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## Rhetoric Subdivision Traffic Impact Analysis PCD File No.: PPR2341 & SF2325 (LSC #S224330) March 20, 2024

### **Traffic Engineer's Statement**

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





### **Developer's Statement**

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

MARCH 20,2024 Date

# Rhetoric Subdivision Traffic Impact Analysis

Prepared for: Colorado Concrete Crushing, LLC 20 Boulder Crescent, Suite 100 Colorado Springs, CO 80903

Contact: Mr. Eric S. Howard, Manager

MARCH 20, 2024

LSC Transportation Consultants Prepared by: Kirstin D. Ferrin, P.E. Reviewed by: Jeffrey C. Hodsdon, P.E.

PCD FILE NO.: PPR2341 & SF2325 LSC #S224330



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March 20, 2024

Mr. Eric S. Howard, Manager Colorado Concrete Crushing, LLC 20 Boulder Crescent, Suite 100 Colorado Springs, CO 80903

> RE: Rhetoric Subdivision Traffic Impact Analysis El Paso County, Colorado PCD FILE NO.: PPR2341 & SF23252241 LSC #S224330

Dear Mr. Howard:

LSC Transportation Consultants, Inc. has prepared this traffic impact analysis for the proposed Rhetoric Subdivision located east of Vollmer Road and south of Marksheffel Road in El Paso County, Colorado. The site location is shown in Figure 1.

### **REPORT CONTENTS**

The preparation of this report included the following:

- A summary of the existing and proposed land uses and access;
- The existing roadway and traffic conditions in the site's vicinity, including the roadway widths, surface conditions, lane geometries, traffic controls, and posted speed limits; and in-progress changes to the existing conditions, based on the design plans and construction of Vollmer Road improvements, Marksheffel Road and Sterling Ranch Road, as shown on the construction plans by Sterling Ranch;
- Estimates of projected short-term background traffic volumes;
- The projected average weekday and peak-hour vehicle trips to be generated by the concrete recycling operation during the design hour; projections of potential future development trip generation on Lot No. 1 and the remaining portion of Lot No. 2.
- The assignment of the estimated design-hour site-generated traffic volumes at the intersection of Marksheffel Road/Sterling Ranch Road;
- The projected short-term total design-hour traffic volumes;

- The projected levels of service at the intersection of Marksheffel Road/Sterling Ranch Road intersection; a preliminary traffic signal warrant analysis;
- Recommendations for auxiliary turn lanes at the intersection of Marksheffel Road/Sterling Ranch Road;
- Other recommendations; and
- County Road Improvement Fee Program information and an estimate of the fee amount.

### **RECENT TRAFFIC REPORTS**

Appendix Table 1, which includes a list of other traffic studies within Sterling Ranch and in the vicinity of area of study completed within the past five years (that LSC is aware of), is attached for reference.

### LAND USE AND ACCESS

### Land Use

The 32.4263-acre parcel (EPC Parcel No. 5300000743) is located south of the Sterling Ranch master planned community and north of the Pioneer Landscape Centers. The site is currently zoned for industrial uses. It is planned to be subdivided into two lots and for right-of-way (ROW) dedication for an extension of Sterling Ranch Road, as shown in Figure 2.

An asphalt and concrete recycling facility is currently operating on the south 7.7 acres of Lot 2. There are currently no plans for the remaining 16.36 acres. However, based on the current zoning, this area could potentially be developed for industrial uses in the future.

The 4.74-acre Lot 1 is intended for mini-warehouse uses **in the future** and will be developed under a separate site development plan application.

### Access

Access for the Rhetoric Subdivision is planned via an extension of Sterling Ranch Road southwest of Marksheffel Road. The extension of Sterling Ranch Road into the site is proposed to be a public street and would be classified as a Non-Residential Collector with 80feet of right-of-way. The recycling operation currently shares the existing Pioneer access to Vollmer Road, located about 905 feet southwest of the future Marksheffel alignment in the jurisdiction of the City of Colorado Springs. As part of this development, the recycling operation would no longer utilize the existing access but would instead have a full-movement access to the new section of Sterling Ranch Road about 585 feet southwest of Marksheffel Road.

### **Existing Asphalt and Concrete Recycling Operations**

The operating hours for the existing asphalt and concrete recycling facility are Monday through Friday from 7:00 a.m. to 5:30 p.m. and one Saturday per month from 7:00 a.m. to noon. The operation currently has four employees but that may increase to up to six in the future.

Tandem trucks and semi-trucks that are owned by third parties transport materials on and off the site throughout the operating hours. No trucks are stored on-site overnight, so each truck load results in one entering truck trip and one exiting truck trip.

LSC was provided with information on the truck operations at the current facility from March 1, 2022, to December 31, 2022. The number of truck loads per day varies throughout the year based on construction activity in the Colorado Springs metropolitan area with the heaviest activity occurring from June to September. The applicant has noted a recent slowdown in demand for recycled materials product due to rising interest rates and reduced housing starts. The applicant anticipates that the summer 2022 traffic likely represents peak demand and resulting production with low probability/potential for future increases in production and associated truck traffic in the foreseeable future.

The maximum number of truck loads on a single day during that time period was 135 (127 tandem trucks and seven semi-trucks). The 85<sup>th</sup>-percentile weekday (Monday through Friday) number of truck loads was 61 loads per day (47 tandem trucks and 15 semi-trucks).

### **EXISTING ROAD AND TRAFFIC CONDITIONS**

The adjacent streets are shown in Figure 1 and are described below. Copies of the 2016 El Paso County Major Transportation Corridors Plan (MTCP), 2040 Roadway Plan, and 2016 MTCP 2060 Corridor Preservation Plan with the site location identified on them have been attached to this report.

**Marksheffel Road** is a Principal Arterial extending north from the City of Fountain to about three quarters of a mile north of Woodmen Road. Marksheffel Road is planned ultimately to be widened to six lanes and extended north and west from Woodmen Road to connect to Research Parkway at Black Forest Road. Marksheffel Road is shown as a four-lane Principal Arterial adjacent to the site on the El Paso County *MTCP*. The City of Colorado Springs intends to take ownership and maintenance of Marksheffel Road when it is constructed from Vollmer to the east and south to where it will connect to the segment constructed north of Woodmen Road in the City.

The section of Marksheffel Road adjacent to Sterling Ranch (and this site) is planned to be constructed on 107 feet of right-of-way to the City's required cross section(s) and criteria. The section of Marksheffel Road between Sterling Ranch Road and Vollmer Road was recently

finished and the section of Marksheffel Road southeast of Sterling Ranch Road (to connect to the segment recently constructed) will be completed in 2024 and will open the connection to Woodmen Road. Marksheffel will be constructed as a four-lane roadway to the previously-agreed-upon cross section.

**Vollmer Road** is currently a five-lane urban street within the City of Colorado Springs limits between Black Forest Road and Cowpoke Road; and a two-lane, rural, paved roadway north of Cowpoke Road extending to north of Hodgen Road. In the southbound direction, Vollmer Road has a posted speed limit of 45 mph. South of the existing site access, Vollmer Road is within the City limits and has a 40-mph posted speed limit. The *2040 El Paso County Major Transportation Corridors Plan (MTCP)* and the Sterling Ranch master traffic study show Vollmer Road as a fourlane Urban Minor Arterial just north of the existing site access. South of the existing site access, Vollmer is classified as a Minor Arterial (including four through lanes, a center turn lane, bicycle lanes in each direction, and a detached sidewalk). The Sterling Ranch development is currently working on improvements to Vollmer Road north of the existing site access. The section south of the existing site access to Dry Needle Place is a three-lane cross section (two southbound travel lanes and one northbound travel lane) with a striped bicycle lane in the southbound direction. South of Dry Needle Place, the cross section has been completed to the full City cross section.

**Sterling Ranch Road** is a planned Urban Non-Residential Collector shown extending through the Sterling Ranch development between Marksheffel Road and the north end of the Sketch Plan area (near Arroya Road). Sterling Ranch Road has been constructed between Marksheffel Road and Dines Boulevard and will be constructed north to Briargate Parkway in the short term with the Sterling Ranch East Phase 1 Preliminary Plan. A short segment of Sterling Ranch Road is planned to be constructed **south** of Marksheffel Road as part of the currently-proposed development.

### **TRIP GENERATION**

### **Initial Phase and Operations**

Initially, no new development is proposed for the site, other than the changes to the access for the existing asphalt and concrete recycling operation (operating on the southern eight-acres of Lot 2) as proposed. LSC conducted the traffic counts at the existing access to Vollmer Road that Colorado Concrete Crushing shares with Pioneer Sand on May 25, 2022. As the count data did not identify the portion related to the site operations, LSC has estimated the number of trips based on the number of employees and operation data provided by Colorado Concrete Crushing. Table 1 shows the trip-generation estimates. The estimated trips on May 24, 2022 due to the employees was based on the number of existing employees and the nationally published trip-generation rates for ITE Land Use 110 – Light Industrial from *Trip Generation, 11th Edition,* 2021 by the Institute of Transportation Engineers (ITE). The number of truck trips

during the peak hours was estimated by LSC by assuming that trucks arrive and depart from the site evenly throughout the operating hours.

As shown in Appendix Table 2, the truck activity on the site varies throughout the year with peak activity occurring from July to September. As traffic counts were conducted in May, LSC has selected a "design" day to use for this analysis. The "design" day selected was the 85<sup>th</sup> percentile from the weekday truck-load data for 2022 provided by Colorado Concrete Crushing. The "design" day also assumes two additional employees in the future. Based on the existing economic conditions, no increases in truck traffic from what was recorded in 2022 are anticipated in the short-term/intermediate-term future. Table 1 shows the projected short-term "design day" traffic volumes and the difference between the May 24, 2022 traffic volumes and the "design day" volumes.

### Future Trip Generation Estimate

Table 2 shows the potential future trip-generation estimate for the entire Rhetoric Subdivision. Vehicle trips due to development of Lot 1 have been estimated using the nationally published trip-generation rates for Land Use 151: Mini-Warehouse from *Trip Generation, 11th Edition, 2021* by the Institute of Transportation Engineers (ITE). Vehicle trips due to potential future development of the remaining portion of Lot 2 have been estimated using the nationally published trip-generation rates for Land Use 130: Industrial Park.

At buildout, the Rhetoric Subdivision could potentially be expected to generate 954 vehicle trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 72 vehicles would enter and 24 vehicles would exit the site. During the afternoon peak hour, which generally occurs for one hour between 4:15 and 6:15 p.m., about 28 vehicles would enter and 71 vehicles would exit the site.

### TRIP DISTRIBUTION AND ASSIGNMENT

The directional distribution of the site-generated traffic volumes on the street and roadway system serving the site is one of the most important factors in determining the site's traffic impacts. Figure 3 shows the estimated directional distribution of the traffic related to the existing asphalt and concrete operation and for the potential future land uses.

When the distribution percentages from Figure 3 are applied to the new, external trip-generation estimates (from Table 2), the resulting site-generated traffic volumes can be determined. Figure 4 shows the "design day" site-generated traffic volumes due to the existing asphalt and concrete recycling facility following the change to the access from Vollmer Road to a new extension of Sterling Ranch Road. Figure 5 shows the potential future additional site-generated traffic volumes, should Lot 1 be developed for mini warehouse uses as intended

and the remaining portion of Lot 2 is developed for industrial uses consistent with the existing zoning.

### BACKGROUND TRAFFIC

Background traffic is the traffic estimated to be on the adjacent roadways and at adjacent intersections without the proposed development's trip generation of site-generated traffic volumes. Background traffic includes the through traffic and the traffic generated by nearby developments but assumes zero traffic generated by the site.

Figures 6 and 7 show the projected short-term and 2044 background traffic volumes. The background traffic volumes are estimates by LSC, based on work completed by LSC in the area including Sterling Ranch East Filings 1 and 2, FourSquare at Sterling Ranch, Sterling Ranch Filing 5, and Sterling Ranch East Filing 5. The short-term background traffic volumes assume the section of Marksheffel Road between Sterling Ranch Road and the existing terminus north of Woodmen Road has been constructed.

### TOTAL TRAFFIC

Figure 8 shows the sum of the short-term background traffic volumes from Figure 6 plus the "design day" asphalt and concrete facility-generated traffic volumes from Figure 4. These volumes represent the projected short-term total traffic assuming only the existing asphalt and concrete recycling on the south portion of Lot 2. This scenario assumes no development on Lot 1 or the remaining portion of Lot 2 in the short-term.

Figure 9 shows the 2044 total traffic volumes. These volumes are the sum of the 2044 background traffic volumes from Figure 7 plus the "design day" asphalt and concrete facility-generated traffic volumes from Figure 4 plus the potential future additional site-generated traffic volumes from Figure 5. This scenario assumes Lot 1 has been developed for mini warehouse uses as intended and the remaining portion of Lot 2 is developed for industrial uses consistent with the existing zoning.

### LEVEL OF SERVICE ANALYSIS

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection. Level of service is indicated on a scale from "A" to "F." LOS A represents control delay of less than 10 seconds for unsignalized intersections. LOS F represents control delay of more than 50 seconds for unsignalized intersections. Table 3 shows the level of service delay ranges.

|                  | Signalized Intersections                       | Unsignalized Intersections                                    |
|------------------|--|---|
| Level of Service | Average Control Delay<br>(seconds per vehicle) | Average Control Delay (seconds<br>per vehicle) <sup>(1)</sup> |
| А                | 10.0 sec or less                               | 10.0 sec or less  |
| В                | 10.1-20.0 sec                                  | 10.1-15.0 sec   |
| С                | 20.1-35.0 sec                                  | 15.1-25.0 sec   |
| D                | 35.1-55.0 sec                                  | 25.1-35.0 sec   |
| E                | 55.1-80.0 sec                                  | 35.1-50.0 sec   |
| F                | 80.1 sec or more                               | 50.1 sec or more  |
|                  |  |   |

| Table 3: Intersection | Levels of Service | Delay Ranges |
|-----------------------|-------------------|--------------|
|                       |                   |              |

(1) For unsignalized intersections, if V/C ratio is greater than 1.0 the level of service is LOS F, regardless of the projected average control delay per vehicle.

The intersection of Marksheffel/Sterling Ranch Road has been analyzed to determine the projected short-term and 2044 total intersection levels of service based on the unsignalized intersection analysis procedures from the Highway Capacity Manual 6<sup>th</sup> Edition. The intersection was also analyzed assuming signal control using Synchro. Figures 8 and 9 show the level of service analysis results. The level of service reports are attached.

The southbound left-turn movement at this intersection is projected to operate at LOS F during the afternoon peak hour, based on projected short-term **background** traffic volumes. This intersection is planned as a future signalized intersection. However, traffic-signal warrant(s) may not be met in the short-term. It is not uncommon for the minor street approach/movements at a stop-sign-controlled intersection to operate at LOS E or F as the traffic volumes approach the levels needed to meet vehicular-volume traffic-signal warrants. The addition of the site-generated traffic is projected to increase the delay for the southbound left-turn movement from 62.3 seconds per vehicle to 89.3 seconds per vehicle. If this intersection is converted to traffic-signal control all movements are projected to operate at LOS D or better, based on both the short-term and 2044 total traffic volumes.

### SIGNAL WARRANT THRESHOLD ANALYSIS – AM AND PM PEAK HOURS

The intersection of Marksheffel/Sterling Ranch was analyzed to determine if the thresholds for Four-Hour and/or Eight-Hour Vehicular-Volume Traffic-Signal Warrant thresholds would be reached or exceeded, based on the projected short-term traffic volumes.

The off-peak-hour volumes are estimates by LSC, based on the peak-hour traffic volumes, 72-hour machine counts conducted by LSC on Vollmer Road in November 2020, and vehicle time-of-day distribution data for single-family homes published by the Institute of Transportation Engineers.

Table 4 shows the results of the analysis for the intersection of Marksheffel/Sterling Ranch. As shown in Table 4, in the short-term, only five of the hours analyzed are projected to meet the thresholds for an Eight-Hour Vehicular-Volume Traffic-Signal and only three of the hours analyzed are projected to meet the thresholds for a Four-Hour Vehicular-Volume Traffic-Signal Warrant. This analysis indicates that traffic-signal warrant(s) will likely **not** be met at the intersection of Marksheffel/Sterling Ranch in the short-term. The minor-approach volume threshold for an Eight-Hour Vehicular-Volume Warrant is 75 vehicles per hour and the minor-approach volume threshold for a Four-Hour Vehicular-Volume Warrant is 80 vehicles per hour. As the projected northbound left-turn volume from the south leg is less than these thresholds, it is likely that a traffic signal will only be warranted at this intersection with future development within the Sterling Ranch Sketch Plan area north of Marksheffel Road.

