	WB	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17:00	787	79	WB	[illegible]	105-No	Major	[illegible]	[illegible]	[illegible]	[illegible]	84-No	Major
18:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
19:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
20:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
21:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
22:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
23:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—

CDOT Region 5 Intersection Study

Year 2002 Raw Counts (Collected: 8/20/02)
SEH, Inc.

Study Name : US550@TrimbleLn_02
Study Date : 11/19/02
Page No. : 1

Signal Warrants - Summary

Major Street Approaches

Northbound: US 550
Number of Lanes: 1
Approach Speed: 55
Total Approach Volume: 2,920

Southbound: US 550
Number of Lanes: 1
Approach Speed: 55
Total Approach Volume: 2,507

Minor Street Approaches

Eastbound: Trimble Lane
Number of Lanes: 1

Total Approach Volume: 374

Westbound: Trimble Lane
Number of Lanes: 1

Total Approach Volume: 793

Warrant Summary (Rural values apply.)

Warrant 1 - Minimum Vehicular Volume .... Not Satisfied
Required volumes reached for 2 hours, 8 are needed

Warrant 2 - Interruption of Continuous Traffic .... Not Satisfied
Required volumes reached for 7 hours, 8 are needed

Warrant 3 - Minimum Pedestrian Volume .... Not Satisfied
Required 4 Hr pedestrian volume reached for 0 hour(s) and the single hour volume for 0 hour(s)

Warrant 4 - School Crossing .... Not Satisfied
Number of gaps > .0 seconds (0) exceeds the number of minutes in the crossing period (0).

Warrant 5 - Progressive Movement .... Not Satisfied
No adjacent coordinated signals are present

Warrant 6 - Accident Experience .... Not Satisfied
Number of accidents (-1) is less than minimum (5). Volume minimums are met.

Warrant 7 - Systems Warrant .... Not Satisfied
Major Route conditions not met. No volume requirement met.

Warrant 8 - Combination of Warrants .... Not Satisfied
Required volumes reached for 4 hours, 8 are needed

Warrant 9 - Four Hour Volumes .... Satisfied
Number of hours (4) volumes exceed minimum >= minimum required (4).

Warrant 10 - Peak Hour Delay .... Not Satisfied
Total approach volumes and delays on minor street do not exceed minimums for any hour.

Warrant 11 - Peak Hour Volume .... Not Satisfied
Volumes do not exceed minimums for any hour.

Warrant 12 - Volume Warrant for Traffic Actuated Signals .... Not Evaluated

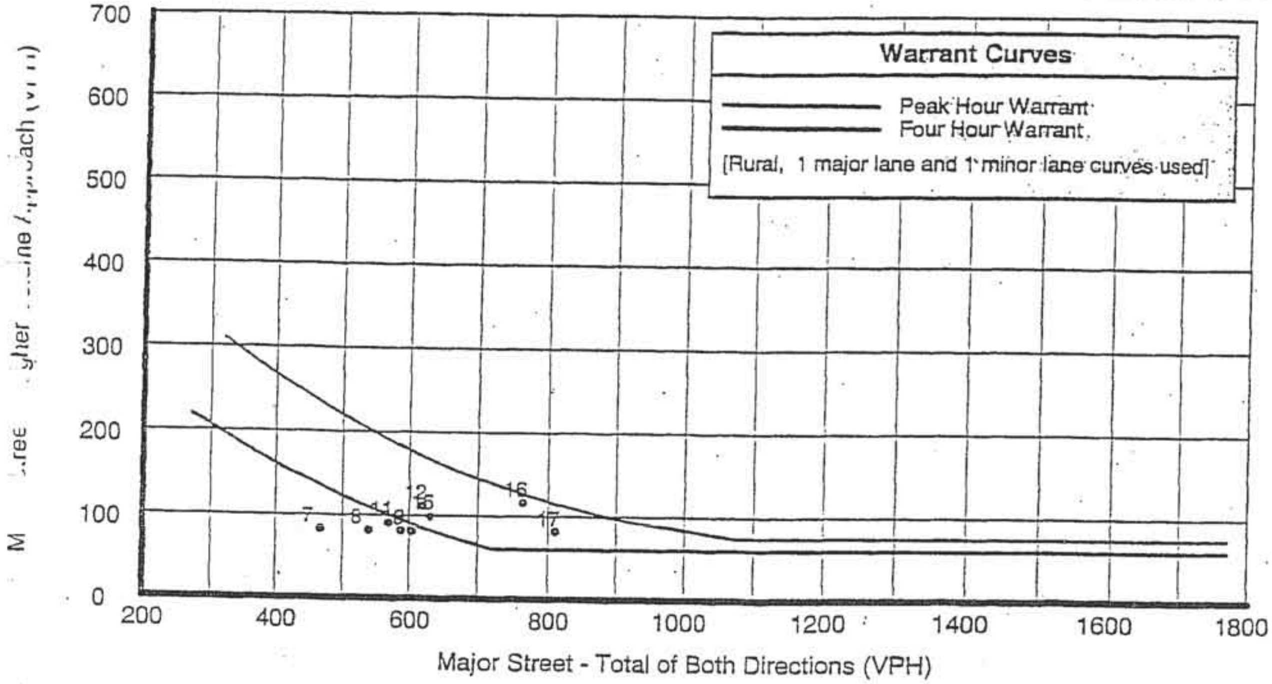
CDOT Region 5 Intersection Study

Year 2003 Factored Counts (Collected: 8/20/02)

SEH, Inc.

Study Name : US550@TrimbleLn_03
Study Date : 11/20/02
Page No. : 2

Signal Warrants - Summary



alysis of 8-Hour Volume Warrants:

lour egin	Major Total	Higher Minor Vol	Higher Minor Dir	Warrant 1 Major Crit	Warrant 1 Minor Crit	Warrant 1 Meets?	Warrant 2 Major Crit	Warrant 2 Minor Crit	Warrant 2 Meets?	Warrant 8 Major Crit	Warrant 8 Minor Crit	Warrant 8 Meets?
:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
1:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
04:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
5:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
:00	467	82	WB	[illegible]	105-No	Major	525-No	[illegible]	Minor	[illegible]	84-No	Major
3:00	540	81	WB	[illegible]	105-No	Major	[illegible]	[illegible]	[illegible]	[illegible]	84-No	Major
:00	603	81	WB	[illegible]	105-No	Major	[illegible]	[illegible]	[illegible]	[illegible]	84-No	Major
:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
1:00	569	91	WB	[illegible]	105-No	Major	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
:00	619	111	WB	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
:00	587	81	WB	[illegible]	105-No	Major	[illegible]	[illegible]	[illegible]	[illegible]	84-No	Major
:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
:00	630	99	WB	[illegible]	105-No	Major	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
00	763	116	WB	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
00	811	81	WB	[illegible]	105-No	Major	[illegible]	[illegible]	[illegible]	[illegible]	84-No	Major
:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
:00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
00	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—

CDOT Region 5 Intersection Study

Year 2003 Factored Counts (Collected: 8/20/02)
SEH, Inc.

Study Name : US550@TrimbleLn_03
Study Date : 11/20/02
Page No. : 1

Signal Warrants - Summary

Major Street Approaches

Northbound: US 550
Number of Lanes: 1
Approach Speed: 55
Total Approach Volume: 3,008

Southbound: US 550
Number of Lanes: 1
Approach Speed: 55
Total Approach Volume: 2,581

Minor Street Approaches

Eastbound: Trimble Lane
Number of Lanes: 1

Total Approach Volume: 383

Westbound: Trimble Lane
Number of Lanes: 1

Total Approach Volume: 823

Warrant Summary (Rural values apply.)

Warrant 1 - Minimum Vehicular Volume .... Not Satisfied
Required volumes reached for 2 hours, 8 are needed

Warrant 2 - Interruption of Continuous Traffic .... Satisfied
Required volumes reached for 8 hours, 8 are needed

Warrant 3 - Minimum Pedestrian Volume .... Not Satisfied
Required 4 Hr pedestrian volume reached for 0 hour(s) and the single hour volume for 0 hour(s)

Warrant 4 - School Crossing .... Not Satisfied
Number of gaps > .0 seconds (0) exceeds the number of minutes in the crossing period (0).

Warrant 5 - Progressive Movement .... Not Satisfied
No adjacent coordinated signals are present

Warrant 6 - Accident Experience .... Not Satisfied
Number of accidents (-1) is less than minimum (5). Volume minimums are met.

Warrant 7 - Systems Warrant .... Not Satisfied
Major Route conditions not met. No volume requirement met.

Warrant 8 - Combination of Warrants .... Not Satisfied
Required volumes reached for 4 hours, 8 are needed

Warrant 9 - Four Hour Volumes .... Satisfied
Number of hours (4) volumes exceed minimum >= minimum required (4).

Warrant 10 - Peak Hour Delay .... Not Satisfied
Total approach volumes and delays on minor street do not exceed minimums for any hour.

Warrant 11 - Peak Hour Volume .... Not Satisfied
Volumes do not exceed minimums for any hour.

Warrant 12 - Volume Warrant for Traffic Actuated Signals .... Not Evaluated

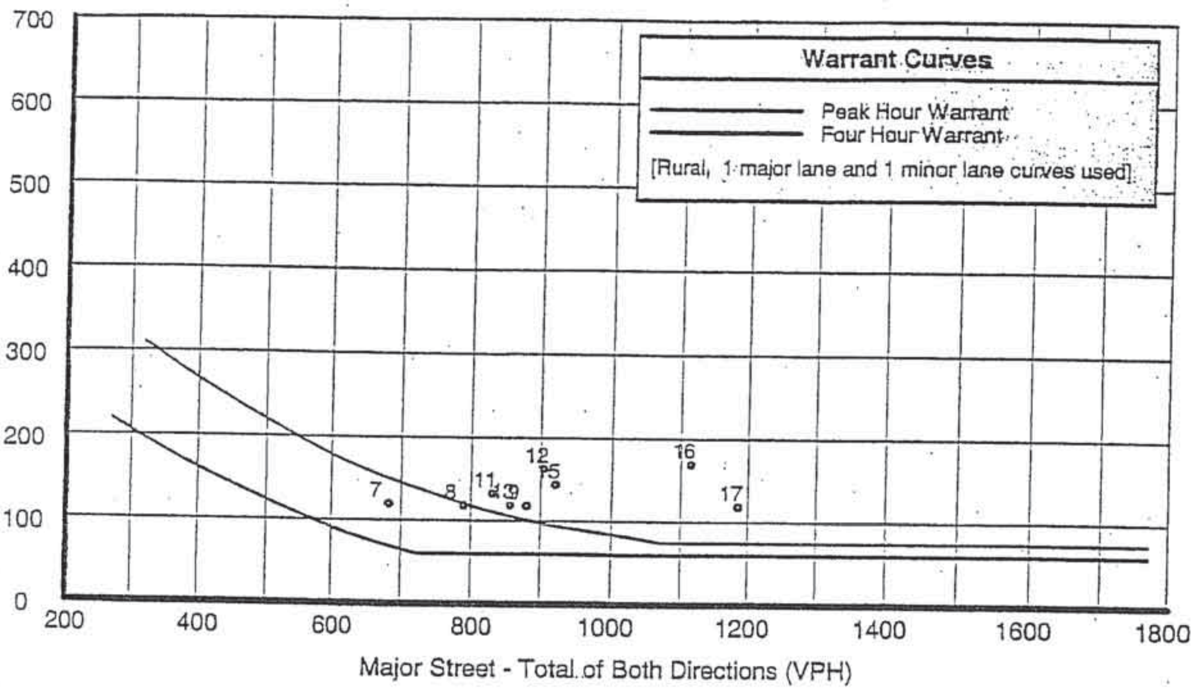
CDOT Region 5 Intersection Study

Year 2023 Factored Counts (Collected: 8/20/02)

SEH, Inc.

Study Name : US550@TrimbleLn_23
Study Date : 11/20/02
Page No. : 2

nal Warrants - Summary



...is of 8-Hour Volume Warrants:

r.l	Major Total	Higher Minor Vol	Higher Minor Dir	Warrant 1 Major Crit	Warrant 1 Minor Crit	Warrant 1 Meets?	Warrant 2 Major Crit	Warrant 2 Minor Crit	Warrant 2 Meets?	Warrant 8 Major Crit	Warrant 8 Minor Crit	Warrant 8 Meets?
	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
	682	120	WB	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	788	118	WB	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	880	118	WB	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
	830	133	WB	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	904	163	WB	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	857	119	WB	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
	920	144	WB	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	1,114	170	WB	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	1,185	119	WB	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—
	0	0	EB	350-No	105-No	—	525-No	52-No	—	420-No	84-No	—

La Plata (Hermosa)
US 550 at Cometti Lane

La Plata (Bayfield)
US 160 at CR 502

La Plata (Durango)
US 160/550 at Sawyer Drive

CDOT Region 5 Intersection Study

Year 2023 Factored Counts (Collected: 8/20/02)

SEH, Inc.

Study Name : US550@TrimbleLn_23
Study Date : 11/20/02
Page No. : 1

Signal Warrants - Summary

Major Street Approaches

Northbound: **US 550**
Number of Lanes: **1**
Approach Speed: **55**
Total Approach Volume: **4,392**

Southbound: **US 550**
Number of Lanes: **1**
Approach Speed: **55**
Total Approach Volume: **3,768**

Minor Street Approaches

Eastbound: **Trimble Lane**
Number of Lanes: **1**

Total Approach Volume: **556**

Westbound: **Trimble Lane**
Number of Lanes: **1**

Total Approach Volume: **1,204**

Warrant Summary **(Rural values apply.)**

Warrant 1 - Minimum Vehicular Volume .... Satisfied
Required volumes reached for 9 hours, 8 are needed

Warrant 2 - Interruption of Continuous Traffic .... Satisfied
Required volumes reached for 9 hours, 8 are needed

Warrant 3 - Minimum Pedestrian Volume .... Not Satisfied
Required 4 Hr pedestrian volume reached for 0 hour(s) and the single hour volume for 0 hour(s)

Warrant 4 - School Crossing .... Not Satisfied
Number of gaps > .0 seconds (0) exceeds the number of minutes in the crossing period (0).

Warrant 5 - Progressive Movement .... Not Satisfied
No adjacent coordinated signals are present

Warrant 6 - Accident Experience .... Not Satisfied
Number of accidents (-1) is less than minimum (5). Volume minimums are met.

Warrant 7 - Systems Warrant .... Not Satisfied
Major Route conditions not met. One or more volume requirement met.

Warrant 8 - Combination of Warrants .... Satisfied
Required volumes reached for 9 hours, 8 are needed

Warrant 9 - Four Hour Volumes .... Satisfied
Number of hours (9) volumes exceed minimum >= minimum required (4).

Warrant 10 - Peak Hour Delay .... Not Satisfied
Total approach volumes and delays on minor street do not exceed minimums for any hour.

Warrant 11 - Peak Hour Volume .... Satisfied
Volumes exceed minimums for at least one hour.

Warrant 12 - Volume Warrant for Traffic Actuated Signals .... Not Evaluated

APPENDIX B
LEVEL OF SERVICE CALCULATIONS

HCS2000™ DETAILED REPORT

General Information		**Site Information**	
Analyst	*Steve Winters*	Intersection	*US 550 & CR 252*
Agency or Co.	*Russell Engineering*	Area Type	*All other areas*
Date Performed	*3/8/2004*	Jurisdiction	*La Plata County, CDOT*
Time Period	*1 hour*	Analysis Year	*2004*
		Project ID	*Trimble Crossing*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	0	1	0	1	1	0	1	1	1	1	1	1
Lane group		LTR		L	TR		L	T	R	L	T	R
Volume, V (vph)	10	11	48	181	43	62	128	548	288	69	585	9
% Heavy vehicles, %HV	7	7	7	7	7	7	7	7	7	7	7	7
Peak-hour factor, PHF	0.71	0.71	0.71	0.77	0.77	0.77	0.88	0.88	0.88	0.91	0.91	0.91
Pretimed (P) or actuated (A)	P	P	P	P	P	P	P	P	P	P	P	P
Start-up lost time, l_1		1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5
Extension of effective green, e		2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Arrival type, AT		3		3	3		3	3	3	3	3	3
Unit extension, UE		3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Filtering/metering, I		1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000
Initial unmet demand, Q_b		1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Ped / Bike / RTOR volumes	0		7	0		9	0		20	0		9
Lane width		12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking maneuvers, N_m												
Buses stopping, N_B		0		0	0		0	0	0	0	0	0
Min. time for pedestrians, G_p		3.2			3.2			3.2			3.2	

Phasing	EW Perm	02	03	04	NS Perm	SB Only	07	08
Timing	G = 15.0	G =	G =	G =	G = 35.0	G = 8.0	G =	G =
	Y = 3	Y =	Y =	Y =	Y = 3	Y = 3	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 67.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted flow rate, v		87		235	125		145	623	305	76	643	0
Lane group capacity, c		359		390	377		894	941	1205	519	1233	1509
v/c ratio, X		0.24		0.60	0.33		0.16	0.66	0.25	0.15	0.52	0.00
		0.23		0.23	0.23		0.53	0.53	0.80	0.69	0.69	1.00

Total green ratio, g/C												
Uniform delay, d_1		21.0		23.1	21.5		8.1	11.5	1.7		5.0	0.0
Progression factor, PF		1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	0.950
Delay calibration, k		0.50		0.50	0.50		0.50	0.50	0.50	0.50	0.50	0.50
Incremental delay, d_2		1.6		6.7	2.3		0.4	3.7	0.5	0.6	1.6	0.0
Initial queue delay, d_3		0.1		0.1	0.1		0.0	0.0	0.0	0.0	0.0	0.0
Control delay		22.7		29.9	23.9		8.5	15.1	2.2		6.5	0.0+
Lane group LOS		C		C	C		A	B	A		A	A
Approach delay	22.7			27.8			10.6					
Approach LOS	C			C			B					
Intersection delay							Intersection LOS					

HCS2000™ Version 4.1c

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LORI MOORE	Intersection	US HWY 550 & CR 252
Agency/Co.	RUSSELL ENGINEERING	Jurisdiction	
Date Performed	11/25/2003	Analysis Year	2006
Analysis Time Period	AM PEAK HOUR		
Project Description	TRIMBLE CROSSING - EXISTING		
East/West Street:	CR 252	North/South Street:	US HWY 550
Intersection Orientation:	North-South	Study Period (hrs):	1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	30	257	68	17	362	4
Peak-Hour Factor, PHF	0.88	0.88	0.88	0.91	0.91	0.91
Hourly Flow Rate, HFR	34	292	77	18	397	4
Percent Heavy Vehicles	1	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	1	1	1	1
Configuration	L	T	R	L	T	R
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	70	4	27	9	10	34
Peak-Hour Factor, PHF	0.77	0.77	0.77	0.71	0.71	0.71
Hourly Flow Rate, HFR	90	5	35	12	14	47
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			1			1
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L		LTR			LTR	
v (vph)	34	18		130			73	
C (m) (vph)	1163	1201		321			437	
v/c	0.03	0.01		0.40			0.17	
95% queue length	0.09	0.05		2.00			0.60	
Control Delay	8.2	8.0		23.8			14.9	
LOS	A	A		C			B	
Approach Delay	--	--	23.8			14.9		
Approach LOS	--	--	C			B		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LORI MOORE	Intersection	US HWY 550 & CR 252
Agency/Co.	RUSSELL ENGINEERING	Jurisdiction	
Date Performed	11/25/2003	Analysis Year	2006
Analysis Time Period	AM PEAK HOUR		
Project Description	TRIMBLE CROSSING - EXISTING & PROJECT		
East/West Street:	CR 252	North/South Street:	US HWY 550
Intersection Orientation:	North-South	Study Period (hrs):	1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	30	257	124	31	362	4
Peak-Hour Factor, PHF	0.88	0.88	0.88	0.91	0.91	0.91
Hourly Flow Rate, HFR	34	292	140	34	397	4
Percent Heavy Vehicles	1	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	1	1	1	1
Configuration	L	T	R	L	T	R
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	115	7	45	9	18	34
Peak-Hour Factor, PHF	0.77	0.77	0.77	0.71	0.71	0.71
Hourly Flow Rate, HFR	149	9	58	12	25	47
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			1			1
Lanes	1	1	0	0	1	0
Configuration	L		TR		LTR	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	L		TR		LTR	
v (vph)	34	34	149		67		84	
C (m) (vph)	1163	1138	235		619		369	
v/c	0.03	0.03	0.63		0.11		0.23	
95% queue length	0.09	0.09	4.69		0.36		0.88	
Control Delay	8.2	8.3	45.9		11.5		17.6	
LOS	A	A	E		B		C	
Approach Delay	--	--	35.2			17.6		
Approach LOS	--	--	E			C		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LORI MOORE	Intersection	US HWY 550 & CR 252
Agency/Co.	RUSSELL ENGINEERING	Jurisdiction	
Date Performed	11/25/2003	Analysis Year	2026
Analysis Time Period	AM PEAK HOUR		

Project Description TRIMBLE CROSSING - GROWTH

East/West Street: CR 252	North/South Street: US HWY 550
Intersection Orientation: North-South	Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	45	383	101	25	529	6
Peak-Hour Factor, PHF	0.88	0.88	0.88	0.91	0.91	0.91
Hourly Flow Rate, HFR	51	435	114	27	581	6
Percent Heavy Vehicles	1	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	1	1	1	1
Configuration	L	T	R	L	T	R
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	102	6	39	13	15	49
Peak-Hour Factor, PHF	0.77	0.77	0.77	0.71	0.71	0.71
Hourly Flow Rate, HFR	132	7	50	18	21	69
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			1			1
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L		LTR			LTR	
v (vph)	51	27		189			108	
C (m) (vph)	993	1031		157			264	
v/c	0.05	0.03		1.20			0.41	
95% queue length	0.16	0.08		26.64			2.02	
Control Delay	8.8	8.6		500.0			28.0	
LOS	A	A		F			D	
Approach Delay	--	--	500.0			28.0		
Approach LOS	--	--	F			D		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LORI MOORE	Intersection	US HWY 550 & CR 252
Agency/Co.	RUSSELL ENGINEERING	Jurisdiction	
Date Performed	11/25/2003	Analysis Year	2026
Analysis Time Period	AM PEAK HOUR		
Project Description	TRIMBLE CROSSING - GROWTH & PROJECT		
East/West Street:	CR 252	North/South Street:	US HWY 550
Intersection Orientation:	North-South	Study Period (hrs):	1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	45	383	157	39	529	6
Peak-Hour Factor, PHF	0.88	0.88	0.88	0.91	0.91	0.91
Hourly Flow Rate, HFR	51	435	178	42	581	6
Percent Heavy Vehicles	1	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	1	1	1	1
Configuration	L	T	R	L	T	R
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	147	9	57	13	23	49
Peak-Hour Factor, PHF	0.77	0.77	0.77	0.71	0.71	0.71
Hourly Flow Rate, HFR	190	11	74	18	32	69
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			1			1
Lanes	1	1	0	0	1	0
Configuration	L		TR		LTR	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	L		TR		LTR	
v (vph)	51	42	190		85		119	
C (m) (vph)	993	976	104		462		221	
v/c	0.05	0.04	1.83		0.18		0.54	
95% queue length	0.16	0.13	48.84		0.67		3.29	
Control Delay	8.8	8.9			14.5		39.9	
LOS	A	A	F		B		E	
Approach Delay	--	--				39.9		
Approach LOS	--	--	F			E		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LORI MOORE	Intersection	US HWY 550 & CR 252
Agency/Co.	RUSSELL ENGINEERING	Jurisdiction	
Date Performed	11/25/2003	Analysis Year	2006
Analysis Time Period	PM PEAK HOUR		
Project Description	TRIMBLE CROSSING - EXISTING		
East/West Street:	CR 252	North/South Street:	US HWY 550
Intersection Orientation:	North-South	Study Period (hrs):	1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	86	368	128	31	401	9
Peak-Hour Factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Hourly Flow Rate, HFR	97	418	145	35	455	10
Percent Heavy Vehicles	1	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	1	1	1	1
Configuration	L	T	R	L	T	R
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	73	17	25	7	5	33
Peak-Hour Factor, PHF	0.77	0.77	0.77	0.71	0.71	0.71
Hourly Flow Rate, HFR	94	22	32	9	7	46
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			1			1
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L		LTR			LTR	
v (vph)	97	35		148			62	
C (m) (vph)	1102	1019		179			317	
v/c	0.09	0.03		0.83			0.20	
95% queue length	0.29	0.11		9.04			0.73	
Control Delay	8.6	8.7		102.1			19.1	
LOS	A	A		F			C	
Approach Delay	--	--	102.1			19.1		
Approach LOS	--	--	F			C		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LORI MOORE	Intersection	US HWY 550 & CR 252
Agency/Co.	RUSSELL ENGINEERING	Jurisdiction	
Date Performed	11/25/2003	Analysis Year	2006
Analysis Time Period	PM PEAK HOUR		
Project Description	TRIMBLE CROSSING - EXISTING & PROJECT		
East/West Street:	CR 252	North/South Street:	US HWY 550
Intersection Orientation:	North-South	Study Period (hrs):	1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	86	368	128	55	401	9
Peak-Hour Factor, PHF	0.88	0.88	0.88	0.91	0.91	0.91
Hourly Flow Rate, HFR	97	418	145	60	440	9
Percent Heavy Vehicles	1	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	1	1	1	1
Configuration	L	T	R	L	T	R
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	147	35	50	7	9	33
Peak-Hour Factor, PHF	0.77	0.77	0.77	0.71	0.71	0.71
Hourly Flow Rate, HFR	190	45	64	9	12	46
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			1			1
Lanes	1	1	0	0	1	0
Configuration	L		TR		LTR	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	L		TR		LTR	
v (vph)	97	60	190		109		67	
C (m) (vph)	1117	1019	130		292		260	
v/c	0.09	0.06	1.46		0.37		0.26	
95% queue length	0.29	0.19	37.58		1.75		1.03	
Control Delay	8.5	8.8	943.5		24.6		23.6	
LOS	A	A	F		C		C	
Approach Delay	--	--	608.5			23.6		
Approach LOS	--	--	F			C		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LORI MOORE	Intersection	US HWY 550 & CR 252
Agency/Co.	RUSSELL ENGINEERING	Jurisdiction	
Date Performed	11/25/2003	Analysis Year	2026
Analysis Time Period	PM PEAK HOUR		

Project Description	TRIMBLE CROSSING- GROWTH
East/West Street: CR 252	North/South Street: US HWY 550
Intersection Orientation: North-South	Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	128	548	191	45	585	13
Peak-Hour Factor, PHF	0.88	0.88	0.88	0.91	0.91	0.91
Hourly Flow Rate, HFR	145	622	217	49	642	14
Percent Heavy Vehicles	1	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	1	1	1	1
Configuration	L	T	R	L	T	R
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	107	25	37	10	7	48
Peak-Hour Factor, PHF	0.77	0.77	0.77	0.71	0.71	0.71
Hourly Flow Rate, HFR	138	32	48	14	9	67
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			1			1
Lanes	1	1	0	0	1	0
Configuration	L		TR		LTR	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	L		TR		LTR	
v (vph)	145	49	138		80		90	
C (m) (vph)	936	804	50		157		127	
v/c	0.15	0.06	2.76		0.51		0.71	
95% queue length	0.55	0.19	48.29		2.90		5.60	
Control Delay	9.6	9.8			51.1		95.0	
LOS	A	A	F		F		F	
Approach Delay	--	--				95.0		
Approach LOS	--	--	F			F		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	LORI MOORE	Intersection	US HWY 550 & CR 252
Agency/Co.	RUSSELL ENGINEERING	Jurisdiction	
Date Performed	11/25/2003	Analysis Year	2026
Analysis Time Period	PM PEAK HOUR		

Project Description	TRIMBLE CROSSING - GROWTH & PROJECT		
East/West Street:	CR 252	North/South Street:	US HWY 550
Intersection Orientation:	North-South	Study Period (hrs):	1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	128	548	288	69	585	13
Peak-Hour Factor, PHF	0.88	0.88	0.88	0.91	0.91	0.91
Hourly Flow Rate, HFR	145	622	327	75	642	14
Percent Heavy Vehicles	1	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	1	1	1	1
Configuration	L	T	R	L	T	R
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	181	43	62	10	11	48
Peak-Hour Factor, PHF	0.77	0.77	0.77	0.71	0.71	0.71
Hourly Flow Rate, HFR	235	55	80	14	15	67
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			1			1
Lanes	1	1	0	0	1	0
Configuration	L		TR		LTR	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	L		TR		LTR	
v (vph)	145	75	235		135		96	
C (m) (vph)	936	732	37		141		62	
v/c	0.15	0.10	6.35		0.96		1.55	
95% queue length	0.55	0.34	102.44		12.81		23.21	
Control Delay	9.6	10.5			205.5			
LOS	A	B	F		F		F	
Approach Delay	--	--						
Approach LOS	--	--	F			F		

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APPENDIX C
ACCIDENT DATA

DATE	TIME	SEV	SERIAL	LOCATION	DRIVER 1	FACTOR 1	ROAD SPEC	SPEED 1	VEH MOVE 1	VEHICLES	CONTOUR	CONDITION	LIGHTING	WEATHER	RAMP	EVENT 1	DIR 1	VEHICLE 1
12/13/1999	2330	PDO	240021	ON	NO IMPAIRMENT	NONE APPARENT	NON-INTERSECTION RURAL	58	GOING STRAIGHT	1	STRAIGHT ON-LEVEL	DRY	DARK-UNLIGHTED	NONE	N	WILD ANIMAL	N	PASS CAR/VAN
12/10/2001	0430	INJ	327516	UNKNOWN	AGE OBSERVED	UNKNOWN	UNKNOWN	01	UNKNOWN	1	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	N		UK	UNKNOWN
[illegible]/20/1999	1640	PDO	881[illegible]	ON	NO IMPAIRMENT	NONE APPARENT	NON-INTERSECTION RURAL	55	MAKING U-TURN	2	STRAIGHT ON-LEVEL	DRY	DAYLIGHT	NONE	N	OVERTAKING TURN	S	PASS CAR/VAN
01/06/2000	2330	PDO	92[illegible]	ON	NO IMPAIRMENT	NONE APPARENT	NON-INTERSECTION RURAL	55	GOING STRAIGHT	1	STRAIGHT ON-LEVEL	DRY	DARK-UNLIGHTED	NONE	N	DOMESTIC ANIMAL	N	PASS CAR/VAN
04/20/1997	[illegible]	PDO	[illegible]	ON	NO IMPAIRMENT	NONE APPARENT	INTERSECTION RELATED	44	PASSING	3	STRAIGHT ON-LEVEL	DRY	DARK-UNLIGHTED	NONE	N	SIDESWIPE SAME DIRECTION	N	TRUCK [illegible]
01/09/1997	[illegible]	INJ	017[illegible]	ON	NO IMPAIRMENT	NONE APPARENT	AT INTERSECTION	15	MAKING LEFT TURN	2	STRAIGHT ON-LEVEL	UNKNOWN	DAYLIGHT	NONE	N	APPROACH TURN	N	PASS CAR/VAN
02/06/1997	[illegible]	PDO	[illegible]	ON	NO IMPAIRMENT	NONE APPARENT	AT INTERSECTION	18	MAKING RIGHT TURN	2	STRAIGHT ON-LEVEL	ICY	DAYLIGHT	NONE	N	BROADSIDE	N	PASS CAR/VAN
07/17/1999	1430	INJ	16[illegible]	ON	NO IMPAIRMENT	DRIVER PREOCCUPIED	AT INTERSECTION	18	MAKING LEFT TURN	2	STRAIGHT ON-LEVEL	DRY	DAYLIGHT	NONE	N	BROADSIDE	N	PASS CAR/VAN
06/24/1999	1320	PDO	18[illegible]	ON	NO IMPAIRMENT	NONE APPARENT	AT INTERSECTION	15	MAKING LEFT TURN	2	STRAIGHT ON-LEVEL	DRY	DARK-UNLIGHTED	NONE	N	BROADSIDE	W	PASS CAR/VAN
01/03/2000	1210	PDO	41[illegible]	ON	NO IMPAIRMENT	NONE APPARENT	AT INTERSECTION	01	GOING STRAIGHT	2	STRAIGHT ON-LEVEL	ICY	DAYLIGHT	SNOW/SLEET/HAIL	N	BROADSIDE	N	PASS CAR/VAN
05/09/2000	1805	INJ	26[illegible]	ON	NO IMPAIRMENT	DRIVER INEXPERIENCE	AT INTERSECTION	15	GOING STRAIGHT	2	STRAIGHT ON-LEVEL	DRY	DAYLIGHT	NONE	N	BROADSIDE	E	PASS CAR/VAN
06/24/1999	1117	PDO	11[illegible]	ON	NO IMPAIRMENT	DRIVER INEXPERIENCE	AT INTERSECTION	18	GOING STRAIGHT	2	STRAIGHT ON-LEVEL	DRY	DARK-UNLIGHTED	UNKNOWN	N	BROADSIDE	W	PASS CAR/VAN
07/09/2000	1330	INJ	312201	ON	NO IMPAIRMENT	NONE APPARENT	AT INTERSECTION	15	STARTING IN TRAFFIC	2	STRAIGHT ON-LEVEL	DRY	DAYLIGHT	NONE	N	BROADSIDE	W	PICKUP TRUCK/UTILITY
07/13/2000	1025	PDO	313321	ON	NO IMPAIRMENT	NONE APPARENT	AT INTERSECTION	18	STARTING IN TRAFFIC	2	STRAIGHT ON-GRADE	DRY	DAYLIGHT	NONE	N	BROADSIDE	E	PASS CAR/VAN
08/01/2001	1730	INJ	300113	ON	NO IMPAIRMENT	NONE APPARENT	AT INTERSECTION	15	GOING STRAIGHT	2	STRAIGHT ON-LEVEL	DRY	DAYLIGHT	NONE	N	BROADSIDE	W	PASS CAR/VAN
01/15/2002	1230	INJ	300011	ON	NO IMPAIRMENT	NONE APPARENT	AT INTERSECTION	35	MAKING LEFT TURN	2	STRAIGHT ON-LEVEL	DRY	DAYLIGHT	NONE	N	BROADSIDE	W	PICKUP TRUCK/UTILITY
08/04/2001	[illegible]	PDO	[illegible]	OFF LEFT	ALCOHOL	NONE APPARENT	AT INTERSECTION	35	MAKING RIGHT TURN	1	STRAIGHT ON-LEVEL	DRY	DARK-LIGHTED	NONE	N	SIGN	N	PASS CAR/VAN
01/03/1998	[illegible]	PDO	[illegible]	OFF RIGHT	NOT OBSERVED	NONE APPARENT	NON-INTERSECTION RURAL	18	GOING STRAIGHT	1	STRAIGHT ON-LEVEL	ICY	DAYLIGHT	SNOW/SLEET/HAIL	N	SIGN	N	PASS CAR/VAN