### **DEVIATION REQUESTS**

No requests for deviations to the criteria contained in the El Paso County *Engineering Criteria Manual* are planned to be submitted as part of this development.

### MARKSHEFFEL/STERLING RANCH ROAD INTERSECTION RECOMMENDATIONS

- A northwest-bound left-turn lane on Marksheffel Road approaching Sterling Ranch Road should be included with the design plans for Marksheffel Road currently under review by the City of Colorado Springs. This lane should be 200 feet long plus a 180-foot taper.
- A southeast-bound right-turn lane should be constructed on Marksheffel Road approaching Sterling Ranch Road. This lane should be 200 feet long plus a 180-foot taper.
- The City of Colorado Springs will require the developer to remit \$150,000 for the future anticipated traffic signal at the intersection of Marksheffel/Sterling Ranch.

### EL PASO COUNTY ROADWAY IMPROVEMENT FEE PROGRAM

This development is required to participate in the El Paso County Roadway Improvement Fee Program. The Road Impact Fee Schedule does not include a fee for the existing asphalt and concrete crushing use. Therefore, the County will require that the fee be calculated based on *ITE Trip Generation* rates. Since the land use is not directly in the ITE manual the County will require the fee be calculated based on ITE Land Use 140: Manufacturing — the units of measure being per acre.

The calculation is based on 3.6 acres as the predictor variable. The 3.6 acres represent the approximate "active work area" within the 7.7-acre portion of Lot 2 - the asphalt and concrete recycling facility.

3.6 acres x 39.53 trips/acre/day = 142 trips per day

The cost per trip is \$398.55, therefore the total fee obligation would be \$56,594

The PID option for any future development on Lots 1 or 2 will be identified with a future Preliminary Plan/Plat submittal. Note: only the 5 mil PID option is available for a mini-warehouse land use.

### FINDINGS & RECOMMENDATIONS

- Please refer to the trip generation section of this report for details regarding the estimated trip-generation estimate for the asphalt and concrete recycling facility used in the access design volumes. The trip-generation estimate has been based on actual daily load data for the concrete recycling operation.
- Colorado Concrete Crushing is currently operating on the site (and currently using the Vollmer access). Truck activity on the site varies based on daily demand and overall construction activity in the Colorado Springs metropolitan area. Based on current economic conditions it is not anticipated that activity will increase significantly from the activity levels in 2022 in the foreseeable future.
- If in the future Lot 1 is developed for mini warehouse uses and the remaining portion of Lot 2 is developed with industrial uses consistent with the existing zoning, the Rhetoric Subdivision could potentially be expected to generate 954 vehicle trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 72 vehicles would enter and 24 vehicles would exit the site. During the afternoon peak hour, which generally occurs for one hour between 4:15 and 6:15 p.m., about 28 vehicles would enter and 71 vehicles would exit the site.
- The southbound left-turn movement at this intersection is projected to operate at LOS F during the afternoon peak hour, based on projected short-term background traffic volumes. This intersection is planned as a future signalized intersection. However, traffic-signal warrant(s) may not be met in the short term. It is not uncommon for the minor-street approach/movements at a stop-sign-controlled intersection to operate at LOS E or F as the traffic volumes approach the levels needed to meet vehicular-volume traffic-signal warrants. The addition of the site-generated traffic is projected to increase the delay for the southbound left-turn movement from 62.3 seconds per vehicle to 89.3 seconds per vehicle. If this intersection is converted to traffic-signal control, all movements are projected to operate at LOS D or better, based on both the short-term and 2044 total traffic volumes.
- The classification of the proposed extension of Sterling Ranch Road into the site as a public street and would Non-Residential Collector with 80feet of right-of-way.
- A northwest-bound left-turn lane on Marksheffel Road approaching Sterling Ranch Road should be included with the design plans for Marksheffel Road currently under review by the City of Colorado Springs. This lane should be 200 feet long plus a 180-foot taper.
- A southeast-bound right-turn lane should be constructed on Marksheffel Road approaching Sterling Ranch Road. This lane should be 200 feet long plus a 180-foot taper.
- The City of Colorado Springs will require the developer to remit \$150,000 for the future anticipated traffic signal at the intersection of Marksheffel/Sterling Ranch.

 The applicant will be required to participate in the El Paso County Road Improvement Fee Program. The Road Impact Fee Schedule does not include land use category and associated fee rate for the existing asphalt and concrete crushing use (given the unique nature of the land use). As discussed above, the "full fee" for this use would be \$56,594. The PID option for any future development on Lots 1 or 2 will be identified with a future Preliminary Plan/Plat submittal.

\* \* \* \* \*

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

Respectfully submitted,

LSC TRANSPORTATION CONSULTANTS, INC.

By Jeffrey C. Hodsdon, P.E. Principal

JCH/KDF:jas

Enclosures: Tables 1, 2, and 4 Figures 1-9 Traffic Count Reports MTCP Maps Level of Service Reports Appendix Tables 1-2 Vollmer Road Approved CD



|  |   |                  |                |             |                          | Table                    | 1          |           |              |              |                 |            |             |           |         |
|--|---|------------------|----------------|-------------|--------------------------|--------------------------|------------|-----------|--------------|--------------|-----------------|------------|-------------|-----------|---------|
|  |   |                  |                | Initial Pl  | hase T                   | rip Ger                  | neratio    | n Estima  | te           |              |                 |            |             |           |         |
|  |   |                  |                |             | Rhete                    | oric Sub                 | divisior   | ו         |              |              |                 |            |             |           |         |
|  | Number of<br>Employees  |                  |                | Trip Genera | tion Rate                | s <sup>(1)</sup>         |            |           |              |              | Total Trips     | Generat    | ed          |           |         |
|  | or  |                  |                | -           | Mo                       | rning                    | After      | noon      |              |              |                 | Мо         | rning       | After     | rnoon   |
|  | Truck   | Avera            | ge Weekday     | Traffic     | Peak                     | Hour                     | Peak       | Hour      | Avera        | ge Weekday   | Traffic         | Pea        | Hour        | Peak      | Hour    |
| Vehicle Type   | Loads   | In               | Out            | Total       | In                       | Out                      | In         | Out       | In           | Out          | Total           | In         | Out         | In        | Out     |
| Estimated site-generated trips on the day traffic counts were conducted at the existing site access (May 24, 2022) |   |                  |                |             |                          |                          |            |           |              |              |                 |            |             |           |         |
| Passenger Car (employee)   | stimated site-generated trips on the day traffic counts were conducted at the existing site access (May 24, 2022)<br>assenger Car (employee) 4 1.55 1.55 3.10 0.44 0.09 0.11 0.38 6 6 12 2 0 0 2<br>and on Truck 48 1 1 2 0 0 2 0 0 2 |                  |                |             |                          |                          |            |           |              |              |                 |            |             |           |         |
| Tandem Truck   | 18  | 1                | 1              | 2           | 0.10                     | 0.10                     | 0.10       | 0.10      | 18           | 18           | 36              | 2          | 2           | 2         | 2       |
| Semi-Truck   | 6   | 1                | 1              | 2           | 0.10                     | 0.10                     | 0.10       | 0.10      | 6            | 6            | 12              | 1          | 1           | 1         | 1       |
|  |   |                  |                |             |                          |                          |            | Total     | 30           | 30           | 60              | 5          | 3           | 3         | 5       |
| Estimated site-generated tr  | ips on the "desig   | n" day (We       | ekday 85th P   | Percentile) |                          |                          |            |           |              |              |                 |            |             |           |         |
| Passenger Car (employee)   | 6   | 1.55             | 1.55           | 3.10        | 0.44                     | 0.09                     | 0.11       | 0.38      | 9            | 9            | 18              | 3          | 1           | 1         | 2       |
| Tandem Truck   | 47  | 1                | 1              | 2           | 0.10                     | 0.10                     | 0.10       | 0.10      | 47           | 47           | 94              | 5          | 5           | 5         | 5       |
| Semi-Truck   | 15  | 1                | 1              | 2           | 0.10                     | 0.10                     | 0.10       | 0.10      | 15           | 15           | 30              | 2          | 2           | 2         | 2       |
|  |   |                  |                |             |                          |                          |            | Total     | 71           | 71           | 142             | 10         | 8           | 8         | 9       |
|  |   |                  | Difference b   | etween the  | "counted                 | " day and                | d the "des | sign" day | 41           | 41           | 82              | 5          | 5           | 5         | 4       |
|  |   |                  |                |             |                          |                          |            |           |              |              |                 |            |             |           |         |
| Notes:   |   |                  |                | 11          |                          | I. 4. I                  |            |           |              |              | . 41            | ( <b>T</b> |             |           |         |
| Truck trip generation rates  | rates were based<br>assume the truck  | on the rates and | exit evenly th | use 110 - G | eneral Lig<br>e operatin | ni indusir<br>a hours (7 | :00 am to  | 5:30 pm)  | on, Tith Ear | tion, 2021 D | y the institute | or trans   | portation E | Ingineers | ; (ITE) |
| Source: LSC Transportation Consult   | ants. Inc.  |                  |                |             |                          | 5                        |            | p)        |              |              |                 |            |             |           | Mar-24  |
|  | ,   |                  |                |             |                          |                          |            |           |              |              |                 |            |             |           |         |

|                 |  |                                    |                  |              | ا<br>Potential Future T<br>Rhetori | Table 2<br>rip Genei<br>c Subdivi | ation Esti | mate      |                      |       |       |       |           |        |        |
|-----------------|--|------------------------------------|------------------|--------------|------------------------------------|-----------------------------------|------------|-----------|----------------------|-------|-------|-------|-----------|--------|--------|
|                 | ITE  |                                    | Aree             | Floor        | Trip Generation                    |                                   | Trip G     | eneration | Rates <sup>(1)</sup> |       |       | Total | Trip Gene | erated |        |
| Lot             | Code   | ITE Land Use                       | (Acres)          | Ratio        | Quantity Unit                      | Daily                             | In         | Out       | In                   | Out   | Daily | In    | Out       | In     | Out    |
| Initial Tr<br>2 | itial Trip Generation Estimate <sup>(2)</sup> 2 Asphalt and Concrete Recycling 7.70 142 10 8 8 9 dditional Trip Concretion Estimate Recedion Retential Future Land Lloss |                                    |                  |              |                                    |                                   |            |           |                      |       |       |       |           |        |        |
| Addition        | dditional Trip Generation Estimate Based on Potential Future Land Uses   |                                    |                  |              |                                    |                                   |            |           |                      |       |       |       |           |        |        |
| 1               | 151  | Mini-Warehouse                     | 4.74             | 0.3          | 60 KSF <sup>(3)</sup>              | 1.45                              | 0.05       | 0.04      | 0.07                 | 0.08  | 87    | 3     | 2         | 4      | 5      |
| 2               | 130  | Industrial Park                    | 16.36            | 0.3          | 215 KSF                            | 3.37                              | 0.28       | 0.06      | 0.07                 | 0.27  | 725   | 59    | 14        | 16     | 57     |
|                 |  |                                    |                  |              |                                    |                                   |            |           |                      |       | 812   | 62    | 16        | 20     | 62     |
|                 |  |                                    |                  |              |                                    |                                   |            |           |                      | Total | 954   | 72    | 24        | 28     | 71     |
| Notes:          |  |                                    |                  |              |                                    |                                   |            |           |                      |       |       |       |           |        |        |
| (1) Source      | e: "Trip   | Generation, 11th Edition, 2021" by | the Institute of | f Transporta | tion Engineers (ITE)               |                                   |            |           |                      |       |       |       |           |        |        |
| (2) See T       | able 1   |                                    |                  |              |                                    |                                   |            |           |                      |       |       |       |           |        |        |
| (3) KSF =       | thousa   | and square feet of floor area      |                  |              |                                    |                                   |            |           |                      |       |       |       |           |        |        |
| Source:         | SC Tra   | nsportation Consultants, Inc.      |                  |              |                                    |                                   |            |           |                      |       |       |       |           |        | Mar-24 |

|                     |  |                                  |                                  |                     | Traffic<br>Marksh | Ta<br>Signal<br>effel Road | ible 4<br>Warrant<br>/Sterling R | t <b>Analysi</b><br>anch Road | S              |                       |                |                    |                            |                  |  |
|---------------------|--|----------------------------------|----------------------------------|---------------------|-------------------|----------------------------|----------------------------------|-------------------------------|----------------|-----------------------|----------------|--------------------|----------------------------|------------------|--|
|                     |  |                                  |                                  |                     |                   |                            |                                  | 1                             | Narrant Ana    | alysis <sup>(1)</sup> |                |                    |                            |                  |  |
|                     |  |                                  |                                  |                     | Wa                | rrant 1: Ei                | ght Hour V                       | ehicular Vo                   | lume Evalu     | ation                 |                | Warrant 2:<br>Volu | Four Hour V<br>me Evaluati | /ehicular<br>ion |  |
|                     |  |                                  |                                  |                     |                   |                            |                                  | ١                             | Warrant Thr    | eshold Met            | ?              | Short-Term B       | ackground                  |                  |  |
|                     | Traffic Vo   | umos <sup>(2)</sup>              |                                  |                     | Warrant T         | hresholds                  |                                  | SB An                         | nroach         | NB An                 | nroach         | Warrant            | Warrant                    | Warrant          |  |
|                     |  | Minor SB                         | Minor SB                         | _                   | Warrant           | inconordo                  |                                  | 00 Ap                         | prodett        |                       | bioach         | Threshold          | Threshold                  | Threshold        |  |
| Hour                | Major<br>Marksheffel <sup>(3)</sup>  | Sterling<br>Ranch <sup>(4)</sup> | Sterling<br>Banch <sup>(4)</sup> | Cond<br>Maior       | ition A<br>Minor  | Cond<br>Maior              | ition B<br>Minor                 | Condition<br>A                | Condition<br>B | Condition<br>A        | Condition<br>B | Minor<br>Minimum   | Met?<br>SB                 | Met?<br>NB       |  |
|                     |  |                                  | Ranon                            |                     |                   |                            |                                  |                               |                |                       |                | Willingth          |                            | <u>.</u>         |  |
| Short-Term Ba       | ackground Traf   | 11 <b>C</b><br>8                 | 0                                | 600                 | 150               | 900                        | 75                               | No                            | No             | No                    | No             | Low Volume         | No                         | No               |  |
| 1-2 AM              | 16   | 8                                | 0                                | 600                 | 150               | 900                        | 75                               | No                            | No             | No                    | No             | Low Volume         | No                         | No               |  |
| 2-3 AM              | 13   | 0                                | 0                                | 600                 | 150               | 900                        | 75                               | No                            | No             | No                    | No             | Low Volume         | No                         | No               |  |
| 4-5 AM              | 4-5 AM         24         34         0         600         150         900         75         No         No         No         Low Volume           5-6 AM         57         83         0         600         150         900         75         No         No         No         Low Volume           6-7 AM         175         247         0         600         150         900         75         No         No         No         Low Volume           7-8 AM         393         427         0         600         150         900         75         No         No         No         Low Volume  |                                  |                                  |                     |                   |                            |                                  |                               |                |                       |                |                    |                            |                  |  |
| 5-6 AM              | 4-5 AM         24         34         0         600         150         900         75         No         No         No         No         Low Volume           5-6 AM         57         83         0         600         150         900         75         No         No         No         No         Low Volume           6-7 AM         175         247         0         600         150         900         75         No         No         No         Low Volume           7-8 AM         393         427         0         600         150         900         75         No         No         No         Low Volume           8-9 AM         443         360         0         600         150         900         75         No         No         No         Low Volume  |                                  |                                  |                     |                   |                            |                                  |                               |                |                       |                |                    |                            |                  |  |
| 6-7 AM              | 5-6 AM         57         83         0         600         150         900         75         No         No         No         No         Low Volume           6-7 AM         175         247         0         600         150         900         75         No         No         No         No         Low Volume           7-8 AM         393         427         0         600         150         900         75         No         No         No         Low Volume           8-9 AM         443         360         0         600         150         900         75         No         No         No         No         S69           9-10 AM         384         226         0         600         150         900         75         No         No         No         No         369           9-10 AM         384         226         0         600         150         900         75         No         No         No         No         Low Volume   |                                  |                                  |                     |                   |                            |                                  |                               |                |                       |                |                    |                            |                  |  |
| 8-9 AM              | 6-7 AM         175         247         0         600         150         900         75         No         No         No         No         Low Volume           6-7 AM         175         247         0         600         150         900         75         No         No         No         Low Volume           7-8 AM         393         427         0         600         150         900         75         No         No         No         Low Volume           8-9 AM         443         360         0         600         150         900         75         No         No         No         Low Volume           9-10 AM         384         226         0         600         150         900         75         No         No         No         Low Volume           10-11 AM         463         226         0         600         150         900         75         No         No         No         Low Volume           10-11 AM         463         226         0         600         150         900         75         No         No         No         S59   |                                  |                                  |                     |                   |                            |                                  |                               |                |                       |                |                    |                            |                  |  |
| 9-10 AM             | 6-7 AM         175         247         0         600         150         900         75         No         No         No         No         Low Volume         No           7-8 AM         393         427         0         600         150         900         75         No         No         No         No         Low Volume         No           8-9 AM         443         360         0         600         150         900         75         No         No         No         No         Low Volume         No           9-10 AM         384         226         0         600         150         900         75         No         No         No         No         S69         1           10-11 AM         463         226         0         600         150         900         75         No         No         No         No         Low Volume         1           10-11 AM         463         226         0         600         150         900         75         No         No         No         No         359         1           11-12 PM         548         214         0         600         150         900                   |                                  |                                  |                     |                   |                            |                                  |                               |                |                       |                |                    |                            |                  |  |
| 10-11 AM            | 0-7.8 Mi         17.5         247         0         000         150         900         75         No         No         No         No         No         Low Volume         No           7-8 AM         393         427         0         600         150         900         75         No         No         No         No         Low Volume         No           8-9 AM         443         360         0         600         150         900         75         No         No         No         No         S0         360         No         N |                                  |                                  |                     |                   |                            |                                  |                               |                |                       |                |                    |                            |                  |  |
| 12-1 PM             | 7-8 AM         393         427         0         600         150         900         75         No         No         No         No         Low Volume         No           8-9 AM         443         360         0         600         150         900         75         No         No         No         No         No         369         No           9-10 AM         384         226         0         600         150         900         75         No         No         No         No         369         No           10-11 AM         463         226         0         600         150         900         75         No         No         No         Low Volume         No           11-12 PM         548         214         0         600         150         900         75         No         No         No         No         316         No           12-1 PM         567         212         0         600         150         900         75         No         No         No         No         307         No           12-PM         589         224         0         600         150         900         75                     |                                  |                                  |                     |                   |                            |                                  |                               |                |                       |                |                    |                            |                  |  |
| 1-2 PM              | 589  | 224                              | 0                                | 600                 | 150               | 900                        | 75                               | No                            | No             | No                    | No             | 296                | No                         | No               |  |
| 2-3 PM              | 683  | 235                              | 0                                | 600                 | 150               | 900                        | 75                               | Yes                           | No             | No                    | No             | 257                | No                         | No               |  |
| 4-5 PM              | 897  | 227                              | 0                                | 600                 | 150               | 900                        | 75                               | Yes                           | No             | No                    | No             | 176                | Yes                        | No               |  |
| 5-6 PM              | 827  | 280                              | 0                                | 600                 | 150               | 900                        | 75                               | Yes                           | No             | No                    | No             | 193                | Yes                        | No               |  |
| 6-7 PM              | 644  | 224                              | 0                                | 600                 | 150               | 900                        | 75                               | Yes                           | No             | No                    | No             | 272                | No                         | No               |  |
| 7-8 PM<br>8-9 PM    | 446  | 103                              | 0                                | 600                 | 150               | 900                        | 75<br>75                         | NO                            | NO             | NO                    | NO             | 367                | NO                         | NO               |  |
| 9-10 PM             | 298  | 91                               | 0                                | 600                 | 150               | 900                        | 75                               | No                            | No             | No                    | No             | Low Volume         | No                         | No               |  |
| 10-11 PM            | 149  | 41                               | 0                                | 600                 | 150               | 900                        | 75                               | No                            | No             | No                    | No             | Low Volume         | No                         | No               |  |
| 11-12 AM            | 86   | 27                               | 0<br>Number                      | 600<br>s of Hours t | 150<br>he Warran  | 900<br>t Threshold         | /5<br>Is Are Met                 | N0                            | N0<br>0        | N0<br>0               | N0<br>0        | Low Volume         | N0<br>3                    | 0<br>0           |  |
|                     |  |                                  | Number                           | , or nours (        |                   | Wa                         | rrant Met?                       | Ŭ                             | Ŭ<br>N         | lo                    | Ŭ              |                    | М                          | 10               |  |
| Short-Term To       | otal Traffic   |                                  |                                  |                     |                   | -                          |                                  |                               |                |                       |                | 1                  |                            |                  |  |
| 12-1 AM             | 35   | 8                                | 0                                | 600                 | 150               | 900                        | 75                               | No                            | No             | No                    | No             | Low Volume         | No                         | No               |  |
| 2-3 AM              | 13   | 0<br>()                          | 0                                | 600                 | 150               | 900                        | 75                               | NO                            | NO             | NO                    | NO             | Low Volume         | NO                         | NO               |  |
| 3-4 AM              | 16   | 8                                | 0                                | 600                 | 150               | 900                        | 75                               | No                            | No             | No                    | No             | Low Volume         | No                         | No               |  |
| 4-5 AM              | 25   | 34                               | 0                                | 600                 | 150               | 900                        | 75                               | No                            | No             | No                    | No             | Low Volume         | No                         | No               |  |
| 6-7 AM              | ี<br>180   | 03<br>247                        | 0                                | 600                 | 150               | 900                        | 75                               | NO                            | NO             | NO                    | NO             | Low Volume         | NO                         | NO               |  |
| 7-8 AM              | 403  | 427                              | 2                                | 600                 | 150               | 900                        | 75                               | No                            | No             | No                    | No             | Low Volume         | No                         | No               |  |
| 8-9 AM              | 450  | 360                              | 1                                | 600                 | 150               | 900                        | 75                               | No                            | No             | No                    | No             | 365                | No                         | No               |  |
| 9-10 AM<br>10-11 AM | 391<br>470   | 226                              | 1                                | 600                 | 150               | 900                        | 75<br>75                         | NO<br>No                      | NO             | NO<br>No              | NO<br>No       | 255                | NO                         | NO               |  |
| 11-12 PM            | 555  | 214                              | 1                                | 600                 | 150               | 900                        | 75                               | No                            | No             | No                    | No             | 313                | No                         | No               |  |
| 12-1 PM             | 574  | 212                              | 1                                | 600                 | 150               | 900                        | 75                               | No                            | No             | No                    | No             | 303                | No                         | No               |  |
| 2-3 PM              | 596<br>596   | 224                              | 1                                | 600                 | 150               | 900                        | 75<br>75                         | Yes                           | NO             | NO<br>No              | NO<br>No       | 292                | NO<br>No                   | NO               |  |
| 3-4 PM              | 788  | 227                              | 1                                | 600                 | 150               | 900                        | 75                               | Yes                           | No             | No                    | No             | 206                | Yes                        | No               |  |
| 4-5 PM              | 904  | 284                              | 1                                | 600                 | 150               | 900                        | 75                               | Yes                           | Yes            | No                    | No             | 174                | Yes                        | No               |  |
| 6-7 PM              | 649  | ∠ou<br>224                       | 0                                | 600                 | 150               | 900                        | 75                               | Yes                           | NO             | NO                    | NO             | 270                | r es<br>No                 | No               |  |
| 7-8 PM              | 449  | 163                              | Ő                                | 600                 | 150               | 900                        | 75                               | No                            | No             | No                    | No             | 366                | No                         | No               |  |
| 8-9 PM              | 429  | 117                              | 0                                | 600                 | 150               | 900                        | 75                               | No                            | No             | No                    | No             | 376                | No                         | No               |  |
| 9-10 PM<br>10-11 PM | 300  | 91<br>41                         | 0                                | 600                 | 150               | 900                        | 75<br>75                         | NO<br>No                      | NO<br>No       | NO<br>No              | NO<br>No       | Low Volume         | NO<br>No                   | NO               |  |
| 11-12 AM            | 87   | 27                               | 0                                | 600                 | 150               | 900                        | 75                               | No                            | No             | No                    | No             | Low Volume         | No                         | No               |  |
|                     |  |                                  | Number                           | s of Hours t        | he Warran         | t Threshold                | ds Are Met                       | 5                             | 1              | 0                     | 0              |                    | 3                          | 0                |  |
|                     |  |                                  |                                  |                     |                   | Wa                         | rrant Met?                       |                               | Ν              | lo                    |                |                    | N                          | io               |  |

Notes:

(1) Thresholds are based on 2 or more lanes on the major approach and 1 lane on the minor approach (Warrant evaluation assuming the southbound left turn only for the minor street) (2) Off peak hour traffic volumes are based on the projected peak hour traffic volumes, 72-hour machine counts conducted on Vollmer Road in November 2020 and

vehicle time-of-day distribution data published by the Institute of Transportation Engineers

(3) The major street traffic includes all movements (left, through, and right)

(4) The minor street traffic includes only the left turns from the minor street Source: LSC Transportation Consultants, Inc.























### LSC Transportation Consultants, Inc. 2504 E. Pikes Peak Ave, Suite 304

i04 E. Pikes Peak Ave, Suite 304 Colorado Springs, CO 80909 719-633-2868 File Name : Vollmer Rd - Pioneer Sand Trucks AM Site Code : S22433 Start Date : 5/25/2022

Page No : 1

## Passenger Cars/ Pickup-Trucks

|             |       |      |        |      |            |       |        | G      | roups | Printe     | d- Un | shifte | d      |      |            |       |      |       |      |            | -          |
|-------------|-------|------|--------|------|------------|-------|--------|--------|-------|------------|-------|--------|--------|------|------------|-------|------|-------|------|------------|------------|
|             |       | Vo   | ollmer | Rd   |            | F     | Pionee | er San | d Acc | es         |       | Vo     | ollmer | Rd   |            |       |      |       |      |            |            |
|             |       | So   | uthbo  | und  |            |       | W      | estbo  | und   |            |       | No     | orthbo | und  |            |       | Ea   | astbo | und  |            |            |
| 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 |
| 06:30       | 0     | 49   | 0      | 0    | 49         | 3     | 0      | 2      | 0     | 5          | 13    | 15     | 0      | 0    | 28         | 0     | 0    | 0     | 0    | 0          | 82         |
| 06:45       | 0     | 49   | 3      | 0    | 52         | 1     | 0      | 0      | 0     | 1          | 14    | 26     | 0      | 0    | 40         | 0     | 0    | 0     | 0    | 0          | 93         |
| Total       | 0     | 98   | 3      | 0    | 101        | 4     | 0      | 2      | 0     | 6          | 27    | 41     | 0      | 0    | 68         | 0     | 0    | 0     | 0    | 0          | 175        |
|             |       |      |        |      |            |       |        |        |       |            |       |        |        |      |            |       |      |       |      |            |            |
| 07:00       | 0     | 63   | 1      | 0    | 64         | 2     | 0      | 6      | 0     | 8          | 5     | 38     | 0      | 0    | 43         | 0     | 0    | 0     | 0    | 0          | 115        |
| 07:15       | 0     | 68   | 1      | 0    | 69         | 8     | 0      | 8      | 0     | 16         | 7     | 44     | 0      | 0    | 51         | 0     | 0    | 0     | 0    | 0          | 136        |
| 07:30       | 0     | 82   | 2      | 0    | 84         | 3     | 0      | 8      | 0     | 11         | 9     | 57     | 0      | 0    | 66         | 0     | 0    | 0     | 0    | 0          | 161        |
| 07:45       | 0     | 79   | 1      | 0    | 80         | 2     | 0      | 2      | 0     | 4          | 5     | 68     | 0      | 0    | 73         | 0     | 0    | 0     | 0    | 0          | 157        |
| Total       | 0     | 292  | 5      | 0    | 297        | 15    | 0      | 24     | 0     | 39         | 26    | 207    | 0      | 0    | 233        | 0     | 0    | 0     | 0    | 0          | 569        |
|             |       |      |        |      |            |       |        |        |       |            |       |        |        |      |            |       |      |       |      |            |            |
| 08:00       | 0     | 58   | 4      | 0    | 62         | 1     | 0      | 8      | 0     | 9          | 7     | 64     | 0      | 0    | 71         | 0     | 0    | 0     | 0    | 0          | 142        |
| 08:15       | 0     | 57   | 1      | 1    | 59         | 1     | 0      | 7      | 0     | 8          | 3     | 52     | 0      | 0    | 55         | 0     | 0    | 0     | 0    | 0          | 122        |
| Grand Total | 0     | 505  | 13     | 1    | 519        | 21    | 0      | 41     | 0     | 62         | 63    | 364    | 0      | 0    | 427        | 0     | 0    | 0     | 0    | 0          | 1008       |
| Apprch %    | 0     | 97.3 | 2.5    | 0.2  |            | 33.9  | 0      | 66.1   | 0     |            | 14.8  | 85.2   | 0      | 0    |            | 0     | 0    | 0     | 0    |            |            |
| Total %     | 0     | 50.1 | 1.3    | 0.1  | 51.5       | 2.1   | 0      | 4.1    | 0     | 6.2        | 6.2   | 36.1   | 0      | 0    | 42.4       | 0     | 0    | 0     | 0    | 0          |            |

### LSC Transportation Consultants, Inc. 2504 E. Pikes Peak Ave, Suite 304

2504 E. Pikes Peak Ave, Suite 304 Colorado Springs, CO 80909 719-633-2868

Passenger Cars/ Pickup-Trucks

|              |   | Vo     | ollmer | Rd     |            | F      | vionee | er San | d Acc | es         |       | Vo   | ollmei | Rd   |            |       |      |       |      |            |            |
|--------------|---|--------|--------|--------|------------|--------|--------|--------|-------|------------|-------|------|--------|------|------------|-------|------|-------|------|------------|------------|
|              |   | So     | uthbo  | und    |            |        | W      | estbo  | und   |            |       | No   | orthbo | und  |            |       | Ea   | astbo | und  |            |            |
| 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 /  | Analys                                      | is Fro | m 6:30 | 0:00 A | M to 8:    | 15:00  | AM - F | Peak 1 | of 1  |            |       |      |        |      |            |       |      |       |      |            |            |
| Peak Hour f  | or Entire Intersection Begins<br>0 68 1 0 6 |        |        |        | gins at    | 7:15:0 | 00 AM  |        |       |            |       |      |        |      |            |       |      |       |      |            |            |
| 7:15:00 AM   |   |        |        | 69     | 8          | 0      | 8      | 0      | 16    | 7          | 44    | 0    | 0      | 51   | 0          | 0     | 0    | 0     | 0    | 136        |            |
| 7:30:00 AM   | 0   | 82     | 2      | 0      | 84         | 3      | 0      | 8      | 0     | 11         | 9     | 57   | 0      | 0    | 66         | 0     | 0    | 0     | 0    | 0          | 161        |
| 7:45:00 AM   | 0   | 79     | 1      | 0      | 80         | 2      | 0      | 2      | 0     | 4          | 5     | 68   | 0      | 0    | 73         | 0     | 0    | 0     | 0    | 0          | 157        |
| 8:00:00 AM   | 0   | 58     | 4      | 0      | 62         | 1      | 0      | 8      | 0     | 9          | 7     | 64   | 0      | 0    | 71         | 0     | 0    | 0     | 0    | 0          | 142        |
| Total Volume | 0   | 287    | 8      | 0      | 295        | 14     | 0      | 26     | 0     | 40         | 28    | 233  | 0      | 0    | 261        | 0     | 0    | 0     | 0    | 0          | 596        |
| % App. Total | 0   | 97.3   | 2.7    | 0      |            | 35     | 0      | 65     | 0     |            | 10.7  | 89.3 | 0      | 0    |            | 0     | 0    | 0     | 0    |            |            |
| PHF          | .000  | .875   | .500   | .000   | .878       | .438   | .000   | .813   | .000  | .625       | .778  | .857 | .000   | .000 | .894       | .000  | .000 | .000  | .000 | .000       | .925       |