Highway: [illegible] Begin: [illegible] End: [illegible] From: [illegible] To: [illegible]

Severity

PDO:	11	
INJ:	7	13 :Injured
FAT:	0	0 :Killed
Total:	[illegible]	

Multi-Vehicle

One Vehicle:	5
Two Vehicles:	13
Three or More:	0
Unknown:	0
Total:	18

Location

On Road:	15	Off in Median:	0
Off Road Left:	1	Unknown:	1
Off Road Right:	1		
Off Road at Tee:	0	Total:	[illegible]

Accident Type

Overturning:	0	Domestic Animal:	1	Tree:	0
Other Non Collision:	0	Wild Animal:	1	Large Boulder:	0
School Age Peds:	0	Light/Utility Pole:	0	Rocks in Roadway:	0
Other Pedestrians:	0	Traffic Signal Pole:	0	Barricade:	0
Broadside:	10	Sign:	2	Wall/Building:	0
Head On:	0	Bridge Rail:	0	Crash Cushion:	0
Rear End:	0	Guard Rail:	0	Mailbox:	0
Sideswipe (Same):	1	Median Barrier:	0	Other Fixed Object:	0
Sideswipe (Opposite):	0	Bridge Abutment:	0	Involving Other Object:	0
Approach Turn:	1	Column/Pier:	0	Road Maintenance Equipment:	0
Overtaking Turn:	1	Culvert/Headwall:	0	Unknown:	1
Parked Motor Vehicle:	0	Embankment:	0	Total:	18
Railway Vehicle:	0	Curb:	0		
Bicycle:	0	Delineator Post:	0	Total Fixed Objects:	2
Motorized Bicycle:	0	Fence:	0	Total Other Objects:	0

Lighting Conditions

Daylight:	11
Dawn or Dusk:	0
Dark - Lighted:	1
Dark - Unlighted:	5
Unknown:	1
Total:	18

Weather Conditions

None:	14	Dust:	0
Rain:	0	Wind:	0
Snow/Sleet/Hail:	2	Unknown:	2
Fog:	0	Total:	18

Road Description

At Intersection:	12
At Driveway Access:	0
Intersection Related:	1
Non Intersection Urban:	0
In Alley:	0
Non Intersection Rural:	4
Highway Interchange:	0
Unknown:	1
Total:	18

Road Conditions

Dry:	13
Wet:	0
Muddy:	0
Snowy:	0
Icy:	3
Slushy:	0
Foreign Material:	0
With Road Treatment:	0
Dry w/Icy Road Treatment:	0
Wet w/Icy Road Treatment:	0
Snowy w/Icy Road Treatment:	0
Icy w/Icy Road Treatment:	0
Slushy w/Icy Road Treatment:	0
Unknown:	2
Total:	[illegible]

Mainline/Ramps/Frontage Rds

Mainline:	18
Crossroad (Ramp A):	0
Frontage Rd:	0

Ramps

B:	0	H:	0
C:	0	I:	0
D:	0	J:	0
E:	0	K:	0
F:	0	T:	0
G:	0		

Intsx Frontage/Ramps

M:	0	N:	0
O:	0	P:	0

		HOV Lanes:	0
Uknwn:	0	Total:	18

Accident Rates

PDO:	0.67 MVMT	Total:	1.10 MVMT
Injury:	0.43 MVMT		
Fatal:	0.00 100 MVMT		

ADT: [illegible] WHI: [illegible] Length: [illegible] Weighted Average Accident Rate: [illegible] Coris File: [illegible]

Any intentional or inadvertant release of this data or any data derived from its use shall not constitute a waiver of privilege pursuant to 23 USC 409.

APPENDIX F:
Access Permit – 506073

COLORADO DEPARTMENT OF TRANSPORTATION

STATE HIGHWAY ACCESS PERMIT

CDOT Permit No. 506073

State Highway No/Mp/Side 550B/030.330/R

Permit fee	Date of transmittal	Region/Section/Patrol	Local Jurisdiction
300.00	07/14/2006	05/03/11	La Plata County

The Permittee(s);

La Plata County - Trimble Ln
1060 E. Main Ave.
Durango, CO 81301

Trimble Crossing L.P.
5400 W. Plano Parkway, Ste 200
Plano, TX 75093

Applicant;

Russell Engineering
934 Main Ave
Durango, CO 81301

PAID #2020 7/24/06 ICW

is hereby granted permission to have an access to the state highway at the location noted below. The access shall be constructed, maintained and used in accordance with this permit, including the State Highway Access Code and any attachments, terms, conditions and exhibits. This permit may be revoked by the issuing authority if at any time the permitted access and its use violate any parts of this permit. The issuing authority, the Department and their duly appointed agents and employees shall be held harmless against any action for personal injury or property damage sustained by reason of the exercise of the permit.

Location:

Access is to be located on the East side of State Highway 550, a distance of approximately 1748 feet north of milepost 30 on the right side.

Access to Provide Service to:

A public street connection known as County Road 252, which includes the proposed Trimble Crossing, LLC Development, consisting of the uses as approved in the Traffic Impact Report for the Trimble Crossing, LLC Development, re-submittal dated June 10, 2004, prepared by Russell Engineering, Inc

Other terms and conditions:

* See Attached Pages 2 and 3 and Other Enclosures for Additional Terms and Conditions.

RECEIVED
JUL 24 2006
COLORADO DEPT. OF TRANSPORTATION
REGION 5
TRAFFIC & SAFETY

MUNICIPALITY OR COUNTY APPROVAL

Required only when the appropriate local authority retains issuing authority.

By (x)	Date	Title

Upon the signing of this permit the permittee agrees to the terms and conditions and referenced attachments contained herein. All construction shall be completed in an expeditious and safe manner and shall be finished within 45 days from Initiation. The permitted access shall be completed in accordance with the terms and conditions of the permit prior to being used.

The permittee shall notify Robert Butero with the Colorado Department of Transportation in Durango at 970-382-9180 at least 48 hours prior to commencing construction within the State Highway right-of-way.

The person signing as the permittee must be the owner or legal representative of the property served by the permitted access and have full authority to accept the permit and its terms and conditions.

	Date
Permittee (x) **La Plata County declined to sign.**	
Permittee (x) Mgr of G.P. Trimble Crossing LLC General Partner	7/20/06
Applicant (x) Michael Russell	7/20/06

This permit is not valid until signed by a duly authorized representative of the Department.
COLORADO DEPARTMENT OF TRANSPORTATION

By (x)	Date (of issue)	Title
	7/24/06	Access Program Manager

Copy Distribution: Required: 1.Region 2.Applicant 3.Staff Access Section

Make copies as necessary for: Local Authority, MTCE Patrol, Inspector, Traffic Engineer

Previous editions are obsolete and may not be used
CDOT Form #101 8/98

The following paragraphs are excerpts of the State Highway Access Code. These are provided for your convenience but do not alleviate compliance with all sections of the Access Code. A copy of the State Highway Access Code is available from your local issuing authority (local government) or the Colorado Department of Transportation (Department). When this permit was issued, the issuing authority made its decision based in part on information submitted by the applicant, on the access category which is assigned to the highway, what alternative access to other public roads and streets is available, and safety and design standards. Changes in use or design not approved by the permit or the issuing authority may cause the revocation or suspension of the permit.

APPEALS

1. Should the permittee or applicant object to the denial of a permit application by the Department or object to any of the terms or conditions of a permit placed there by the Department, the applicant and permittee (appellant) have a right to appeal the decision to the [Transportation] Commission [of Colorado]. To appeal a decision, submit a request for administrative hearing to the Transportation Commission of Colorado within 60 days of transmittal of notice of denial or transmittal of the permit for signature. Submit the request to the Transportation Commission of Colorado, 4201 East Arkansas Avenue, Denver, Colorado 80222-3400. The request shall include reasons for the appeal and may include changes, revisions, or conditions that would be acceptable to the permittee or applicant.

2. Any appeal by the applicant or permittee of action by a local issuing authority shall be filed with the local authority and be consistent with the appeal procedures of the local authority.

3. In submitting the request for administrative hearing, the appellant has the option of including within the appeal a request for a review by the Department's internal administrative review committee pursuant to [Code] subsection 2.10. When such committee review is requested, processing of the appeal for formal administrative hearing, 2.9(5) and (6), shall be suspended until the appellant notifies the Commission to proceed with the administrative hearing, or the appellant submits a request to the Commission or the administrative law judge to withdraw the appeal. The two administrative processes, the internal administrative review committee, and the administrative hearing, may not run concurrently.

4. Regardless of any communications, meetings, administrative reviews or negotiations with the Department or the internal administrative review Committee regarding revisions or objections to the permit or a denial, if the permittee or applicant wishes to appeal the Department's decision to the Commission for a hearing, the appeal must be brought to the Commission within 60 days of transmittal of notice of denial or transmittal of the permit.

PERMIT EXPIRATION

1. A permit shall be considered expired if the access is not under construction within one year of the permit issue date or before the expiration of any authorized extension. When the permittee is unable to commence construction within one year after the permit issue date, the permittee may request a one year extension from the issuing authority. No more than two one-year extensions may be granted under any circumstances. If the access is not under construction within three years from date of issue the permit will be considered expired. Any request for an extension must be in writing and submitted to the issuing authority before the permit expires. The request should state the reasons why the extension is necessary, when construction is anticipated, and include a copy of page 1 (face of permit) of the access permit. Extension approvals shall be in writing. The local issuing authority shall obtain the concurrence of the Department prior to the approval of an extension, and shall notify the Department of all denied extensions within ten days. Any person wishing to reestablish an access permit that has expired may begin again with the application procedures. An approved Notice to Proceed, automatically renews the access permit for the period of the Notice to Proceed.

CONSTRUCTION

1. Construction may not begin until a Notice to Proceed is approved. (Code subsection 2.4]

2. The construction of the access and its appurtenances as required by the terms and conditions of the permit shall be completed at the expense of the permittee except as provided in subsection 2.14. All materials used in the construction of the access within the highway right-of-way or on permanent easements, become public property. Any materials removed from the highway right-of-way will be disposed of only as directed by the Department. All fencing, guard rail, traffic control devices and other equipment and materials removed in the course of access construction shall be given to the Department unless otherwise instructed by the permit or the Department inspector.

3. The permittee shall notify the individual or the office specified on the permit or Notice to Proceed at least two working days prior to any construction within state highway right-of-way. Construction of the access shall not proceed until both the access permit and the Notice to Proceed are issued. The access shall be completed in an expeditious and safe manner and shall be finished within 45 days from initiation of construction within the highway right-of-way. A construction time extension not to exceed 30 working days may be requested from the individual or office specified on the permit.

4. The issuing authority and the Department may inspect the access during construction and upon completion of the access to ensure that all terms and conditions of the permit are met. Inspectors are authorized to enforce the conditions of the permit during construction and to halt any activities within state right-of-way that do not comply with the provisions of the permit, that conflict with concurrent highway construction or maintenance work, that endanger highway

property, natural or cultural resources protected by law, or the health and safety of workers or the public.

5. Prior to using the access, the permittee is required to complete the construction according to the terms and conditions of the permit. Failure by the permittee to abide by all permit terms and conditions shall be sufficient cause for the Department or issuing authority to initiate action to suspend or revoke the permit and close the access. If in the determination of the Department or issuing authority the failure to comply with or complete the construction requirements of the permit create a highway safety hazard, such shall be sufficient cause for the summary suspension of the permit. If the permittee wishes to use the access prior to completion, arrangements must be approved by the issuing authority and Department and included in the permit. The Department or issuing authority may order a halt to any unauthorized use of the access pursuant to statutory and regulatory powers. Reconstruction or improvement of the access may be required when the permittee has failed to meet required specifications of design or materials. If any construction element fails within two years due to improper construction or material specifications, the permittee shall be responsible for all repairs. Failure to make such repairs may result in suspension of the permit and closure of the access.

6. The permittee shall provide construction traffic control devices at all times during access construction, in conformance with the M.U.T.C.D. as required by section 42-4-104, C.R.S., as amended.

7. A utility permit shall be obtained for any utility work within highway right-of-way. Where necessary to remove, relocate, or repair a traffic control device or public or private utilities for the construction of a permitted access, the relocation, removal or repair shall be accomplished by the permittee without cost to the Department or issuing authority, and at the direction of the Department or utility company. Any damage to the state highway or other public right-of-way beyond that which is allowed in the permit shall be repaired immediately. The permittee is responsible for the repair of any utility damaged in the course of access construction, reconstruction or repair.

8. In the event it becomes necessary to remove any right-of-way fence, the posts on either side of the access shall be securely braced with an approved end post before the fence is cut to prevent any slacking of the remaining fence. All posts and wire removed are Department property and shall be turned over to a representative of the Department.

9. The permittee shall ensure that a copy of the permit is available for review at the construction site at all times. The permit may require the contractor to notify the individual or office specified on the permit at any specified phases in construction to allow the field inspector to inspect various aspects of construction such as concrete forms, subbase, base course compaction, and materials specifications. Minor changes and additions may be ordered by the Department or local authority field inspector to meet unanticipated site conditions.

10. Each access shall be constructed in a manner that shall not cause water to enter onto the roadway or shoulder, and shall not interfere with the existing drainage system on the right-of-way or any adopted municipal system and drainage plan..

11. By accepting the permit, permittee agrees to save, indemnify, and hold harmless to the extent allowed by law, the issuing authority, the Department, its officers, and employees from suits, actions, claims of any type or character brought because of injuries or damage sustained by any person resulting from the permittee's use of the access permit during the construction of the access.

CHANGES IN ACCESS USE AND PERMIT VIOLATIONS

1. It is the responsibility of the property owner and permittee to ensure that the use of the access to the property is not in violation of the Code, permit terms and conditions or the Act. The terms and conditions of any permit are binding upon all assigns, successors-in-interest, heirs and occupants. If any significant changes are made or will be made in the use of the property which will affect access operation, traffic volume and or vehicle type, the permittee or property owner shall contact the local issuing authority or the Department to determine if a new access permit and modifications to the access are required.

2. When an access is constructed or used in violation of the Code, section 43-2-147(5)(c), C.R.S., of the Act applies. The Department or issuing authority may summarily suspend an access permit and immediately order closure of the access when its continued use presents an immediate threat to public health, welfare or safety. Summary suspension shall comply with article 4 of title 24, C.R.S.

MAINTENANCE

1. The permittee, his or her heirs, successors-in-interest, assigns, and occupants of the property serviced by the access shall be responsible for meeting the terms and conditions of the permit, the repair and maintenance of the access beyond the edge of the roadway including any cattle guard and gate, and the removal or clearance of snow or ice upon the access even though deposited on the access in the course of Department snow removal operations. Within unincorporated areas the Department will keep access culverts clean as part of maintenance of the highway drainage system. However, the permittee is responsible for the repair and replacement of any access-related culverts within the right-of-way. Within incorporated areas, drainage responsibilities for municipalities are determined by statute and local ordinance. The Department will maintain the roadway including auxiliary lanes and shoulders, except in those cases where the access installation has failed due to improper access construction and/or failure to follow permit requirements and specifications in which case the permittee shall be responsible for such repair. Any significant repairs such as culvert replacement, resurfacing, or changes in design or specifications, requires authorization from the Department.

ACCESS PERMIT TERMS & CONDITIONS

1. This permit #506073 is issued to permit and allow the reconstruction of an existing La Plata County Road known as County Road 252 and A.K.A. Trimble Lane, to be a signalized public intersection with gates at the railroad and related auxiliary and highway improvements to State Highway 550 as warranted by the approved Traffic Impact Study dated June 10, 2004, located approximately Milepost 30.331 right. The terms and conditions of previously issued Permit Number 591018, issued to Redcliff Development and La Plata County, will remain valid.

2. The access and improvements will jointly serve that indicated on Page one (1), a public street connection known as County Road 252, which includes the proposed Trimble Crossing, LLC Development, consisting of the uses as approved in the Traffic Impact Report for the Trimble Crossing, LLC Development, re-submittal dated June 10, 2004, prepared by Russell Engineering, Inc. In regard to future development on County Road 252, CDOT will review changes on property that takes access from County Road 252 to State Highway 550, and will determine if, based on the degradation of the intersection below an acceptable level of service "D" for the category of highway that State Highway 550 currently enjoys, a traffic study is needed. If the traffic study is needed in the sole judgment of CDOT, the traffic study will be completed at no cost to CDOT and the new development will be required to mitigate any impacts resulting from an anticipated unacceptable level of service at the intersection.

3. The Permittee(s) is required to install a full-movement public signalized intersection, complete with railroad gates and all other warranted improvements on State Highway 550 and County Road 252 for this access, in conformance with Section Four of the State Highway Access Code; Volume Two, Colorado Code of Regulations 601-1, as amended. The signal and auxiliary lane/highway improvement design plans will be provided and stamped by a Colorado registered professional engineer.

4. Prior to the issuance of the Notice to Proceed, the Permittee(s) will furnish the Colorado Department of Transportation (CDOT) a minimum of five (5) stamped sets of the final approved design plans. The Department will incorporate the stamped plans, which must first be completed to the Department's satisfaction, as part of this permit upon acceptance thereof. A performance bond to CDOT that will insure completion of the required highway improvements and all related intersection improvements in conformance with all CDOT standards and specification will be required to be in place before construction is allowed to commence. The bond must be in the amount of at least 110% of the cost of the construction. A Cost Estimate and a draft of the bond must be provided to CDOT for review and approved by CDOT before acceptance of the final bond and before construction is allowed to commence. When the final design plans, including, but not limited to material specifications and Certifications of Compliance, are accepted and approved, and all other requirements stated herein are completed as required, a Notice To Proceed will be issued that will allow commencement of construction. When accepted and approved, the final design plans will be labeled "EXHIBIT "A" and signed as approved by CDOT. They will be referred to as "EXHIBIT "A", reserved" in the remainder of the terms and conditions of this permit.

5. CDOT standards, specifications and regulations will override the design plans should an oversight, omission or conflict occur. CDOT assumes no liability or responsibility whatsoever for the accuracy, completeness or correctness of the Permittee(s)'s design plans (EXHIBIT "A", reserved). Any design plan errors are the sole responsibility of the Permittee(s)/design engineer.

6. If necessary, minor changes, corrections, and/or additions to this permit will be ordered by the Region 5 Access Program Manager or other authorized Region 5 CDOT representative to meet unanticipated site conditions.

7. Construction of improvements within the highway right-of-way will be in compliance with CDOT's Roadway Design Manual "Typical Section", Section 300 regarding the hinge point, point of slope selection, "Z" slope, shoulder gravel and topsoil placement, etc. Cut or embankment slopes will not be steeper than 3:1 within the highway right-of-way unless otherwise allowed by the Department.

8. **A COPY OF THIS PERMIT AND THE VALIDATED NOTICE TO PROCEED MUST BE ON THE JOB WITH THE CONTRACTOR AT ALL TIMES OR ANY WORK ONSITE AND OFFSITE WILL BE ORDERED TO BE IMMEDIATELY SUSPENDED UNTIL THIS TERM IS COMPLIED WITH.**

9. Incorporated as part of this permit are the following: Application for Access Permit, (Form No. 137), Permit Pages 1-3 and Page 101a, Access Permit Terms and Conditions Pages 1 through 9, EXHIBIT "A", reserved.

10. This permit is issued in accordance with the 1998 Access Code and is based upon the information submitted by the Permittee(s). Any changes in the herein permitted type and use and/or volume of traffic using the access, drainage, or other operational aspects will render this permit void, requiring that a new application be submitted for review based upon currently existing and anticipated future conditions.

11. The access will be constructed in accordance with the approved design plans (EXHIBIT "A", reserved).

12. You must contact the Region 5 Access Program Manager at 3803 North Main Avenue, Durango, Colorado or telephone (970) 385-3626 and leave a message to meet and obtain a Notice To Proceed, a minimum of five working days prior to beginning any access improvements or construction of any kind within the highway right-of-way. This includes but is not limited to the installation of side drain culverts and fencing. Failure to comply with this condition will result in revocation of this permit. **PRIOR TO THE NOTICE TO PROCEED IS ISSUED**, a construction schedule must be submitted to the Region 5 Access Program Manager for approval of any work within the highway right-of-way and any subsequent revisions must be submitted for approval.

13. A construction traffic control plan must be submitted to the Region 5 Access Program Manager, 3803 Main Avenue, Suite 100, Durango, Colorado 81301, or telephone (970) 385-3626 for inspection and approval, a minimum of five (5) working days prior to commencement of construction. The traffic control plan must be in conformance with Manual On Uniform Traffic Control Devices, and all other applicable standards. No Lane closures or traffic detours of any nature will be allowed unless pre-approved and authorized in writing by CDOT.

14. No disruption of traffic flow, highway lane closures or one-way traffic will be allowed during the morning (7:00 A.M. - 8:30 A.M.) and evening (4:30 P.M. - 6:00 P.M.) peak hour traffic flows, unless otherwise authorized in writing by CDOT.

15. No work within the highway right-of-way will be allowed on Saturdays, Sundays, legal holidays, or during periods of adverse weather conditions.

16. All construction activities within the state highway right-of-way will not be allowed to begin before sunrise and will be required to cease prior to sunset. Traffic control operations may begin one half hour before sunrise and continue until one half hour after sunset.

17. The use of appropriate advanced warning and construction signs, flasher barricades and flagging personnel are required at all times during construction. These devices will be located within the State Highway 160 right-of-way and will be in conformance with the Manual On Uniform Traffic Control Devices, Part VI and the Colorado Supplement.

18. Any open cuts that will be left overnight will be barricaded with slashed vertical panels as set forth in the Manual On Uniform Traffic Control Devices, Part VI.

19. All existing highway signs within the limits of the construction activities will be removed and delivered to the CDOT Maintenance Shop for storage and future replacement by the Permittee(s) unless otherwise agreed to by CDOT and Permittee(s). Installation will be as directed by CDOT.

20. All temporary pavement marking will be installed by the Permittee(s) in conformance with the CDOT, Division of Highways, State of Colorado, Standard Specifications for Road and Bridge Construction (1999 or most current edition), Section 627 and all other applicable State standards.

21. All final signing and striping will be installed by the Permittee(s) in conformance with the Colorado M&S Standards, Typical Pavement Markings (S-627-1), unless otherwise agreed to by CDOT and Permittee(s). A final signing and striping plan will be submitted to the Region 5 Permit Unit Manager a minimum of five (5) working days prior to the anticipated striping date.

22. Commencement of the final striping will not proceed without prior authorization in writing from CDOT. All final striping must follow the pavement joints.

23. All required access improvements will be installed prior to the herein authorized use of this access.

24. The Permittee(s)/contractor will be responsible for keeping the State Highway 550 highway travel lanes clear of any mud or debris tracked onto it throughout the construction of the signal and auxiliary lane improvements. Any mud or debris which is tracked onto the highway will be removed daily or as otherwise directed by the Maintenance Foreman. If mud and debris become a safety hazard to the traveling public, as determined by CDOT, all activities causing the mud and debris on the highway will be shut down immediately and a plan that addresses mitigation of the hazards must be submitted to CDOT for review and be approved by CDOT before the activities will be allowed to recommence.

25. **PRIOR** to the start of construction, a proposed mix design for hot bituminous pavement must be submitted to the CDOT Region 5 Access Program Manager for approval. The mix design will be current (<1 year old). Construction will **NOT** begin **PRIOR** to obtaining mix design approval from the Materials Engineer. Also, **PRIOR** to the start of construction, **ALL** aggregate base materials must be approved by the Region 5 Permit Unit Manager.

26. Auxiliary lane design and construction will be performed in accordance with applicable portions of the current editions of the following manuals and documents:

    A. Current CDOT Roadway Design Manual.
    B. Current CDOT Field Materials Manual.
    C. Current CDOT Laboratory Manual of Test Procedures.
    D. Current CDOT Construction Manual.
    E. Current CDOT M&S Standards.
    F. Current CDOT Standard Specifications for Road and Bridge Construction.
    G. CDOT Supplemental Specifications to the current Standard Specifications for Road and Bridge Construction.
    H. Revisions to the Standard and Supplemental Specifications included herein.
    I. CDOT Standard Plans and New and Revised Standards.
    J. Current Manual on Uniform Traffic Control Devices for Streets and Highways and the Colorado Supplement thereto.
    K. Current AASHTO Policy on Geometric design of Highways and Streets.
    L. Transportation and Traffic Engineering Handbook.
    M. Trip Generation Manual.
    N. 1998 State Highway Access Code, Volume 2, Code of Regulations 601-1, as amended.
    O. Current AASHTO Roadside Design Guide.

27. Materials will be placed in separate courses at the depths shown on the plans (EXHIBIT "A", reserved) in conformance with CDOT, Division of Highways, State of Colorado Standard Specifications for Road and Bridge Construction, 1999 Edition or the most current edition.

28. The required depth of bituminous pavement will be determined by a proper pavement design analysis and will be provided and stamped by a Colorado registered professional engineer. A 2-inch overlay is required over the entire length of the reconstruction/widening. The required depths will indicate compacted material. If a pavement design is not submitted, the minimum required pavement structure depths are as follows:

Hot Bituminous Pavement	6 inches (This includes the final 2-inch overlay)
Aggregate Base Course (Class 6)	6 inches
Aggregate Base Course (Class 1 or 2)	12 inches

29. Excavation and Embankment operations will conform to the requirements of Section 203 of the Standard Specifications.

30. Excavation and Backfill for Structures will conform to the requirements of Section 206 of the Standard Specifications, as modified by the attached Special Provision.

31. Placement of base course materials will be in accordance with Section 304 of the Standard Specifications. Compaction will be in conformance with AASHTO T 180 or T 99, whichever is applicable for the soil conditions in the Durango area as approved by the Region 5 Permit Unit Manager **PRIOR** to any placement.

32. Aggregate Base Course will conform to the requirements of Section 304 of the Standard Specifications, amended as follows:

A. Subsection 304.02 will include the following:
i) Materials for the sub-base will be Aggregate Base Course (Class 1 or 2) as shown in subsection 703.03.
ii) Materials for the base course will be Aggregate Base Course (Class 6) as shown in subsection 703.03.
iii) The Aggregate Base Course (Class 1 or 2) and (Class 6) must meet all requirements and have resistance values of at least 70 and 78, respectively, when tested by the Hveem Stabilometer method.

B. Subsection 304.04 will include the following:
i) The sub-grade on which the Aggregate Base Course will be placed will be frost-free.

33. Minimum construction material testing will include:

A. Aggregate Base Course will be sampled in accordance with CP-30.

i) Gradation (CP-31), Atterberg Limits (AASHTO T89 & T90, and in place density (CP-22 or CP-80) will be determined every 2,000 tons, or fraction thereof, for Class 1 or 2 Aggregate Base Course material. R-values will be a minimum of 70 or equivalent.

ii) Gradation (CP-31), Atterberg Limits (AASHTO T89 or T90), and in place density(CP-22 or CP-80) will be determined every 2,000 tons, or fraction thereof, for Class 6 Aggregate Base Course material. R-values will be a minimum of 78 or equivalent.

B. Hot Bituminous Pavement

i) Gradation (sampled in accordance with CP-30, CP-31) determination will be performed every 1,000 tons, or fraction thereof, for Hot Bituminous Pavement Grading S or SX. Project testing will follow CDOT testing CP-31.

ii) Asphalt content testing will be performed every 500 tons, or fraction thereof, for Hot Bituminous Pavement Grading S or SX. Project sampling will follow CDOT procedure CP-41 and CP-55 and testing procedure CP-42 or CP-85.

iii) In place density testing will be performed every 500 tons, or fraction thereof, for Hot Bituminous Pavement. Project testing will follow CDOT testing procedure CP-44 or CP-81.

C. Note: CP's are testing procedures included in the CDOT Field Materials Manual

D. Certified test results for each item will be submitted to the CDOT Region 5 Materials Engineer as soon as those results become available. Out of specification material will be replaced with acceptable material.

34. Construction of sub-grade, embankments and backfill will comply with Section 203 of the CDOT Standard Specifications for Road and Bridge Construction.

35. Compaction of Hot Bituminous Pavement will comply with Section 401-17 of the CDOT Standard Specifications for Road and Bridge Construction.

36. Hot Bituminous Pavement will conform to the requirements of Sections 401 and 403 of the Standard Specifications, modified for this project by the attached Special Provisions.

37. Prime Coat and Tack Coat will conform to the requirements of Section 407 of the Standard Specifications

38. Structural Concrete will conform to the requirements of Section 601 of the Standard Specifications and Supplemental Specifications, as modified by the attached Special Provision.

39. Any layer of bituminous pavement that is to have a succeeding layer placed thereon will be completed full width before succeeding layers are placed. No layer will be less than 2 inches. Placement will be in conformance with Section 401.16 of the CDOT Standard Specifications for Road and Bridge Construction.

40. The following materials will be used in conformance with the standard specifications, within the highway right-of-way:

    (a) Item 304 - Aggregate Base Course - Class 6, and Class 1 or 2
    (b) Item 403 - Hot Bituminous Pavement Grading S or SX

41. The Hot Bituminous Pavement (HBP Grading S and SX) job mix formula and asphalt cement content will be approved by the Region 5 Materials Engineer prior to placement. The CPL 5115 method will be used in determining the job mix formula. Minimum stability of 28 and a lime additive will be used. The mix will meet a minimum TSR of 80 for the Lottman test. The Dry Split Tensile will meet a minimum of 30.

42. Certified tests of each layer of material will be submitted to the Region 5 Access Program Manager as soon as each test is complete. Out of specification material will be removed and replaced with acceptable material.

43. The contractor/Permittee(s) will follow the applicable construction specifications set forth by CDOT in the latest edition of the Standard Specifications for Road and Bridge Construction.

44. The existing asphalt shoulder edge will not be cut back until the future pavement is ready to be installed. The shoulder will be saw cut a minimum of one (1) foot from the existing pavement edge to assure a straight edge for placement of adjacent asphalt material.

45. For placement of patching or new asphalt pavement, the Permittee(s)/contractor will saw cut or score the existing asphalt to assure a straight and uniform edge. Prior to the placement of the new asphalt, the exposed edge of the existing pavement will be thoroughly coated with emulsified asphalt (slow-setting).

46. The joint between the old asphalt mat and new asphalt mat will be placed in such a manner as to maintain good rideability and prevent ponding. If rideability is not maintained and/or ponding occurs, the Permittee(s) will be responsible for curing the problem with the concurrence of the Department.

47. The Permittee(s) must notify owners or operators of underground utility facilities at least two (2) business days prior to beginning excavation in the vicinity of such facilities, as required under Section 9-1.5-103, Colorado Revised Statutes. Call Utility Notification Center of Colorado (UNCC), 1-800-922-1987 for marking of member utilities. Call non-member utilities directly. All utility permits and related construction coordination requirements shall be handled in accordance with the approved plans and specifications. All utility work in the highway right-of-way must be shown in the design plans and be approved by CDOT.

48. No drainage from this site will enter onto the roadway of the highway.

49. The access approach and all related highway improvements will be constructed in accordance with the approved design plans, EXHIBIT "A", reserved.