# LSC Transportation Consultants, Inc. 2504 E. Pikes Peak Ave, Suite 304 Colorado Springs, CO 80909

719-633-2868

## Trucks

|             |       |      |        |      |            |       |        |        | Group | s Print    | ed- Ba | ank 1 |        |      |            |       |      |       |      |            | -          |
|-------------|-------|------|--------|------|------------|-------|--------|--------|-------|------------|--------|-------|--------|------|------------|-------|------|-------|------|------------|------------|
|             |       | Vo   | ollmer | Rd   |            | F     | Pionee | er San | d Acc | es         |        | Vo    | ollmer | Rd   |            |       |      |       |      |            |            |
|             |       | So   | uthbo  | und  |            |       | W      | estbo  | und   |            |        | No    | orthbo | und  |            |       | Ea   | astbo | und  |            |            |
| 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 |
| 06:30       | 0     | 0    | 0      | 0    | 0          | 3     | 0      | 2      | 0     | 5          | 0      | 0     | 0      | 0    | 0          | 0     | 0    | 0     | 0    | 0          | 5          |
| 06:45       | 0     | 0    | 1      | 0    | 1          | 0     | 0      | 0      | 0     | 0          | 0      | 0     | 0      | 0    | 0          | 0     | 0    | 0     | 0    | 0          | 1          |
| Total       | 0     | 0    | 1      | 0    | 1          | 3     | 0      | 2      | 0     | 5          | 0      | 0     | 0      | 0    | 0          | 0     | 0    | 0     | 0    | 0          | 6          |
|             |       |      |        |      |            |       |        |        |       |            |        |       |        |      |            |       |      |       |      |            |            |
| 07:00       | 0     | 0    | 0      | 0    | 0          | 2     | 0      | 4      | 0     | 6          | 0      | 0     | 0      | 0    | 0          | 0     | 0    | 0     | 0    | 0          | 6          |
| 07:15       | 0     | 0    | 0      | 0    | 0          | 6     | 0      | 7      | 0     | 13         | 1      | 0     | 0      | 0    | 1          | 0     | 0    | 0     | 0    | 0          | 14         |
| 07:30       | 0     | 0    | 0      | 0    | 0          | 1     | 0      | 1      | 0     | 2          | 0      | 0     | 0      | 0    | 0          | 0     | 0    | 0     | 0    | 0          | 2          |
| 07:45       | 0     | 0    | 0      | 0    | 0          | 0     | 0      | 0      | 0     | 0          | 2      | 0     | 0      | 0    | 2          | 0     | 0    | 0     | 0    | 0          | 2          |
| Total       | 0     | 0    | 0      | 0    | 0          | 9     | 0      | 12     | 0     | 21         | 3      | 0     | 0      | 0    | 3          | 0     | 0    | 0     | 0    | 0          | 24         |
|             |       |      |        |      |            |       |        |        |       |            |        |       |        |      |            |       |      |       |      |            |            |
| 08:00       | 0     | 0    | 1      | 0    | 1          | 0     | 0      | 0      | 0     | 0          | 2      | 0     | 0      | 0    | 2          | 0     | 0    | 0     | 0    | 0          | 3          |
| 08:15       | 0     | 0    | 1      | 0    | 1          | 0     | 0      | 2      | 0     | 2          | 0      | 0     | 0      | 0    | 0          | 0     | 0    | 0     | 0    | 0          | 3          |
| Grand Total | 0     | 0    | 3      | 0    | 3          | 12    | 0      | 16     | 0     | 28         | 5      | 0     | 0      | 0    | 5          | 0     | 0    | 0     | 0    | 0          | 36         |
| Apprch %    | 0     | 0    | 100    | 0    |            | 42.9  | 0      | 57.1   | 0     |            | 100    | 0     | 0      | 0    |            | 0     | 0    | 0     | 0    |            |            |
| Total %     | 0     | 0    | 8.3    | 0    | 8.3        | 33.3  | 0      | 44.4   | 0     | 77.8       | 13.9   | 0     | 0      | 0    | 13.9       | 0     | 0    | 0     | 0    | 0          |            |

### LSC Transportation Consultants, Inc. 2504 E. Pikes Peak Ave, Suite 304

2504 E. Pikes Peak Ave, Suite 304 Colorado Springs, CO 80909 719-633-2868

Passenger Cars/ Pickup-Trucks

|             |       |      |        |      |            |       |       | G      | roups  | Printe     | d- Un | shifte | d      |      |            |       |      |       |      |            |            |
|-------------|-------|------|--------|------|------------|-------|-------|--------|--------|------------|-------|--------|--------|------|------------|-------|------|-------|------|------------|------------|
|             |       | Vo   | ollmer | Rd   |            | P     | ionee | r Sano | d Acce | ees        |       | Vo     | ollmer | Rd   |            |       |      |       |      |            |            |
|             |       | So   | uthbo  | und  |            |       | W     | estbo  | und    |            |       | No     | rthbo  | und  |            |       | Ea   | astbo | und  |            |            |
| 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 |
| 16:00       | 0     | 72   | 1      | 0    | 73         | 2     | 0     | 8      | 0      | 10         | 6     | 69     | 0      | 0    | 75         | 0     | 0    | 0     | 0    | 0          | 158        |
| 16:15       | 0     | 61   | 2      | 0    | 63         | 1     | 0     | 7      | 0      | 8          | 11    | 69     | 0      | 0    | 80         | 0     | 0    | 0     | 0    | 0          | 151        |
| 16:30       | 0     | 64   | 1      | 0    | 65         | 2     | 0     | 8      | 0      | 10         | 6     | 75     | 0      | 0    | 81         | 0     | 0    | 0     | 0    | 0          | 156        |
| 16:45       | 0     | 54   | 2      | 0    | 56         | 6     | 0     | 8      | 0      | 14         | 2     | 72     | 0      | 0    | 74         | 0     | 0    | 0     | 0    | 0          | 144        |
| Total       | 0     | 251  | 6      | 0    | 257        | 11    | 0     | 31     | 0      | 42         | 25    | 285    | 0      | 0    | 310        | 0     | 0    | 0     | 0    | 0          | 609        |
|             |       |      |        |      |            |       |       |        |        |            |       |        |        |      |            |       |      |       |      |            |            |
| 17:00       | 0     | 60   | 1      | 0    | 61         | 1     | 0     | 9      | 0      | 10         | 3     | 58     | 0      | 0    | 61         | 0     | 0    | 0     | 0    | 0          | 132        |
| 17:15       | 0     | 65   | 2      | 0    | 67         | 0     | 0     | 5      | 0      | 5          | 1     | 58     | 0      | 0    | 59         | 0     | 0    | 0     | 0    | 0          | 131        |
| 17:30       | 0     | 50   | 0      | 0    | 50         | 2     | 0     | 21     | 0      | 23         | 2     | 68     | 0      | 0    | 70         | 0     | 0    | 0     | 0    | 0          | 143        |
| 17:45       | 0     | 48   | 1      | 0    | 49         | 0     | 0     | 2      | 0      | 2          | 0     | 77     | 0      | 0    | 77         | 0     | 0    | 0     | 0    | 0          | 128        |
| Total       | 0     | 223  | 4      | 0    | 227        | 3     | 0     | 37     | 0      | 40         | 6     | 261    | 0      | 0    | 267        | 0     | 0    | 0     | 0    | 0          | 534        |
|             |       |      |        |      |            |       |       |        |        |            |       |        |        |      |            |       |      |       |      |            |            |
| Grand Total | 0     | 474  | 10     | 0    | 484        | 14    | 0     | 68     | 0      | 82         | 31    | 546    | 0      | 0    | 577        | 0     | 0    | 0     | 0    | 0          | 1143       |
| Apprch %    | 0     | 97.9 | 2.1    | 0    |            | 17.1  | 0     | 82.9   | 0      |            | 5.4   | 94.6   | 0      | 0    |            | 0     | 0    | 0     | 0    |            |            |
| Total %     | 0     | 41.5 | 0.9    | 0    | 42.3       | 1.2   | 0     | 5.9    | 0      | 7.2        | 2.7   | 47.8   | 0      | 0    | 50.5       | 0     | 0    | 0     | 0    | 0          |            |

### LSC Transportation Consultants, Inc. 2504 E. Pikes Peak Ave, Suite 304

2504 E. Pikes Peak Ave, Suite 304 Colorado Springs, CO 80909 719-633-2868

Passenger Cars/ Pickup-Trucks

|              |   | Vo     | ollmer | Rd     |            | P      | ionee  | r San  | d Acc | ees        |       | Vo   | ollmei | Rd   |            |       |      |       |      |            |            |
|--------------|---|--------|--------|--------|------------|--------|--------|--------|-------|------------|-------|------|--------|------|------------|-------|------|-------|------|------------|------------|
|              |   | So     | uthbo  | ound   |            |        | W      | estbo  | und   |            |       | No   | orthbo | und  |            |       | Ea   | astbo | und  |            |            |
| 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 /  | Analys                                      | is Fro | m 4:00 | 0:00 P | M to 5:    | 45:00  | PM - F | Peak 1 | of 1  |            |       |      |        |      |            |       |      |       |      |            |            |
| Peak Hour f  | or Entire Intersection Begins<br>0 72 1 0 7 |        |        |        |            | 4:00:0 | 00 PM  |        |       |            |       |      |        |      |            |       |      |       |      |            |            |
| 4:00:00 PM   | 0 72 1 0 73<br>0 61 2 0 63                  |        |        | 73     | 2          | 0      | 8      | 0      | 10    | 6          | 69    | 0    | 0      | 75   | 0          | 0     | 0    | 0     | 0    | 158        |            |
| 4:15:00 PM   | 0   | 61     | 2      | 0      | 63         | 1      | 0      | 7      | 0     | 8          | 11    | 69   | 0      | 0    | 80         | 0     | 0    | 0     | 0    | 0          | 151        |
| 4:30:00 PM   | 0   | 64     | 1      | 0      | 65         | 2      | 0      | 8      | 0     | 10         | 6     | 75   | 0      | 0    | 81         | 0     | 0    | 0     | 0    | 0          | 156        |
| 4:45:00 PM   | 0   | 54     | 2      | 0      | 56         | 6      | 0      | 8      | 0     | 14         | 2     | 72   | 0      | 0    | 74         | 0     | 0    | 0     | 0    | 0          | 144        |
| Total Volume | 0   | 251    | 6      | 0      | 257        | 11     | 0      | 31     | 0     | 42         | 25    | 285  | 0      | 0    | 310        | 0     | 0    | 0     | 0    | 0          | 609        |
| % App. Total | 0   | 97.7   | 2.3    | 0      |            | 26.2   | 0      | 73.8   | 0     |            | 8.1   | 91.9 | 0      | 0    |            | 0     | 0    | 0     | 0    |            |            |
| PHF          | .000  | .872   | .750   | .000   | .880       | .458   | .000   | .969   | .000  | .750       | .568  | .950 | .000   | .000 | .957       | .000  | .000 | .000  | .000 | .000       | .964       |

# LSC Transportation Consultants, Inc. 2504 E. Pikes Peak Ave, Suite 304 Colorado Springs, CO 80909

719-633-2868

## Trucks

|             |       |      |        |      |            |       |       |       | Group  | s Print    | ed- B | ank 1 |        |      |            |       |      |       |      |            |            |
|-------------|-------|------|--------|------|------------|-------|-------|-------|--------|------------|-------|-------|--------|------|------------|-------|------|-------|------|------------|------------|
|             |       | V    | ollmei | r Rd |            | P     | ionee | r San | d Acce | ees        |       | V     | ollmei | Rd   |            |       |      |       |      |            |            |
|             |       | So   | uthbo  | ound |            |       | w     | estbo | und    |            |       | No    | orthbo | ound |            |       | Ea   | astbo | und  |            |            |
| 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 |
| 16:00       | 0     | 0    | 1      | 0    | 1          | 1     | 0     | 2     | 0      | 3          | 3     | 0     | 0      | 0    | 3          | 0     | 0    | 0     | 0    | 0          | 7          |
| 16:15       | 0     | 0    | 1      | 0    | 1          | 0     | 0     | 2     | 0      | 2          | 5     | 0     | 0      | 0    | 5          | 0     | 0    | 0     | 0    | 0          | 8          |
| 16:30       | 0     | 0    | 0      | 0    | 0          | 0     | 0     | 0     | 0      | 0          | 4     | 0     | 0      | 0    | 4          | 0     | 0    | 0     | 0    | 0          | 4          |
| 16:45       | 0     | 0    | 2      | 0    | 2          | 0     | 0     | 0     | 0      | 0          | 1     | 0     | 0      | 0    | 1          | 0     | 0    | 0     | 0    | 0          | 3          |
| Total       | 0     | 0    | 4      | 0    | 4          | 1     | 0     | 4     | 0      | 5          | 13    | 0     | 0      | 0    | 13         | 0     | 0    | 0     | 0    | 0          | 22         |
|             |       |      |        |      |            |       |       |       |        |            |       |       |        |      |            |       |      |       |      |            |            |
| 17:00       | 0     | 0    | 1      | 0    | 1          | 0     | 0     | 0     | 0      | 0          | 2     | 0     | 0      | 0    | 2          | 0     | 0    | 0     | 0    | 0          | 3          |
| 17:15       | 0     | 0    | 2      | 0    | 2          | 0     | 0     | 2     | 0      | 2          | 1     | 0     | 0      | 0    | 1          | 0     | 0    | 0     | 0    | 0          | 5          |
| 17:30       | 0     | 0    | 0      | 0    | 0          | 0     | 0     | 0     | 0      | 0          | 1     | 0     | 0      | 0    | 1          | 0     | 0    | 0     | 0    | 0          | 1          |
| 17:45       | 0     | 0    | 1      | 0    | 1          | 0     | 0     | 1     | 0      | 1          | 0     | 0     | 0      | 0    | 0          | 0     | 0    | 0     | 0    | 0          | 2          |
| Total       | 0     | 0    | 4      | 0    | 4          | 0     | 0     | 3     | 0      | 3          | 4     | 0     | 0      | 0    | 4          | 0     | 0    | 0     | 0    | 0          | 11         |
|             |       |      |        |      |            |       |       |       |        |            |       |       |        |      |            |       |      |       |      |            |            |
| Grand Total | 0     | 0    | 8      | 0    | 8          | 1     | 0     | 7     | 0      | 8          | 17    | 0     | 0      | 0    | 17         | 0     | 0    | 0     | 0    | 0          | 33         |
| Apprch %    | 0     | 0    | 100    | 0    |            | 12.5  | 0     | 87.5  | 0      |            | 100   | 0     | 0      | 0    |            | 0     | 0    | 0     | 0    |            |            |
| Total %     | 0     | 0    | 24.2   | 0    | 24.2       | 3     | 0     | 21.2  | 0      | 24.2       | 51.5  | 0     | 0      | 0    | 51.5       | 0     | 0    | 0     | 0    | 0          |            |

# LSC Transportation Consultants, Inc. 2504 E. Pikes Peak Ave, Suite 304 Colorado Springs, CO 80909

719-633-2868

## Trucks

|              |   | Ve       | llmor  | Dd     |            | п      | lanaa  | - 600  |      |            |       | V    |        | Dd   |            |       |      |      |      |            | 1          |
|--------------|---|----------|--------|--------|------------|--------|--------|--------|------|------------|-------|------|--------|------|------------|-------|------|------|------|------------|------------|
|              |   | vc       | Jimer  | ĸu     |            | F      | ionee  | r Sano |      | ees        |       | v    | Jiimei | ĸu   |            |       |      |      |      |            |            |
|              | Southbound Westbound Northbound 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 /  | Analys                                    | is Fro   | m 4:00 | 0:00 P | M to 5:    | 45:00  | PM - F | Peak 1 | of 1 |            |       |      |        |      |            |       |      |      |      |            |            |
| Peak Hour f  | or Ent                                    | ire Inte | ersect | ion Be | gins at    | 4:00:0 | 00 PM  |        |      |            |       |      |        |      |            |       |      |      |      |            |            |
| 4:00:00 PM   | 0   | 0        | 1      | 0      | 1          | 1      | 0      | 2      | 0    | 3          | 3     | 0    | 0      | 0    | 3          | 0     | 0    | 0    | 0    | 0          | 7          |
| 4:15:00 PM   | 0   | 0        | 1      | 0      | 1          | 0      | 0      | 2      | 0    | 2          | 5     | 0    | 0      | 0    | 5          | 0     | 0    | 0    | 0    | 0          | 8          |
| 4:30:00 PM   | 0   | 0        | 0      | 0      | 0          | 0      | 0      | 0      | 0    | 0          | 4     | 0    | 0      | 0    | 4          | 0     | 0    | 0    | 0    | 0          | 4          |
| 4:45:00 PM   | 0   | 0        | 2      | 0      | 2          | 0      | 0      | 0      | 0    | 0          | 1     | 0    | 0      | 0    | 1          | 0     | 0    | 0    | 0    | 0          | 3          |
| Total Volume | 0   | 0        | 4      | 0      | 4          | 1      | 0      | 4      | 0    | 5          | 13    | 0    | 0      | 0    | 13         | 0     | 0    | 0    | 0    | 0          | 22         |
| % App. Total | 0   | 0        | 100    | 0      |            | 20     | 0      | 80     | 0    |            | 100   | 0    | 0      | 0    |            | 0     | 0    | 0    | 0    |            |            |
| PHF          | .000                                      | .000     | .500   | .000   | .500       | .250   | .000   | .500   | .000 | .417       | .650  | .000 | .000   | .000 | .650       | .000  | .000 | .000 | .000 | .000       | .688       |