50. This permit is only for the purpose stated herein. Any changes in the type, use and/or volume of traffic using the access will require revision of the permit.

51. Soil preparation, seeding, and mulching will be required within the right-of-way limits on all disturbed areas not surfaced. The following types and rates will be used:

COMMON NAME	BOTANICAL NAME	LBS. PLS\ACRE
Western Wheatgrass V. Arriba	Pascopyrum Smithii	8
Slender Wheatgrass V. San Luis	Elymus Trachycaulus	3
Indian Ricegrass V. Paloma	Oryzopsis Hymenoides	3
Hard Fescue V. Durar	Festuca Ovina Duriuscula	3
Alsike Clover	Trifolium Hybridium	2
Sand Dropseed	Sporobolus Cryptandrus	0.25
Total lbs/acre		---------- 19.25

Seeding Application: Seed will be mechanically drilled to a depth of .25 or .5 inches into the soil. Broadcast seed on slopes 2:1 or steeper and rake into soil.

52. Mulching requirement and application: 2 tons/acre straw mechanically crimped into soil on slopes flatter than 3:1. Place a soil retention blanket consisting of woven wood or straw coconut material on slopes 3:1 or steeper.

53.

FERTILIZER REQUIREMENT	% AVAILABLE	LBS\ACRE
(a) Nitrogen:	18	45
(b) Phosphorus:	46	115

Incorporate fertilizer to a depth of 2" to 4" into the topsoil.

54. A minimum of 4 inches of topsoil will be placed on all slopes which are to be seeded and mulched.

55. Any damage to any existing highway facilities will be repaired prior to continuing other work.

56. The Permittee(s) will be responsible for verification of existing utility locations. If any damage occurs to these utilities during construction, it will be the Permittee(s) responsibility to repair or replace the utility at no cost to the Department.

57. The Permittee(s)/contractor is required to obtain liability insurance in conformance with Section 107.15 of the Standard Specifications. Copies of insurance coverage will be submitted to the Region 5 Access Program Manager before the Notice to Proceed will be validated and a copy of that policy will be required to be available at the construction site at all times for inspection.

58. All existing drainage structures will be extended to accommodate all new construction and safety criteria, according to appropriate CDOT standards and specifications.

59. All culvert extensions will meet or exceed the minimum requirements for CDOT roadway clear-zone, as outlined in the AASHTO Roadside Design Guide.

60. Break points on slopes and in the bottom of ditches will be rounded on construction for a pleasing appearance. The existing shoulder edge will not be cut back until the future pavement is ready to be installed.

61. The depth and width of roadway drainage ditches will be varied so as to provide proper storm water drainage.

62. All embankment material placed on existing slopes in excess of 4:1 will be benched into the existing grade to provide a stable roadway foundation.

63. The Permittee(s) will notify the CDOT Region 5 Access Program Manager, at (970) 385-3626, a minimum of five (5) working days prior to beginning any electrical or loop detector work. The Contractor will keep the permit unit manager informed of project progress and schedule. CDOT inspection of the work will be in conformance with Section 614.10(k) of the Standard Specifications. The Permittee will submit a list of all signal equipment to CDOT for approval by CDOT before they order the equipment. Any unauthorized equipment will not be accepted.

64. A contractor licensed in the State of Colorado will be employed by the Permittee(s) for the all phases of the signal project. A Colorado licensed electrician employed by that contractor will be on the project at all times during the signal work. Failure to comply with this condition may result in revocation of this permit. Failure to comply with this condition **WILL** result in immediate suspension of signal work.

65. Pursuant to The Colorado State Electrical Board, Title 12, Professions and Occupations; Article 23, Electricians, Section 12-23-110.5 Apprentices – supervision – registration – discipline. "(1) Any person may work as an apprentice but shall not do any electrical wiring for the installation of electrical apparatus or equipment for light, heat, or power except under the supervision of a licensed electrician. The degree of supervision shall be no more than one licensed electrician to supervise no more than one apprentice at the jobsite." Failure to comply with this regulation and maintain the above required ratio of one Colorado licensed electrician to supervise no more than one apprentice at the jobsite **WILL** result in immediate suspension of signal work.

66. A designated Inspector employed by CDOT will also be on the project site at all times during signal work and the hours worked by that inspector during that time will be paid by the Permittee(s) at no cost to the Department pursuant to the State Highway Access Code, Section 2.5(5) Access Construction, copy enclosed. The Permittee(s) **WILL** notify the CDOT Region 5 Permit Unit Manager, a minimum of five (5) days prior to commencing **ANY** signal construction, so that inspection by CDOT may be coordinated. Failure to provide proper notification will result in suspension of signal work. Failure to comply with this condition **WILL** result in immediate suspension of signal work.

67. Loop detectors will be installed under all approach lanes on side streets before paving and connected to the controller at the existing or to be constructed junction boxes. In addition to the **REQUIRED** CDOT Inspector, a licensed electrician employed by the Permittee(s) will be required to be on the project at all times during the loop detector work. Failure to comply with this condition **WILL** result in immediate suspension of loop detector work.

68. No electrical splices will be allowed under the pavement surface.

69. No splicing in pull-boxes or water valve boxes will be allowed within the pavement area.

70. All overhead structures will be fabricated and inspected in accordance with the latest revision of CDOT standard and specification 614.02.

71. The Permittee(s) will be required to install a communications link (phone drop) to the controller.

72. In addition to the **REQUIRED** CDOT Inspector, the Permittee(s)/Contractor will have a qualified signal engineer on the project site at the time of signal system field tests and system turn-on.

73. Upon completion of the work, the Contractor/Engineer **WILL** submit an "As Built" plan, showing in detail right-of-way easements, all construction changes, modifications and revisions. The "As Built" Plans will show all wiring, cabling, locations and depths of conduit, in conformance with Section 614.10(a) of the Standard Specifications. All changes, modifications or revisions will be signed and sealed by the engineer.

74. The Contractor **WILL** submit two (2) copies of a schematic wiring diagram to the Department for all completed electrical work.

75. Upon completion of the final work, a letter certifying that all project materials, construction, inspection and workmanship is in accordance with the design plans and specifications will be submitted to the Region 5 Access Program Manager, Colorado Department of Transportation, 3803 Main Avenue, Suite 100, Durango, Colorado 81301. The certification letter must be signed and sealed by the engineer.

76. Reconstruction or improvements to the access will be required when the Permittee(s) have failed to meet the required design and/or materials specifications. If any construction element fails within two years of CDOT's final acceptance due to improper construction or material specifications, the Permittee(s) are responsible for all such repairs. (1998 Access Code, as amended)

77. The permittee is required to comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG) that have been adopted by the U.S. Architectural and Transportation Barriers Compliance Board (Access Board), and incorporated by the U.S. Attorney General as a federal standard. These guidelines are defining traversable slope requirements and prescribing the use of a defined pattern of truncated domes as detectable warnings at street crossings. The new Standards Plans and can be found on the Design and Construction Project Support web page at: http://www.dot.state.co.us/DesignSupport/, then click on *Design Bulletins*.

78. The Permittee is responsible for obtaining any necessary additional Federal, State and/or City/County permits or clearances required for construction of the access. Approval of this access permit does not constitute verification of this action by the Permittee. Permittee is also responsible for obtaining all necessary utility permits in addition to this access permit.

79. All workers within the State Highway right of way shall comply with their employer's safety and health policies/procedures, and all applicable U.S. Occupational Safety and Health Administration (OSHA) regulations - including, but not limited to the applicable sections of 29 CFR Part 1910 - Occupational Safety and Health Standards and 29 CFR Part 1926 – Safety and Health Regulations for Construction. Personal protective equipment (e.g. head protection, footwear, high visibility apparel, safety glasses, hearing protection, respirators, gloves, etc.) shall be worn as appropriate for the work being performed, and as specified in regulation.

80. It is the responsibility of the permittee/applicant to determine which environmental clearances and/or regulations apply to the project, and to obtain any clearances that are required directly from the appropriate agency. Please refer to or request a copy of the "CDOT Environmental Clearance Information Summary" for details. FAILURE TO COMPLY WITH REGULATORY REQUIREMENTS MAY RESULT IN SUSPENSION OR REVOCATION OF YOUR CDOT PERMIT, OR ENFORCEMENT ACTIONS BY OTHER AGENCIES.

- ALL discharges are subject to the provisions of the Colorado Water Quality Control Act and the Colorado Discharge Permit Regulations. Prohibited discharges include substances such as: wash water, paint, automotive fluids, solvents, oils or soaps.
- Unless otherwise identified by CDOT or the Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Division (WQCD) as significant sources of pollutants to the waters of the State, the following discharges to storm water systems are allowed without a Colorado Discharge Permit System permit: landscape irrigation, diverted stream flows, uncontaminated ground water infiltration to separate storm sewers, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, footing drains; water line flushing, flows from riparian habitats and wetlands, and flow from fire fighting activities. However, construction activities may require a Construction Stormwater Permit. Contact the CDOT Water Quality Program Manager at 303-757-9343.
- ANY OTHER DISCHARGES may require Colorado Discharge Permit(s) or separate permits from CDPHE or the appropriate agency before work begins. For additional information and forms, go to the CDPHE website at: http://www.cdphe.state.co.us/wq/PermitsUnits/wqcdpmt.html.

78. **PRIOR** to the issuance of the Notice to Proceed, all deeded access widening requirements, including all required environmental clearances, all P.U.C., and Durango and Silverton Narrow Gauge Railroad approvals must be obtained.

81. Final acceptance will be by the Regional Transportation Director or their authorized designee.

PERMITTEE(S) **La Plata County Declined to Sign** DATE
La Plata County

PERMITTEE(S) mgr of G.P. Trimble Crossing LLC General Partner DATE 7/20/06
Trimble ~~Crossing, L.P~~

APPLICANT DATE 7/20/06
Russell Engineering

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REGION 5
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COLORADO DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ACCESS PERMIT APPLICATION

Issuing authority application acceptance date:

Instructions:
060053
Please print or type
506073

- Contact the Colorado Department of Transportation (CDOT) or your local government to determine your issuing authority.
- Contact the issuing authority to determine what plans and other documents are required to be submitted with your application.
- Complete this form (some questions may not apply to you) and attach all necessary documents and Submit it to the issuing authority.
- Submit an application for each access affected.
- If you have any questions contact the issuing authority.
- For additional information see CDOT's Access Management website at **http://www.dot.state.co.us/AccessPermits/index.htm**

1) Property owner (Permittee)
Tremble Crossing LP
Street address
5400 W Plano Parkway Ste 200
City, state & zip
Plano TX 75093
Phone #
E-mail address

2) Agent for permittee (if different from property owner)
Russell Engineering
Mailing address
934 Main Ave
City, state & zip
Durango CO 81301
Phone # (required)
385 - 4546
E-mail address if available

3) Address of property to be served by permit (required)
131 CR 252 & 197 CR 252

4) Legal description of property: If within jurisdictional limits of Municipality, city and/or County, which one?

county	subdivision	block	lot	section	township	range
LaPlata	Trimble Crossing			15	36 North	9 west

5) What State Highway are you requesting access from?
US 550

6) What side of the highway? ☐ N ☐ S ☐ E ☐ W

7) How many feet is the proposed access from the nearest mile post?
feet ☐N ☐S ☐E ☐W) from:

How many feet is the proposed access from the nearest cross street?
0 feet ☐N ☐S ☐E ☐W) from: Trimble Lane

8) What is the approximate date you intend to begin construction?
Fall 2006

9) Check here if you are requesting a:
☐ new access ☐ temporary access (duration anticipated:) ☒ improvement to existing access
☐ change in access use ☐ removal of access ☐ relocation of an existing access (provide detail)

10) Provide existing property use
Agricultural

11) Do you have knowledge of any State Highway access permits serving this property, or adjacent properties in which you have a property interest?
☐ no ☒ yes, if yes - what are the permit number(s) and provide copies: and/or, permit date:
504090

12) Does the property owner own or have any interests in any adjacent property?
☒ no ☐ yes, if yes - please describe:

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13) Are there other existing or dedicated public streets, roads, highways or access easements bordering or within the property?
☐ no ☒ yes, if yes - list them on your plans and indicate the proposed and existing access points.

14) If you are requesting agricultural field access - how many acres will the access serve?

15) If you are requesting commercial or industrial access please indicate the types and number of businesses and provide the floor area square footage of each.

business/land use	square footage	business	square footage
office	665	Restaurant	475
Commercial	32,250	Gas Station 6 pumps	

16) If you are requesting residential developement access, what is the type (single family, apartment, townhouse) and number of units?

type	number of units	type	number of units
town house	64		

17) Provide the following vehicle count estimates for vehicles that will use the access. Leaving the property then returning is two counts. See Traffic Study

Indicate if your counts are ☐ peak hour volumes or ☐ average daily volumes.	# of passenger cars and light trucks at peak hour volumes	# of multi unit trucks at peak hour volumes
# of single unit vehicles in excess of 30 ft.	# of farm vehicles (field equipment)	Total count of all vehicles 0

Previous editions are obsolete and may not be used

18) Check with the issuing authority to determine which of the following documents are required to complete the review of your application.

a) Property map indicating other access, bordering roads and streets.
b) Highway and driveway plan profile.
c) Drainage plan showing impact to the highway right-of-way.
d) Map and letters detailing utility locations before and after development in and along the right-of-way.
e) Subdivision, zoning, or development plan.
f) Proposed access design.
g) Parcel and ownership maps including easements.
h) Traffic studies.
i) Proof of ownership.

1- It is the applicant's responsibility to contact appropriate agencies and obtain all environmental clearances that apply to their activities. Such clearances may include Corps of Engineers 404 Permits or Colorado Discharge Permit System permits, or ecological, archeological, historical or cultural resource clearances. The CDOT Environmental Clearances Information Summary presents contact information for agencies administering certain clearances, information about prohibited discharges, and may be obtained from Regional CDOT Utility/Special Use Permit offices or accessed via the CDOT Planning/Construction-Environmental-Guidance webpage **http://www.dot.state.co.us/environmental/Forms.asp**.

2- All workers within the State Highway right of way shall comply with their employer's safety and health policies/ procedures, and all applicable U.S. Occupational Safety and Health Administration (OSHA) regulations - including, but not limited to the applicable sections of 29 CFR Part 1910 - Occupational Safety and Health Standards and 29 CFR Part 1926 - Safety and Health Regulations for Construction.

Personal protective equipment (e.g. head protection, footwear, high visibility apparel, safety glasses, hearing protection, respirators, gloves, etc.) shall be worn as appropriate for the work being performed, and as specified in regulation. At a minimum, all workers in the State Highway right of way, except when in their vehicles, shall wear the following personal protective equipment: High visibility apparel as specified in the Traffic Control provisions of the documentation accompanying the Notice to Proceed related to this permit (at a minimum, ANSI/ISEA 107-1999, class 2); head protection that complies with the ANSI Z89.1-1997 standard; and at all construction sites or whenever there is danger of injury to feet, workers shall comply with OSHA's PPE requirements for foot protection per 29 CFR 1910.136, 1926.95, and 1926.96. If required, such footwear shall meet the requirements of ANSI Z41-1999.

Where any of the above-referenced ANSI standards have been revised, the most recent version of the standard shall apply.

3- The Permittee is responsible for complying with the Revised Guidelines that have been adopted by the Access Board under the American Disabilities Act (ADA). These guidelines define traversable slope requirements and prescribe the use of a defined pattern of truncated domes as detectable warnings at street crossings. The new Standards Plans and can be found on the Design and Construction Project Support web page at: **<http://www.dot.state.co.us/DesignSupport/>**, then click on *Design Bulletins*.

If an access permit is issued to you, it will state the terms and conditions for its use. Any changes in the use of the permitted access not consistent with the terms and conditions listed on the permit may be considered a violation of the permit.

The applicant declares under penalty of perjury in the second degree, and any other applicable state or federal laws, that all information provided on this form and submitted attachments are to the best of their knowledge true and complete.

I understand receipt of an access permit does not constitute permission to start access construction work.

Applicant's signature	Print name	Date
x [signature]	Michael K. Russell	3/24/06

If the applicant is not the owner of the property, we require this application also to be signed by the property owner or their legally authorized representative (or other acceptable written evidence). This signature shall constitute agreement with this application by all owners-of-interest unless stated in writing. If a permit is issued, the property owner, in most cases, will be listed as the permittee.

Property owner signature	Print name	Date
[signature]	Michael K. Russell	3/24/06

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APPENDIX G:
Synchro Output
2022 AM Peak Hour
2022 PM Peak Hour
2042 AM Peak Hour
2042 PM Peak Hour

HCM 2010 Signalized Intersection Summary
2: US 550 & CR 252

03/04/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	18	56	105	12	72	24	300	99	48	216	5
Future Volume (veh/h)	9	18	56	105	12	72	24	300	99	48	216	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.89		1.00	1.00		1.00	0.92		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1810	1900	1810	1810	1900	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	10	20	0	119	14	0	27	341	0	55	245	0
Adj No. of Lanes	0	1	0	1	1	0	1	1	1	1	1	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	185	325	0	656	724	0	467	603	513	414	603	513
Arrive On Green	0.27	0.27	0.00	0.07	0.40	0.00	0.07	0.33	0.00	0.07	0.33	0.00
Sat Flow, veh/h	393	1220	0	1723	1810	0	1723	1810	1538	1723	1810	1538
Grp Volume(v), veh/h	30	0	0	119	14	0	27	341	0	55	245	0
Grp Sat Flow(s),veh/h/ln	1612	0	0	1723	1810	0	1723	1810	1538	1723	1810	1538
Q Serve(g_s), s	0.0	0.0	0.0	2.8	0.3	0.0	0.6	9.3	0.0	1.2	6.3	0.0
Cycle Q Clear(g_c), s	0.7	0.0	0.0	2.8	0.3	0.0	0.6	9.3	0.0	1.2	6.3	0.0
Prop In Lane	0.33		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	510	0	0	656	724	0	467	603	513	414	603	513
V/C Ratio(X)	0.06	0.00	0.00	0.18	0.02	0.00	0.06	0.57	0.00	0.13	0.41	0.00
Avail Cap(c_a), veh/h	510	0	0	656	724	0	467	603	513	414	603	513
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.4	0.0	0.0	12.9	10.9	0.0	11.3	16.4	0.0	11.9	15.4	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.6	0.0	0.0	0.2	3.8	0.0	0.7	2.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	1.4	0.1	0.0	0.3	5.3	0.0	0.6	3.5	0.0
LnGrp Delay(d),s/veh	16.6	0.0	0.0	13.5	10.9	0.0	11.5	20.2	0.0	12.6	17.4	0.0
LnGrp LOS	B			B	B		B	C		B	B	
Approach Vol, veh/h		30			133			368			300	
Approach Delay, s/veh		16.6			13.3			19.6			16.6	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	24.0	8.0	20.0	8.0	24.0		28.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	20.0	4.0	16.0	4.0	20.0		24.0				
Max Q Clear Time (g_c+I1), s	3.2	11.3	4.8	2.7	2.6	8.3		2.3				
Green Ext Time (p_c), s	0.0	1.2	0.0	0.1	0.0	0.9		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			17.4									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
2: US 550 & CR 252

03/04/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	23	46	123	27	74	80	292	175	89	421	13
Future Volume (veh/h)	4	23	46	123	27	74	80	292	175	89	421	13
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.88		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1810	1900	1810	1810	1900	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	5	26	0	140	31	0	91	332	0	101	478	0
Adj No. of Lanes	0	1	0	1	1	0	1	1	1	1	1	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	89	371	0	593	659	0	391	726	617	495	724	615
Arrive On Green	0.23	0.23	0.00	0.08	0.36	0.00	0.08	0.40	0.00	0.07	0.40	0.00
Sat Flow, veh/h	143	1588	0	1723	1810	0	1723	1810	1538	1723	1810	1538
Grp Volume(v), veh/h	31	0	0	140	31	0	91	332	0	101	478	0
Grp Sat Flow(s),veh/h/ln	1731	0	0	1723	1810	0	1723	1810	1538	1723	1810	1538
Q Serve(g_s), s	0.0	0.0	0.0	4.4	0.8	0.0	2.2	10.1	0.0	2.5	16.2	0.0
Cycle Q Clear(g_c), s	1.0	0.0	0.0	4.4	0.8	0.0	2.2	10.1	0.0	2.5	16.2	0.0
Prop In Lane	0.16		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	460	0	0	593	659	0	391	726	617	495	724	615
V/C Ratio(X)	0.07	0.00	0.00	0.24	0.05	0.00	0.23	0.46	0.00	0.20	0.66	0.00
Avail Cap(c_a), veh/h	460	0	0	593	659	0	391	726	617	495	724	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.4	0.0	0.0	17.9	15.4	0.0	12.8	16.5	0.0	11.7	18.3	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.9	0.1	0.0	1.4	2.1	0.0	0.9	4.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	2.2	0.4	0.0	1.2	5.4	0.0	1.3	8.9	0.0
LnGrp Delay(d),s/veh	22.7	0.0	0.0	18.9	15.6	0.0	14.2	18.5	0.0	12.7	23.0	0.0
LnGrp LOS	C			B	B		B	B		B	C	
Approach Vol, veh/h		31			171			423			579	
Approach Delay, s/veh		22.7			18.3			17.6			21.2	
Approach LOS		C			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	34.1	9.8	21.5	9.7	34.0		31.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	5.6	30.1	5.8	17.5	5.7	30.0		27.3
Max Q Clear Time (g_c+I1), s	4.5	12.1	6.4	3.0	4.2	18.2		2.8
Green Ext Time (p_c), s	0.0	1.8	0.0	0.1	0.0	2.1		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	19.6
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
2: US 550 & CR 252

03/04/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	20	62	113	13	77	27	332	109	52	239	6
Future Volume (veh/h)	10	20	62	113	13	77	27	332	109	52	239	6
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.89		1.00	1.00		1.00	0.93		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1810	1900	1810	1810	1900	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	11	23	0	128	15	0	31	377	0	59	272	0
Adj No. of Lanes	0	1	0	1	1	0	1	1	1	1	1	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	180	331	0	656	724	0	450	603	513	389	603	513
Arrive On Green	0.27	0.27	0.00	0.07	0.40	0.00	0.07	0.33	0.00	0.07	0.33	0.00
Sat Flow, veh/h	378	1242	0	1723	1810	0	1723	1810	1538	1723	1810	1538
Grp Volume(v), veh/h	34	0	0	128	15	0	31	377	0	59	272	0
Grp Sat Flow(s),veh/h/ln	1620	0	0	1723	1810	0	1723	1810	1538	1723	1810	1538
Q Serve(g_s), s	0.0	0.0	0.0	3.0	0.3	0.0	0.7	10.5	0.0	1.3	7.1	0.0
Cycle Q Clear(g_c), s	0.8	0.0	0.0	3.0	0.3	0.0	0.7	10.5	0.0	1.3	7.1	0.0
Prop In Lane	0.32		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	511	0	0	656	724	0	450	603	513	389	603	513
V/C Ratio(X)	0.07	0.00	0.00	0.20	0.02	0.00	0.07	0.63	0.00	0.15	0.45	0.00
Avail Cap(c_a), veh/h	511	0	0	656	724	0	450	603	513	389	603	513
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.4	0.0	0.0	13.0	10.9	0.0	11.4	16.8	0.0	12.2	15.7	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.7	0.1	0.0	0.3	4.8	0.0	0.8	2.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	1.5	0.2	0.0	0.3	6.0	0.0	0.7	3.9	0.0
LnGrp Delay(d),s/veh	16.7	0.0	0.0	13.7	10.9	0.0	11.7	21.7	0.0	13.0	18.1	0.0
LnGrp LOS	B			B	B		B	C		B	B	
Approach Vol, veh/h		34			143			408			331	
Approach Delay, s/veh		16.7			13.4			20.9			17.2	
Approach LOS		B			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	24.0	8.0	20.0	8.0	24.0		28.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	20.0	4.0	16.0	4.0	20.0		24.0
Max Q Clear Time (g_c+I1), s	3.3	12.5	5.0	2.8	2.7	9.1		2.3
Green Ext Time (p_c), s	0.0	1.2	0.0	0.1	0.0	1.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	18.2
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
2: US 550 & CR 252

03/04/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	25	51	133	30	80	88	323	189	96	465	14
Future Volume (veh/h)	5	25	51	133	30	80	88	323	189	96	465	14
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.88		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1810	1900	1810	1810	1900	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	6	28	0	151	34	0	100	367	0	109	528	0
Adj No. of Lanes	0	1	0	1	1	0	1	1	1	1	1	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	95	363	0	588	654	0	359	731	621	473	731	621
Arrive On Green	0.23	0.23	0.00	0.07	0.36	0.00	0.07	0.40	0.00	0.07	0.40	0.00
Sat Flow, veh/h	164	1555	0	1723	1810	0	1723	1810	1538	1723	1810	1538
Grp Volume(v), veh/h	34	0	0	151	34	0	100	367	0	109	528	0
Grp Sat Flow(s),veh/h/ln	1719	0	0	1723	1810	0	1723	1810	1538	1723	1810	1538
Q Serve(g_s), s	0.0	0.0	0.0	4.8	0.9	0.0	2.4	11.4	0.0	2.6	18.4	0.0
Cycle Q Clear(g_c), s	1.1	0.0	0.0	4.8	0.9	0.0	2.4	11.4	0.0	2.6	18.4	0.0
Prop In Lane	0.18		0.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	458	0	0	588	654	0	359	731	621	473	731	621
V/C Ratio(X)	0.07	0.00	0.00	0.26	0.05	0.00	0.28	0.50	0.00	0.23	0.72	0.00
Avail Cap(c_a), veh/h	458	0	0	588	654	0	359	731	621	473	731	621
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.5	0.0	0.0	18.2	15.6	0.0	13.4	16.7	0.0	11.9	18.8	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	1.1	0.2	0.0	1.9	2.5	0.0	1.1	6.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	2.4	0.5	0.0	1.3	6.1	0.0	1.4	10.3	0.0
LnGrp Delay(d),s/veh	22.8	0.0	0.0	19.2	15.7	0.0	15.3	19.2	0.0	13.0	24.9	0.0
LnGrp LOS	C			B	B		B	B		B	C	
Approach Vol, veh/h		34			185			467			637	
Approach Delay, s/veh		22.8			18.6			18.3			22.9	
Approach LOS		C			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	34.3	9.6	21.5	9.6	34.3		31.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	5.6	30.3	5.6	17.5	5.6	30.3		27.1
Max Q Clear Time (g_c+I1), s	4.6	13.4	6.8	3.1	4.4	20.4		2.9
Green Ext Time (p_c), s	0.0	2.0	0.0	0.1	0.0	2.2		0.1

Intersection Summary		
HCM 2010 Ctrl Delay		20.7
HCM 2010 LOS		C

Appendix E

CR 252 Pavement Analysis

Geotechnical Engineering Study Proposed Durango River View RV Resort and A Limited Evaluation of CR 252 – Durango, CO (June 26, 2023)

CR 252 Pavement Analysis Summary

CR 252 Summary of ESALs					
Year	2025	2040	2045		
	ADT	ADT	ADT	**ESAL -2025 (20 Year)**	Max Yearly ESAL
RR to Dalton	4415	5077.25	5298	1,508,031	75,402
Dalton to Bridge	1847	2124.05	2216.4	630,879	31,544
Trucks = 5%					

Existing CR 252 Road Section				
	HMA	**ABC Layer**	**Pit Run**	**Existing SN**
Location/SN	0.35	0.11	0.08	
TB-15	6.50	10.50	4.00	3.75
TB-16	6.50	4.00	10.00	3.52

Roberts RV Summary of ESALs					
Year	2025	2040	2045		
	ADT	ADT	ADT	**ESAL -2024 (20 Year)**	Max Yearly ESAL
Project	458	458	458	1,420,945	71,050
Trucks = 50%					

Road Section with Proposed Overlays					
	Overlay	HMA	ABC Layer	Pit Run	Existing SN
Location/SN	0.44	0.35	0.11	0.08	
TB-15	2.00	6.50	10.50	4.00	4.63
TB-16	2.00	6.50	4.00	10.00	4.40

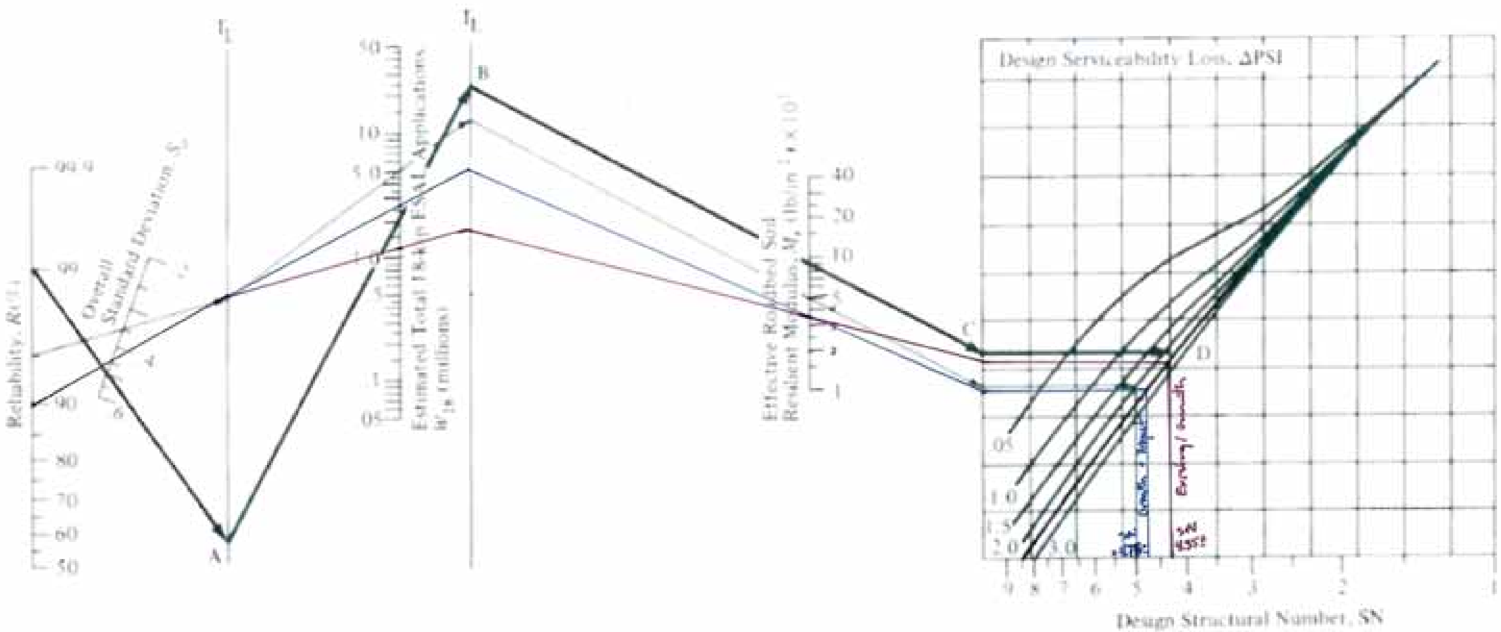
Section Summary								
RR to Dalton								
Traffic	ESAL	Reliability	Standard Dev	M_r	Delta PSI	SN (90%)	SN (80%)	SN (70%)
Background	1,508,031	90	0.44	3562	2.5	4.35	4.10	3.85
Background and Project	2,928,976	90	0.44	3562	2.5	4.75	4.50	4.30
Dalton to Bridge								
Traffic	ESAL	Reliability	Standard Dev	M_r	Delta PSI	SN (90%)	SN (80%)	SN (70%)
Background	630,879	90.0	0.44	3562	2.5	4.05	3.90	3.75
Background and Project	2,051,824	90.0	0.44	3562	2.5	4.55	4.45	4.20

Calculation of Missing Overlay to achieve adequate Structural Section (SN = 4.50)						
Section	Length (ft)	Width (ft)	Thickness (In)	Tons	Price	Total Price
RR to Trimble Entrance	650	48	2	390	200	$ 78,000.00
Dalton Ranch Road to West Entry	800	30	2	300	200	$ 60,000.00
						$ 138,000.00