Map 14: 2040 Roadway Plan (Classification and Lanes)



### Map 17: 2060 Corridor Preservation





### Intersection

| Int Delay, s/veh       | 12.2 |          |      |      |          |      |  |  |
|------------------------|------|----------|------|------|----------|------|--|--|
| Movement               | EBL  | EBT      | WBT  | WBR  | SBL      | SBR  |  |  |
| Lane Configurations    | - ሽ  | <b>^</b> | - 11 | 1    | <u>آ</u> | 1    |  |  |
| Traffic Vol, veh/h     | 38   | 133      | 80   | 142  | 427      | 150  |  |  |
| Future Vol, veh/h      | 38   | 133      | 80   | 142  | 427      | 150  |  |  |
| Conflicting Peds, #/hr | 0    | 0        | 0    | 0    | 0        | 0    |  |  |
| Sign Control           | Free | Free     | Free | Free | Stop     | Stop |  |  |
| RT Channelized         | -    | None     | -    | None | -        | None |  |  |
| Storage Length         | 300  | -        | -    | 205  | 155      | 0    |  |  |
| Veh in Median Storage  | ,# - | 0        | 0    | -    | 0        | -    |  |  |
| Grade, %               | -    | 0        | 0    | -    | 0        | -    |  |  |
| Peak Hour Factor       | 85   | 85       | 85   | 85   | 85       | 85   |  |  |
| Heavy Vehicles, %      | 2    | 2        | 2    | 2    | 2        | 2    |  |  |
| Mvmt Flow              | 45   | 156      | 94   | 167  | 502      | 176  |  |  |

| Major/Minor          | Major1 | Ма | ajor2 | Ν | /linor2 |      |  |  |  |  |  |  |  |
|----------------------|--------|----|-------|---|---------|------|--|--|--|--|--|--|--|
| Conflicting Flow All | 261    | 0  | -     | 0 | 262     | 47   |  |  |  |  |  |  |  |
| Stage 1              | -      | -  | -     | - | 94      | -    |  |  |  |  |  |  |  |
| Stage 2              | -      | -  | -     | - | 168     | -    |  |  |  |  |  |  |  |
| Critical Hdwy        | 4.14   | -  | -     | - | 6.84    | 6.94 |  |  |  |  |  |  |  |
| Critical Hdwy Stg 1  | -      | -  | -     | - | 5.84    | -    |  |  |  |  |  |  |  |
| Critical Hdwy Stg 2  | -      | -  | -     | - | 5.84    | -    |  |  |  |  |  |  |  |
| Follow-up Hdwy       | 2.22   | -  | -     | - | 3.52    | 3.32 |  |  |  |  |  |  |  |
| Pot Cap-1 Maneuver   | 1300   | -  | -     | - | 705     | 1012 |  |  |  |  |  |  |  |
| Stage 1              | -      | -  | -     | - | 919     | -    |  |  |  |  |  |  |  |
| Stage 2              | -      | -  | -     | - | 844     | -    |  |  |  |  |  |  |  |
| Platoon blocked, %   |        | -  | -     | - |         |      |  |  |  |  |  |  |  |
| Mov Cap-1 Maneuver   | 1300   | -  | -     | - | 680     | 1012 |  |  |  |  |  |  |  |
| Mov Cap-2 Maneuver   | -      | -  | -     | - | 680     | -    |  |  |  |  |  |  |  |
| Stage 1              | -      | -  | -     | - | 887     | -    |  |  |  |  |  |  |  |
| Stage 2              | -      | -  | -     | - | 844     | -    |  |  |  |  |  |  |  |
|                      |        |    |       |   |         |      |  |  |  |  |  |  |  |
| Approach             | EB     |    | WB    |   | SB      |      |  |  |  |  |  |  |  |
| HCM Control Delay, s | 1.7    |    | 0     |   | 20      |      |  |  |  |  |  |  |  |
| HCMLOS               |        |    |       |   | C       |      |  |  |  |  |  |  |  |

|                       |      |     |     | C               |  |
|-----------------------|------|-----|-----|-----------------|--|
|                       |      |     |     |                 |  |
| Minor Lane/Major Mvmt | EBL  | EBT | WBT | WBR SBLn1 SBLn2 |  |
| Capacity (veh/h)      | 1300 | -   | _   | - 680 1012      |  |

|                               | ٦          | -        | +        | •     | 1          | ~          |
|-------------------------------|------------|----------|----------|-------|------------|------------|
| Lane Group                    | EBL        | EBT      | WBT      | WBR   | SBL        | SBR        |
| Lane Configurations           | 5          | <b>^</b> | <b>^</b> | 1     | ካካ         | 1          |
| Traffic Volume (vph)          | 38         | 133      | 80       | 142   | 427        | 150        |
| Future Volume (vph)           | 38         | 133      | 80       | 142   | 427        | 150        |
| Turn Type                     | pm+pt      | NA       | NA       | Perm  | Prot       | Perm       |
| Protected Phases              | 5          | 2        | 6        |       | 7          |            |
| Permitted Phases              | 2          |          |          | 6     |            | 4          |
| Detector Phase                | 5          | 2        | 6        | 6     | 7          | 4          |
| Switch Phase                  |            |          |          |       |            |            |
| Minimum Initial (s)           | 5.0        | 5.0      | 5.0      | 5.0   | 5.0        | 5.0        |
| Minimum Split (s)             | 10.0       | 23.0     | 23.0     | 23.0  | 10.0       | 23.0       |
| Total Split (s)               | 12.0       | 60.0     | 48.0     | 48.0  | 30.0       | 30.0       |
| Total Split (%)               | 13.3%      | 66.7%    | 53.3%    | 53.3% | 33.3%      | 33.3%      |
| Yellow Time (s)               | 3.0        | 3.0      | 3.0      | 3.0   | 3.0        | 3.0        |
| All-Red Time (s)              | 2.0        | 2.0      | 2.0      | 2.0   | 2.0        | 2.0        |
| Lost Time Adjust (s)          | 0.0        | 0.0      | 0.0      | 0.0   | 0.0        | 0.0        |
| Total Lost Time (s)           | 5.0        | 5.0      | 5.0      | 5.0   | 5.0        | 5.0        |
| Lead/Lag                      | Lead       |          | Lag      | Lag   |            |            |
| Lead-Lag Optimize?            | Yes        |          | Yes      | Yes   |            |            |
| Recall Mode                   | None       | Max      | Max      | Max   | None       | None       |
| Act Effct Green (s)           | 55.1       | 55.1     | 48.3     | 48.3  | 17.1       | 17.1       |
| Actuated g/C Ratio            | 0.67       | 0.67     | 0.59     | 0.59  | 0.21       | 0.21       |
| v/c Ratio                     | 0.05       | 0.07     | 0.05     | 0.17  | 0.71       | 0.38       |
| Control Delay                 | 5.6        | 5.3      | 9.7      | 2.5   | 35.9       | 7.0        |
| Queue Delay                   | 0.0        | 0.0      | 0.0      | 0.0   | 0.0        | 0.0        |
| Total Delay                   | 5.6        | 5.3      | 9.7      | 2.5   | 35.9       | 7.0        |
| LOS                           | А          | А        | А        | А     | D          | А          |
| Approach Delay                |            | 5.4      | 5.1      |       | 28.4       |            |
| Approach LOS                  |            | А        | А        |       | С          |            |
| Intersection Summary          |            |          |          |       |            |            |
| Cycle Length: 90              |            |          |          |       |            |            |
| Actuated Cycle Length: 82.2   | 2          |          |          |       |            |            |
| Natural Cycle: 60             |            |          |          |       |            |            |
| Control Type: Semi Act-Unc    | oord       |          |          |       |            |            |
| Maximum v/c Ratio: 0.71       |            |          |          |       |            |            |
| Intersection Signal Delay: 19 | 9.0        |          |          | Ir    | ntersectio | n LOS: B   |
| Intersection Capacity Utiliza | tion 29.3% |          |          | ](    | CU Level   | of Service |
| Analysis Period (min) 15      |            |          |          |       |            |            |

Splits and Phases: 13: Marksheffel Rd & Sterling Ranch Rd

| <u>_</u> ø₂ |                | <i>∜</i><br>Ø4 |
|-------------|----------------|----------------|
| 60 s        |                | 30 s           |
|             | <b>▲</b><br>Ø6 | <b>▶</b> Ø7    |
| 12 s        | 48 s           | 30 s           |

### Intersection

Int Delay, s/veh 15.6 EBL Movement EBT WBT WBR SBL SBR Lane Configurations ٦ ħħ ħħ ۴ ٦ ۴ 108 178 130 283 Traffic Vol, veh/h 481 100 Future Vol, veh/h 130 108 178 481 283 100 Conflicting Peds, #/hr 0 0 0 0 0 0 Sign Control Stop Stop Free Free Free Free RT Channelized -None -None -None Storage Length 300 205 155 0 --Veh in Median Storage, # -0 0 -0 -Grade, % 0 0 0 ---Peak Hour Factor 85 85 85 85 85 85 Heavy Vehicles, % 2 2 2 2 2 2 Mvmt Flow 153 127 209 566 333 118

| Major/Minor          | Major1 | Ν   | 1ajor2 |      | Minor2 |         |        |
|----------------------|--------|-----|--------|------|--------|---------|--------|
| Conflicting Flow All | 775    | 0   | -      | 0    | 579    | 105     |        |
| Stage 1              | -      | -   | -      | -    | 209    | -       |        |
| Stage 2              | -      | -   | -      | -    | 370    | -       |        |
| Critical Hdwy        | 4.14   | -   | -      | -    | 6.84   | 6.94    |        |
| Critical Hdwy Stg 1  | -      | -   | -      | -    | 5.84   | -       |        |
| Critical Hdwy Stg 2  | -      | -   | -      | -    | 5.84   | -       |        |
| Follow-up Hdwy       | 2.22   | -   | -      | -    | 3.52   | 3.32    |        |
| Pot Cap-1 Maneuver   | 837    | -   | -      | -    | 446    | 929     |        |
| Stage 1              | -      | -   | -      | -    | 806    | -       |        |
| Stage 2              | -      | -   | -      | -    | 669    | -       |        |
| Platoon blocked, %   |        | -   | -      | -    |        |         |        |
| Mov Cap-1 Maneuver   | 837    | -   | -      | -    | 364    | 929     |        |
| Mov Cap-2 Maneuver   | -      | -   | -      | -    | 364    | -       |        |
| Stage 1              | -      | -   | -      | -    | 659    | -       |        |
| Stage 2              | -      | -   | -      | -    | 669    | -       |        |
|                      |        |     |        |      |        |         |        |
| Approach             | EB     |     | WB     |      | SB     |         |        |
| HCM Control Delay, s | 5.6    |     | 0      |      | 48.5   |         |        |
| HCM LOS              |        |     |        |      | E      |         |        |
|                      |        |     |        |      |        |         |        |
| Minor Lane/Maior Myr | nt     | FRI | FRT    | WRT  | WRRS   | RI n1 S | SBI n2 |
| Capacity (yeb/b)     | in     | 027 |        | VVD1 | VDI C  | 264     | 020    |
| Capacity (ven/n)     |        | 031 | -      | -    | -      | 304     | 929    |

| HCM Lane V/C Ratio    | 0.183 | - | - | - 0. | 915  | 0.127 |  |
|-----------------------|-------|---|---|------|------|-------|--|
| HCM Control Delay (s) | 10.3  | - | - | - 6  | 62.3 | 9.4   |  |
| HCM Lane LOS          | В     | - | - | -    | F    | А     |  |
| HCM 95th %tile Q(veh) | 0.7   | - | - | -    | 9.4  | 0.4   |  |

Splits and Phases: 13: Marksheffel Rd & Sterling Ranch Rd

| -4 <sub>Ø2</sub> |        | ¢ Ø4 |
|------------------|--------|------|
| 60 s             |        | 30 s |
| ≯ <sub>ø5</sub>  | <br>Ø6 | Ø7   |
| 12 s             | 48 s   | 30 s |

|                                | ≯         | -        | +        | •     | 1          | ~          |
|--------------------------------|-----------|----------|----------|-------|------------|------------|
| Lane Group                     | EBL       | EBT      | WBT      | WBR   | SBL        | SBR        |
| Lane Configurations            | 5         | <b>^</b> | <b>^</b> | 1     | ሻሻ         | 1          |
| Traffic Volume (vph)           | 160       | 900      | 809      | 175   | 478        | 328        |
| Future Volume (vph)            | 160       | 900      | 809      | 175   | 478        | 328        |
| Turn Type                      | pm+pt     | NA       | NA       | Perm  | Prot       | Perm       |
| Protected Phases               | 5         | 2        | 6        |       | 4          |            |
| Permitted Phases               | 2         |          |          | 6     |            | 4          |
| Detector Phase                 | 5         | 2        | 6        | 6     | 4          | 4          |
| Switch Phase                   |           |          |          |       |            |            |
| Minimum Initial (s)            | 5.0       | 5.0      | 5.0      | 5.0   | 5.0        | 5.0        |
| Minimum Split (s)              | 10.0      | 23.0     | 23.0     | 23.0  | 10.0       | 10.0       |
| Total Split (s)                | 10.0      | 60.0     | 50.0     | 50.0  | 30.0       | 30.0       |
| Total Split (%)                | 11.1%     | 66.7%    | 55.6%    | 55.6% | 33.3%      | 33.3%      |
| Yellow Time (s)                | 3.0       | 3.0      | 3.0      | 3.0   | 3.0        | 3.0        |
| All-Red Time (s)               | 2.0       | 2.0      | 2.0      | 2.0   | 2.0        | 2.0        |
| Lost Time Adjust (s)           | 0.0       | 0.0      | 0.0      | 0.0   | 0.0        | 0.0        |
| Total Lost Time (s)            | 5.0       | 5.0      | 5.0      | 5.0   | 5.0        | 5.0        |
| Lead/Lag                       | Lead      |          | Lag      | Lag   |            |            |
| Lead-Lag Optimize?             | Yes       |          | Yes      | Yes   |            |            |
| Recall Mode                    | None      | Max      | Max      | Max   | None       | None       |
| Act Effct Green (s)            | 55.1      | 55.1     | 45.1     | 45.1  | 18.1       | 18.1       |
| Actuated g/C Ratio             | 0.66      | 0.66     | 0.54     | 0.54  | 0.22       | 0.22       |
| v/c Ratio                      | 0.45      | 0.41     | 0.45     | 0.20  | 0.68       | 0.69       |
| Control Delay                  | 10.0      | 7.7      | 13.1     | 2.4   | 34.8       | 19.2       |
| Queue Delay                    | 0.0       | 0.0      | 0.0      | 0.0   | 0.0        | 0.0        |
| Total Delay                    | 10.0      | 7.7      | 13.1     | 2.4   | 34.8       | 19.2       |
| LOS                            | В         | Α        | В        | А     | С          | В          |
| Approach Delay                 |           | 8.0      | 11.2     |       | 28.5       |            |
| Approach LOS                   |           | A        | В        |       | С          |            |
| Intersection Summary           |           |          |          |       |            |            |
| Cycle Length: 90               |           |          |          |       |            |            |
| Actuated Cycle Length: 83.2    |           |          |          |       |            |            |
| Natural Cycle: 50              |           |          |          |       |            |            |
| Control Type: Semi Act-Unco    | oord      |          |          |       |            |            |
| Maximum v/c Ratio: 0.69        |           |          |          |       |            |            |
| Intersection Signal Delay: 14  | .9        |          |          | lr    | ntersectio | n LOS: B   |
| Intersection Capacity Utilizat | ion 57.4% |          |          | 10    | CU Level   | of Service |
| Analysis Period (min) 15       |           |          |          |       |            |            |
|                                |           |          |          |       |            |            |

Splits and Phases: 13: Marksheffel Rd & Sterling Ranch Rd

| <u>ø</u> ₂ |        | < <b>↓</b> Ø4 |
|------------|--------|---------------|
| 60 s       |        | 30 s          |
| ∕<br>∕_ø₅  | <br>Ø6 |               |
| 10 s       | 50 s   |               |

| +        | •   | 1   | -   |
|----------|---|---|---|
| WBT      | WBR   | SBL   | SBR   |
| <b>^</b> | 1   | ሻሻ  | 1   |
| 841      | 570   | 342   | 191   |
| 841      | 570   | 342   | 191   |
| NA       | Perm  | Prot  | Perm  |
| 6        |   | 4   |   |
|          | 6   |   | 4   |
| 6        | 6   | 4   | 4   |
|          |   |   |   |
| 5.0      | 5.0   | 5.0   | 5.0   |
| 23.0     | 23.0  | 10.0  | 10.0  |
| 50.0     | 50.0  | 30.0  | 30.0  |
| 5.6%     | 55.6%   | 33.3%   | 33.3%   |
| 3.0      | 3.0   | 3.0   | 3.0   |
| 2.0      | 2.0   | 2.0   | 2.0   |
| 0.0      | 0.0   | 0.0   | 0.0   |
| 5.0      | 5.0   | 5.0   | 5.0   |
| Lag      | Lag   |   |   |
| Yes      | Yes   |   |   |
| Max      | Max   | None  | None  |
| 45.0     | 45.0  | 13.6  | 13.6  |
| 0.57     | 0.57  | 0.17  | 0.17  |
| 0.44     | 0.52  | 0.61  | 0.46  |
| 10.9     | 2.7   | 34.7  | 8.3   |
| 0.0      | 0.0   | 0.0   | 0.0   |
| 10.9     | 2.7   | 34.7  | 8.3   |
| В        | А   | С   | А   |
| 7.6      |   | 25.2  |   |
| Α        |   | С   |   |
|          |   |   |   |
|          |   |   |   |
|          |   |   |   |
|          |   |   |   |
|          |   |   |   |
|          |   |   |   |
|          | Ir  | tersectio   | n LOS: B  |
|          | 10  | CULevel   | of Service  |
|          |   |   |   |
|          | <ul> <li>₩BT</li> <li>841</li> <li>841</li> <li>841</li> <li>841</li> <li>6</li> <li>6</li> <li>5.0</li> <li>23.0</li> <li>5.00</li> <li>5.00</li></ul> | WBT       WBR         MBT       WBR         MA       S70         841       570         841       570         841       570         NA       Perm         6       6         5.0       5.0         23.0       23.0         50.0       50.0         50.0       55.6%         3.0       3.0         2.0       0.0         0.0       0.0         5.0       5.0         5.0       55.6%         3.0       3.0         2.0       0.0         0.10       0.0         5.0       5.0         5.0       5.0         2.0       0.0         0.10       0.0         1.03       2.7         0.44       0.52         10.9       2.7         B       A         7.6       A | WBT         WBR         SBL           M         r         in           841         570         342           841         570         342           841         570         342           NA         Perm         Prot           6 |

Splits and Phases: 13: Marksheffel Rd & Sterling Ranch Rd

| -4 <sub>Ø2</sub> |                | < <b>₩</b> Ø4 |  |
|------------------|----------------|---------------|--|
| 60 s             |                | 30 s          |  |
|                  | <u>≪</u><br>Ø6 |               |  |
| 10 s             | 50 s           |               |  |

15

### Intersection

Int Delay, s/veh

| Movement               | EBL   | EBT  | EBR  | WBL  | WBT  | WBR  | NBL      | NBT  | NBR  | SBL  | SBT      | SBR  |
|------------------------|-------|------|------|------|------|------|----------|------|------|------|----------|------|
| Lane Configurations    | - ሽ   | - 11 | 1    | - ሽ  | - 11 | 1    | <u>۲</u> | 4    |      | - ሽ  | <b>↑</b> | 1    |
| Traffic Vol, veh/h     | 38    | 133  | 2    | 8    | 80   | 142  | 2        | 0    | 6    | 427  | 1        | 150  |
| Future Vol, veh/h      | 38    | 133  | 2    | 8    | 80   | 142  | 2        | 0    | 6    | 427  | 1        | 150  |
| 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         | 300   | -    | 200  | 250  | -    | 205  | 0        | -    | -    | 155  | -        | 0    |
| Veh in Median Storage  | , # - | 0    | -    | -    | 0    | -    | -        | 0    | -    | -    | 0        | -    |
| Grade, %               | -     | 0    | -    | -    | 0    | -    | -        | 0    | -    | -    | 0        | -    |
| Peak Hour Factor       | 85    | 85   | 85   | 85   | 85   | 85   | 85       | 85   | 85   | 85   | 85       | 85   |
| Heavy Vehicles, %      | 2     | 2    | 70   | 70   | 2    | 2    | 88       | 2    | 88   | 2    | 2        | 2    |
| Mvmt Flow              | 45    | 156  | 2    | 9    | 94   | 167  | 2        | 0    | 7    | 502  | 1        | 176  |

| Major/Minor I        | Major1 |        |       | Major2 |     | I   | Minor1 |      | Ν     | /linor2 |         |         |  |
|----------------------|--------|--------|-------|--------|-----|-----|--------|------|-------|---------|---------|---------|--|
| Conflicting Flow All | 261    | 0      | 0     | 158    | 0   | 0   | 312    | 525  | 78    | 280     | 360     | 47      |  |
| Stage 1              | -      | · -    | -     | -      | -   | -   | 246    | 246  | -     | 112     | 112     | -       |  |
| Stage 2              | -      | · -    | -     | -      | -   | -   | 66     | 279  | -     | 168     | 248     | -       |  |
| Critical Hdwy        | 4.14   | -      | -     | 5.5    | -   | -   | 9.26   | 6.54 | 8.66  | 7.54    | 6.54    | 6.94    |  |
| Critical Hdwy Stg 1  | -      |        | -     | -      | -   | -   | 8.26   | 5.54 | -     | 6.54    | 5.54    | -       |  |
| Critical Hdwy Stg 2  | -      | · -    | -     | -      | -   | -   | 8.26   | 5.54 | -     | 6.54    | 5.54    | -       |  |
| Follow-up Hdwy       | 2.22   | -      | -     | 2.9    | -   | -   | 4.38   | 4.02 | 4.18  | 3.52    | 4.02    | 3.32    |  |
| Pot Cap-1 Maneuver   | 1300   | -      | -     | 1039   | -   | -   | 443    | 456  | 747   | 650     | 565     | 1012    |  |
| Stage 1              | -      |        | -     | -      | -   | -   | 541    | 701  | -     | 881     | 802     | -       |  |
| Stage 2              | -      | · -    | -     | -      | -   | -   | 735    | 678  | -     | 817     | 700     | -       |  |
| Platoon blocked, %   |        | -      | -     |        | -   | -   |        |      |       |         |         |         |  |
| Mov Cap-1 Maneuver   | 1300   | -      | -     | 1039   | -   | -   | 353    | 436  | 747   | 623     | 540     | 1012    |  |
| Mov Cap-2 Maneuver   | -      |        | -     | -      | -   | -   | 353    | 436  | -     | 623     | 540     | -       |  |
| Stage 1              | -      | · -    | -     | -      | -   | -   | 522    | 676  | -     | 850     | 795     | -       |  |
| Stage 2              | -      |        | -     | -      | -   | -   | 601    | 672  | -     | 781     | 676     | -       |  |
|                      |        |        |       |        |     |     |        |      |       |         |         |         |  |
| Approach             | EB     |        |       | WB     |     |     | NB     |      |       | SB      |         |         |  |
| HCM Control Delay, s | 1.7    | ,      |       | 0.3    |     |     | 11.3   |      |       | 24.9    |         |         |  |
| HCM LOS              |        |        |       |        |     |     | В      |      |       | С       |         |         |  |
|                      |        |        |       |        |     |     |        |      |       |         |         |         |  |
| Minor Lane/Major Mvm | nt     | NBLn11 | VBLn2 | EBL    | EBT | EBR | WBL    | WBT  | WBR S | SBLn1   | SBLn2 S | SBLn3   |  |
| Capacity (veh/h)     |        | 353    | 747   | 1300   | -   | -   | 1039   | -    | -     | 623     | 540     | 1012    |  |
|                      |        | 0.007  | 0.000 | 0.004  |     |     |        |      |       |         |         | 0 1 7 1 |  |

| HCM Lane V/C Ratio    | 0.007 | 0.009 | 0.034 | - | - | 0.009 | - | - | 0.806 | 0.002 | 0.174 |  |
|-----------------------|-------|-------|-------|---|---|-------|---|---|-------|-------|-------|--|
| HCM Control Delay (s) | 15.3  | 9.9   | 7.9   | - | - | 8.5   | - | - | 30.4  | 11.7  | 9.3   |  |
| HCM Lane LOS          | С     | А     | А     | - | - | А     | - | - | D     | В     | А     |  |
| HCM 95th %tile Q(veh) | 0     | 0     | 0.1   | - | - | 0     | - | - | 8.1   | 0     | 0.6   |  |

|                                   | ≯        | -       | $\rightarrow$ | 4     | -          | •          | 1     | 1     | 1     | ŧ     | ~     |  |
|-----------------------------------|----------|---------|---------------|-------|------------|------------|-------|-------|-------|-------|-------|--|
| Lane Group                        | EBL      | EBT     | EBR           | WBL   | WBT        | WBR        | NBL   | NBT   | SBL   | SBT   | SBR   |  |
| Lane Configurations               | 1        | <u></u> | 1             | ľ     | <u></u>    | 1          | ľ     | eî 👘  | ኘ     | •     | 1     |  |
| Traffic Volume (vph)              | 38       | 133     | 2             | 8     | 80         | 142        | 2     | 0     | 427   | 1     | 150   |  |
| Future Volume (vph)               | 38       | 133     | 2             | 8     | 80         | 142        | 2     | 0     | 427   | 1     | 150   |  |
| Turn Type                         | pm+pt    | NA      | Perm          | pm+pt | NA         | Perm       | pm+pt | NA    | Prot  | NA    | Perm  |  |
| Protected Phases                  | 5        | 2       |               | 1     | 6          |            | 3     | 8     | 7     | 4     |       |  |
| Permitted Phases                  | 2        |         | 2             | 6     |            | 6          | 8     |       |       |       | 4     |  |
| Detector Phase                    | 5        | 2       | 2             | 1     | 6          | 6          | 3     | 8     | 7     | 4     | 4     |  |
| Switch Phase                      |          |         |               |       |            |            |       |       |       |       |       |  |
| Minimum Initial (s)               | 5.0      | 5.0     | 5.0           | 5.0   | 5.0        | 5.0        | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |  |
| Minimum Split (s)                 | 10.0     | 23.0    | 23.0          | 10.0  | 23.0       | 23.0       | 10.0  | 10.0  | 9.5   | 10.0  | 10.0  |  |
| Total Split (s)                   | 11.0     | 50.0    | 50.0          | 10.0  | 49.0       | 49.0       | 10.0  | 10.0  | 20.0  | 20.0  | 20.0  |  |
| Total Split (%)                   | 12.2%    | 55.6%   | 55.6%         | 11.1% | 54.4%      | 54.4%      | 11.1% | 11.1% | 22.2% | 22.2% | 22.2% |  |
| Yellow Time (s)                   | 3.0      | 3.0     | 3.0           | 3.0   | 3.0        | 3.0        | 3.0   | 3.0   | 3.5   | 3.0   | 3.0   |  |
| All-Red Time (s)                  | 2.0      | 2.0     | 2.0           | 2.0   | 2.0        | 2.0        | 2.0   | 2.0   | 1.0   | 2.0   | 2.0   |  |
| Lost Time Adjust (s)              | 0.0      | 0.0     | 0.0           | 0.0   | 0.0        | 0.0        | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |  |
| Total Lost Time (s)               | 5.0      | 5.0     | 5.0           | 5.0   | 5.0        | 5.0        | 5.0   | 5.0   | 4.5   | 5.0   | 5.0   |  |
| Lead/Lag                          | Lead     | Lag     | Lag           | Lead  | Lag        | Lag        | Lead  | Lag   | Lead  | Lag   | Lag   |  |
| Lead-Lag Optimize?                | Yes      | Yes     | Yes           | Yes   | Yes        | Yes        | Yes   | Yes   | Yes   | Yes   | Yes   |  |
| Recall Mode                       | None     | Max     | Max           | None  | Max        | Max        | None  | None  | None  | None  | None  |  |
| Act Effct Green (s)               | 50.4     | 49.4    | 49.4          | 47.8  | 45.0       | 45.0       | 5.9   | 5.1   | 14.6  | 14.1  | 14.1  |  |
| Actuated g/C Ratio                | 0.65     | 0.64    | 0.64          | 0.62  | 0.58       | 0.58       | 0.08  | 0.07  | 0.19  | 0.18  | 0.18  |  |
| v/c Ratio                         | 0.05     | 0.07    | 0.00          | 0.02  | 0.05       | 0.17       | 0.03  | 0.01  | 0.77  | 0.00  | 0.41  |  |
| Control Delay                     | 5.6      | 6.9     | 0.0           | 5.9   | 9.3        | 1.6        | 30.0  | 0.0   | 40.2  | 29.0  | 8.6   |  |
| Queue Delay                       | 0.0      | 0.0     | 0.0           | 0.0   | 0.0        | 0.0        | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |  |
| Total Delay                       | 5.6      | 6.9     | 0.0           | 5.9   | 9.3        | 1.6        | 30.0  | 0.0   | 40.2  | 29.0  | 8.6   |  |
| LOS                               | А        | А       | А             | А     | А          | А          | С     | А     | D     | С     | А     |  |
| Approach Delay                    |          | 6.5     |               |       | 4.4        |            |       | 6.7   |       | 32.0  |       |  |
| Approach LOS                      |          | А       |               |       | А          |            |       | А     |       | С     |       |  |
| Intersection Summary              |          |         |               |       |            |            |       |       |       |       |       |  |
| Cycle Length: 90                  |          |         |               |       |            |            |       |       |       |       |       |  |
| Actuated Cycle Length: 77.1       |          |         |               |       |            |            |       |       |       |       |       |  |
| Natural Cycle: 60                 |          |         |               |       |            |            |       |       |       |       |       |  |
| Control Type: Semi Act-Unco       | ord      |         |               |       |            |            |       |       |       |       |       |  |
| Maximum v/c Ratio: 0.77           |          |         |               |       |            |            |       |       |       |       |       |  |
| Intersection Signal Delay: 20.    | .9       |         |               | Ir    | ntersectio | n LOS: C   |       |       |       |       |       |  |
| Intersection Capacity Utilization | on 36.0% | )       |               | 10    | CU Level   | of Service | Α     |       |       |       |       |  |
| Analysis Period (min) 15          |          |         |               |       |            |            |       |       |       |       |       |  |

| <b>√</b> Ø1 | - 102          | <b>1</b> Ø3 | 🌵 Ø4 |              |
|-------------|----------------|-------------|------|--------------|
| 10 s        | 50 s           | 10 s        | 20 s |              |
|             | <b>↓</b><br>Ø6 | Ø7          |      | <b>√1</b> ø8 |
| 11 s        | 49 s           | 20 s        |      | 10 s         |