* RR to Dalton Ranch Section - 90% Reliability

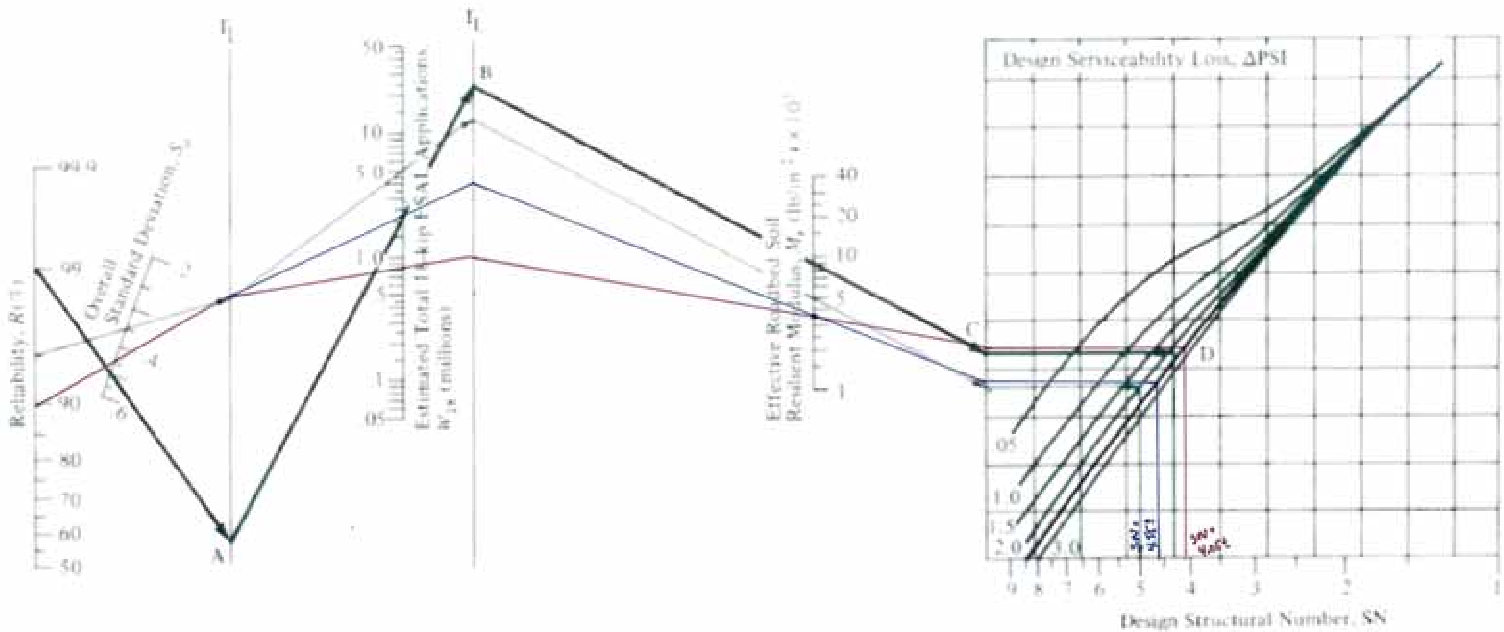
Nomograph for estimating needed structural numbers

SN Δ = 0.40 ~ 1" Asphalt



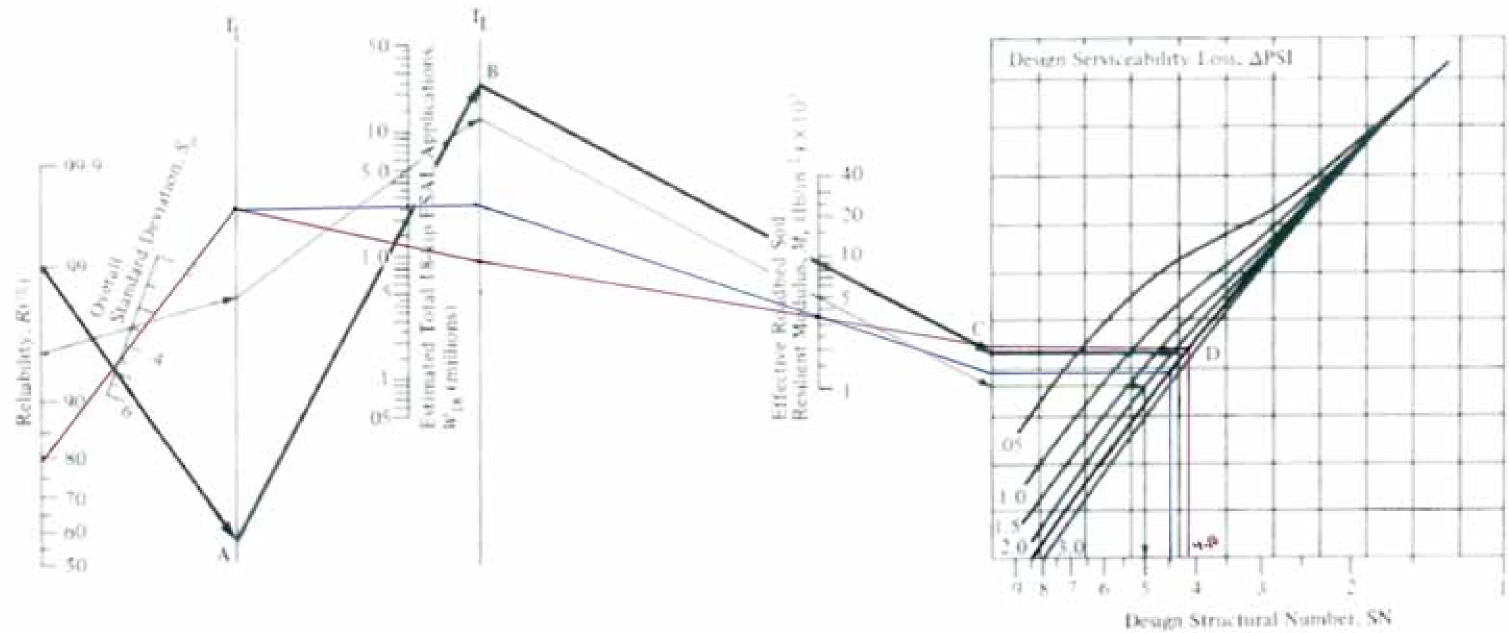
* Dalton Ranch to Bridge Section - 90% Reliability

Nomograph for estimating needed structural numbers



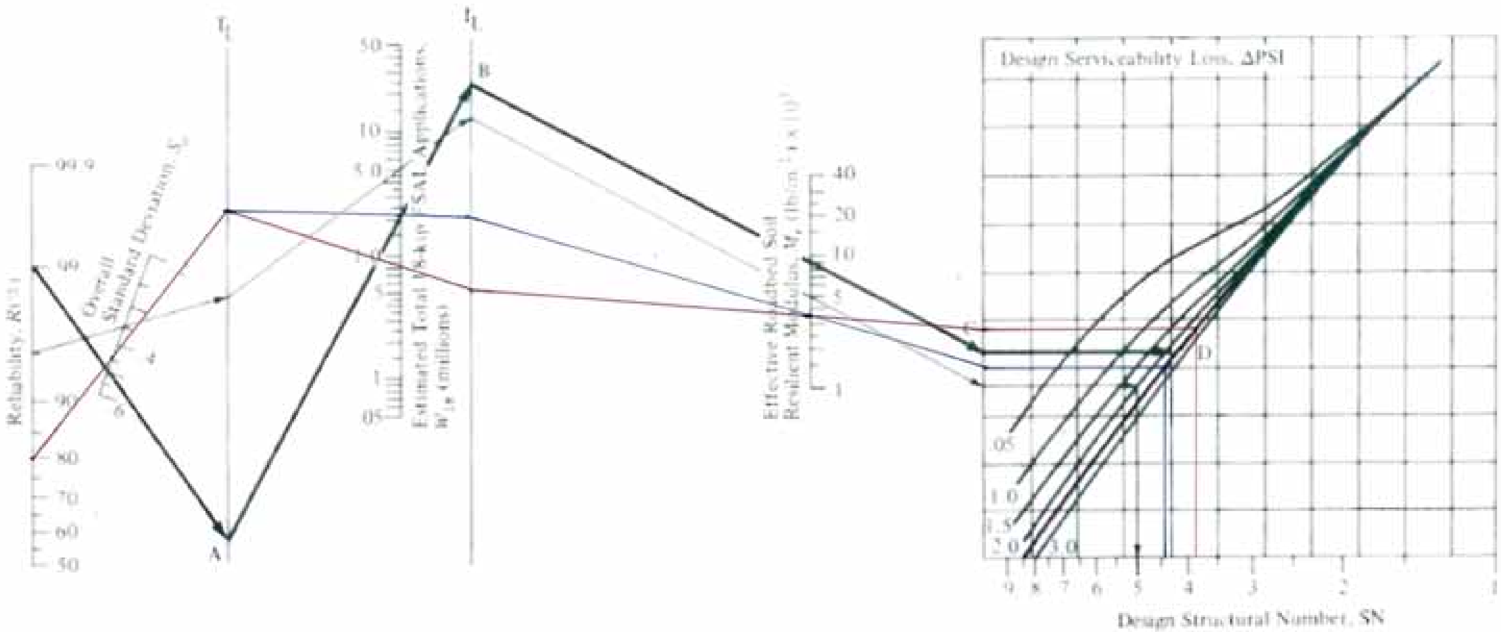
* R12 to Dalton Ranch section - 80% Reliability

Nomograph for estimating needed structural numbers



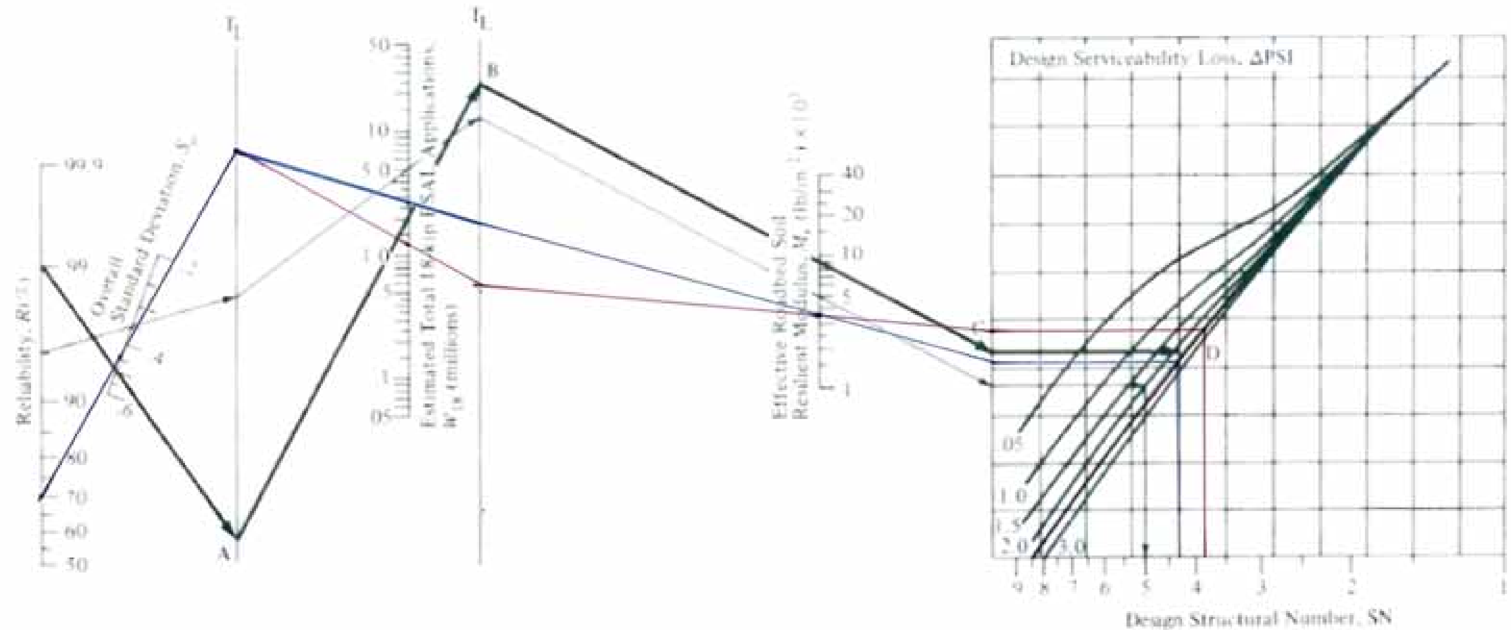
Dalton Ranch to Bridge Section - 80% Reliability

Nomograph for estimating needed structural numbers



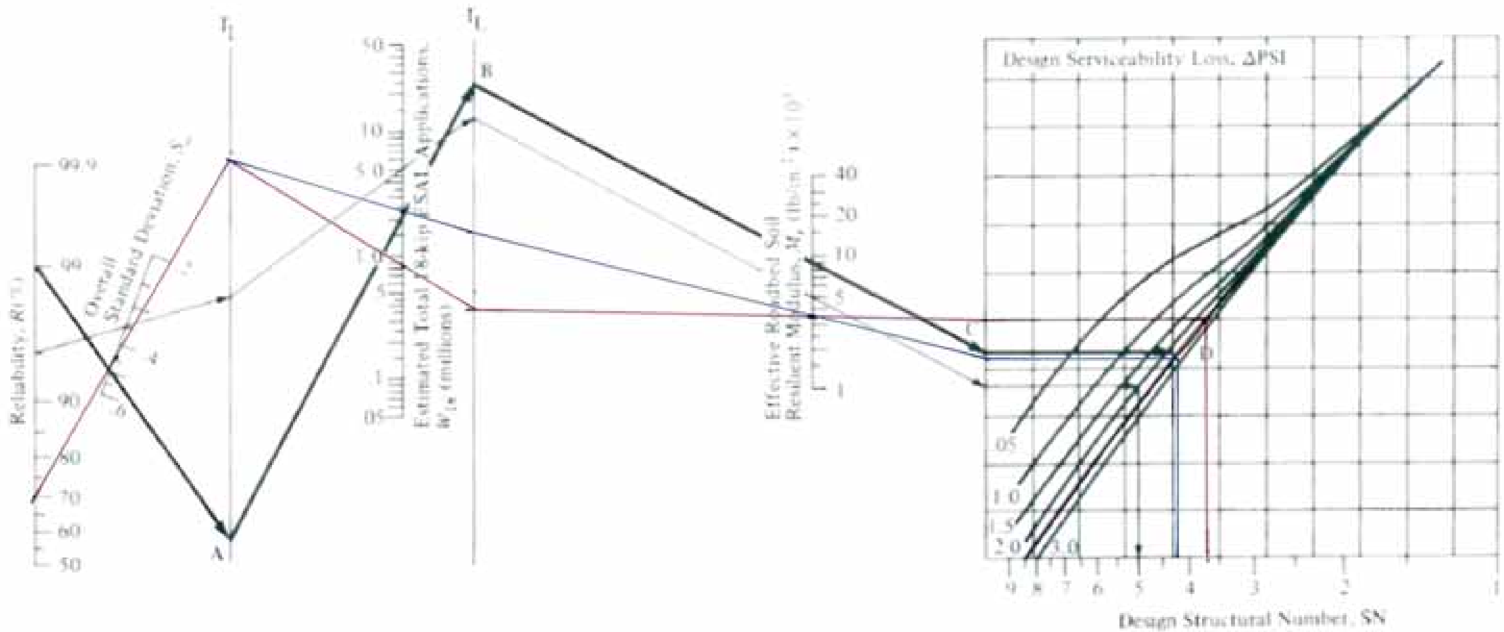
RR to Dalton Ranch Section - 70% Reliability

Nomograph for estimating needed structural numbers



Dalton Ranch to Bridge Section - 70% Reliability

Nomograph for estimating needed structural numbers



GEOTECHNICAL ENGINEERING STUDY
PROPOSED DURANGO RIVER VIEW RV RESORT
AND
A LIMITED EVALUATION OF CR 252
DURANGO, COLORADO

June 26, 2023

PREPARED FOR:

Brian Fero
Roberts Communities and Resorts
c/o Travis Mooney, PE (CO, NM)
Short Elliott Hendrickson, Inc. (SEH®)
970.903.2263 cell

PROJECT NO. 57927GE

Table of Contents

1.0 REPORT INTRODUCTION

This report presents our geotechnical engineering recommendations for the proposed Durango River View RV Resort to be located along CR 252 in Durango, Colorado. This report was requested by Mr. Travis Mooney, SEH, on behalf of Mr. Brian Fero, Roberts Communities and Resorts and was prepared in accordance with our revised proposal dated May 15, 2023, Proposal No. 23195-Revised. In addition, this report contains a limited evaluation of County Road 252, which was prepared in accordance with our proposal dated June 12, 2023, Proposal No. 23235P.

As outlined within our proposal for services for this project the client is responsible for appropriate distribution of this report to other design professionals and/or governmental agencies unless specific arrangements have been made with us for distribution.

Geotechnical engineering is a discipline which provides insight into natural conditions and site characteristics such as; subsurface soil and water conditions, soil strength, swell (expansion) potential, consolidation (settlement) potential, and often slope stability considerations. The information provided by the geotechnical engineer is utilized by many people including the project owner, architect or designer, structural engineer, civil engineer, the project builder and others. The information is used to help develop a design and subsequently implement construction strategies that are appropriate for the subsurface soil and water conditions, and slope stability considerations. We are available to discuss any aspect of this report with those who are unfamiliar with the recommendations, concepts, and techniques provided below.

This geotechnical engineering report is the beginning of a process involving the geotechnical engineering consultant on any project. It is imperative that the geotechnical engineer be consulted throughout the design and construction process to verify the implementation of the geotechnical engineering recommendations provided in this report. Often the design has not been started or has only been initiated at the time of the preparation of the geotechnical engineering study. Changes in the proposed design must be communicated to the geotechnical engineer so that we have the opportunity to tailor our recommendations as needed based on the proposed site development and structure design.

The following outline provides a synopsis of the various portions of this report;

- ❖ Sections 1.0 provides an introduction and an establishment of our scope of service.
- ❖ Sections 2.0 and 3.0 of this report present our geotechnical engineering field and laboratory studies
- ❖ Sections 4.0 through 7.0 presents our geotechnical engineering design parameters and recommendations which are based on our engineering analysis of the data obtained.
- ❖ Section 8.0 provides a brief discussion of construction sequencing and strategies which may influence the geotechnical engineering characteristics of the site. Ancillary information such as some background information regarding soil corrosion and radon considerations is also presented as general reference.
- ❖ Section 9.0 presents our pavement section recommendations.
- ❖ Section 10.0 provides our general construction monitoring and testing recommendations.
- ❖ Sections 11.0 and 12.0 provides our conclusions and limitations.

The data used to generate our recommendations are presented throughout this report and in the attached figures.

All recommendations provided within this report must be followed in order to achieve the intended performance of the foundation system and other components that are supported by the site soil.

1.1 Proposed Construction

Architectural details and grading plans were not available at the time of this report. We understand the project consists of development of an RV resort on approximately 30 acres at the subject property along County Road 252. The proposed construction will consist of approximately 133 RV sites, 54 RV Cabin sites, 90 Park Models, asphalt paved roadways, a clubhouse building and bathhouse building, and utility infrastructure. We understand the Park Models will be modular structures set on a permanent foundation. The clubhouse and bathhouse will be supported by steel reinforced, permanent, concrete foundation systems, and the floors will either be structurally supported over a crawl space or concrete slab on grade. We assume relatively light foundation loadings, typical of the proposed type of construction.

When final building locations, grading and loading information have been developed, we should be notified to re-evaluate the recommendations presented in this report.

2.0 FIELD STUDY

2.1 Site Description and Geomorphology

The project site is located along the north of the Animas River and along the west side of County Road 252. We understand the property was previously used as a gravel pit and various other uses. The ground surface in a majority of the site had been graded relatively flat. An oxbow lake feature exists in the western portion of the site. Based on the previous use of the site and given the site is located in a river valley, we suspect deeper pockets of previously placed fill may exist throughout the site. Based on review of historical imagery from 1968, it appears the Animas River was located in the vicinity of the western half of the site. A site plan prepared by nadigroup and provided SEH is shown below on Figure 2.1

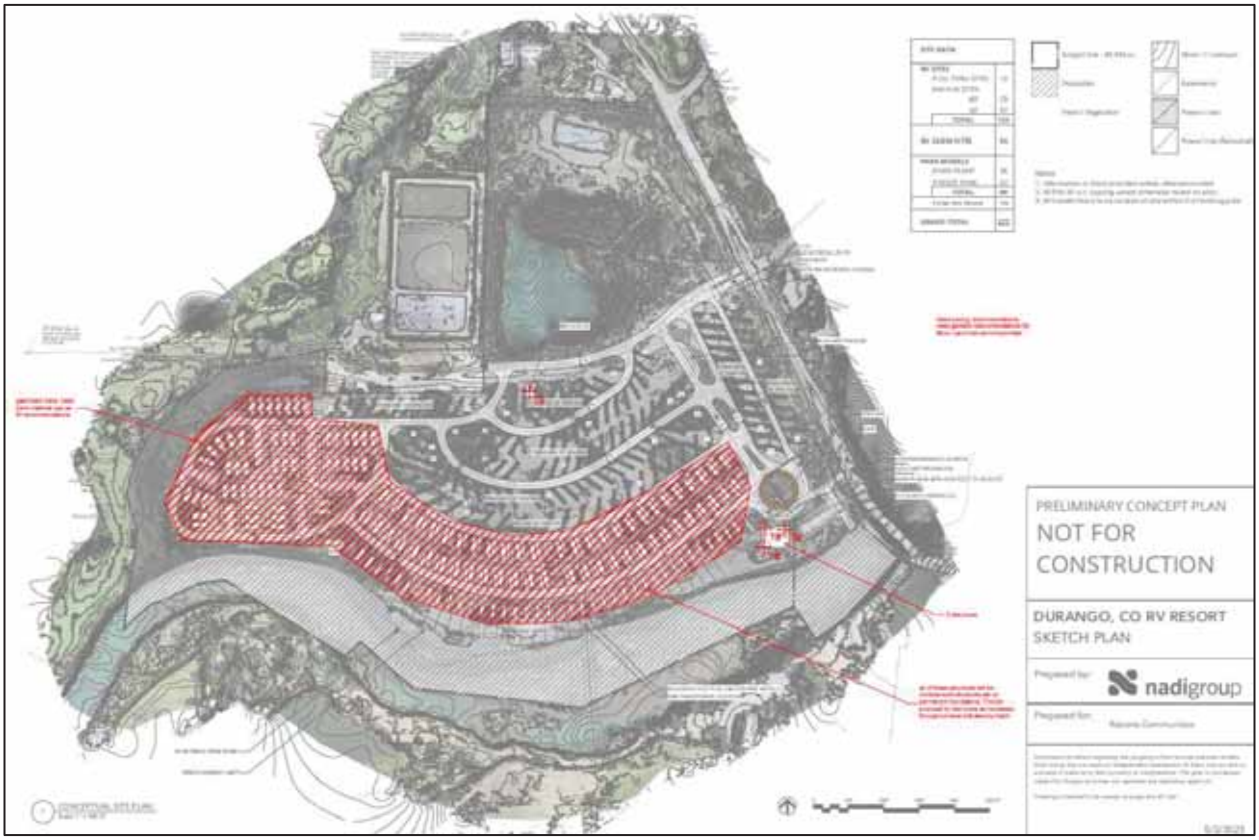


Figure 2.1; Site plan prepared by nadigroup and provided by SEH.

2.2 Subsurface Soil and Water Conditions

We advanced fourteen test borings in the vicinity of the proposed structures and roadways, and we advanced two test borings along CR 252. Schematics showing the approximate boring locations is provided below as Figures 2.2 and 2.3. The logs of the soils encountered in our test borings are presented in Appendix A.

Figure 2.2: Locations of Exploratory Borings. Adapted from La Plata County GIS Image.

Figure 2.3: Locations of Exploratory Borings along CR 252. Adapted from La Plata County GIS Image.

The schematics presented above were prepared using notes and field measurements obtained during our field exploration and is intended to show the approximate test boring locations for reference purposes only.

The subsurface conditions encountered in our test borings consisted of man-placed fill material from the existing ground surface to depths of up to 2 feet. We suspect deeper pockets of previously placed fill material will be encountered during construction in other areas of the site given the historical use of the site and the river environment. The native soils encountered below the fill material consisted of various mixtures of clay, silt, sand, gravel and cobbles to the bottom of our test borings. We advanced our test borings to depths that ranged from about 12 to 19 feet. Many of the test borings encountered practical auger refusal on dense cobbles at various depths.

In the test borings (TB-15 and TB-16) advanced in CR 252, we encountered 6½ inches of asphalt, over 4 to 10.5 inches of ¾ to 1½ inch base course material, over 3 to 8 inch pit run type material. We encountered practical auger refusal on dense cobble at 21 inches in TB-15 and 20 inches in TB-16. A tabulation of TB-15 and TB-16 is presented in Section 9.5 below.

We encountered free subsurface water at about 7½ to 8 feet in some of our test borings at the time of the advancement. We suspect that the subsurface water elevation and soil moisture conditions will be influenced by snow melt and/or precipitation, local irrigation, and the seasonal elevation of the Animas River.

The logs of the subsurface soil conditions encountered in our test borings are presented in Appendix A. The logs present our interpretation of the subsurface conditions encountered in the test borings at the time of our field work. Subsurface soil and water conditions are often variable across relatively short distances. It is likely that variable subsurface soil and water conditions will be encountered during construction. Laboratory soil classifications of samples obtained may differ from field classifications.

3.0 LABORATORY STUDY

The laboratory study included tests to estimate the strength, swell and consolidation potential of the soils tested. We performed the following tests on select samples obtained from the test borings. The laboratory test results are provided in Appendix B.

- Moisture Content and Dry Density
- Sieve Analysis (Gradation)
- Atterberg Limits, Liquid Limit, Plastic Limit and Plasticity Index
- Swell Consolidation Tests
- Moisture Content Dry Density Relationship Test

A synopsis of some of our laboratory data for some of the samples tested is tabulated below.

Sample Designation	Percent Passing #200 Sieve	Atterberg Limits LL/PI	Moisture Content (percent)	Dry Density (PCF)	Measured Swell Pressure (PSF)	Swell or Consolidation Potential	Estiamted R-Value	Maximum Dry Density (pcf)	Optimum Moisture (percent)
TB-3 @ 0-4’	5	NLL/NP	2.3	-	-	-	-	-	-
TB-4 @ 2’	-	-	14.1	105.3	320	0.2 (% under 100 psf load)	-	-	-
TB-6 @ 4’	-	-	24.9	93.5	0	0.0 (% under 500 psf load)	-	-	-
TB-9 @ 4’	-	-	11.2	105.5	0	-0.1 (% under 500 psf load)	-	-	-
TB-12 @ 2’	-	-	22.6	101.8	0	0.0 (% under 100 psf load)	-	-	-
TB-14 @ 0-4’	44	27/9	11.3	-	-	-	-	-	-
TB-14 @ 4’	-	-	40.2	82.3	180	0.1 (% under 100 psf load)	-	-	-
Bulk from TB-1 » TB-14	39	25/7	7.4	-	-	-	10*	-	-
Bulk from Berm Material	63	NLL/NP	11.4	81.8	410	0.4 (% under 100 psf load)	-	110.5	16.9
TB-15 @ 8-17” ABC	6.5	NLL/NP	2.9	-	-	-	72*	-	-
TB-16 @ 10-20” PR	8.3	NLL/NP	2.7	-	-	-	65*	-	-

*NOTES:
1. We determine the swell pressure as measured in our laboratory using the graphically estimated load-back swell pressure method.
2. Negative Swell-Consolidation Potential indicates compression under conditions of loading and wetting.
3. ABC = aggregate base course; PR = Pit Run sub-base
4. NLL = No Liquid Limit; NP = Non-Plastic
5. * = Estimated R-Value based on Sieve and Atterberg correlation

4.0 FOUNDATION RECOMMENDATIONS

There are two general types of foundation system concepts, “deep” and “shallow”, with the designation being based on the depth of support of the system. We have provided a discussion of viable foundation system concepts for this project below. The choice of the appropriate foundation system for the project is best made by the project structural engineer or project architect. We should be contacted once the design choice has been made to provide consultation regarding implementation of our design parameters.

Deep foundations will provide for the least likelihood of post-construction movement of the structure. Deep foundation system design concepts may be viable for this project; however, we anticipate that only a shallow foundation system design is being considered at this time. We are available to develop deep foundation design parameters if desired.

4.1 Shallow Foundation System Concepts

Subsurface data indicate that various soil mixtures of clay, silt, sand, gravel, and cobbles will likely be encountered beneath shallow foundations. The soils were found to have a nil to low swell potential and moderate consolidation potential. Deep foundation system design concepts which include isolation of shallow components including floor systems from shallow soils are less likely to experience post-construction movement due to volume changes in the site soil.

There are numerous types of shallow foundation systems and variants of each type. Shallow foundation system concepts discussed below include:

- Spread Footings (continuous) and stem walls
- Mat or Raft Foundations

The integrity and long-term performance of each type of system is influenced by the quality of workmanship which is implemented during construction. It is imperative that all excavation and fill placement operations be conducted by qualified personnel using appropriate equipment and techniques to provide suitable support conditions for the foundation system.

4.1.1 Spread Footings

A spread footing foundation system consists of a footing which dissipates, or spreads, the loads imposed from the stem wall (or beam) from the structure above. Properly designed and constructed continuous spread footings with stem walls (or beams) have the ability to distribute the forces associated with consolidation of the support soil. The rigidity of the system helps reduce differential movement and associated damage to the overlying structure. Settlement of the soil supporting isolated pad footings will result in direct settlement of the columns and structural components supported by the columns. Damage to the structure due to this type of movement can be severe. We recommend that isolated pad footings be avoided and that the foundation system be designed as rigid as is reasonably possible.

Careful preparation of the support soils, placement of granular compacted structural fill, careful placement and compaction of stem wall backfill and positive surface drainage adjacent to the foundation system all help reduce the influence of volume changes of the soils on the performance of the spread footing foundation system.

We recommend that the footings be supported by a layer of moisture conditioned and compacted natural soil which is overlain by a layer of compacted structural fill material. This concept is outlined below:

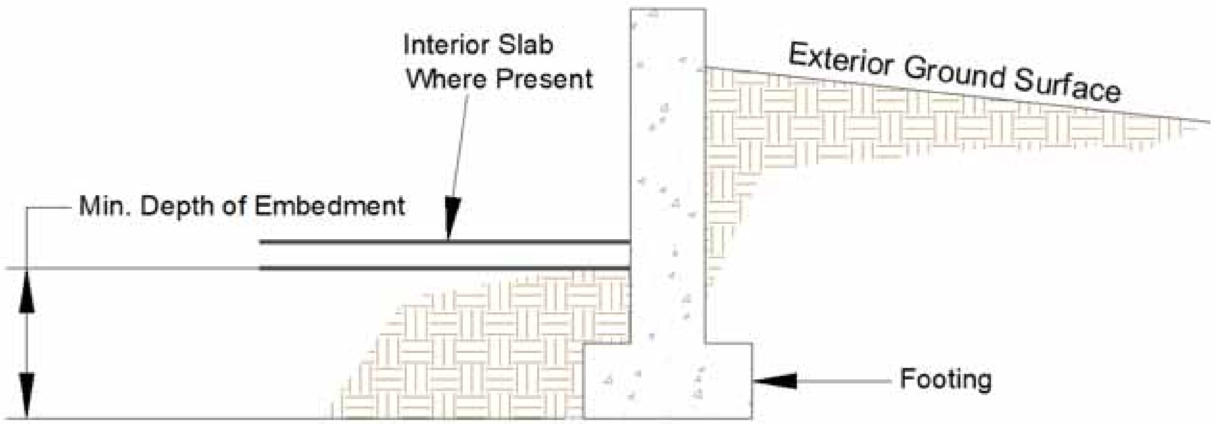
- The foundation excavation should be excavated to at least 12 inches below the proposed footing support elevation. A representative of Trautner Geotech must observe the excavation at the time of construction to verify the bearing conditions.
- The foundation excavation should extend down to through any existing fill material, if encountered.
- The natural soils exposed in the bottom of the excavation should be scarified to a depth of about 6 to 8 inches

- The scarified soil should be thoroughly moisture conditioned to about 2 percent above the laboratory determined optimum moisture content and then compacted.
- If the subgrade is yielding under compactive effort, we should be contacted to observe the subgrade conditions. Conceptual mechanical stabilization recommendations presented in Section 8.1.1 may be necessary.
- After completion of the compaction of the moisture conditioned natural soil a 12 inch thick layer of granular aggregate base course structural fill material should be placed, moisture conditioned and compacted.
- The moisture conditioned natural soil material and the granular soils should be compacted as discussed under the Compaction Recommendations portion of this report below.
- In the absence of structural engineering design and for general geotechnical engineering purposes, we recommend the stem walls be designed to act as beams and reinforced with continuous steel reinforcement, 4 reinforcement bars, 2 top and 2 bottom. Taller walls may require additional reinforcement bar.
- The structural engineer should be contacted to provide the appropriate reinforcement bar diameter and locations.
- The exterior foundation backfill must be well compacted and moisture conditioned to above optimum moisture content. Recommendations for exterior foundation backfill are provided later in this report.

We recommend below-grade construction, such as retaining walls, crawlspace and basement areas, be protected from wetting and hydrostatic pressure buildup by installing a foundation drain and wall drain systems. Topographic conditions on the site may influence the ability to install a subsurface drain system which promotes water flow away from the foundation system. The subsurface drain system concept is discussed under the Subsurface Drain System section of this report below.