### Intersection

| Int Delay, s/veh       | 21.4  |      |      |      |      |      |      |      |      |      |      |      |  |
|------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|--|
| Movement               | EBL   | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |  |
| Lane Configurations    | 1     | - 11 | 1    | ۲.   | - 11 | 1    | 1    | et 👘 |      | 1    | •    | 1    |  |
| Traffic Vol, veh/h     | 130   | 108  | 2    | 6    | 178  | 481  | 2    | 0    | 7    | 283  | 1    | 100  |  |
| Future Vol, veh/h      | 130   | 108  | 2    | 6    | 178  | 481  | 2    | 0    | 7    | 283  | 1    | 100  |  |
| 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         | 300   | -    | 200  | 250  | -    | 205  | 0    | -    | -    | 155  | -    | 0    |  |
| Veh in Median Storage  | , # - | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |  |
| Grade, %               | -     | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |  |
| Peak Hour Factor       | 85    | 85   | 85   | 85   | 85   | 85   | 85   | 85   | 85   | 85   | 85   | 85   |  |
| Heavy Vehicles, %      | 2     | 2    | 88   | 88   | 2    | 2    | 78   | 2    | 78   | 2    | 2    | 2    |  |
| Mvmt Flow              | 153   | 127  | 2    | 7    | 209  | 566  | 2    | 0    | 8    | 333  | 1    | 118  |  |

| Major/Minor           | Major1 |        |          | Major2   |       |        | Minor1   |          | Ν      | Minor2 |       |          |            |
|-----------------------|--------|--------|----------|----------|-------|--------|----------|----------|--------|--------|-------|----------|------------|
| Conflicting Flow All  | 775    | 0      | 0        | 129      | 0     | 0      | 552      | 1222     | 64     | 593    | 658   | 105      |            |
| Stage 1               | -      | -      | -        | -        | -     | -      | 433      | 433      | -      | 223    | 223   | -        |            |
| Stage 2               | -      | -      | -        | -        | -     | -      | 119      | 789      | -      | 370    | 435   | -        |            |
| Critical Hdwy         | 4.14   | -      | -        | 5.86     | -     | -      | 9.06     | 6.54     | 8.46   | 7.54   | 6.54  | 6.94     |            |
| Critical Hdwy Stg 1   | -      | -      | -        | -        | -     | -      | 8.06     | 5.54     | -      | 6.54   | 5.54  | -        |            |
| Critical Hdwy Stg 2   | -      | -      | -        | -        | -     | -      | 8.06     | 5.54     | -      | 6.54   | 5.54  | -        |            |
| Follow-up Hdwy        | 2.22   | -      | -        | 3.08     | -     | -      | 4.28     | 4.02     | 4.08   | 3.52   | 4.02  | 3.32     |            |
| Pot Cap-1 Maneuver    | 837    | -      | -        | 1001     | -     | -      | 286      | 178      | 787    | 389    | 383   | 929      |            |
| Stage 1               | -      | -      | -        | -        | -     | -      | 408      | 580      | -      | 759    | 718   | -        |            |
| Stage 2               | -      | -      | -        | -        | -     | -      | 691      | 400      | -      | 622    | 579   | -        |            |
| Platoon blocked, %    |        | -      | -        |          | -     | -      |          |          |        |        |       |          |            |
| Mov Cap-1 Maneuver    | 837    | -      | -        | 1001     | -     | -      | 213      | 144      | 787    | ~ 329  | 311   | 929      |            |
| Mov Cap-2 Maneuver    | -      | -      | -        | -        | -     | -      | 213      | 144      | -      | ~ 329  | 311   | -        |            |
| Stage 1               | -      | -      | -        | -        | -     | -      | 333      | 474      | -      | 620    | 713   | -        |            |
| Stage 2               | -      | -      | -        | -        | -     | -      | 598      | 397      | -      | 503    | 473   | -        |            |
|                       |        |        |          |          |       |        |          |          |        |        |       |          |            |
| Approach              | EB     |        |          | WB       |       |        | NB       |          |        | SB     |       |          |            |
| HCM Control Delay, s  | 5.6    |        |          | 0.1      |       |        | 12.4     |          |        | 68.3   |       |          |            |
| HCM LOS               |        |        |          |          |       |        | В        |          |        | F      |       |          |            |
|                       |        |        |          |          |       |        |          |          |        |        |       |          |            |
| Minor Lane/Major Mvn  | nt     | NBLn11 | VBLn2    | EBL      | EBT   | EBR    | WBL      | WBT      | WBR S  | SBLn1  | SBLn2 | SBLn3    |            |
| Capacity (veh/h)      |        | 213    | 787      | 837      | -     | -      | 1001     | -        | -      | 329    | 311   | 929      |            |
| HCM Lane V/C Ratio    |        | 0.011  | 0.01     | 0.183    | -     | -      | 0.007    | -        | -      | 1.012  | 0.004 | 0.127    |            |
| HCM Control Delay (s) | )      | 22.1   | 9.6      | 10.3     | -     | -      | 8.6      | -        | -      | 89.3   | 16.6  | 9.4      |            |
| HCM Lane LOS          |        | С      | А        | В        | -     | -      | А        | -        | -      | F      | С     | А        |            |
| HCM 95th %tile Q(veh  | I)     | 0      | 0        | 0.7      | -     | -      | 0        | -        | -      | 11.4   | 0     | 0.4      |            |
| Notes                 |        |        |          |          |       |        |          |          |        |        |       |          |            |
| ~: Volume exceeds ca  | pacity | \$: De | elay exc | ceeds 30 | )0s - | +: Com | putation | n Not De | efined | *: All | major | /olume i | in platoon |

|                                   | ≯        | -       | $\mathbf{r}$ | 4     | -          | •          | 1     | 1        | 1     | ŧ     | ~     |  |
|-----------------------------------|----------|---------|--------------|-------|------------|------------|-------|----------|-------|-------|-------|--|
| Lane Group                        | EBL      | EBT     | EBR          | WBL   | WBT        | WBR        | NBL   | NBT      | SBL   | SBT   | SBR   |  |
| Lane Configurations               | 1        | <u></u> | 1            | ľ     | <u></u>    | 1          | ľ     | el<br>el | ካካ    | •     | 1     |  |
| Traffic Volume (vph)              | 130      | 108     | 2            | 6     | 178        | 481        | 2     | 0        | 283   | 1     | 100   |  |
| Future Volume (vph)               | 130      | 108     | 2            | 6     | 178        | 481        | 2     | 0        | 283   | 1     | 100   |  |
| Turn Type                         | pm+pt    | NA      | Perm         | pm+pt | NA         | Perm       | pm+pt | NA       | Prot  | NA    | Perm  |  |
| Protected Phases                  | 5        | 2       |              | 1     | 6          |            | 3     | 8        | 7     | 4     |       |  |
| Permitted Phases                  | 2        |         | 2            | 6     |            | 6          | 8     |          |       |       | 4     |  |
| Detector Phase                    | 5        | 2       | 2            | 1     | 6          | 6          | 3     | 8        | 7     | 4     | 4     |  |
| Switch Phase                      |          |         |              |       |            |            |       |          |       |       |       |  |
| Minimum Initial (s)               | 5.0      | 5.0     | 5.0          | 5.0   | 5.0        | 5.0        | 5.0   | 5.0      | 5.0   | 5.0   | 5.0   |  |
| Minimum Split (s)                 | 10.0     | 23.0    | 23.0         | 10.0  | 23.0       | 23.0       | 10.0  | 10.0     | 9.5   | 10.0  | 10.0  |  |
| Total Split (s)                   | 11.0     | 50.0    | 50.0         | 10.0  | 49.0       | 49.0       | 10.0  | 10.0     | 20.0  | 20.0  | 20.0  |  |
| Total Split (%)                   | 12.2%    | 55.6%   | 55.6%        | 11.1% | 54.4%      | 54.4%      | 11.1% | 11.1%    | 22.2% | 22.2% | 22.2% |  |
| Yellow Time (s)                   | 3.0      | 3.0     | 3.0          | 3.0   | 3.0        | 3.0        | 3.0   | 3.0      | 3.5   | 3.0   | 3.0   |  |
| All-Red Time (s)                  | 2.0      | 2.0     | 2.0          | 2.0   | 2.0        | 2.0        | 2.0   | 2.0      | 1.0   | 2.0   | 2.0   |  |
| Lost Time Adjust (s)              | 0.0      | 0.0     | 0.0          | 0.0   | 0.0        | 0.0        | 0.0   | 0.0      | 0.0   | 0.0   | 0.0   |  |
| Total Lost Time (s)               | 5.0      | 5.0     | 5.0          | 5.0   | 5.0        | 5.0        | 5.0   | 5.0      | 4.5   | 5.0   | 5.0   |  |
| Lead/Lag                          | Lead     | Lag     | Lag          | Lead  | Lag        | Lag        | Lead  | Lag      | Lead  | Lag   | Lag   |  |
| Lead-Lag Optimize?                | Yes      | Yes     | Yes          | Yes   | Yes        | Yes        | Yes   | Yes      | Yes   | Yes   | Yes   |  |
| Recall Mode                       | None     | Max     | Max          | None  | Max        | Max        | None  | None     | None  | None  | None  |  |
| Act Effct Green (s)               | 54.5     | 53.5    | 53.5         | 49.2  | 44.2       | 44.2       | 5.9   | 5.0      | 12.5  | 11.3  | 11.3  |  |
| Actuated g/C Ratio                | 0.69     | 0.68    | 0.68         | 0.62  | 0.56       | 0.56       | 0.07  | 0.06     | 0.16  | 0.14  | 0.14  |  |
| v/c Ratio                         | 0.20     | 0.05    | 0.00         | 0.02  | 0.11       | 0.50       | 0.03  | 0.01     | 0.62  | 0.00  | 0.34  |  |
| Control Delay                     | 5.6      | 6.4     | 0.0          | 5.7   | 9.3        | 2.8        | 29.5  | 0.0      | 36.7  | 30.0  | 6.6   |  |
| Queue Delay                       | 0.0      | 0.0     | 0.0          | 0.0   | 0.0        | 0.0        | 0.0   | 0.0      | 0.0   | 0.0   | 0.0   |  |
| Total Delay                       | 5.6      | 6.4     | 0.0          | 5.7   | 9.3        | 2.8        | 29.5  | 0.0      | 36.7  | 30.0  | 6.6   |  |
| LOS                               | А        | А       | А            | A     | А          | А          | С     | A        | D     | С     | А     |  |
| Approach Delay                    |          | 5.9     |              |       | 4.6        |            |       | 5.9      |       | 28.9  |       |  |
| Approach LOS                      |          | А       |              |       | A          |            |       | A        |       | С     |       |  |
| Intersection Summary              |          |         |              |       |            |            |       |          |       |       |       |  |
| Cycle Length: 90                  |          |         |              |       |            |            |       |          |       |       |       |  |
| Actuated Cycle Length: 79         |          |         |              |       |            |            |       |          |       |       |       |  |
| Natural Cycle: 60                 |          |         |              |       |            |            |       |          |       |       |       |  |
| Control Type: Semi Act-Unco       | ord      |         |              |       |            |            |       |          |       |       |       |  |
| Maximum v/c Ratio: 0.62           |          |         |              |       |            |            |       |          |       |       |       |  |
| Intersection Signal Delay: 12.    | 0        |         |              | Ir    | ntersectio | n LOS: B   |       |          |       |       |       |  |
| Intersection Capacity Utilization | on 53.7% |         |              | 10    | CU Level   | of Service | Α     |          |       |       |       |  |
| Analysis Period (min) 15          |          |         |              |       |            |            |       |          |       |       |       |  |

| <b>√</b> Ø1 | - 102          | <b>1</b> Ø3 | 🌵 Ø4 |              |
|-------------|----------------|-------------|------|--------------|
| 10 s        | 50 s           | 10 s        | 20 s |              |
|             | <b>↓</b><br>Ø6 | Ø7          |      | <b>√1</b> ø8 |
| 11 s        | 49 s           | 20 s        |      | 10 s         |

|                                    | ۶        | -          | $\mathbf{\hat{z}}$ | 4           | +          | ×          | 1     | 1     | 1     | ŧ        | -     |  |
|------------------------------------|----------|------------|--------------------|-------------|------------|------------|-------|-------|-------|----------|-------|--|
| Lane Group                         | EBL      | EBT        | EBR                | WBL         | WBT        | WBR        | NBL   | NBT   | SBL   | SBT      | SBR   |  |
| Lane Configurations                | ۲        | <u>†</u> † | 1                  | ٦           | <u>†</u> † | 1          | ۲     | eî 👘  | ሻሻ    | <b>†</b> | 1     |  |
| Traffic Volume (vph)               | 160      | 900        | 27                 | 39          | 809        | 175        | 9     | 2     | 478   | 6        | 328   |  |
| Future Volume (vph)                | 160      | 900        | 27                 | 39          | 809        | 175        | 9     | 2     | 478   | 6        | 328   |  |
| Turn Type                          | pm+pt    | NA         | Perm               | pm+pt       | NA         | Perm       | pm+pt | NA    | Prot  | NA       | Perm  |  |
| Protected Phases                   | 5        | 2          |                    | 1           | 6          |            | 3     | 8     | 7     | 4        |       |  |
| Permitted Phases                   | 2        |            | 2                  | 6           |            | 6          | 8     |       |       |          | 4     |  |
| Detector Phase                     | 5        | 2          | 2                  | 1           | 6          | 6          | 3     | 8     | 7     | 4        | 4     |  |
| Switch Phase                       |          |            |                    |             |            |            |       |       |       |          |       |  |
| Minimum Initial (s)                | 5.0      | 15.0       | 15.0               | 5.0         | 15.0       | 15.0       | 5.0   | 10.0  | 20.0  | 10.0     | 10.0  |  |
| Minimum Split (s)                  | 10.0     | 20.0       | 20.0               | 10.0        | 20.0       | 20.0       | 10.0  | 15.0  | 25.0  | 20.0     | 20.0  |  |
| Total Split (s)                    | 12.0     | 51.0       | 51.0               | 12.0        | 51.0       | 51.0       | 12.0  | 25.0  | 32.0  | 45.0     | 45.0  |  |
| Total Split (%)                    | 10.0%    | 42.5%      | 42.5%              | 10.0%       | 42.5%      | 42.5%      | 10.0% | 20.8% | 26.7% | 37.5%    | 37.5% |  |
| Yellow Time (s)                    | 3.0      | 3.0        | 3.0                | 3.0         | 3.0        | 3.0        | 3.0   | 3.0   | 3.0   | 3.0      | 3.0   |  |
| All-Red Time (s)                   | 2.0      | 2.0        | 2.0                | 2.0         | 2.0        | 2.0        | 2.0   | 2.0   | 2.0   | 2.0      | 2.0   |  |
| Lost Time Adjust (s)               | 0.0      | 0.0        | 0.0                | 0.0         | 0.0        | 0.0        | 0.0   | 0.0   | 0.0   | 0.0      | 0.0   |  |
| Total Lost Time (s)                | 5.0      | 5.0        | 5.0                | 5.0         | 5.0        | 5.0        | 5.0   | 5.0   | 5.0   | 5.0      | 5.0   |  |
| Lead/Lag                           | Lead     | Lag        | Lag                | Lead        | Lag        | Lag        | Lead  | Lag   | Lead  | Lag      | Lag   |  |
| Lead-Lag Optimize?                 | Yes      | Yes        | Yes                | Yes         | Yes        | Yes        | Yes   | Yes   | Yes   | Yes      | Yes   |  |
| Recall Mode                        | None     | C-Max      | C-Max              | None        | C-Max      | C-Max      | None  | None  | None  | None     | None  |  |
| Act Effct Green (s)                | 79.8     | 70.8       | 70.8               | 72.5        | 65.4       | 65.4       | 10.2  | 10.0  | 23.1  | 26.7     | 26.7  |  |
| Actuated g/C Ratio                 | 0.66     | 0.59       | 0.59               | 0.60        | 0.54       | 0.54       | 0.08  | 0.08  | 0.19  | 0.22     | 0.22  |  |
| v/c Ratio                          | 0.42     | 0.46       | 0.04               | 0.17        | 0.45       | 0.20       | 0.10  | 0.16  | 0.77  | 0.02     | 0.61  |  |
| Control Delay                      | 17.7     | 13.4       | 0.1                | 11.5        | 19.7       | 3.8        | 35.7  | 28.2  | 54.1  | 32.8     | 12.6  |  |
| Queue Delay                        | 0.0      | 0.0        | 0.0                | 0.0         | 0.0        | 0.0        | 0.0   | 0.0   | 0.0   | 0.0      | 0.0   |  |
| Total Delay                        | 17.7     | 13.4       | 0.1                | 11.5        | 19.7       | 3.8        | 35.7  | 28.2  | 54.1  | 32.8     | 12.6  |  |
| LOS                                | В        | В          | A                  | В           | В          | А          | D     | С     | D     | С        | В     |  |
| Approach Delay                     |          | 13.7       |                    |             | 16.7       |            |       | 31.0  |       | 37.2     |       |  |
| Approach LOS                       |          | В          |                    |             | В          |            |       | С     |       | D        |       |  |
| Intersection Summary               |          |            |                    |             |            |            |       |       |       |          |       |  |
| Cycle Length: 120                  |          |            |                    |             |            |            |       |       |       |          |       |  |
| Actuated Cycle Length: 120         |          |            |                    |             |            |            |       |       |       |          |       |  |
| Offset: 0 (0%), Referenced to      | phase 2  | EBTL an    | d 6:WBTL           | ., Start of | f Green    |            |       |       |       |          |       |  |
| Natural Cycle: 75                  |          |            |                    |             |            |            |       |       |       |          |       |  |
| Control Type: Actuated-Coordinated |          |            |                    |             |            |            |       |       |       |          |       |  |
| Maximum v/c Ratio: 0.77            |          |            |                    |             |            |            |       |       |       |          |       |  |
| Intersection Signal Delay: 21.     | 4        |            |                    | Ir          | ntersectio | n LOS: C   |       |       |       |          |       |  |
| Intersection Capacity Utilization  | on 64.0% |            |                    | 10          | CU Level   | of Service | ЭC    |       |       |          |       |  |
| Analysis Period (min) 15           |          |            |                    |             |            |            |       |       |       |          |       |  |