The footing embedment is a relatively critical, yet often overlooked, aspect of foundation construction. The embedment helps develop the soil bearing capacity, increases resistance of the footing to lateral movement and decreases the potential for rapid moisture changes in the footing support soils, particularly in crawl space areas. Interior footing embedment reduces the exposure of the crawl space support soils to dry crawl space air. Reduction in drying of the support soil helps reduce downward movement of interior footings due to soil shrinkage.

All footings should have a minimum depth of embedment of at least one 1 foot. The embedment concept is shown below.



Footing Embedment Concept

Not to Scale

Spread footings located away from sloped areas may be designed using the bearing capacity information tabulated below.

Minimum Depth of Embedment (Feet)	Continuous Footing Design Capacity (psf)	Isolated Footing Design Capacity (psf)
1	1,500	Not Recommended
2	2,000	
3	2,500	

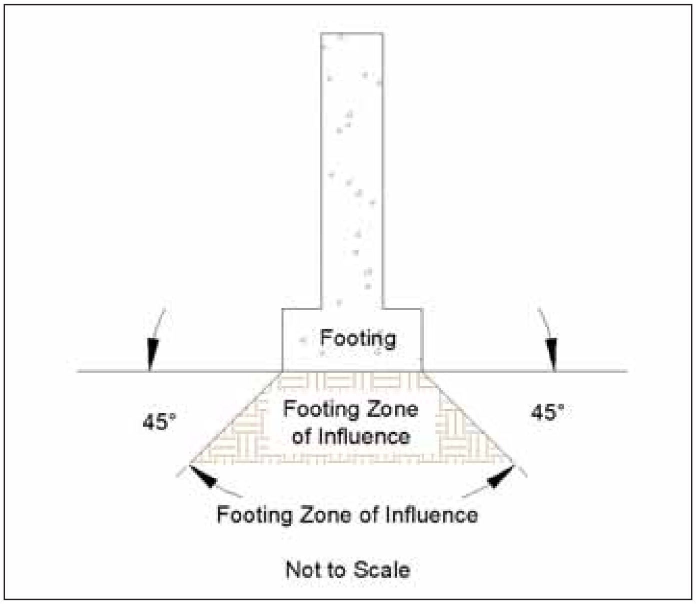
The bearing capacity values tabulated above may be increased by 20 percent for transient conditions associated with wind and seismic loads. Snow loads are not transient loads.

The bearing capacity values above were based on footing placed directly on the natural soils and on a continuous spread footing width of 2 feet. Larger footings and/or footings placed on a blanket of compacted structural fill will have a higher design soil bearing capacity. Development of the final footing design width is usually an iterative process based on evaluation of design pressures, footing widths and the thickness of compacted structural fill beneath the footings. We should be contacted as the design process continues to re-evaluate the design capacities above based on the actual proposed footing geometry.

Due to the consolidation potential of the soils tested we recommend isolated footings for support of interior column loads be avoided. A more rigid structure consisting of interior continuous footings and grade beams will help reduce the potential for damage due to settling soils.

The compacted structural fill should be placed and compacted as discussed in the Construction Considerations, “Fill Placement Recommendations” section of this report, below. The zone of influence of the footing (at elevations close to the bottom of the footing) is often approximated as being between two lines subtended at 45 degree angles from each bottom corner of the footing.

The compacted structural fill should extend beyond the zone of influence of the footing as shown in the sketch below.



A general and simple rule to apply to the geometry of the compacted structural fill blanket is that it should extend beyond each edge of the footing a distance which is equal to the fill thickness.

We estimate that the footings designed and constructed above will have a total post construction settlement of about 1 inch or less.

All footings should be support at an elevation deeper than the maximum depth of frost penetration for the area. This recommendation includes exterior isolated footings and column supports. Please contact the local building department for specific frost depth requirements.

The post construction differential settlement may be reduced by designing footings that will apply relatively uniform loads on the support soils. Concentrated loads should be supported by footings that have been designed to impose similar loads as those imposed by adjacent footings.

Under no circumstances should any footing be supported by more than 3 feet of compacted structural fill material unless we are contacted to review the specific conditions supporting these footing locations.

The design concepts and parameters presented above are based on the soil conditions encountered in our test borings. We should be contacted during the initial phases of the foundation excavation at the site to assess the soil support conditions and to verify our recommendations.

4.1.2 General Shallow Foundation Considerations

Some movement and settlement of any shallow foundation system will occur after construction. Movement associated with swelling soils also occurs occasionally. Utility line connections through and foundation or structural component should be appropriately sleeved to reduce the potential for damage to the utility line. Flexible utility line connections will further reduce the potential for damage associated with movement of the structure.

5.0 RETAINING STRUCTURES

We anticpate that laterally loaded walls will be constructed as part of this site development. Lateral loads will be imposed on the retaining structures by the adjacent soils and, in some cases, additional surcharge loads will be imposed on the retained soils from vehicles or adjacent structures. The loads imposed by the soil are commonly referred to as lateral earth pressures. The magnitude of the lateral earth pressure forces is partially dependent on the soil strength characteristics, the geometry of the ground surface adjacent to the retaining structure, the subsurface water conditions and on surcharge loads.

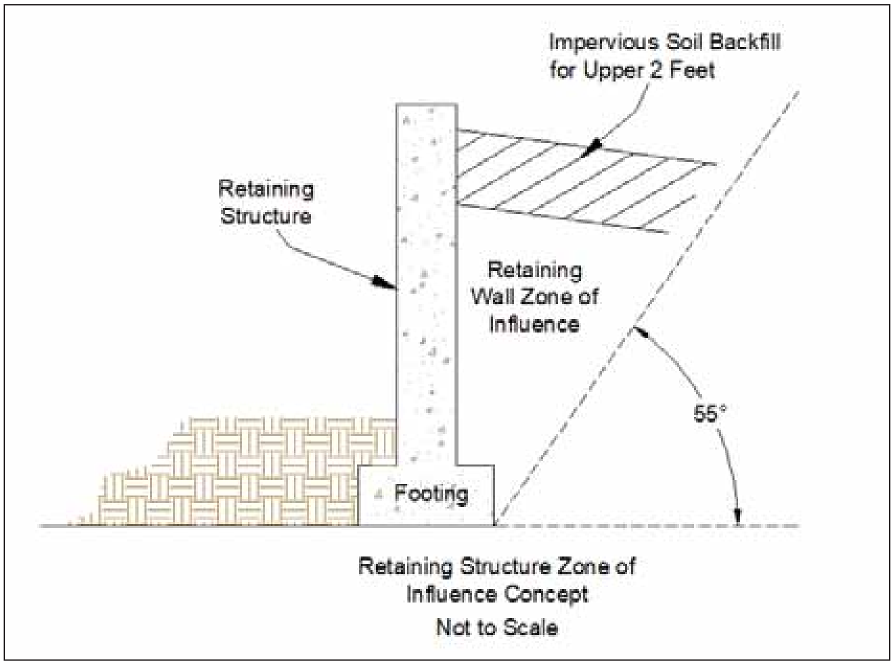
Due to the variability of the site soils, we do not recommend that the site soils be used for retaining wall backfill. The gravel and cobble soils are also not considered suitable for wall backfill without considerable processing. The retaining walls may be designed using the lateral earth pressure values for imported granular soil that are tabulated below.

Type of Lateral Earth Pressure	Level Granular Soil Backfill (pounds per cubic foot/foot)
Active	35
At-rest	55
Passive	460
Allowable Coefficient of Friction	0.45

The granular soil that is used for the retaining wall backfill may be permeable and may allow water migration to the foundation support soils. There are several options available to help reduce water migration to the foundation soils, two of which are discussed here. An impervious geotextile layer and shallow drain system may be incorporated into the backfill, as discussed in Section 9.5, Landscaping Considerations, below. A second option is to place a geotextile filter material on top of the granular soils and above that place about 1½ to 2 feet of moisture conditioned and compacted site clay soils. It should be noted that if the site clay soils are used volume changes may occur which will influence the performance of overlying concrete flatwork or structural components.

The values tabulated above are for well drained backfill soils. The values provided above do not include any forces due to adjacent surcharge loads or sloped soils. If the backfill soils become saturated the imposed lateral earth pressures will be significantly higher than those tabulated above.

The granular imported soil backfill values tabulated above are appropriate for material with an angle of internal friction of 35 degrees, or greater. The granular backfill must be placed within the retaining structure zone of influence as shown below in order for the lateral earth pressure values tabulated above for the granular material to be appropriate.



If an open graded, permeable, granular backfill is chosen it should not extend to the ground surface. Some granular soils allow ready water migration which may result in increased water access to the foundation soils. The upper few feet of the backfill should be constructed using an impervious soil such as silty-clay and clay soils from the project site, if these soils are available. The 55 degree angle shown in the figure above is approximately correct for most clay soils. The angle is defined by $45 + (\varphi/2)$ where "φ" if the angle of internal friction of the soil.

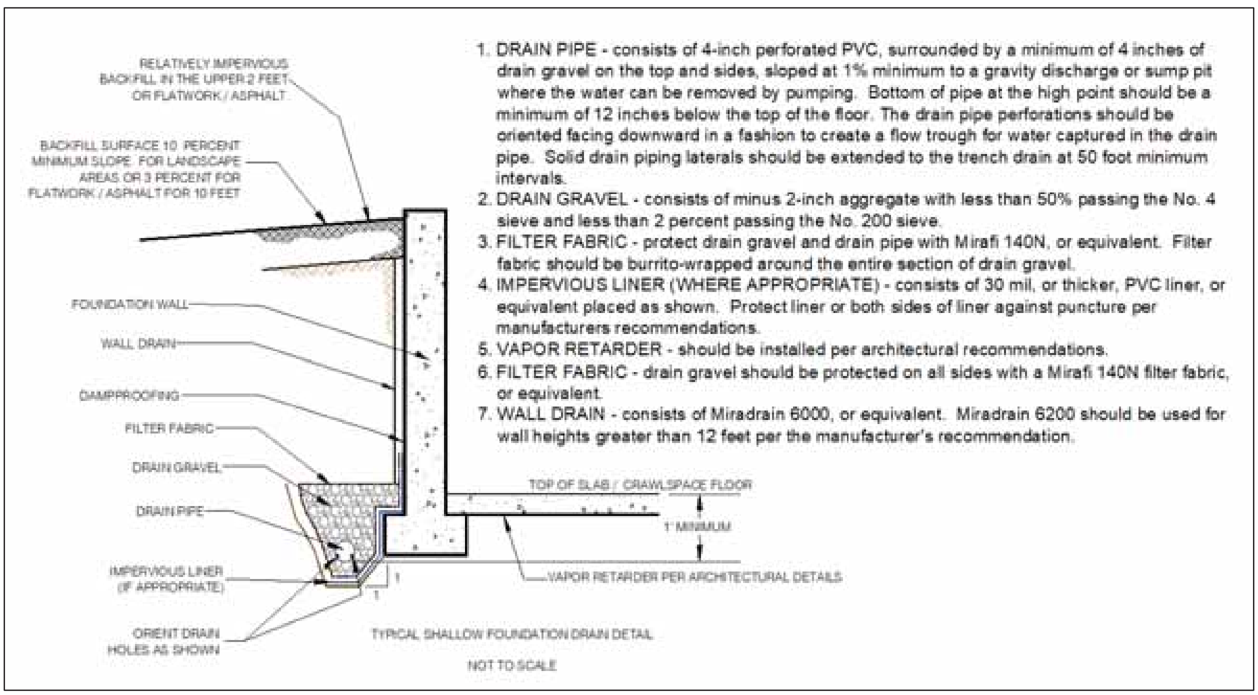
Backfill should not be placed and compacted behind the retaining structure unless approved by the project structural engineer. Backfill placed prior to construction of all appropriate structural members such as floors, or prior to appropriate curing of the retaining wall concrete, may result in severe damage and/or failure of the retaining structure.

6.0 SUBSURFACE DRAIN SYSTEM

We recommend below-grade construction, such as retaining walls, crawlspace and basement areas, be protected from wetting and hydrostatic pressure buildup by an underdrain and wall drain system. Exterior retaining structures may be constructed with weep holes to allow subsurface water migration through the retaining structures. Topographic conditions on the site may influence the ability to install a subsurface drain system which promotes water flow away from the foundation system. The subsurface drain system concept is discussed under the Subsurface Drain System section of this report below.

A drain system constructed with a free draining aggregate material and a 4 inch minimum diameter perforated drain pipe should be constructed adjacent to retaining structures and/or adjacent to foundation walls. The drain pipe perforations should be oriented facing downward. The system should be protected from fine soil migration by a fabric-wrapped aggregate which surrounds a rigid perforated pipe. We do not recommend use of flexible corrugated perforated pipe since it is not possible to establish a uniform gradient of the flexible pipe throughout the drain system alignment. Corrugated drain tile is perforated throughout the entire circumference of the pipe and therefore water can escape from the perforations at undesirable locations after being collected. The nature of the perforations of the corrugated material further decreases its effectiveness as a subsurface drain conduit.

The drain should be placed at each level of excavation and at least 12 inches below lowest adjacent finish floor or crawlspace grade. The drain system pipe should be graded to surface outlets or a sump vault. The drain system should be sloped at a minimum gradient of about 2 percent, but site geometry and topography may influence the actual installed pipe gradient. Water must not be allowed to pool along any portion of the subsurface drain system. An improperly constructed subsurface drain system may promote water infiltration to undesirable locations. The drain system pipe should be surrounded by about 2 to 4 cubic feet per lineal foot of free draining aggregate. If a sump vault and pump are incorporated into the subsurface drain system, care should be taken so that the water pumped from the vault does not recirculate through pervious soils and obtain access to the basement or crawl space areas. An impervious membrane should be included in the drain construction for grade beam and pier systems or other foundation systems such as interrupted footings where a free pathway for water beneath the structure exists. A generalized subsurface drain system concept is shown below.



There are often aspects of each site and structure which require some tailoring of the subsurface drain system to meet the needs of individual projects. Drain systems that are placed adjacent to void forms must include provisions to protect and support the impervious liner adjacent to the void form. We are available to provide consultation for the subsurface drain system for this project, if desired.

Water often will migrate along utility trench excavations. If the utility trench extends from areas above the site, this trench may be a source for subsurface water within the proposed basement or crawl space. We suggest that the utility trench backfill be thoroughly compacted to help reduce the amount of water migration. The subsurface drain system should be designed to collect subsurface water from the utility trench and direct it to surface discharge points.

7.0 CONCRETE FLATWORK

We anticipate that both interior and exterior concrete flatwork will be considered in the project design. Concrete flatwork is typically lightly loaded and has a limited capability to resist shear forces associated with uplift from swelling soils and/or frost heave. It is prudent for the design and construction of concrete flatwork on this project to be able to accommodate some movement associated with swelling soil conditions.

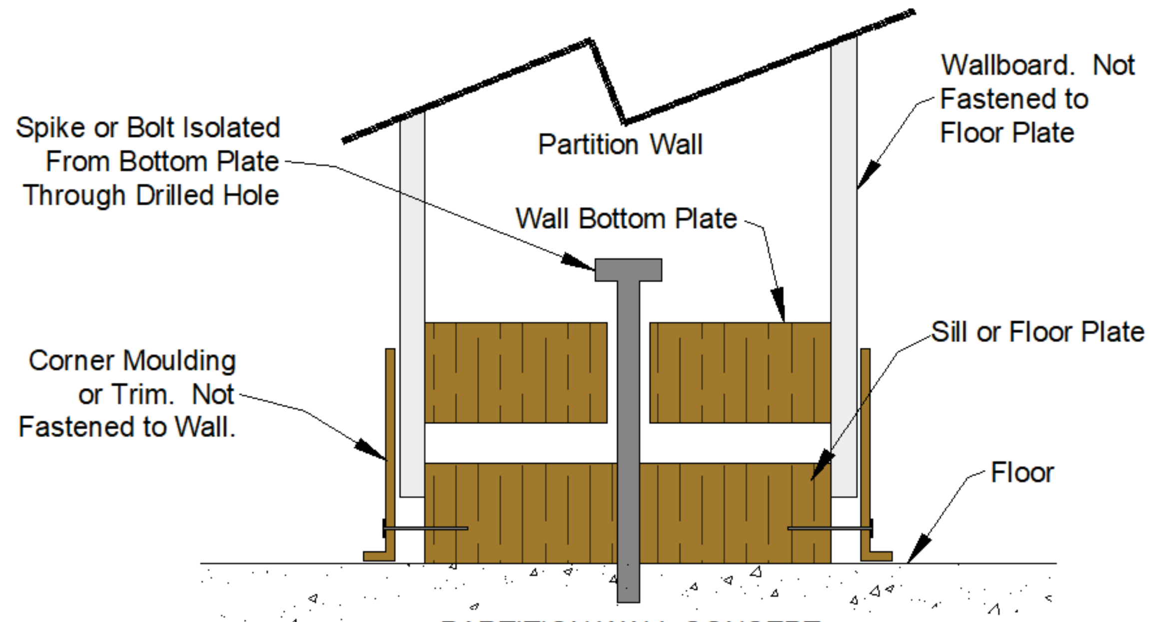
Due to the consolidation potential of the site soils, interior floors supported over a crawl space are less likely to experience movement than are concrete slabs support on grade. The following recommendations are appropriate for garage floor slabs and for interior floor slabs if the owner is willing to accept the risk of potential movement beyond normal tolerances.

7.1 Interior Concrete Slab-on-Grade Floors

A primary goal in the design and construction of concrete slab-on-grade floors is to reduce the amount of post construction uplift associated with swelling soils, or downward movement due to consolidation of soft soils. A parallel goal is to reduce the potential for damage to the structure associated with any movement of the slab-on-grade which may occur. There are limited options available to help mitigate the influence of volume changes in the support soil for concrete slab-on-grade floors, these include:

- Preconstruction scarification, moisture conditioning and re-compaction of the natural soils in areas proposed for support of concrete flatwork, and/or,
- Placement and compaction of granular compacted structural fill material

Although the soil on this site does not exhibit a high swell potential when wetted, performance of the structure may be improved by isolating the floors from the interior partition walls. Interior walls may be structurally supported from framing above the floor, or interior walls and support columns may be supported on interior portions of the foundation system. Partition walls should be designed and constructed with voids above, and/or below, to allow independent movement of the floor slab. This concept is shown below.



PARTITION WALL CONCEPT

Not to Scale

The sketch above provides a concept. If the plans include isolation of the partition walls from the floor slab, the project architect or structural engineer should be contacted to provide specific details and design of the desired system.

If the owner chooses to construct the structures with concrete slab-on-grade floors, the floors should be supported by a layer of granular structural fill overlying the processed natural soils. Interior concrete flatwork, or concrete slab-on-grade floors, should be underlain by scarification, moisture conditioning and compaction of about 6 inches of the natural soils followed by placement of at least 12 inches of compacted granular structural fill material that is placed and compacted as discussed in the Construction Considerations, "Fill Placement Recommendations" section of this report, below.

The above recommendations will not prevent slab heave if the expansive soils underlying slabs-on-grade become wet. However, the recommendations will reduce the effects if slab heave occurs. All plumbing lines should be pressure tested before backfilling to help reduce the potential for wetting. The only means to completely mitigate the influence of volume changes on the performance of interior floors is to structurally support the floors over a void space. Floors that are suspended by the foundation system will not be influenced by volume changes in the site soils. The suggestions and recommendations presented in this section are intended to help reduce the influence of swelling soils on the performance of the concrete slab-on-grade floors.

7.1.1 Capillary and Vapor Moisture Rise

Capillary and vapor moisture rise through the slab support soil may provide a source for moisture in the concrete slab-on-grade floor. This moisture may promote development of mold or mildew in poorly ventilated areas and may influence the performance of floor coverings and mastic placed directly on the floor slabs. The type of floor covering, adhesives used, and other considerations that are not related to the geotechnical engineering practice will influence the design. The architect, builder and particularly the floor covering/adhesive manufacturer should be contacted regarding the appropriate level of protection required for their products.

Comments for Reduction of Capillary Rise

One option to reduce the potential for capillary rise through the floor slab is to place a layer of clean aggregate material, such as washed concrete aggregate for the upper 4 to 6 inches of fill material supporting the concrete slabs.

Comments for Reduction of Vapor Rise

To reduce vapor rise through the floor slab, a moisture barrier such as a 6 mil (or thicker) plastic, or similar impervious geotextile material is often be placed below the floor slab. The material used should be protected from punctures that will occur during the construction process.

There are proprietary barriers that are puncture resistant that may not need the underlying layer of protective material. Some of these barriers are robust material that may be placed below the compacted structural fill layer. We do not recommend placement of the concrete directly on a moisture barrier unless the concrete contractor has had previous experience with curing of concrete placed in this manner. As mentioned above, the architect, builder and particularly the floor covering/adhesive manufacturer should be contacted regarding the appropriate level of moisture and vapor protection required for their products.

7.1.2 Slab Reinforcement Considerations

The project structural engineer should be contacted to provide steel reinforcement design considerations for the proposed floor slabs. Any steel reinforcement placed in the slab should be placed at the appropriate elevations to allow for proper interaction of the reinforcement with tensile stresses in the slab. Reinforcement steel that is allowed to cure at the bottom of the slab will not provide adequate reinforcement.

7.2 Exterior Concrete Flatwork Considerations

Exterior concrete flatwork includes concrete driveway slabs, aprons, patios, and walkways. The desired performance of exterior flatwork typically varies depending on the proposed use of the site and each owner's individual expectations. As with interior flatwork, exterior flatwork is particularly prone to movement and potential damage due to movement of the support soils. This movement and associated damage may be reduced by following the recommendations discussed under interior flatwork, above. Unlike interior flatwork, exterior flatwork may be exposed to frost heave, particularly on sites where the bearing soils have a high silt content. It may be prudent to remove silt soils from exterior flatwork support areas where movement of exterior flatwork will adversely affect the project, such as near the interface between the driveway and the interior garage floor slab. If silt soils are encountered, they should be removed to the maximum depth of frost penetration for the area where movement of exterior flatwork is undesirable.

If some movement of exterior flatwork is acceptable, we suggest that the support areas be prepared by scarification, moisture conditioning and re-compaction of about 6 inches of the natural soils followed by placement of at least 12 inches of compacted granular fill material. The scarified material and granular fill materials should be placed as discussed under the Construction Considerations, "Fill Placement Recommendations" section of this report, below.

It is important that exterior flatwork be separated from exterior column supports, masonry veneer, finishes and siding. No support columns, for the structure or exterior decks, should be placed on exterior concrete unless movement of the columns will not adversely affect the supported structural components. Movement of exterior flatwork may cause damage if it is in contact with portions of the structure exterior.

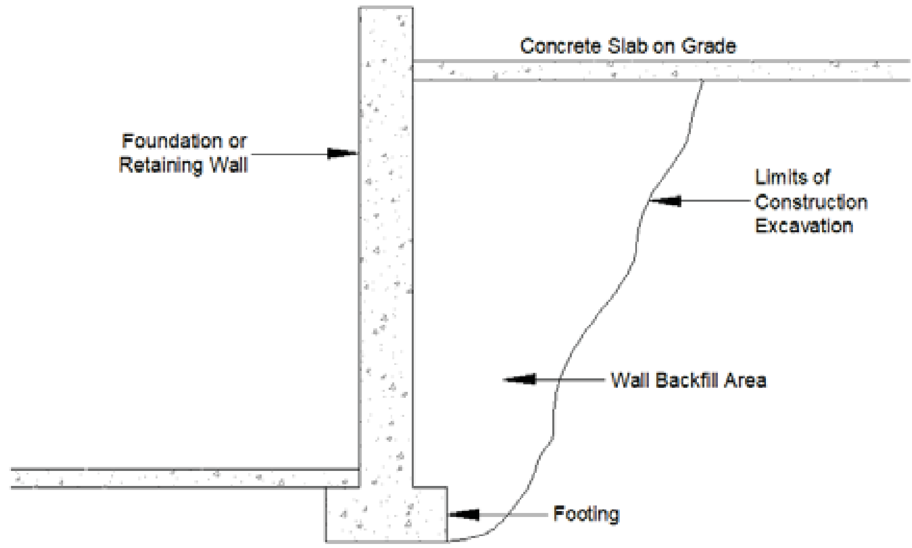
It should be noted that silt and silty sand soils located near the ground surface are particularly prone to frost heave. Soils with high silt content have the ability to retain significant moisture. The ability for the soils to accumulate moisture combined with a relatively shallow source of subsurface water and the fact that the winter temperatures in the area often very cold all contribute to a high potential for frost heave of exterior structural components. We recommend that silty soils be removed from the support areas of exterior components that are sensitive to movement associated with frost heave. These soils should be replaced with a material that is not susceptible to frost heave. Aggregate road base and similar materials retain less water than fine-grained soils and are therefore less prone to frost heave. We are available to discuss this concept with you as the plans progress.

Landscaping and landscaping irrigation often provide additional moisture to the soil supporting exterior flatwork. Excessive moisture will promote heave of the flatwork either due to expansive soil, or due to frost action. If movement of exterior slabs is undesirable, we recommend against placement of landscaping that requires irrigation. The ground surfaces near exterior flatwork must be sloped away from flatwork to reduce surface water migration to the support soil.

Exterior flatwork should not be placed on soils prepared for support of landscaping vegetation. Cultivated soils will not provide suitable support for concrete flatwork.

7.3 General Concrete Flatwork Comments

It is relatively common that both interior and exterior concrete flatwork is supported by areas of fill adjacent to either shallow foundation walls or basement retaining walls. A typical sketch of this condition is shown below.



Wall Backfill and Slab Support Schematic

Not to Scale

Settlement of the backfill shown above will create a void and lack of soil support for the portions of the slab over the backfill. Settlement of the fill supporting the concrete flatwork is likely to cause damage to the slab-on-grade. Settlement and associated damage to the concrete flatwork may occur when the backfill is relatively deep, <u>even if the backfill is compacted.</u>

If this condition is likely to exist on this site it may be prudent to design the slab to be structurally supported on the retaining or foundation wall and designed to span to areas away from the backfill area as designed by the project structural engineer. We are available to discuss this with you upon request.

8.0 CONSTRUCTION CONSIDERATIONS

This section of the report provides comments, considerations and recommendations for aspects of the site construction which may influence, or be influenced by the geotechnical engineering considerations discussed above. The information presented below is not intended to discuss all aspects of the site construction conditions and considerations that may be encountered as the project progresses. If any questions arise as a result of our recommendations presented above, or if unexpected subsurface conditions are encountered during construction we should be contacted immediately.

8.1 Fill Placement Recommendations

There are several references throughout this report regarding both natural soil and compacted structural fill recommendations. The recommendations presented below are appropriate for the fill placement considerations discussed throughout the report above.

All areas to receive fill, structural components, or other site improvements should be properly prepared and grubbed at the initiation of the project construction. The grubbing operations should include scarification and removal of organic material and soil. No fill material or concrete should be placed in areas where existing vegetation or fill material exist.

We observed evidence of previous site use and encountered existing man-placed fill during our field work. We suspect that man-placed fill and subterranean structures may be encountered as the project construction progresses. All existing fill material should be removed from areas planned for support of structural components. Excavated areas and subterranean voids should be backfilled with properly compacted fill material as discussed below.

8.1.1 Subgrade Soil Stabilization

We encountered subsurface water within our test borings. We suspect that soft, yielding soil conditions may be encountered at various locations on the project site during construction, especially in the ox-bow area of the site. This material may be challenging to compact in preparation for placement of overlying fill material. We have provided two general categories of concepts to stabilize these soils to provide a suitable substrate for placement and compaction of overlying compacted fill. These include:

1.) Mechanical Stabilization; using soil and/or geotextile materials, and,
2.) Chemical Stabilization; using dry Portland cement.

Mechanical stabilization of soil often includes placement of aggregate material and/or larger cobbles (3-4 inch size) into an area where the soils are yielding. The most predictable technique is to over-excavate these soft areas by about 8 to 12 inches, (or more, if needed) lightly proof compact the exposed soil, place a layer of woven geosynthetic or geogrid-type material, such as or Mirafi RS 280i or BXG 120 geogrid, followed by placement of a “clean crushed aggregate” material with a nominal maximum size of 3 inches and not more than about 5 percent passing the #4 sieve. This clean crushed aggregate material should then be consolidated with a plate-type compactor. A less robust fabric, such as a non-woven geofabric, (such as Mirifi 140N) is placed on top of this aggregate layer followed by placement and compaction of the overlying fill material. For sites with extremely soft conditions it may be necessary to increase the clean aggregate layer to about 18 inches and place an intermediate layer of geogrid (or fabric) at mid-height of this layer.

Chemical stabilization using Portland cement is effective for most soils. Generally, this technique is more suitable for isolated soft areas. Generally dry Portland cement powder may be placed on the surface of the soft yielding material and subsequently mixed into the soil. The effectiveness of this technique is partially dependent upon the thoroughness of the mixing. If it can be thoroughly mixed the application rate of the Portland cement need not be more than 10 percent, and often an application of 5 to 7 percent will provide a significant decrease in free water and stabilize the material. After mixing, the material should be allowed to “rest” for about two of more hours prior to compaction. The treated material will often yield some during initial compaction, but will generally increase in rigidity as the process of hydration begins takes place. If yielding under compaction is excessive, the material should be allowed “cure” additionally prior to continued compaction effort being applied. Often it takes more time, such as overnight, to allow the cement to fully stabilize the material so this strategy is often implemented in an area at the end of a work day and allowed to cure overnight followed by subsequent fill placement on the following day.

8.1.2 Natural Soil Fill

Any natural soil used for any fill purpose should be free of all deleterious material, such as organic material and construction debris. Natural soil fill includes excavated and replaced material or in-place scarified material. Due to the consolidation potential of the natural soil we do not recommend that it be used as fill material for direct support of structural components. The natural soils may be used to establish general site elevation. Our recommendations for placement of natural soil fill are provided below.

- The natural soils should be moisture conditioned, either by addition of water to dry soils, or by processing to allow drying of wet soils. The proposed fill materials should be moisture conditioned to between about optimum and about 2 percent above optimum soil moisture content. This moisture content can be estimated in the field by squeezing a sample of the soil in the palm of the hand. If the material easily makes a cast of soil which remains in-tact, and a minor amount of surface moisture develops on the cast, the material is close to the desired moisture content. Material testing during construction is the best means to assess the soil moisture content.
- Moisture conditioning of clay or silt soils may require many hours of processing. If possible, water should be added and thoroughly mixed into fine grained soil such as clay or silt the day prior to use of the material. This technique will allow for development of a more uniform moisture content and will allow for better compaction of the moisture conditioned materials.
- The moisture conditioned soil should be placed in lifts that do not exceed the capabilities of the compaction equipment used and compacted to at least 90 percent of maximum dry density as defined by ASTM D1557, modified Proctor test.
- We typically recommend a maximum fill lift thickness of 6 inches for hand operated equipment and 8 to 10 inches for larger equipment.
- Care should be exercised in placement of utility trench backfill so that the compaction operations do not damage underlying utilities.
- The maximum recommended lift thickness is about 6 to 8 inches. The maximum recommended rock size for natural soil fill is about 3 inches. This may require on-site screening or crushing if larger rocks are present. We must be contacted if it is desired to utilize rock greater than 3 inches for fill materials.

8.1.3 Berm Borrow Material

We sampled and tested the proposed borrow material currently stockpiled and located along the western boundary of the site. Based on the results of the laboratory testing, the material classified as a sandy silt (ML) and had a maximum dry density of 110.5 PCF and an optimum moisture content of 16.9%. In addition, we performed a one-dimensional swell/consolidation on a remolded sample of the berm material to estimate the post construction settlement of this material. Based on the results of the swell/consolidation test, the sample exhibited a low swell potential and a high consolidation potential. The sample had an initial moisture content of 11.4 and a final moisture content of 32.0.

We estimate the compacted berm material will have a post construction consolidation potential of approximately 4 to 5 percent, therefore a 10 foot thick fill of compacted berm material may settle up to approximately 6 inches over time even when properly placed. Due to the consolidation potential of the berm material and the high moisture contents, we do not recommend that it be used as fill material for support of structural components. The berm material may be used to establish general site elevation outside of structural components.

8.1.4 Granular Compacted Structural Fill

Granular compacted structural fill is referenced in numerous locations throughout the text of this report. Granular compacted structural fill should be constructed using an imported commercially produced rock product such as aggregate road base. Many products other than road base, such as clean aggregate or select crusher fines may be suitable, depending on the intended use. If a specification is needed by the design professional for development of project specifications, a material conforming to the Colorado Department of Transportation (CDOT) “Class 6” aggregate road base material can be specified. This specification can include an option for testing and approval in the event the contractor’s desired material does not conform to the Class 6 aggregate specifications. We have provided the CDOT Specifications for Class 6 material below.

Grading of CDOT Class 6 Aggregate Base-Course Material	
Sieve Size	Percent Passing Each Sieve
1 inch	100
¾ inch	95-100
#4	30-65
#8	25-55
#200	3-12

Liquid Limit less than 30

All compacted structural fill should be moisture conditioned and compacted to at least 90 percent of maximum dry density as defined by ASTM D1557, modified Proctor test. Areas where the structural fill will support traffic loads under concrete slabs or asphalt concrete should be compacted to at least 95 percent of maximum dry density as defined by ASTM D1557, modified Proctor test.

Although clean-screened or washed aggregate may be suitable for use as structural fill on sites with sand or non-expansive silt soils, or on sites where shallow subsurface water is present, clean aggregate materials must not be used on any site where expansive soils exist due to the potential for water to accumulate in the voids of the clean aggregate materials.

Clean aggregate fill, if appropriate for the site soil conditions, must not be placed in lifts exceeding 8 inches and each lift should be thoroughly vibrated, preferably with a plate-type vibratory compactor prior to placing overlying lifts of material or structural components. We should be contacted prior to the use of clean aggregate fill materials to evaluate their suitability for use on this project.

8.1.4 Deep Fill Considerations

Deep fills, in excess of approximately 3 feet, should be avoided where possible. Fill soils will settle over time, even when placed properly per the recommendations contained in this report. Natural soil fill or engineered structural fills placed to our minimum recommended requirements will tend to settle an estimated 1 to 3 percent; therefore, a 3 foot thick fill may settle up to approximately 1 inch over time. A 10 foot thick fill may settle up to approximately 3½ inches even when properly placed. Fill settlement will result in distress and damage to the structures they are intended to support. There are methods to reduce the effects of deep fill settlement such as surcharge loading and surveyed monitoring programs; however, there is a significant time period of monitoring required for this to be successful. A more reliable method is to support structural components with deep foundation systems bearing below the fill envelope. We can provide additional guidance regarding deep fills up on request.

8.2 Excavation Considerations

Unless a specific classification is performed, the site soils should be considered as an Occupational Safety and Health Administration (OSHA) Type C soil and should be sloped and/or benched according to the current OSHA regulations. Excavations should be sloped and benched to prevent wall collapse. Any soil can release suddenly and cave unexpectedly from excavation walls, particularly if the soils is very moist, or if fractures within the soil are present. Daily observations of the excavations should be conducted by OSHA competent site personnel to assess safety considerations.

We did encounter free subsurface water in our test borings. If water is encountered during construction, it may be necessary to dewater excavations to provide for suitable working conditions.

If possible, excavations should be constructed to allow for water flow from the excavation the event of precipitation during construction. If this is not possible it may be necessary to remove water from snowmelt or precipitation from the foundation excavations to help reduce the influence of this water on the soil support conditions and the site construction characteristics.

8.2.1 Excavation Cut Slopes

We anticipate that some permanent excavation cut slopes may be included in the site development. Temporary cut slopes should not exceed 5 feet in height and should not be steeper than about 1:1 (horizontal to vertical) for most soils. Permanent cut slopes greater than 5 feet or steeper than 2½:1 must be analyzed on a site-specific basis. We are available to perform limited slope stability analysis as the project progresses; however, we do not perform shoring designs. If shoring is needed, then a shoring design engineer will need to be contacted to provide temporary and/or permanent shoring.

We did not observe evidence of existing unstable slope areas influencing the site, but due to the steepness and extent of the slopes in the area we suggest that the magnitude of the proposed excavation slopes be minimized, supported by retaining structures, and/or temporary or permanent shoring.

8.3 Utility Considerations

Subsurface utility trenches will be constructed as part of the site development. Utility line backfill often becomes a conduit for post construction water migration. If utility line trenches approach the proposed project site from above, water migrating along the utility line and/or backfill may have direct access to the portions of the proposed structure where the utility line penetrations are made through the foundation system. The foundation soils in the vicinity of the utility line penetration may be influenced by the additional subsurface water. There are a few options to help mitigate water migration along utility line backfill. Backfill bulkheads constructed with high clay content soils and/or placement of subsurface drains to promote utility line water discharge away from the foundation support soil.

Some movement of all structural components is normal and expected. The amount of movement may be greater on sites with problematic soil conditions. Utility line penetrations through any walls or floor slabs should be sleeved so that movement of the walls or slabs does not induce movement or stress in the utility line. Utility connections should be flexible to allow for some movement of the floor slab.

8.4 Exterior Grading and Drainage Comments

The following recommendations should be following during construction and maintained for the life of the structure with regards to exterior grading and surface drainage.

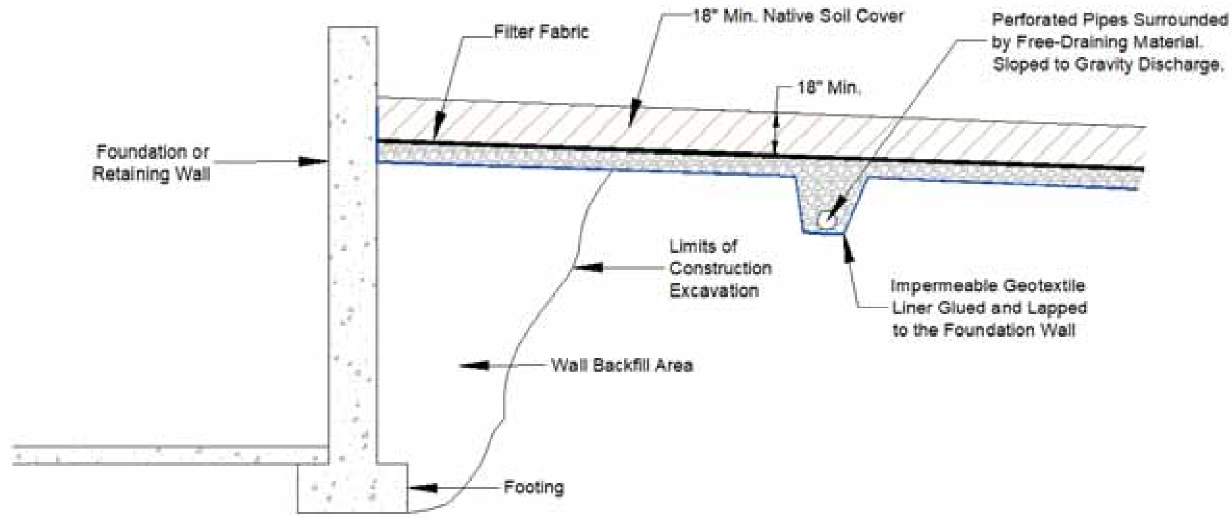
- The ground surface adjacent to the structure should be sloped to promote water flow away from the foundation system and flatwork.
- Snow storage areas should not be located in areas which will allow for snowmelt water access to support soils for the foundation system or flatwork.
- The project civil engineer, architect or builder should develop a drainage scheme for the site. We typically recommend the ground surface surrounding the exterior of the building be sloped to drain away from the foundation in all directions. We recommend a minimum slope of 12 inches in the first 10 feet in unpaved areas and a minimum slope of 3 inches in the first 10 feet in paved areas.
- Water flow from the roof of the structure should be captured and directed away from the structure. If the roof water is collected in an eave gutter system, or similar, the discharge points of the system must be located away from areas where the water will have access to the foundation backfill or any structure support soils. If downspouts are used, provisions should be made to either collect or direct the water away from the structure.
- Care should be taken to not direct water onto adjacent property or to areas that would negatively influence existing structures or improvements.

8.5 Landscaping Considerations

We recommend against construction of landscaping which requires excessive irrigation. Generally landscaping which uses abundant water requires that the landscaping contractor install topsoil which will retain moisture. The topsoil is often placed in flattened areas near the structure to further trap water and reduce water migration from away from the landscaped areas.

Unfortunately, almost all aspects of landscape construction and development of lush vegetation are contrary to the establishment of a relatively dry area adjacent to the foundation walls. Excess water from landscaped areas near the structure can migrate to the foundation system or flatwork support soils, which can result in volume changes in these soils.

A relatively common concept used to collect and subsequently reduce the amount of excess irrigation water is to glue or attach an impermeable geotextile fabric or heavy mill plastic to the foundation wall and extend it below the topsoil which is used to establish the landscape vegetation. A thin layer of sand can be placed on top of the geotextile material to both protect the geotextile from punctures and to serve as a medium to promote water migration to the collection trench and perforated pipe. The landscape architect or contractor should be contacted for additional information regarding specific construction considerations for this concept which is shown in the sketch below.



Shallow Landscaping Drain Concept

Not to Scale

A free draining aggregate or sand may be placed in the collection trench around the perforated pipe. The perforated pipe should be graded to allow for positive flow of excess irrigation water away from the structure or other area where additional subsurface water is undesired. Preferably the geotextile material should extend at least 10 or more feet from the foundation system.

Care should be taken to not place exterior flatwork such as sidewalks or driveways on soils that have been tilled and prepared for landscaping. Tilled soils will settle which can cause damage to the overlying flatwork. Tilled soils placed on sloped areas often “creep” down-slope. Any structure or structural component placed on this material will move down-slope with the tilled soil and may become damaged.

8.6 Soil Sulfate and Corrosion Issues

The requested scope of our services did not include assessment of the chemical constituents of corrosion potential of the site soils. Most soils in southwest Colorado are not typically corrosive to concrete. There has not been a history of damage to concrete due to sulfate corrosion in the area.

We are available to perform soluble sulfate content tests to assess the corrosion potential of the soils on concrete if desired.

8.7 Radon Issues

The requested scope of service of this report did not include assessment of the site soils for radon production. Many soils and formational materials in western Colorado produce Radon gas. The structure should be appropriately ventilated to reduce the accumulation of Radon gas in the structure. Several Federal Government agencies including the Environmental Protection Agency (EPA) have information and guidelines available for Radon considerations and home construction. If a radon survey of the site soils is desired, please contact us.

8.8 Mold and Other Biological Contaminants

Our services do not include determining the presence, prevention or possibility of mold or other biological contaminants developing in the future. If the client is concerned about mold or other biological contaminants, a professional in this special field of practice should be consulted.

9.0 PAVEMENT SECTION THICKNESS DESIGN RECOMMENDATIONS

We have provided recommendations for a flexible asphalt and rigid Portland concrete pavement sections for the RV Park. We have provided our traffic estimates in Section 9.1 below. Our flexible asphalt pavement section thickness recommendations are provided in Section 9.2 and general asphalt pavement construction recommendations are provided in Section 9.3. Rigid Portland concrete recommendations are provided in Section 9.4. Our limited pavement evaluation of CR 252 is presented in Section 9.5.

9.1 *Traffic Estimates*

SEH provided an average daily traffic (ADT) projection of 335 for the RV Park. Based on an ADT of 335, we estimated a corresponding 10 year, 18,000 pound (18k) equivalent single axel load (ESAL) of 126,000. We have provided conceptual pavement section thickness recommendations for an estimated 126,000 ESALs. If different ESAL values are anticipated or if alternative recommendations are required, the pavement sections presented in this report should be re-evaluated.

9.2 *Asphalt Pavement Design Recommendations*

The aggregate materials used within the pavement section should conform to the requirements outlined in the current Specifications for Road and Bridge Construction, Colorado Department of

Transportation (CDOT). The aggregate base material should be a ¾-inch minus material that conforms to the CDOT Class 6 aggregate base course specifications and have an R-value of at least 78. The aggregate sub-base course should conform to the CDOT specifications for Class 2 material and should have a minimum R-value 70. Other material may be suitable for use in the pavement section, but materials different than those listed above should be tested and observed by us prior to inclusion in the project design or construction. Aggregate sub-base and base-course materials should be compacted to at least 95 percent of maximum dry density as defined by the modified Proctor test, ASTM D1557.

We recommend that the asphalt concrete used on this project be mixed in accordance with a design prepared by a licensed professional engineer, or an asphalt concrete specialist. We should be contacted to review the mix design prior to placement at the project site. We recommend that the asphalt concrete be compacted to between 92 and 96 percent of the maximum theoretical density.

We have provided several pavement section design thicknesses below for 126,000 estimated ESALs. The project civil engineer, or contractor can evaluate the best combination of materials for economic considerations.

We performed a California Bearing Ratio (CBR) test on a composite sample of soil obtained from the project site. Based on the laboratory analysis, we estimated the R-Value of 10 for the on-site soils, which correlates to a resilient modulus of 3,562 pounds per square inch. The CBR results are provided in Appendix A. Other assumptions made for our analysis are listed below.

- Reliability Factor R(%) = 90%
- Overall Standard Deviation, So = 0.44
- Estimated Total 18K-ESAL value(s) = 126,000
- Effective Roadbed Soils Resilient Modulus, Mr = 3,562
- Change is serviceability index, Delta PSI = 2.5
- Structural Coefficient of Asphalt Pavement = 0.44
- Structural Coefficient of Aggregate Base Course = 0.12
- Structural Coefficient of Aggregate Sub-Base Course = 0.09
- Modifying Structural Layer Coefficients for aggregate base course and aggregate sub-base course layers, mi = 1.0 (fair drainage conditions with 5%-25% saturation frequency)

We have estimated a pavement reliability factor ® of 90 percent. The Federal Highway Administration defines R as "the probability that a pavement section will perform satisfactorily over the design period. It must account for uncertainties in traffic loading, environmental conditions, and construction materials. The AASHTO design method accounts for these uncertainties by incorporating a reliability level R to provide a factor of safety into the pavement design and thereby increase the probability that the pavement will perform as intended over its design life." A higher R will result in thicker pavement section materials; however, may lead to a greater reliability in the pavement performance. The designer or project civil engineer should evaluate the desired R factor for the intended use. We can provide alternate reliability factors for the proposed pavement section upon request.

Based on the above assumptions and laboratory test data obtained for the native on-site soil materials, we obtained a structural number (SN) equal to 3.09 for an assumed 126,000 18k-ESAL. Our pavement thickness design recommendations are provided below. We have shown alternate pavement sections below that meet the minimum structural numbers. We generally feel that the design with the thicker (4 inch) asphalt mat will be more resilient and able to withstand the rigors associated with exposure to heavy RV, equipment or truck traffic, and will allow for a mill and overlay for future maintenance.

Pavement Section Design Thickness –126,000 ESAL (Minimum SN = 3.09)

Pavement Section Component	Alternative Thickness of Each Component (inches)			
Asphalt Concrete	4	4	4.5	5
Class 6 Roadbase	4	12	10	8
Class 2 Sub-Base	10	0	0	0
Structural Number	3.14	3.2	3.18	3.16

We do not recommend use of Class 6, ¾-inch aggregate base course in layers less than 4 inches or the use of Class 2 sub-base in layers less than 6 inches. This may result in total structural numbers that are in excess of the minimum required by the anticipated traffic loading as can be seen in the tables above.

Water intrusion into the pavement section support materials will negatively influence the performance of the parking lot surface. Water from irrigation, water from natural sources that migrates into the soils beneath landscapes surface and water from any source that gains access to the support materials can all decrease the life of the parking lot surface. Care should be taken along curbs and any edge of the parking lot to develop an interface between the material that will reduce subsurface and surface water migration into the support soil and pavement section materials. Landscape islands and other irrigated features often promote water migration since no surface flow from these features typically occurs. The same can occur along perimeter cub areas.

Water will often migrate along the interface of concrete curbs and gutter areas early in the life of any parking area. The tendency for this type of migration often decreases with time but can be reduced by compaction of materials along the outside base of curb areas adjacent to the interface of the concrete curb and the underlying soil prior to placement of landscaping soil above this interface.

9.3 *General Asphalt Pavement Recommendations*

The asphalt pavement used on this project should be mixed in accordance with a design prepared by a licensed professional engineer, or an asphalt pavement specialist. We should be contacted to review the mix design prior to placement at the project site. We recommend that the asphalt pavement be compacted to between 92 and 96 percent of the maximum theoretical density.

We suspect that the subgrade soils will be well above the optimum moisture content in many areas of the project. We anticipate that conventional scarification and drying of the subgrade soils will be sufficient for most areas of the roadway subgrade provided warm and preferably breezy weather conditions are present during the project construction, and there is adequate time to perform scarification and drying construction procedures. However, it is likely that some areas of the subgrade will require specialty stabilization techniques. We have provided cursory recommendations for stabilization of severely yielding soil materials in Section 5.0 below.

The subgrade soil materials should be scarified to a depth of about 8 inches, moisture conditioned, and compacted to at least 90 percent of the maximum dry density as defined by ASTM D1557 or AASHTO T180 (Modified Proctor). Proof rolling observations should then be performed over the prepared subgrade surface. Any areas of significant yielding should be stabilized as needed prior to placement of the overlying aggregate base course materials. The surface of the subgrade soil should be graded and contoured to be approximately parallel to the finished grade of the asphalt surface.

The aggregate materials used within the pavement section should conform to the requirements outlined in the current Specifications for Road and Bridge Construction, Colorado Department of Transportation (CDOT). The aggregate base material should be a ¾ inch minus material that conforms to the CDOT Class 6 aggregate base course specifications and have an R-value of at least 78. The aggregate sub-base course should conform to the CDOT specifications for Class 2 material and should have a minimum R-value 70. Other material may be suitable for use in the pavement section, but materials different than those listed above should be tested and observed by us prior to inclusion in the project design or construction. Aggregate sub-base and base-course materials should be compacted to at least 95 percent of maximum dry density as defined by the modified Proctor test, ASTM D1557.

Thorough proof rolling with a fully loaded tandem axle water truck should be performed across the prepared aggregate surface prior to placement of the asphalt cement. Any areas that are observed to yield should be stabilized as necessary. We should be contacted to observe the proof rolling operations and provide recommendations for stabilization if necessary.

The drainage characteristics of the roadway should be addressed by the project civil engineer. Surface water must not be allowed to pool in areas adjacent to the asphalt pavement roadway.

9.4 *Portland Cement Concrete Pavement Recommendations*

For concrete pavements (rigid pavements), we recommend a minimum of 5-inches of Portland cement concrete (PCC). Concrete pavement underlain by 12 inches Class 6 aggregate base course is recommended 1) to create a uniform subbase/base, 2) to limit potential of pumping of fines from beneath the pavement, 3) provide a working platform for construction, and 4) to help control frost heave soils.

All concrete should be based on a mix design established by a qualified engineer. A CDOT Class P or D mix would be acceptable. The design mix should consist of aggregate, Portland cement, water, and additives which will meet the requirements contained in this section. The concrete should have a modulus of rupture of third point loading of 650 psi. Normally, concrete with a 28-

day compressive strength of 4,200 psi will meet this requirement. Concrete should contain approximately 6 percent entrained air. Maximum allowable slump should not exceed 4 inches.

The concrete should contain joints not greater than 10 feet on centers. Joints should be sawed or formed by pre-molded filler. The joints should be at least 1/3 of the slab thickness. Joints should be reinforced with dowels to provide load transfer between slabs. Concrete pavement joints should meet the requirements of CDOT Standard Plan No. M 412-1 and CDOT Standard Specifications Section 412.13. Expansion joints should be provided at the end of each construction sequence and between the concrete slab and adjacent structures. Expansion joints, where required, should be filled with a ½-inch thick asphalt impregnated fiber. Concrete should be cured by protecting against loss of moisture, rapid temperature changes and mechanical injury for at least three days after placement. After sawing joints, the saw residue shall be removed and the joint sealed.

9.5 *Limited Pavement Evaluation of County Road 252*

This section of the report provides an analysis for the existing structural number of the existing asphalt pavement section in the areas tested along CR 252. As requested, we advanced two test borings along County Road 252. A tabulation of the subsurface conditions is tabulated below. The locations are presented on Figure 2.3 above. Our analysis is intended to be general in nature as it is based on limited field and laboratory data and is intended to provide the structural number and corresponding 18K ESAL for the existing roadway. The following analysis should be considered valid only for the portion of County Road 252 within the tested areas.

Table 1 – Subsurface Conditions Summary Table

Test Boring#	Asphalt Thickness	ABC Thickness	Minimum Pit Run Thickness	Comments
TB-15	6.5”	10.5”	4”	Auger refusal on pit run material at 21 inches
TB-16	6.5”	4”	10”	Auger refusal on pit run material at 20 inches

Based on our observations of the existing asphalt pavement surface, we feel that the existing asphalt pavement in the project area may be considered as being in fair to good condition. We observed localized areas on the roadway surface where moderate alligator cracking, potholing/patching, and longitudinal and transverse cracking has occurred in the pavement surface. We suspect that the distressed area is related to the age of the pavement section, poor drainage, freeze-thaw, and structurally deficient sections of asphalt pavement for the existing traffic loading.

Based on the subsurface conditions encountered and laboratory test data, we feel that the following general assumptions can be made regarding the average asphalt pavement section and underlying aggregate base course and subgrade support conditions;

- The thickness of the existing asphalt pavement materials encountered in our test boring is 6.5 inches.
- Aggregate base course (ABC) ranged in thickness from approximately 4 to 10.5 inches.
- 3 to 8 inch Pit Run type material was encountered below the ABC layer to depths of

practical auger refusal at 20 and 21 inches.

- A structural number coefficient of the existing asphalt pavement layer of 0.35 has been assumed. A structural number coefficient of the existing aggregate base course material of 0.11 has been assumed. A structural number coefficient of the existing pit run material of 0.08 has been assumed. The R-value of a composite sample of the existing aggregate base course was 72.
- We estimated an R-Value of 10 for the subgrade soils. A roadbed resilient modulus M_r equal to about 3,562 psi was estimated based on laboratory testing.
- A structural number of the total existing asphalt pavement section of 3.5 has been estimated based on the averages and details assumed above.

An estimated structural number of 3.5 can support an estimated 18-kip ESAL value of 350,000, assuming a 10 year design life.

10.0 CONSTRUCTION MONITORING AND TESTING

Engineering observation of subgrade bearing conditions, compaction testing of fill material and testing of foundation concrete are equally important tasks that should be performed by the geotechnical engineering consultant during construction. We should be contacted during the construction phase of the project and/or if any questions or comments arise as a result of the information presented below. It is common for unforeseen, or otherwise variable subsurface soil and water conditions to be encountered during construction. As discussed in our proposal for our services, it is imperative that we be contacted during the foundation excavation stage of the project to verify that the conditions encountered in our field exploration were representative of those encountered during construction. Our general recommendations for construction monitoring and testing are provided below.

- <u>Consultation with design professionals during the design phases:</u> This is important to ensure that the intentions of our recommendations are properly incorporated in the design, and that any changes in the design concept properly consider geotechnical aspects.
- <u>Grading Plan Review:</u> A grading plan was not available for our review at the time of this report. A grading plan with finished floor elevations for the proposed construction should be prepared by a civil engineer licensed in the State of Colorado. Trautner Geotech should be provided with grading plans once they are complete to determine if our recommendations based on the assumed bearing elevations are appropriate.
- <u>Observation and monitoring during construction:</u> A representative of the Geotechnical engineer from our firm should observe the foundation excavation, earthwork, and foundation phases of the work to determine that subsurface conditions are compatible with those used in the analysis and design and our recommendations have been properly implemented. Placement of backfill should be observed and tested to judge whether the proper placement conditions have been achieved. Compaction tests should be performed on each lift of material placed in areas proposed for support of structural components.
- We recommend a representative of the geotechnical engineer observe the drain and dampproofing phases of the work to judge whether our recommendations have been properly implemented.
- If asphaltic concrete is placed for driveways or aprons near the structure we are available to provide testing of these materials during placement.

11.0 CONCLUSIONS

While we feel that it is feasible to develop this site as planned using relatively conventional techniques we feel that it is prudent for us to be part of the continuing design of this project to review and provide consultation in regard to the proposed development scheme as the project progresses to aid in the proper interpretation and implementation of the recommendations presented in this report. This consultation should be incorporated in the project development prior to construction at the site.

12.0 LIMITATIONS

This study has been conducted based on the geotechnical engineering standards of care in this area at the time this report was prepared. We make no warranty as to the recommendations contained in this report, either expressed or implied. The information presented in this report is based on our understanding of the proposed construction that was provided to us and on the data obtained from our field and laboratory studies. Our recommendations are based on limited field and laboratory sampling and testing. Unexpected subsurface conditions encountered during construction may alter our recommendations. We should be contacted during construction to observe the exposed subsurface soil conditions to provide comments and verification of our recommendations.

The recommendations presented above are intended to be used only for this project site and the proposed construction which was provided to us. The recommendations presented above are not suitable for adjacent project sites, or for proposed construction that is different than that outlined for this study.

This report provides geotechnical engineering design parameters, but does not provide foundation design or design of structure components. The project architect, designer or structural engineer must be contacted to provide a design based on the information presented in this report.

This report does not provide an environmental assessment nor does it provide environmental recommendations such as those relating to Radon or mold considerations. If recommendation relative to these or other environmental topics are needed and environmental specialist should be contacted.

The findings of this report are valid as of the present date. However, changes in the conditions of the property can occur with the passage of time. The changes may be due to natural processes or to the works of man, on the project site or adjacent properties. In addition, changes in applicable or appropriate standards can occur, whether they result from legislation or the broadening of knowledge. Therefore, the recommendations presented in this report should not be relied upon after a period of two years from the issue date without our review.

We are available to review and tailor our recommendations as the project progresses and additional information which may influence our recommendations becomes available.

Please contact us if you have any questions, or if we may be of additional service.

Respectfully,
TRAUTNER GEOTECH

Tom R. Harrison P.E.
Geotechnical Engineer

APPENDIX A

Field Study Results

TRAUTNER GEOTECH LLC

Field Engineer	: C. Deleon
Hole Diameter	: 4" Solid
Drilling Method	: Continuous Flight Auger
Sampling Method	: Mod. California Sampler
Date Drilled	: 05/24/2023
Total Depth (approx.)	: 12 feet
Location	: See Figure in Report

LOG OF TEST BORING TB-1

Durango River View Resort
Brian Fero
C/O Travis Mooney, PE
970-459-9009

57927GE

Sample Type
- Mod. California Sampler
- Standard Split Spoon
- Bag Sample

Water Level
- ▼ Water Level During Drilling
- ▽ Water Level After Drilling

Depth in feet	DESCRIPTION	USCS	GRAPHIC	Samples	Blow Count	Water Level	REMARKS
0–7	POORLY GRADED GRAVEL WITH SILT AND SAND, medium dense, moist to very moist, brown to tan	GP-GM		Bag Sample (0–4)			Fill material to 1 foot; Hole collapsed to 2 feet; Pocket of SP from 3-5 feet
7–11	SANDY SILTY CLAY WITH GRAVEL, soft, wet, brown	CL-ML		Bag Sample (4–9)			
11–12	POORLY GRADED GRAVEL WITH SILT AND SAND AND COBBLE, dense, wet, brown	GP-GM					
12	Auger refusal on cobble at 12 feet						

TRAUTNER GEOTECH LLC

Field Engineer	: C. Deleon
Hole Diameter	: 4" Solid
Drilling Method	: Continuous Flight Auger
Sampling Method	: Mod. California Sampler
Date Drilled	: 05/24/2023
Total Depth (approx.)	: 19 feet
Location	: See Figure in Report

LOG OF TEST BORING TB-2

Durango River View Resort
Brian Fero
C/O Travis Mooney, PE
970-459-9009

57927GE

Sample Type
- Mod. California Sampler
- Standard Split Spoon
- Bag Sample

Water Level
- Water Level During Drilling
- Water Level After Drilling

Depth in feet	DESCRIPTION	USCS	GRAPHIC	Samples	Blow Count	Water Level	REMARKS
0	CLAYEY GRAVEL WITH SAND AND COBBLE, medium dense, slightly moist, tan	GC		Bag Sample			Top 4 inches of fill
1	POORLY GRADED SAND, silty and slightly sandy, loose to medium dense, moist, brown	SP		Bag Sample			
2				Mod. California Sampler	4/6		
					14/6		
2.5	POORLY GRADED GRAVEL WITH SAND, medium dense to dense, moist, brown	GP-GM					Hole collapsed to 3.5 feet after drilling
4							Pockets of SP
9.5	POORLY GRADED GRAVEL WITH SAND, silty, medium dense to loose, very moist,	GP-SP					
19	Boring terminated at 19 feet						

TRAUTNER GEOTECH LLC

Field Engineer	: C. Deleon
Hole Diameter	: 4" Solid
Drilling Method	: Continuous Flight Auger
Sampling Method	: Mod. California Sampler
Date Drilled	: 05/24/2023
Total Depth (approx.)	: 14 feet
Location	: See Figure in Report

LOG OF TEST BORING TB-3

Durango River View Resort
Brian Fero
C/O Travis Mooney, PE
970-459-9009

57927GE

Sample Type
- Mod. California Sampler
- Standard Split Spoon
- Bag Sample

Water Level
- ▼ Water Level During Drilling
- ▽ Water Level After Drilling

Depth in feet	DESCRIPTION	USCS	Samples	Blow Count	Water Level	REMARKS
0–6	SILTY CLAYEY GRAVEL WITH SAND SILT AND COBBLE, dense, slightly moist to moist, tan to brown	GC-GM	Bag Sample 0–4; Mod. California Sampler 4–5; Bag Sample 5–6	20/6 28/6		Top 8 inches fill
6–8	POORLY GRADED SAND, organics, medium dense to loose, very moist to wet, dark brown to brown	SP	Bag Sample		▼ (approx. 7.5 ft)	
8–14	SILTY GRAVEL WITH SAND, few cobbles, medium dense, wet, brown	GM	Bag Sample 8–9; Standard Split Spoon 9–10.5	6/6 8/6 7/6		

Boring terminated at 14 feet

TRAUTNER GEOTECH LLC

Field Engineer	: C. Deleon
Hole Diameter	: 4" Solid
Drilling Method	: Continuous Flight Auger
Sampling Method	: Mod. California Sampler
Date Drilled	: 05/24/2023
Total Depth (approx.)	: 18.5 feet
Location	: See Figure in Report

LOG OF TEST BORING TB-4

Durango River View Resort
Brian Fero
C/O Travis Mooney, PE
970-459-9009

57927GE

Sample Type: Mod. California Sampler; Standard Split Spoon; Bag Sample

Water Level: ▼ Water Level During Drilling; ▽ Water Level After Drilling

Depth in feet	DESCRIPTION	USCS	GRAPHIC	Samples	Blow Count	Water Level	REMARKS
0–1	CLAYEY GRAVEL WITH SAND, slightly silty, medium dense, slightly moist to moist, tan	GC		Bag Sample			
1–11	CLAYEY SAND WITH GRAVEL, loose, moist to very moist to wet, brown	SC		Mod. California Sampler (2–3); Mod. California Sampler (3.5–4.5)	4/6 4/6; 3/6 4/6	▼ 8	Few cobbles from 6-8 feet
11–16	LEAN CLAY, very soft to soft, wet, brown to gray	CL		Standard Split Spoon (13.5–15)	1/6 1/6 1/6		Pond material (at 11)
16–19	SILTY GRAVEL WITH SAND AND CLAY AND COBBLE, loose to dense, wet, brown	GM					Increase in density at 17 feet

Boring terminated at 18.5 feet

TRAUTNER GEOTECH LLC

Field Engineer : C. Deleon
Hole Diameter : 4" Solid
Drilling Method : Continuous Flight Auger
Sampling Method : Mod. California Sampler
Date Drilled : 05/24/2023
Total Depth (approx.) : 14 feet
Location : See Figure in Report

LOG OF TEST BORING TB-5

Durango River View Resort
Brian Fero
C/O Travis Mooney, PE
970-459-9009

57927GE

Sample Type: Mod. California Sampler; Standard Split Spoon; Bag Sample

Water Level: Water Level During Drilling; Water Level After Drilling

Depth in feet	DESCRIPTION	USCS	Samples	Blow Count	Water Level	REMARKS
0–2	SANDY LEAN CLAY WITH GRAVEL AND SILT, stiff, moist, brown	CL	Bag Sample			Fill up to 2 feet
2–4	SILTY GRAVEL WITH SAND AND COBBLE, medium dense, moist, brown	GM	Bag Sample			
4–6	CLAYEY SAND WITH SILT, very stiff, moist, brown	SC	Mod. California Sampler (4–5)	10/6 13/6		Hole collapsed to 5 feet
6–8	POORLY GRADED GRAVEL WITH COBBLE, dense, very moist, brown	GP				
8–14	POORLY GRADED SAND WITH SILT, few gravels, loose, wet, brown	SP				

Boring terminated at 14 feet

LOG OF TEST BORING TB-6

TRAUTNER GEOTECH LLC

Field Engineer	: C. Deleon
Hole Diameter	: 4" Solid
Drilling Method	: Continuous Flight Auger
Sampling Method	: Mod. California Sampler
Date Drilled	: 05/24/2023
Total Depth (approx.)	: 14 feet
Location	: See Figure in Report

Durango River View Resort
Brian Fero
C/O Travis Mooney, PE
970-459-9009

57927GE

Sample Type: Mod. California Sampler; Standard Split Spoon; Bag Sample

Water Level: Water Level During Drilling; Water Level After Drilling

Depth in feet	DESCRIPTION	USCS	GRAPHIC	Samples	Blow Count	Water Level	REMARKS
0–2	CLAYEY GRAVEL AND SAND WITH SILT, medium dense, moist, brown	GC-SC					Fill up to 2 feet
2–4.5	SILTY CLAY WITH SAND, few organics, soft, moist, brown	CL-ML		Bag Sample (2–4); Mod. California Sampler (4–5)	2/6		
4.5–14	CLAYEY SAND WITH SILT, soft to loose, moist to wet, brown	SC		Bag Sample (5–9)	2/6		Attempted drive at 14 feet, 6 inches of sluff
14	Boring terminated at 14 feet						

TRAUTNER GEOTECH LLC

Field Engineer	: C. Deleon
Hole Diameter	: 4" Solid
Drilling Method	: Continuous Flight Auger
Sampling Method	: Mod. California Sampler
Date Drilled	: 05/26/2023
Total Depth (approx.)	: 4.5 feet
Location	: See Figure in Report

LOG OF TEST BORING TB-7

Durango River View Resort
Brian Fero
C/O Travis Mooney, PE
970-459-9009

57927GE

Sample Type: Mod. California Sampler; Standard Split Spoon; Bag Sample

Water Level: Water Level During Drilling; Water Level After Drilling

Depth in feet	DESCRIPTION	USCS	GRAPHIC	Samples	Blow Count	Water Level	REMARKS
0	CLAYEY GRAVEL WITH SAND, medium dense, slightly moist, tan	GC		Bag Sample			
1	CLAYEY SAND WITH GRAVEL, slightly silty, medium dense to dense, moist, brown	SC		Bag Sample			Fill up to 10 inches
2	SILTY GRAVEL, dense, moist, brown	GM		Mod. California Sampler	42/6 50/4		
3							
4	POORLY GRADED GRAVEL WITH COBBLE, very dense, moist, brown	GP					
	Auger refusal on heavy cobble at 4.5 feet						
5							

TRAUTNER GEOTECH LLC

Field Engineer	: C. Deleon
Hole Diameter	: 4" Solid
Drilling Method	: Continuous Flight Auger
Sampling Method	: Mod. California Sampler
Date Drilled	: 05/26/2023
Total Depth (approx.)	: 3.5 feet
Location	: See Figure in Report

LOG OF TEST BORING TB-8

Durango River View Resort
Brian Fero
C/O Travis Mooney, PE
970-459-9009

57927GE

Sample Type
- Mod. California Sampler
- Standard Split Spoon
- Bag Sample

Water Level
- ▼ Water Level During Drilling
- ▽ Water Level After Drilling

Depth in feet	DESCRIPTION	USCS	GRAPHIC	Samples	Blow Count	Water Level	REMARKS
0–1	CLAYEY GRAVEL WITH SAND, medium dense, slightly moist, tan	GC					
1–3.5	POORLY GRADED GRAVEL WITH SILT AND SAND, very dense, moist, brown	GP-GM					

Auger refusal on heavy cobble at 3.5 feet

TRAUTNER GEOTECH LLC	Field Engineer : C. Deleon Hole Diameter : 4" Solid Drilling Method : Continuous Flight Auger Sampling Method : Mod. California Sampler Date Drilled : 05/26/2023 Total Depth (approx.) : 17.5 feet Location : See Figure in Report	LOG OF TEST BORING TB-9 Durango River View Resort Brian Fero C/O Travis Mooney, PE 970-459-9009 57927GE

Sample Type
- Mod. California Sampler
- Standard Split Spoon
- Bag Sample

Water Level
- Water Level During Drilling
- Water Level After Drilling

Depth in feet	DESCRIPTION	USCS	GRAPHIC	Samples	Blow Count	Water Level	REMARKS
0	CLAYEY GRAVEL WITH SAND, medium dense, slightly moist, brown	GC		Bag Sample			
1	SILTY SAND WITH GRAVEL, medium dense, moist, brown to dark brown	SM					Fill up to 1 foot
2.5	SANDY SILTY CLAY, medium stiff, moist, brown	CL-ML					
4				Mod. California Sampler	4/6 11/6		
4.5	SILTY CLAYEY GRAVEL WITH SAND AND COBBLE, medium dense, moist, brown	GC-GM					
7.5							Pocket of SP from 7.5 to 9.5 feet
9							Attempted drive at 9 feet, hole collapsed to 4 feet
16							Increase in cobble at 16 feet
17.5	Auger refusal on heavy cobble at 17.5 feet						

TRAUTNER GEOTECH LLC

Field Engineer : C. Deleon
Hole Diameter : 4" Solid
Drilling Method : Continuous Flight Auger
Sampling Method : Mod. California Sampler
Date Drilled : 05/26/2023
Total Depth (approx.) : 7.5 feet
Location : See Figure in Report

LOG OF TEST BORING TB-10

Durango River View Resort
Brian Fero
C/O Travis Mooney, PE
970-459-9009

57927GE

Sample Type: Mod. California Sampler; Standard Split Spoon; Bag Sample

Water Level: Water Level During Drilling; Water Level After Drilling

Depth in feet	DESCRIPTION	USCS	GRAPHIC	Samples	Blow Count	Water Level	REMARKS
0–1	CLAYEY GRAVEL WITH SAND, medium dense, slightly moist, tan	GC		Bag Sample			
1–2.5	CLAYEY SAND WITH SILT, medium dense, moist, brown	SC		Bag Sample (0–2); Mod. California Sampler (2–3)	10/6		
2.5–7.5	POORLY GRADED GRAVEL WITH SAND AND SILT, medium dense to dense to very dense, moist, brown	GP		Mod. California Sampler (2–3); Bag Sample (3–4); Bag Sample (4–7.5)	14/6		Heavy rounded river cobbles with minor fines

Auger refusal on heavy cobble at 7.5 feet

TRAUTNER GEOTECH LLC

Field Engineer	: C. Deleon
Hole Diameter	: 4" Solid
Drilling Method	: Continuous Flight Auger
Sampling Method	: Mod. California Sampler
Date Drilled	: 05/26/2023
Total Depth (approx.)	: 6.5 feet
Location	: See Figure in Report

LOG OF TEST BORING TB-11

Durango River View Resort
Brian Fero
C/O Travis Mooney, PE
970-459-9009

57927GE

Sample Type: Mod. California Sampler; Standard Split Spoon; Bag Sample

Water Level: Water Level During Drilling; Water Level After Drilling

Depth in feet	DESCRIPTION	USCS	GRAPHIC	Samples	Blow Count	Water Level	REMARKS
0–1.5	CLAYEY SAND WITH GRAVEL AND SILT, medium dense, slightly moist, tan	SC		Bag Sample (0–3.5)			
1.5–4.5	SILTY GRAVEL WITH SAND AND COBBLE, dense, moist, brown	GM					
4.5–6.5	POORLY GRADED GRAVEL WITH SAND AND COBBLE, slightly silty, very dense, moist, brown	GP					
	Auger refusal on heavy cobble at 6.5 feet						

LOG OF TEST BORING TB-12

TRAUTNER GEOTECH LLC

Field Engineer	: C. Deleon
Hole Diameter	: 4" Solid
Drilling Method	: Continuous Flight Auger
Sampling Method	: Mod. California Sampler
Date Drilled	: 05/26/2023
Total Depth (approx.)	: 8 feet
Location	: See Figure in Report

Durango River View Resort
Brian Fero
C/O Travis Mooney, PE
970-459-9009

57927GE

Sample Type: Mod. California Sampler; Standard Split Spoon; Bag Sample

Water Level: ▼ Water Level During Drilling; ▽ Water Level After Drilling

Depth in feet	DESCRIPTION	USCS	GRAPHIC	Samples	Blow Count	Water Level	REMARKS
0–1.5	CLAYEY GRAVEL WITH SAND, medium dense, slightly moist, brown	GC		Bag Sample (0–2)			ABC fill top 10 inches
1.5–4.5	POORLY GRADED SAND WITH SILTY GRAVEL, very loose to loose, moist, brown	SP-GM		Mod. California Sampler (2–3)	push/6 2/6 2/6		Gravels at 3.5 feet
4.5–8	POORLY GRADED GRAVEL WITH SAND AND COBBLE, very dense, moist, brown	GP					

Auger refusal on heavy cobble at 8 feet

TRAUTNER GEOTECH LLC

Field Engineer	: C. Deleon
Hole Diameter	: 4" Solid
Drilling Method	: Continuous Flight Auger
Sampling Method	: Mod. California Sampler
Date Drilled	: 05/26/2023
Total Depth (approx.)	: 19 feet
Location	: See Figure in Report

LOG OF TEST BORING TB-13

Durango River View Resort
Brian Fero
C/O Travis Mooney, PE
970-459-9009

57927GE

Sample Type: Mod. California Sampler; Standard Split Spoon; Bag Sample

Water Level: Water Level During Drilling; Water Level After Drilling

Depth in feet	DESCRIPTION	USCS	GRAPHIC	Samples	Blow Count	Water Level	REMARKS
0–1.5	POORLY GRADED GRAVEL WITH SAND AND COBBLE, medium dense to dense, slightly moist, tan	GP					
1.5–5.5	POORLY GRADED SAND WITH SILT AND GRAVEL, medium dense, moist, brown	SP		Bag Sample (2–4); Mod. California Sampler (4–5)	9/6 9/6		
5.5–19	SILTY GRAVEL WITH SAND AND COBBLE, very dense to medium dense, moist to very moist, brown	GM		Bag Sample (5–9)			Pockets of SP Decrease in density at 10 feet

Boring terminated at 19 feet

TRAUTNER GEOTECH LLC

Field Engineer	: C. Deleon
Hole Diameter	: 4" Solid
Drilling Method	: Continuous Flight Auger
Sampling Method	: Mod. California Sampler
Date Drilled	: 05/26/2023
Total Depth (approx.)	: 14 feet
Location	: See Figure in Report

LOG OF TEST BORING TB-14

Durango River View Resort
Brian Fero
C/O Travis Mooney, PE
970-459-9009

57927GE

Sample Type
- Mod. California Sampler
- Standard Split Spoon
- Bag Sample

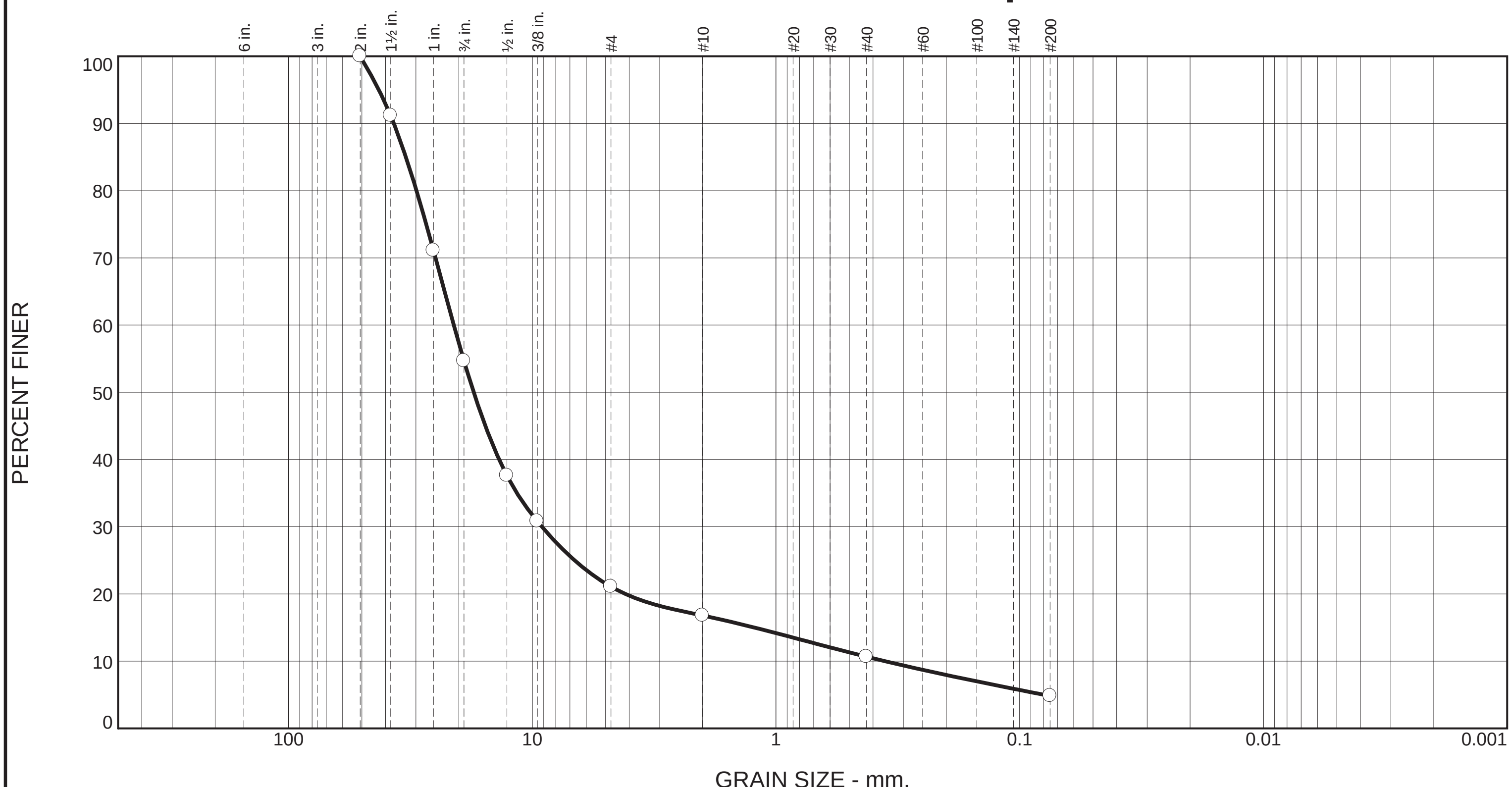
Water Level
- ▼ Water Level During Drilling
- ▽ Water Level After Drilling

Depth in feet	DESCRIPTION	USCS	GRAPHIC	Samples	Blow Count	Water Level	REMARKS
0–3	SILTY GRAVEL WITH SAND, slightly clayey, medium dense, moist, brown	GM		Bag Sample			
3–7.5	SANDY SILTY CLAY, soft, moist to very moist, brown to gray	CL-ML		Bag Sample; Mod. California Sampler (4–5)	2/6 2/6		Pond material from 3 to 7.5 feet
7.5–14	SILTY GRAVEL WITH SAND AND COBBLE, medium dense to dense, wet, brown	GM		Bag Sample; Standard Split Spoon (9–10.5)	7/6 6/6 5/6	▼ (approx. 8.5)	Increase in density at 13 feet
14	Boring terminated at 14 feet						

APPENDIX B

Laboratory Test Results

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	45	34	4	6	6	5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100		
1-1/2"	91		
1"	71		
3/4"	55		
1/2"	38		
3/8"	31		
#4	21		
#10	17		
#40	11		
#200	5		

* (no specification provided)

Material Description

GP-GM-Poorly Graded Gravel with Silt and Sand

Atterberg Limits

PL= 0 LL= 0 PI= 0

Coefficients

D_{90}= 36.9556 D_{85}= 32.9768 D_{60}= 20.9802
D_{50}= 17.3820 D_{30}= 9.1235 D_{15}= 1.2278
D_{10}= 0.3572 C_u= 58.74 C_c= 11.11

Classification

USCS= GP-GM AASHTO= A-1-a

Remarks

Source of Sample: Test Boring 3 **Depth:** 0'-4'
Sample Number: 13074-E

Date: 5-24-23

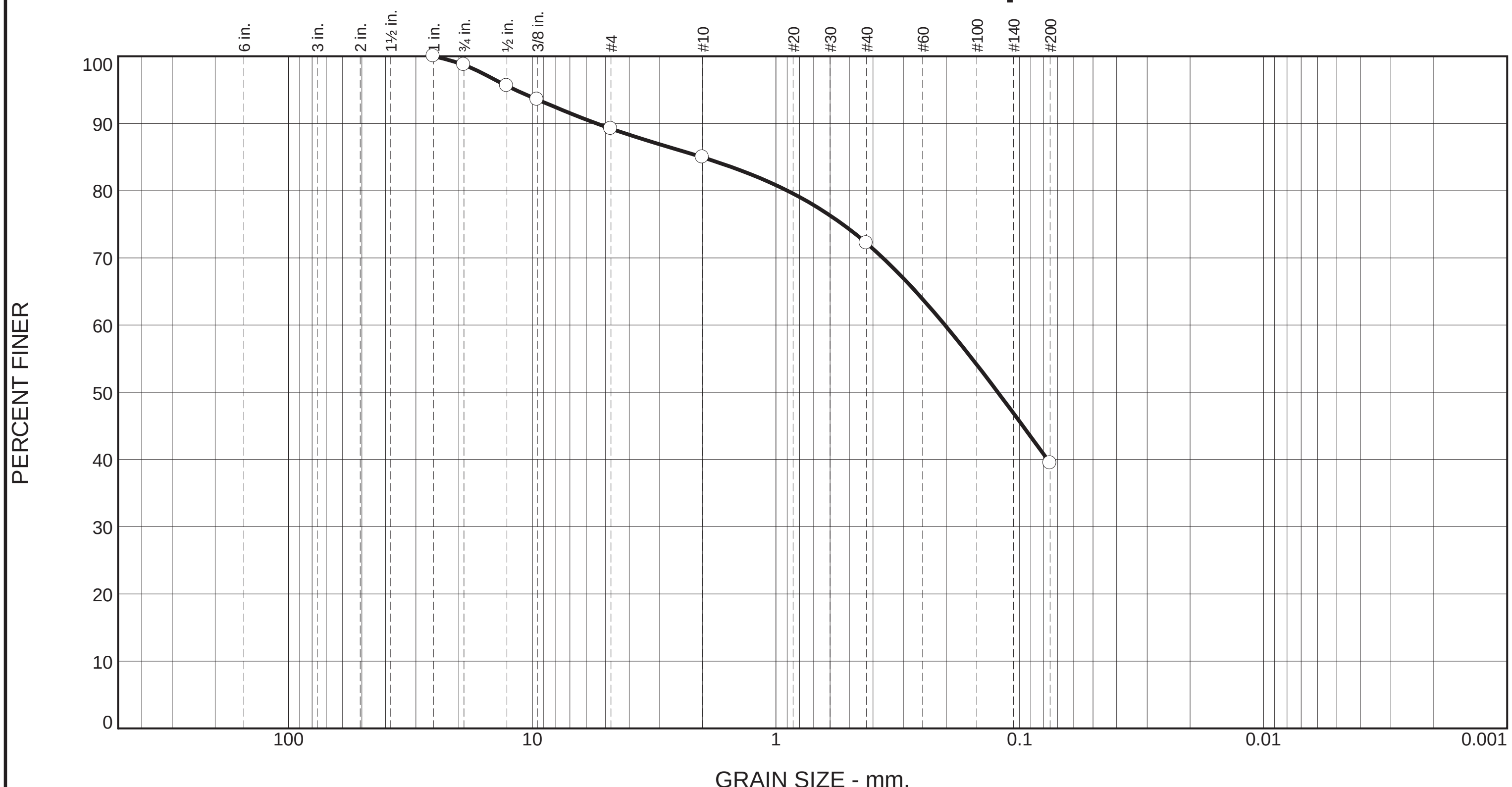
TRAUTNER GEOTECH LLC

Client: Roberts Communities and Resorts, Brian Fero
Project: Durango River View RV Resort

Project No: 57927GE **Figure** B.1

Tested By: N. Ellis **Checked By:** J. Koch

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	1	10	4	13	33	39	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1"	100		
3/4"	99		
1/2"	96		
3/8"	94		
#4	89		
#10	85		
#40	72		
#200	39		

* (no specification provided)

Material Description

SC-SM-Silty, Clayey Sand

Atterberg Limits

PL= 18 LL= 25 PI= 7

Coefficients

D_{90}= 5.4486 D_{85}= 2.0174 D_{60}= 0.2025
D_{50}= 0.1229 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC-SM AASHTO= A-4(0)

Remarks

Source of Sample: Bulk Subgrade
Sample Number: 13074-Y

Date: 5-26-23

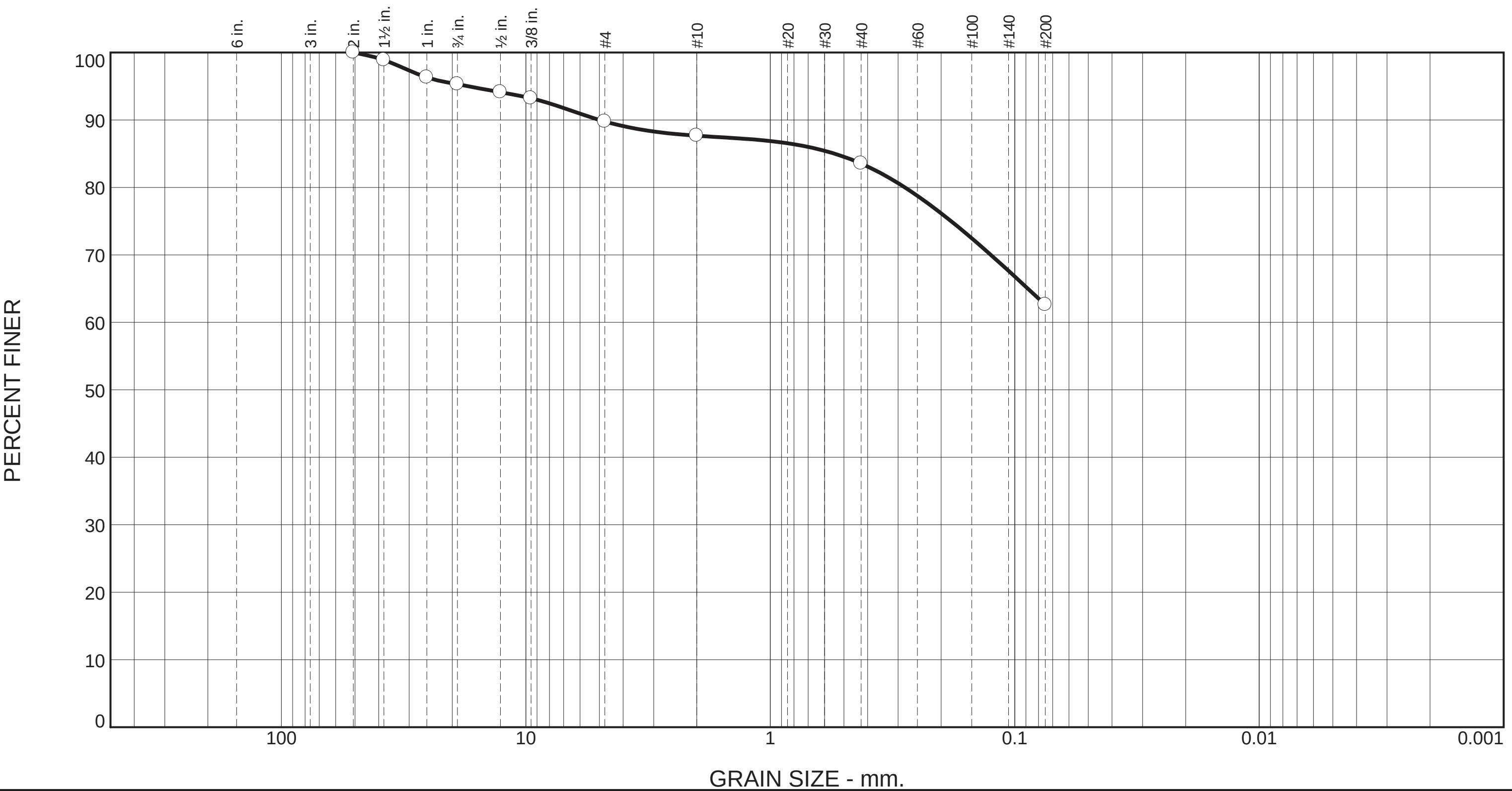
TRAUTNER GEOTECH LLC

Client: Roberts Communities and Resorts, Brian Fero
Project: Durango River View RV Resort

Project No: 57927GE **Figure** B.2

Tested By: N. Ellis **Checked By:** J. Koch

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	5	5	2	4	21	63	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2	100		
1.5	99		
1.	96		
3/4"	95		
1/2"	94		
3/8"	93		
#4	90		
#10	88		
#40	84		
#200	63		

* (no specification provided)

Material Description

ML-Sandy Silt

Atterberg Limits

PL= Non Plastic LL= NLL PI= NPI

Coefficients

D_{90}= 4.9980 D_{85}= 0.5454 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO=

Remarks

Source of Sample: Bulk Berm Material
Sample Number: 13074-Z

Date: 5-24-23

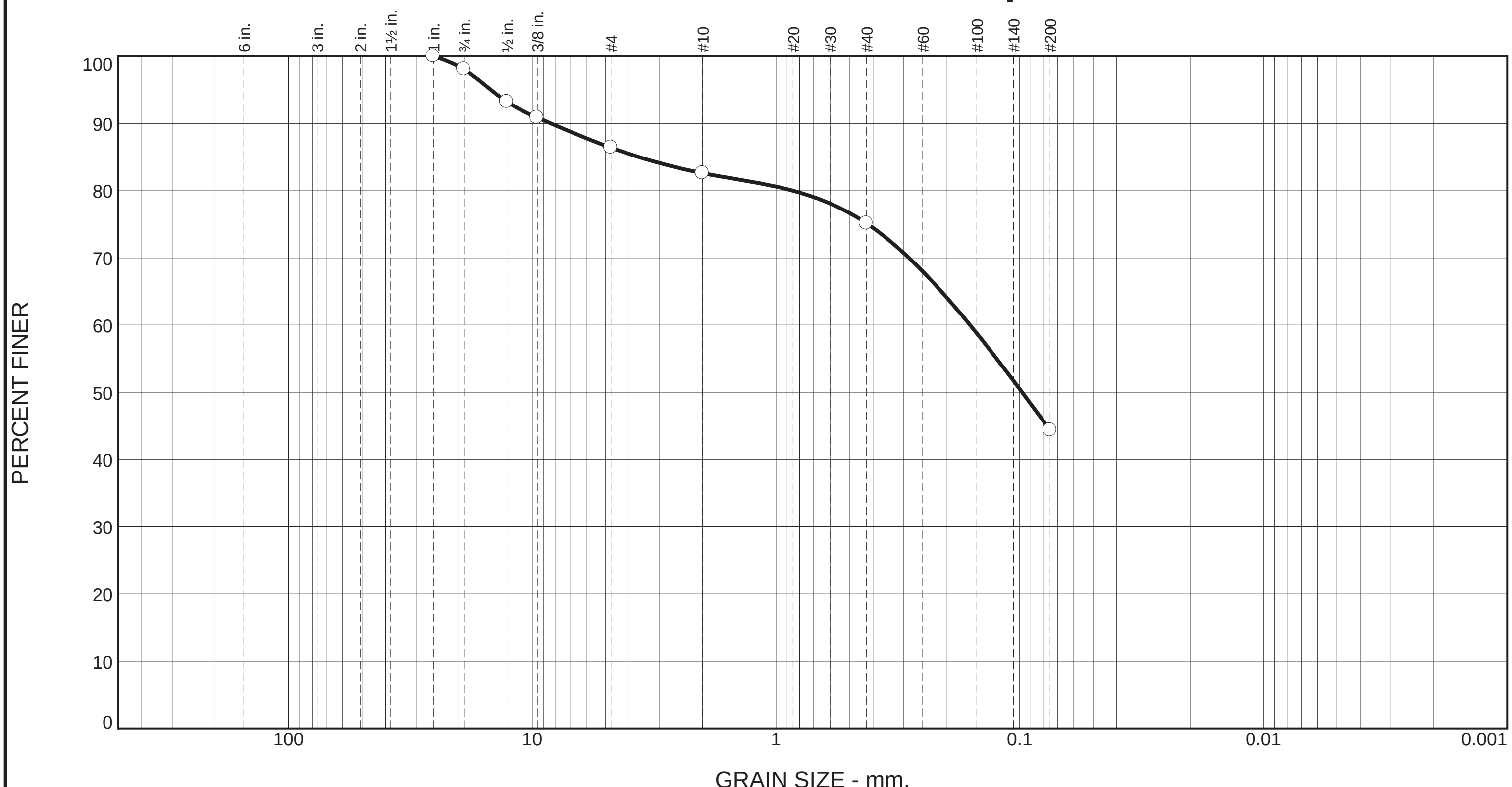
TRAUTNER GEOTECH LLC

Client: Roberts Communities and Resorts, Brian Fero
Project: Durango River View RV Resort

Project No: 57927GE **Figure** B.3

Tested By: G. Jadrych **Checked By:** J. Koch

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	2	12	3	8	31	44	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1"	100		
.75	98		
.50	93		
.375	91		
#4	86		
#10	83		
#40	75		
#200	44		

* (no specification provided)

Material Description

SC-Clayey Sand

Atterberg Limits

PL= 18 LL= 27 PI= 9

Coefficients

D_{90}= 8.3787 D_{85}= 3.6437 D_{60}= 0.1597
D_{50}= 0.0977 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-4(1)

Remarks

Source of Sample: Test Boring 14 **Depth:** 0'-4'
Sample Number: 13074-I

Date: 5-26-23

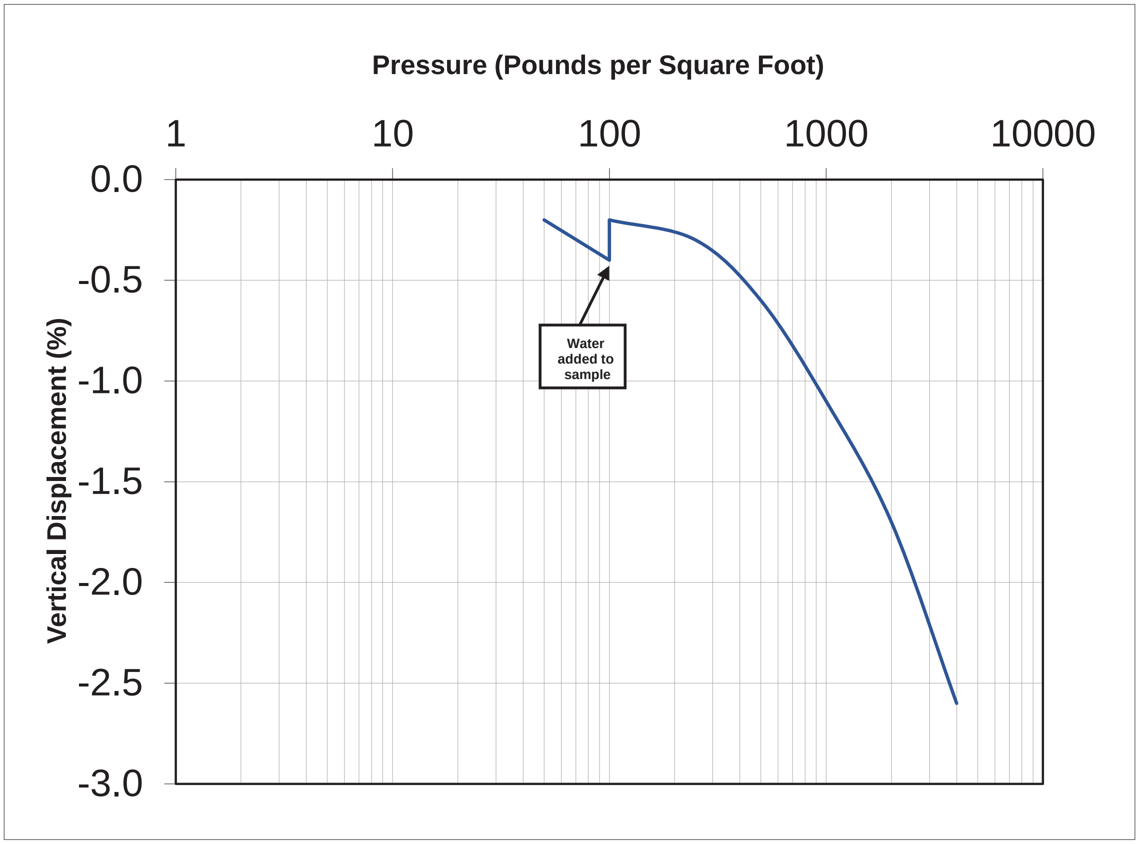
TRAUTNER GEOTECH LLC

Client: Roberts Communities and Resorts, Brian Fero
Project: Durango River View RV Resort

Project No: 57927GE **Figure** B.4

Tested By: N. Ellis **Checked By:** J. Koch

SWELL - CONSOLIDATION TEST



SUMMARY OF TEST RESULTS		
Sample Source:	TB-4 @ 2'	
Visual Soil Description:	CL-ML	
Swell Potential (%)	0.2%	
Estimated Load-Back Swell Pressure (lb/ft^2):	320	
	Initial	**Final**
Moisture Content (%):	14.1	22.4
Dry Density (lb/ft^3):	105.3	104.6
Height (in.):	1.000	0.974
Diameter (in.):	1.94	1.94

Project Number:	57927 GE
Sample ID:	13074-I
Figure:	B.5

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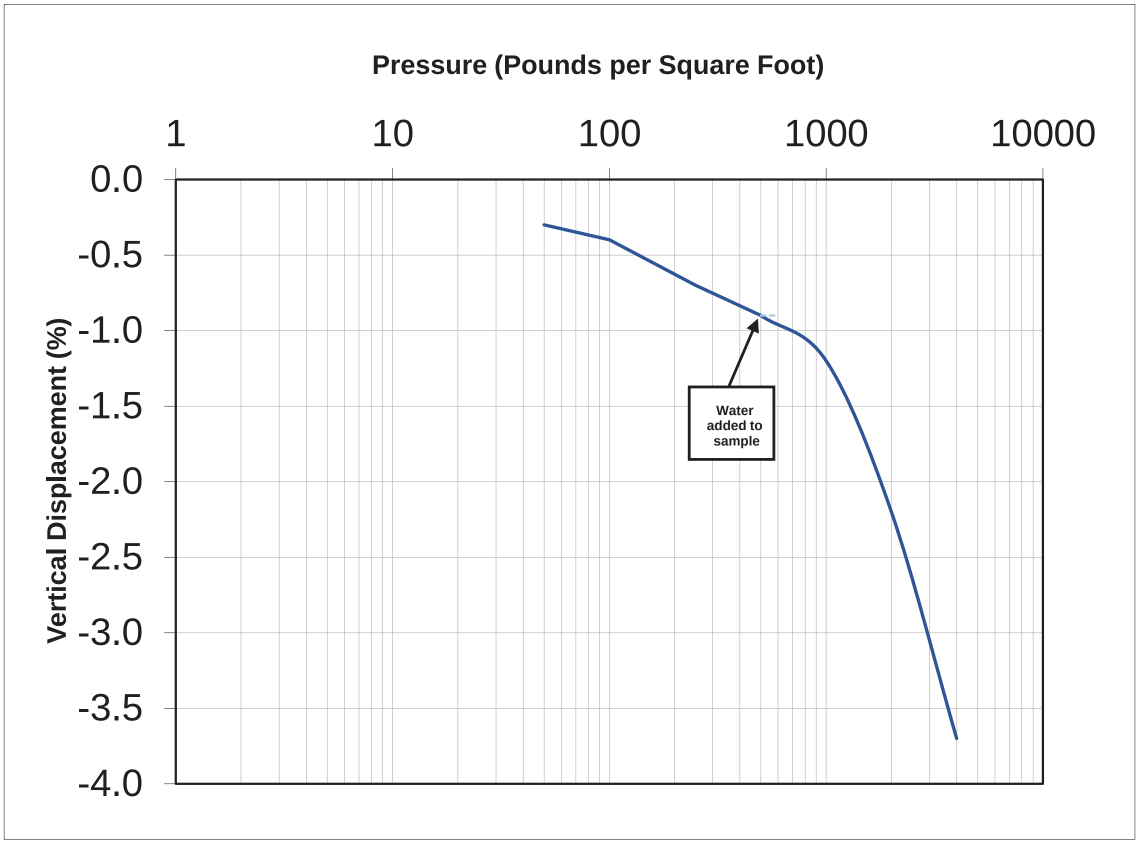
AND ENGINEERING GEOLOGY

SWELL - CONSOLIDATION TEST



SUMMARY OF TEST RESULTS		
Sample Source:	TB-6 @ 4'	
Visual Soil Description:	CL-MC	
Swell Potential (%)	0.0%	
Estimated Load-Back Swell Pressure (lb/ft^2):	0	
	Initial	Final
Moisture Content (%):	24.9	26.6
Dry Density (lb/ft^3):	93.5	96.8
Height (in.):	1.000	0.963
Diameter (in.):	1.94	1.94

Project Number:	57927 GE
Sample ID:	13074-O
Figure:	B.6

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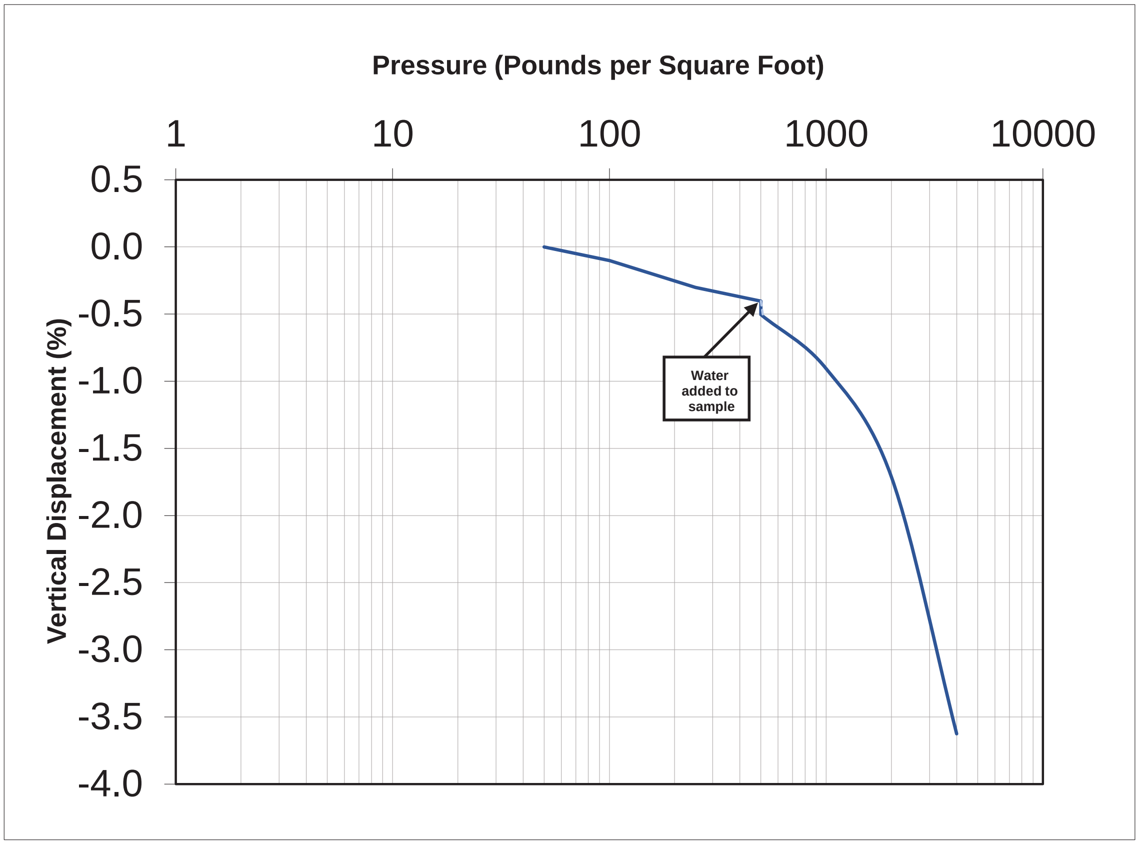
GEOTECHNICAL ENGINEERING, MATERIAL TESTING
AND ENGINEERING GEOLOGY

SWELL - CONSOLIDATION TEST

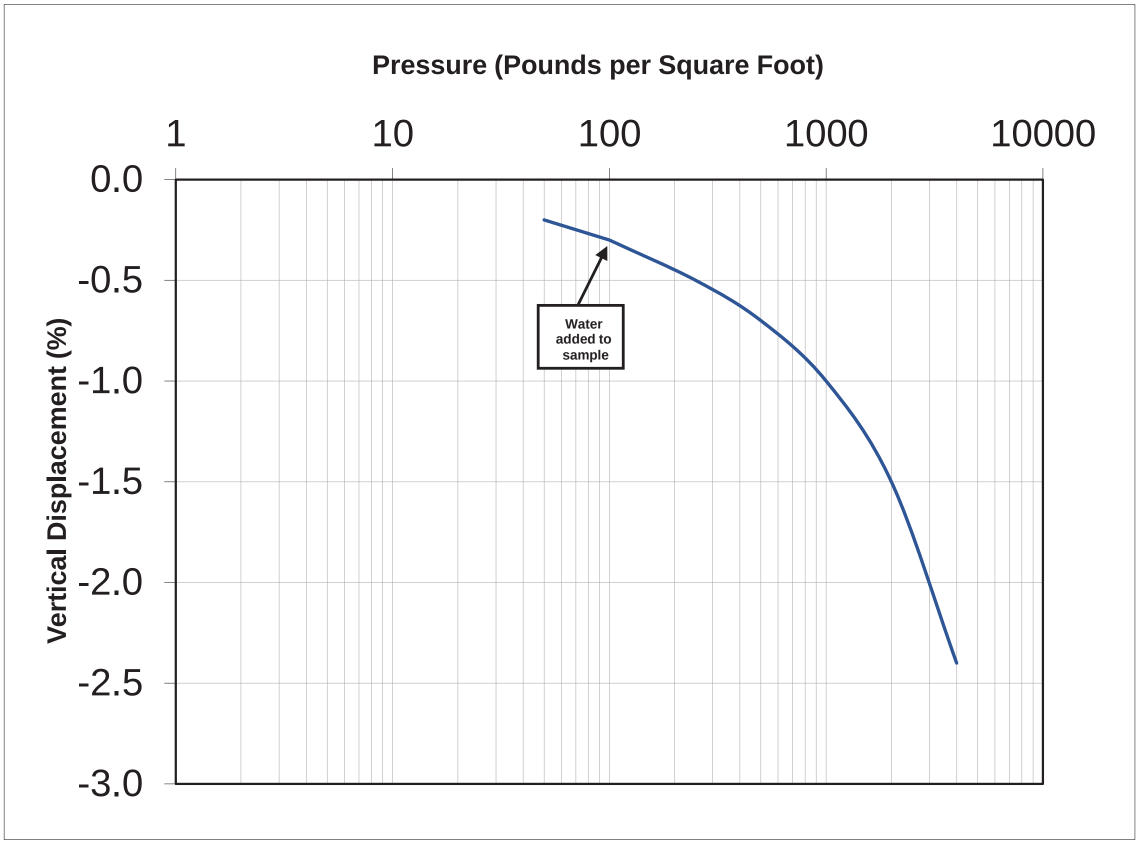


SUMMARY OF TEST RESULTS		
Sample Source:	TB-9 @ 4'	
Visual Soil Description:	SC	
Swell Potential (%)	-0.1%	
Constant Volume Swell Pressure (lb/ft^2):	0	
	Initial	**Final**
Moisture Content (%):	11.2	20.0
Dry Density (lb/ft^3):	105.5	109.0
Height (in.):	0.993	0.957
Diameter (in.):	1.94	1.94

Note: Remolded Sample; Molded from the portion of sample passing a #10 sieve. Consolidated under 500 PSF prior to initiating load sequence and wetting. Initial values represent the conditions under 50 PSF following the pre-consolidation under 500 PSF.

Project Number:	57927GE
Sample ID:	13074-U
Figure:	B.7

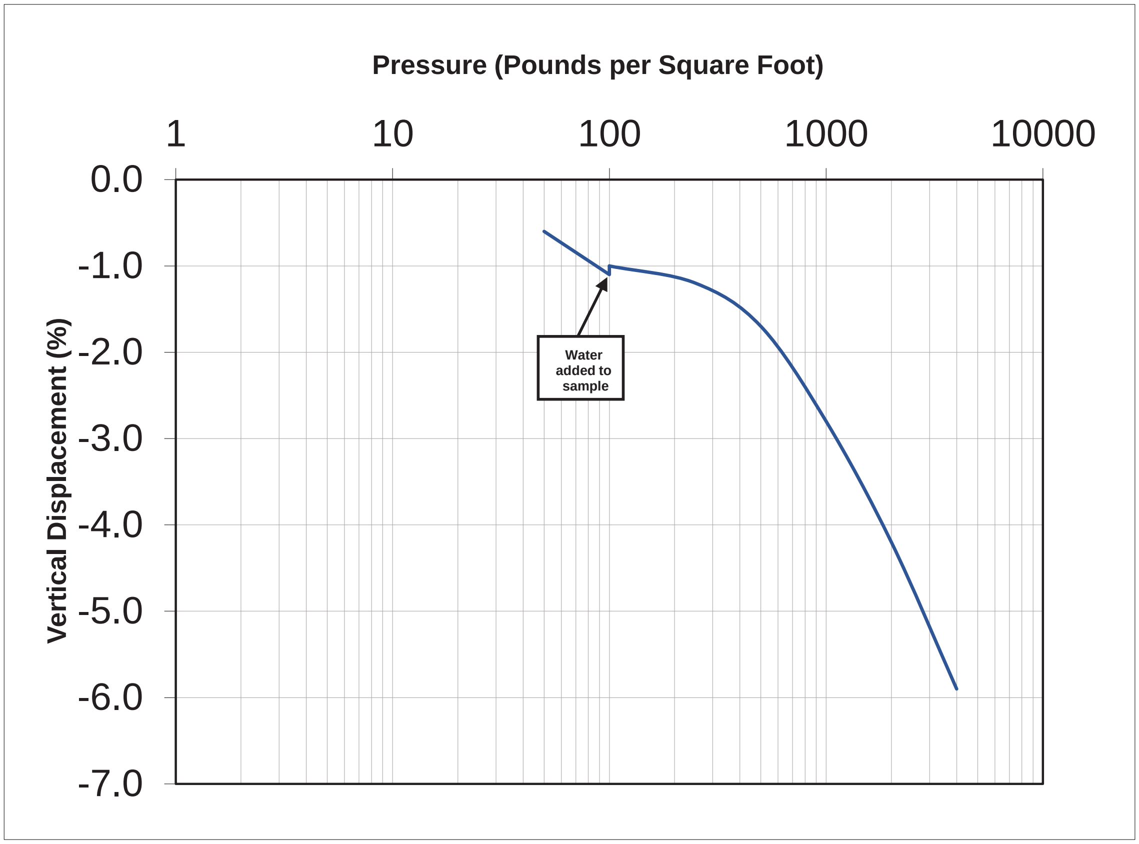
SWELL - CONSOLIDATION TEST



SUMMARY OF TEST RESULTS		
Sample Source:	TB-12 @ 2'	
Visual Soil Description:	SC	
Swell Potential (%)	0.0%	
Estimated Load-Back Swell Pressure (lb/ft^2):	0	
	Initial	**Final**
Moisture Content (%):	22.6	17.1
Dry Density (lb/ft^3):	101.8	111.0
Height (in.):	1.000	0.976
Diameter (in.):	1.94	1.94

Project Number:	57927GE
Sample ID:	13074-AD
Figure:	B.8

SWELL - CONSOLIDATION TEST



SUMMARY OF TEST RESULTS		
Sample Source:	TB-14 @ 4'	
Visual Soil Description:	CL-ML	
Swell Potential (%)	0.1%	
Estimated Load-Back Swell Pressure (lb/ft^2):	180	
	Initial	**Final**
Moisture Content (%):	40.2	35.2
Dry Density (lb/ft^3):	82.3	89.1
Height (in.):	1.000	0.941
Diameter (in.):	1.94	1.94

Project Number:	57927GE
Sample ID:	13074-J
Figure:	B.9

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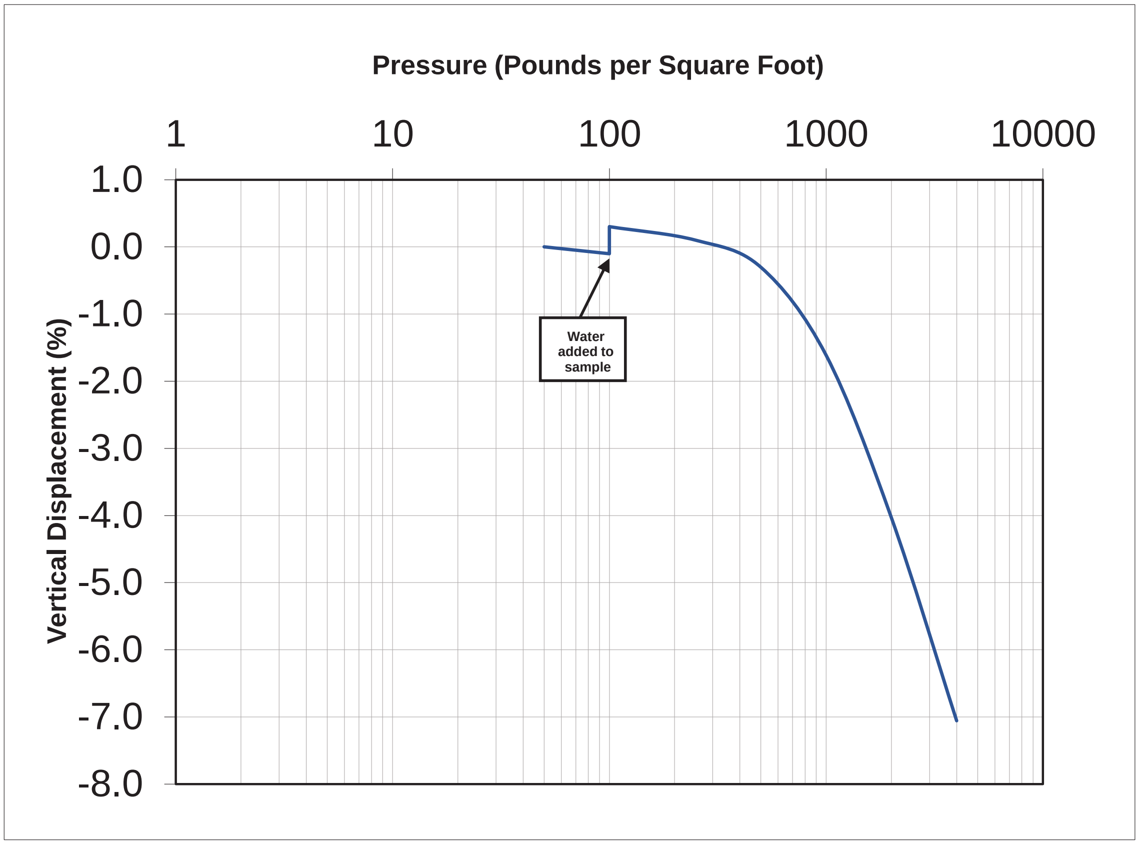
AND ENGINEERING GEOLOGY

SWELL - CONSOLIDATION TEST

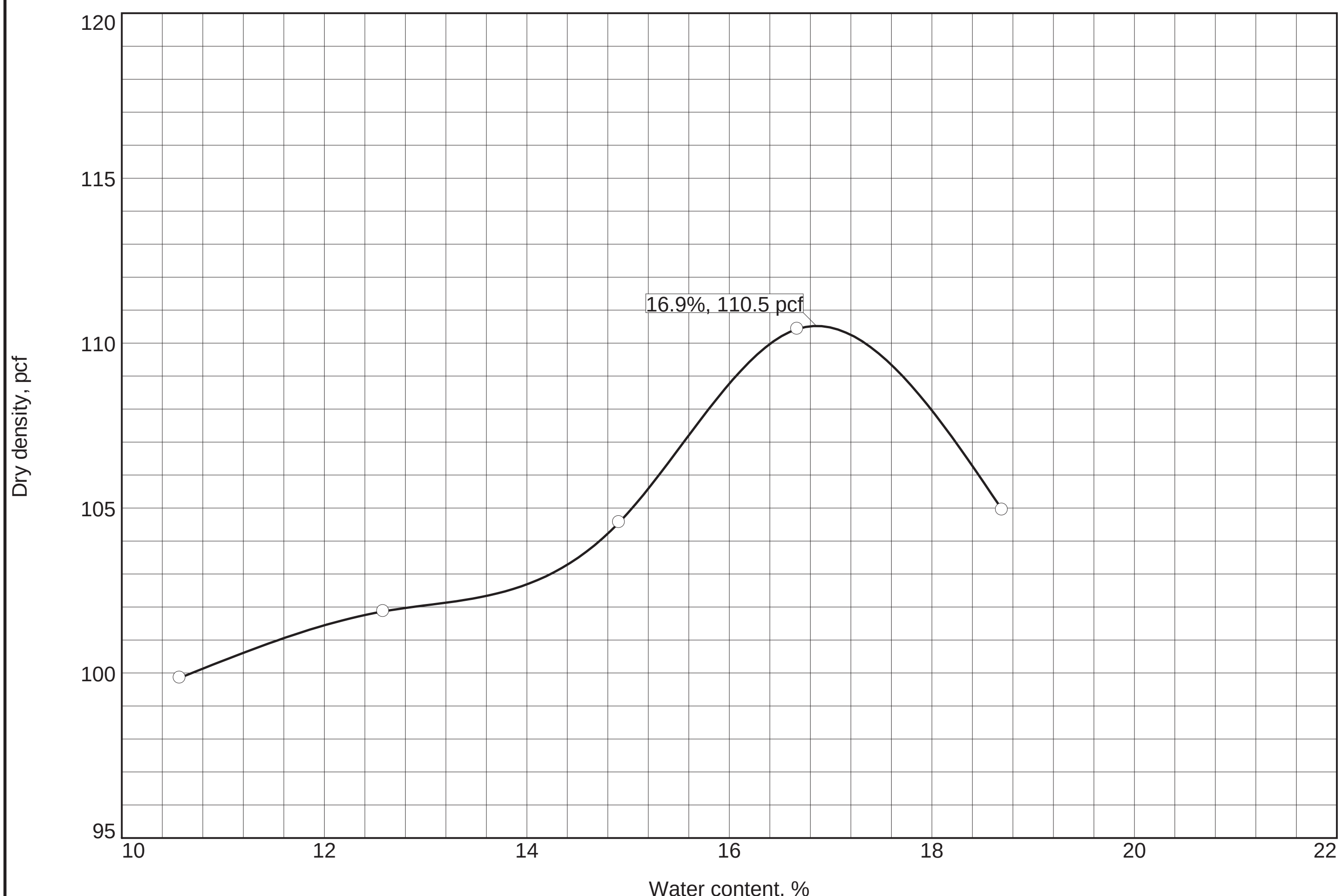


SUMMARY OF TEST RESULTS		
Sample Source:	Berm Material	
Visual Soil Description:	ML	
Swell Potential (%)	0.4%	
Estimated Free Swell Pressure (psf):	410	
	Initial	**Final**
Moisture Content (%):	11.4	32.0
Dry Density (lb/ft^3):	81.8	87.1
Height (in.):	0.992	0.922
Diameter (in.):	1.94	1.94

Note: Remolded Sample; Molded from the portion of sample passing a #10 sieve. Consolidated under 500 PSF prior to initiating load sequence and wetting. Initial values represent the conditions under 50 PSF following the pre-consolidation under 500 PSF.

Project Number:	57927GE
Sample ID:	13074-Z
Figure:	B.10

MOISTURE/DENSITY RELATIONSHIP



Test specification: ASTM D 1557-12 Method C Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
	ML	A-4(0)			NV	NP	5	63

TEST RESULTS

Maximum dry density = 110.5 pcf

Optimum moisture = 16.9 %

MATERIAL DESCRIPTION

ML-Sandy Silt

Project No. 57927GE **Client:** Roberts Communities and Resorts, Brian Fero

Project: Durango River View RV Resort

○ **Source of Sample:** Bulk Berm Material **Sample Number:** 13074-Z

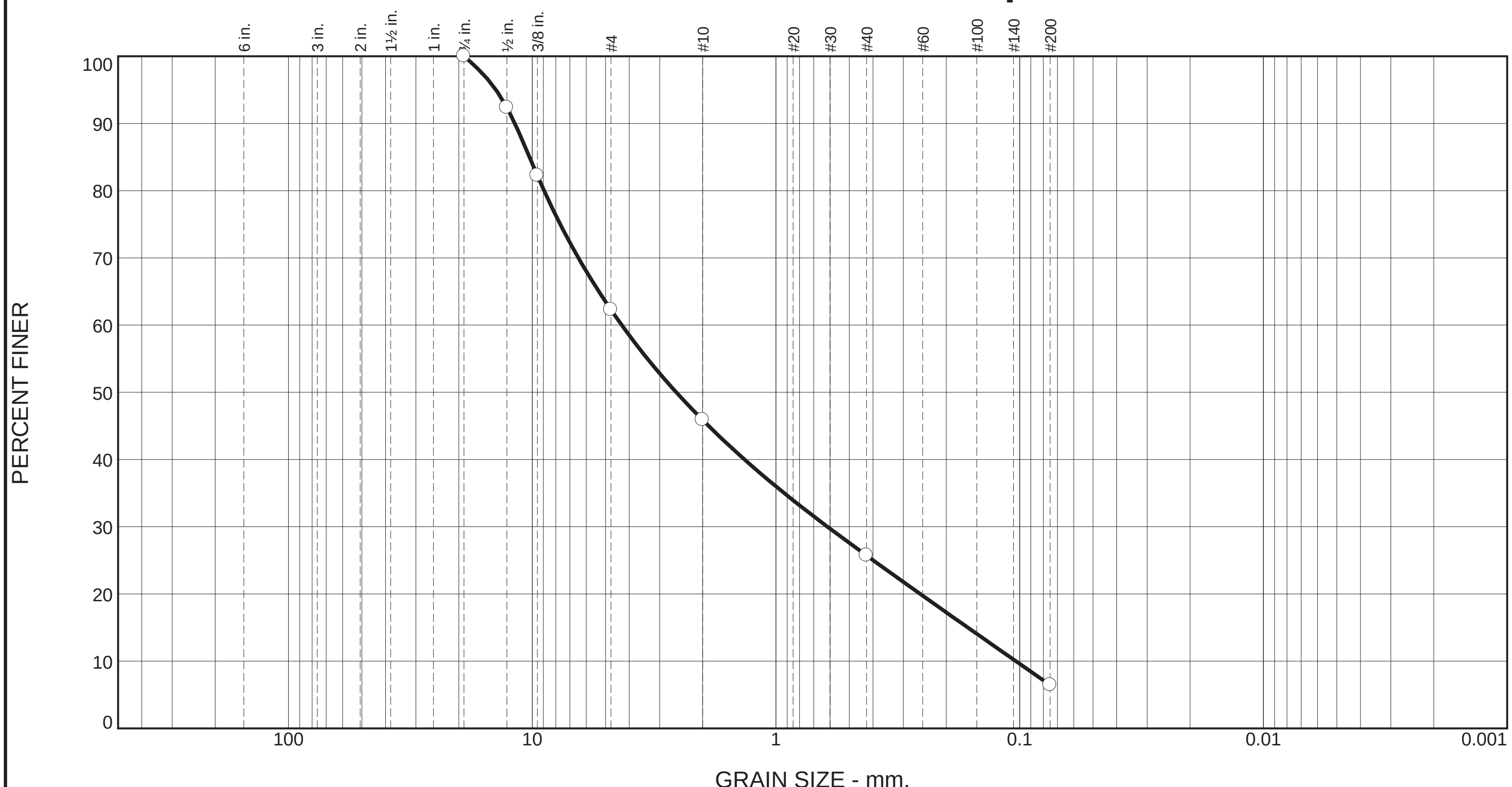
TRAUTNER GEOTECH LLC

Remarks:

Figure B.11

Tested By: N. Ellis **Checked By:** K. Moran

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	38	16	20	20	6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75	100		
.50	92		
.375	82		
#4	62		
#10	46		
#40	26		
#200	6		

* (no specification provided)

Material Description

SP-SM-Poorly Graded Sand with Silt and Gravel

Atterberg Limits

PL= NPL LL= NLL PI= Non-Plastic

Coefficients

D_{90}= 11.7873 D_{85}= 10.2630 D_{60}= 4.2908
D_{50}= 2.5638 D_{30}= 0.6143 D_{15}= 0.1632
D_{10}= 0.1037 C_u= 41.40 C_c= 0.85

Classification

USCS= SP-SM AASHTO= A-1-a

Remarks

Source of Sample: Test Boring 15 **Depth:** 8"-17'
Sample Number: 13086-B

Date: 6-19-23

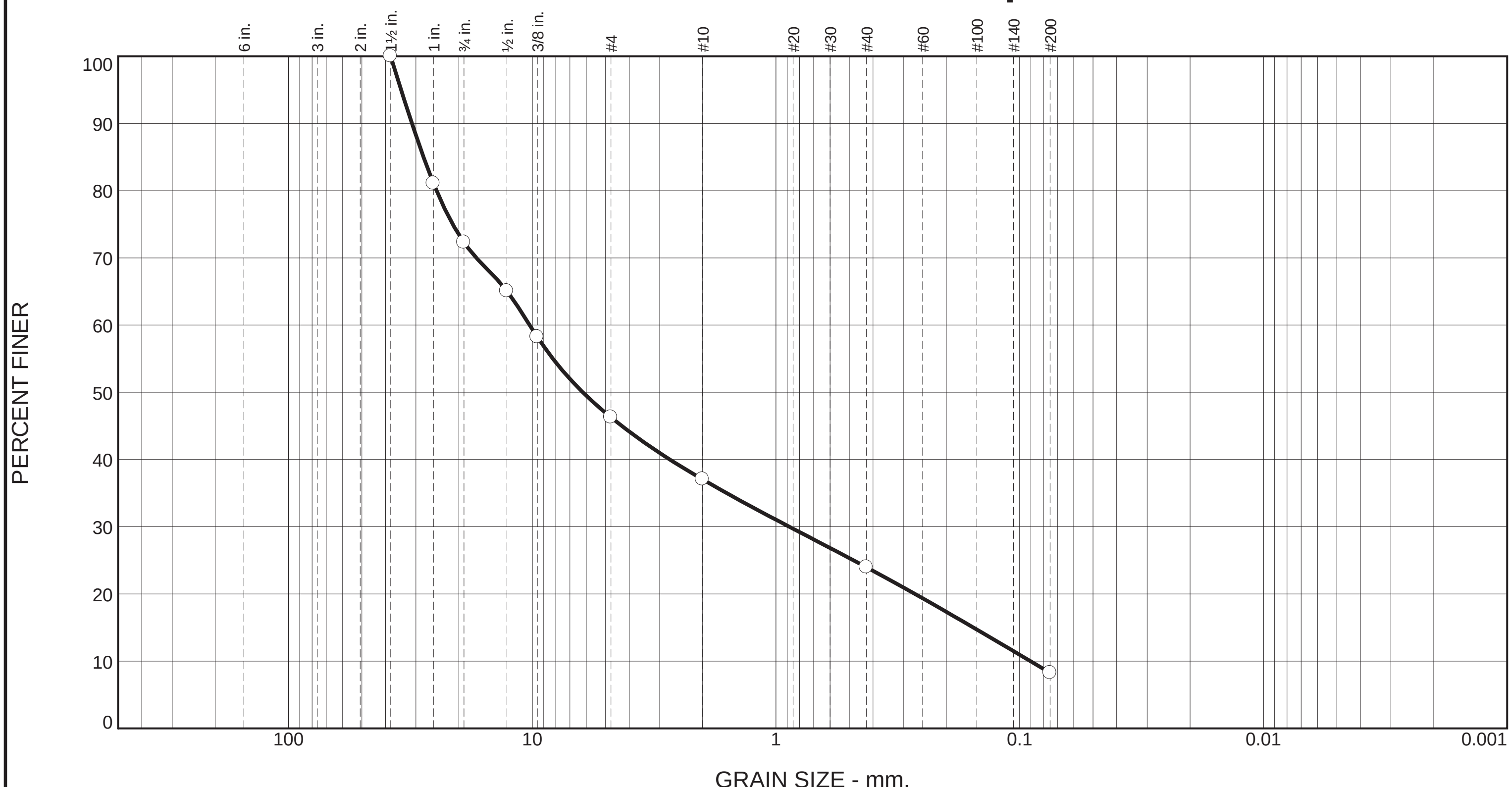
TRAUTNER GEOTECH LLC

Client: Roberts Communities and Resorts, Brian Fero
Project: Durango River View RV Resort

Project No: 57927GE **Figure** B.12

Tested By: J. Vaughn **Checked By:** J. Koch

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	28	26	9	13	16	8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1-1/2"	100		
1"	81		
3/4"	72		
1/2"	65		
3/8"	58		
#4	46		
#10	37		
#40	24		
#200	8		

* (no specification provided)

Material Description

GP-GM-Poorly Graded Gravel with Silt and Sand

Atterberg Limits

PL= 18 LL= 20 PI= 2

Coefficients

D_{90}= 31.1446 D_{85}= 27.9249 D_{60}= 10.2472
D_{50}= 6.2015 D_{30}= 0.8813 D_{15}= 0.1548
D_{10}= 0.0903 C_u= 113.44 C_c= 0.84

Classification

USCS= GP-GM AASHTO= A-1-a

Remarks

Source of Sample: Test Boring 16 **Depth:** 10"-20"
Sample Number: 13086-D

Date: 6-19-23

TRAUTNER GEOTECH LLC

Client: Roberts Communities and Resorts, Brian Fero
Project: Durango River View RV Resort

Project No: 57927GE **Figure** B.13

Tested By: C. Manchester **Checked By:** J. Deem

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