| Ø1   | Ø2 (R)        | <b>√</b> Ø3 |      |                         |  |
|------|---------------|-------------|------|-------------------------|--|
| 12 s | 51 s          | 12 s        | 45 s |                         |  |
| ∕×   | ●<br>● Ø6 (R) | Ø7          |      | <b>≜</b><br><b>1</b> Ø8 |  |
| 12 s | 51 s          | 32 s        |      | 25 s                    |  |

|                                    | ≯        | -           | $\mathbf{r}$ | 4           | +           | •          | 1     | 1     | 1     | ŧ        | ~     |  |
|------------------------------------|----------|-------------|--------------|-------------|-------------|------------|-------|-------|-------|----------|-------|--|
| Lane Group                         | EBL      | EBT         | EBR          | WBL         | WBT         | WBR        | NBL   | NBT   | SBL   | SBT      | SBR   |  |
| Lane Configurations                | ٦        | - <b>††</b> | 1            | ሻ           | - <b>††</b> | 1          | ሻ     | ef 👘  | ካካ    | <b>↑</b> | 1     |  |
| Traffic Volume (vph)               | 305      | 946         | 11           | 17          | 841         | 570        | 27    | 6     | 342   | 2        | 191   |  |
| Future Volume (vph)                | 305      | 946         | 11           | 17          | 841         | 570        | 27    | 6     | 342   | 2        | 191   |  |
| Turn Type                          | pm+pt    | NA          | Perm         | pm+pt       | NA          | Perm       | pm+pt | NA    | Prot  | NA       | Perm  |  |
| Protected Phases                   | 5        | 2           |              | 1           | 6           |            | 3     | 8     | 7     | 4        |       |  |
| Permitted Phases                   | 2        |             | 2            | 6           |             | 6          | 8     |       |       |          | 4     |  |
| Detector Phase                     | 5        | 2           | 2            | 1           | 6           | 6          | 3     | 8     | 7     | 4        | 4     |  |
| Switch Phase                       |          |             |              |             |             |            |       |       |       |          |       |  |
| Minimum Initial (s)                | 5.0      | 15.0        | 15.0         | 5.0         | 15.0        | 15.0       | 5.0   | 10.0  | 20.0  | 10.0     | 10.0  |  |
| Minimum Split (s)                  | 10.0     | 20.0        | 20.0         | 10.0        | 20.0        | 20.0       | 10.0  | 15.0  | 25.0  | 20.0     | 20.0  |  |
| Total Split (s)                    | 20.0     | 68.0        | 68.0         | 12.0        | 60.0        | 60.0       | 10.0  | 15.0  | 25.0  | 30.0     | 30.0  |  |
| Total Split (%)                    | 16.7%    | 56.7%       | 56.7%        | 10.0%       | 50.0%       | 50.0%      | 8.3%  | 12.5% | 20.8% | 25.0%    | 25.0% |  |
| Yellow Time (s)                    | 3.0      | 3.0         | 3.0          | 3.0         | 3.0         | 3.0        | 3.0   | 3.0   | 3.0   | 3.0      | 3.0   |  |
| All-Red Time (s)                   | 2.0      | 2.0         | 2.0          | 2.0         | 2.0         | 2.0        | 2.0   | 2.0   | 2.0   | 2.0      | 2.0   |  |
| Lost Time Adjust (s)               | 0.0      | 0.0         | 0.0          | 0.0         | 0.0         | 0.0        | 0.0   | 0.0   | 0.0   | 0.0      | 0.0   |  |
| Total Lost Time (s)                | 5.0      | 5.0         | 5.0          | 5.0         | 5.0         | 5.0        | 5.0   | 5.0   | 5.0   | 5.0      | 5.0   |  |
| Lead/Lag                           | Lead     | Lag         | Lag          | Lead        | Lag         | Lag        | Lead  | Lag   | Lead  | Lag      | Lag   |  |
| Lead-Lag Optimize?                 | Yes      | Yes         | Yes          | Yes         | Yes         | Yes        | Yes   | Yes   | Yes   | Yes      | Yes   |  |
| Recall Mode                        | None     | C-Max       | C-Max        | None        | C-Max       | C-Max      | None  | None  | None  | None     | None  |  |
| Act Effct Green (s)                | 78.0     | 73.3        | 73.3         | 65.2        | 59.1        | 59.1       | 13.0  | 10.0  | 20.0  | 26.0     | 26.0  |  |
| Actuated g/C Ratio                 | 0.65     | 0.61        | 0.61         | 0.54        | 0.49        | 0.49       | 0.11  | 0.08  | 0.17  | 0.22     | 0.22  |  |
| v/c Ratio                          | 0.79     | 0.47        | 0.02         | 0.08        | 0.51        | 0.56       | 0.25  | 0.36  | 0.64  | 0.01     | 0.40  |  |
| Control Delay                      | 45.3     | 9.5         | 0.0          | 10.2        | 23.1        | 3.7        | 38.4  | 27.1  | 52.3  | 38.0     | 8.0   |  |
| Queue Delay                        | 0.0      | 0.0         | 0.0          | 0.0         | 0.0         | 0.0        | 0.0   | 0.0   | 0.0   | 0.0      | 0.0   |  |
| l otal Delay                       | 45.3     | 9.5         | 0.0          | 10.2        | 23.1        | 3.7        | 38.4  | 27.1  | 52.3  | 38.0     | 8.0   |  |
| LOS                                | D        | A           | A            | В           | C           | A          | D     | C     | D     | D        | A     |  |
| Approach Delay                     |          | 18.1        |              |             | 15.2        |            |       | 31.5  |       | 36.4     |       |  |
| Approach LOS                       |          | В           |              |             | В           |            |       | C     |       | D        |       |  |
| Intersection Summary               |          |             |              |             |             |            |       |       |       |          |       |  |
| Cycle Length: 120                  |          |             |              |             |             |            |       |       |       |          |       |  |
| Actuated Cycle Length: 120         |          |             |              |             |             |            |       |       |       |          |       |  |
| Offset: 0 (0%), Referenced to      | phase 2  | :EBTL an    | d 6:WBTL     | ., Start of | f Green     |            |       |       |       |          |       |  |
| Natural Cycle: 90                  |          |             |              |             |             |            |       |       |       |          |       |  |
| Control Type: Actuated-Coordinated |          |             |              |             |             |            |       |       |       |          |       |  |
| Maximum v/c Ratio: 0.79            |          |             |              |             |             |            |       |       |       |          |       |  |
| Intersection Signal Delay: 20.     | 1        |             |              | lr          | ntersectio  | n LOS: C   |       |       |       |          |       |  |
| Intersection Capacity Utilization  | on 73.0% | )           |              | 10          | CU Level    | of Service | Ð     |       |       |          |       |  |
| Analysis Period (min) 15           |          |             |              |             |             |            |       |       |       |          |       |  |





| Appendix Table 1  |                                 |  |                               |
|---|---------------------------------|--|-------------------------------|
| Area Traffic Impact Studie  | s                               |  |                               |
| Rhetoric Subdivision  | -                               |  |                               |
|   | (1)                             |  |                               |
| Study   | PCD File No <sup>(1)</sup>      | Consultant                               | Date                          |
| Sterling Ranch Reports  |                                 |  |                               |
| Sterling Ranch Updated Traffic Impact Analysis  | <u>SKP07007</u>                 | LSC Transportation Consultants, Inc      | June 5, 2008                  |
| Sterling Ranch Phase 1 Traffic Impact Study   | <u>P151</u>                     | LSC Transportation Consultants, Inc      | March 16, 2015                |
| Sterling Ranch Phases 1-3 Transportation Memorandum   | <u>SP1415</u>                   | LSC Transportation Consultants, Inc      | October 2, 2017               |
| Branding Iron at Sterling Ranch Filing No. 1 and Homestead at Sterling Ranch Filing No. 1 Transportation Memorandum               | <u>SF1724</u> <u>SF1725</u>     | LSC Transportation Consultants, Inc      | December 19, 2017             |
| Sterling Ranch Filing No. 2 Transportation Memorandum   | <u>SF1820</u>                   | LSC Transportation Consultants, Inc      | April 3, 2018                 |
| Sterling Ranch Phase 2 Preliminary Plan Traffic Impact Study  | <u>SP203</u>                    | LSC Transportation Consultants, Inc      | December 20, 2018             |
| Homestead at Sterling Ranch Filing No. 2 Transportation Memorandum  | <u>SF194</u>                    | LSC Transportation Consultants, Inc      | March 3, 2020                 |
| Branding Iron at Sterling Ranch Filing No. 2 Transportation Memorandum  | <u>SF1918</u>                   | LSC Transportation Consultants, Inc      | May 6, 2020                   |
| Sterling Ranch Filing No. 2 and Phase 2 Traffic Impact Study  | <u>SF2015</u> <u>SP191</u>      | LSC Transportation Consultants, Inc      | June 23, 2021                 |
| Sterling Ranch Filing No. 3 Transportation Memorandum   | <u>SF2132</u>                   | LSC Transportation Consultants, Inc      | April 19, 2022                |
| Homestead North Phase 1 Updated Transportation Memorandum   | <u>SP208</u>                    | LSC Transportation Consultants, Inc      | January 11, 2022              |
| Homestead North Filing No. 1 Traffic Technical Memorandum   | <u>SF2213</u>                   | LSC Transportation Consultants, Inc      | February 2, 2022              |
| Homestead North Filing No. 2 Traffic Technical Memorandum   | <u>SF2218</u>                   | LSC Transportation Consultants, Inc      | April 15, 2022                |
| Homestead North Filing 3 Traffic Impact Study   | <u>SF2229</u>                   | LSC Transportation Consultants, Inc      | June 17, 2022                 |
| The Villages at Sterling Ranch East Preliminary Plan/Traffic Generation Analysis  | PUDSP226                        | SM Rocha, LLC                            | July 1, 2022                  |
| Sterling Ranch Sketch Plan Amendment Master Traffic Impact Study  | <u>SKP224</u>                   | LSC Transportation Consultants, Inc      | March 17, 2023                |
| Sterling Ranch East - Rezoning & Preliminary Plan Traffic Impact Study  | SP-22-004, P-22-012, P-22-013   | LSC Transportation Consultants, Inc      | March 17, 2023 <sup>(2)</sup> |
| Sterling Ranch East Filing Nos 1 & 2 Traffic Technical Memorandum   | <u>SF2235</u> <u>SF2237</u>     | LSC Transportation Consultants, Inc      | February 10, 2023             |
| Sterling Ranch Filing No. 4 Transportation Memorandum   | <u>SF2230</u>                   | LSC Transportation Consultants, Inc      | February 21, 2023             |
| Foursquare at Sterling Ranch East Transportation Memorandum   | <u>SF2236</u>                   | LSC Transportation Consultants, Inc      | April 20, 2023                |
| Copper Chase at Sterling Ranch Traffic Impact Study   | PUDSP222                        | LSC Transportation Consultants, Inc      | April 28, 2023                |
| Sterling Ranch East Filing 5 Rezone and Prelminary Plan Traffic Impact Study  | <u>SP235</u>                    | LSC Transportation Consultants, Inc      | January 15, 2024              |
|   |                                 |  |                               |
| Retreat at TimberRidge Reports  |                                 |  |                               |
| The Retreat at TimberRidge Traffic Impact Analysis  | <u>PUD173</u>                   | LSC Transportation Consultants, Inc      | January 25, 2018              |
| The Retreat at TimberRidge Preliminary Plan Traffic Technical Memorandum  | <u>SP182</u>                    | LSC Transportation Consultants, Inc      | June 29, 2018                 |
| The Retreat at TimberRidge Filing No. 1 Traffic Technical Memorandum  | <u>SF199</u>                    | LSC Transportation Consultants, Inc      | April 3, 2020                 |
| The Retreat at TimberRidge Filing No. 2 Updated Traffic Technical Memorandum  | <u>SF2121</u>                   | LSC Transportation Consultants, Inc      | October 4, 2021               |
| The Retreat at TimberRidge Filing No. 3 Traffic Technical Memorandum  | SF2241                          | LSC Transportation Consultants, Inc      | July 1, 2022                  |
| The Retreat at TimberRidge Filing No. 4 Traffic Technical Memorandum  | SF1827                          | LSC Transportation Consultants. Inc      | February 21, 2024             |
|   |                                 |  |                               |
| Other Area Reports  |                                 |  |                               |
| Wolf Ranch School Site Traffic Impact Study   | OAR1720                         | Matrix Design Group. Inc.                | 5-May-17                      |
| The Ranch Sketch Plan Traffic Impact Analysis   | SKP186                          | LSC Transportation Consultants. Inc      | July 9, 2019                  |
| Lodge III Traffic Impact Study  | OAR                             | LSC Transportation Consultants, Inc      | December 13, 2019             |
| Continental 613 Traffic Impact Study  | OAR2177                         | LSC Transportation Consultants, Inc      | July 16. 2021                 |
| Solace at Black Forest Traffic Impact and Access Analysis   | OAR2134                         | ISC Transportation Consultants, Inc      | August 13, 2021               |
| Traffic Impact Study Addendum for Percheron   | OAR2173                         | SM Rocha, LLC                            | October 2021                  |
| Woodmen Fast Commercial Center Traffic Impact Analysis  | OAR2191                         | ISC Transportation Consultants Inc       | December 8, 2021              |
| Traffic Impact Study for Jaynes Property  | SKP225                          | SM Rocha, LLC                            | May, 2022                     |
| Traffic Impact Study for Rhetoric Site  | P2216                           | SM Bocha, LLC                            | lune, 2022                    |
| Briargate-Stapleton Corridor Study (DRAFT)  | briargate-stapleton com         | Wilson & Company                         | December 9 2021               |
| Notes:  | Shargaw Supreton.com            |  | Determiner J, 2021            |
| (1) Follow the links listed below to obtain the most recent version of each listed study. To obtain a conv of the version of each | ch study used in preparing this | report please contact LSC Transportation | Consultants Inc               |
| (2) With minor revision 4/3/2023  |                                 |  | . conouncanto, mor            |
| Source: ISC Transportation Consultants Inc  |                                 |  | Mar_21                        |
|   |                                 |  | 10101-24                      |

| Appendix Table 2<br>Existing Truck Operations<br>Rhetoric Subdivision<br>DATE Day of the Week Tandem Semi TOTAL LOADS DATE Day of the Week Tandem Semi TOTAL LOADS |  |                     |                       |                      |   |   |                           |                     |                                       |  |  |  |  |
|--|--|---------------------|-----------------------|----------------------|---|---|---------------------------|---------------------|---------------------------------------|--|--|--|--|
| DATE<br>3/6/2022<br>3/13/2022  | Day of the Week<br>Sunday<br>Sunday          | Tandem<br>0<br>0    | <b>Semi</b><br>0<br>0 | 0<br>0               | DATE<br>5/23/2022<br>10/17/2022                   | Day of the Week<br>Monday<br>Monday                         | <b>Tandem</b><br>19<br>19 | Semi<br>4<br>4      | TOTAL LOADS           23           23 |  |  |  |  |
| 3/20/2022<br>3/27/2022<br>4/3/2022   | Sunday<br>Sunday<br>Sunday                   | 0 0 0 0             | 0 0 0                 | 0<br>0<br>0          | 11/3/2022<br>9/30/2022<br>5/24/2022               | Thursday<br>Friday<br>Tuesday                               | 17<br>17<br>18            | 6<br>6<br>6         | 23<br>23<br>24                        |  |  |  |  |
| 4/10/2022<br>4/17/2022<br>4/24/2022  | Sunday<br>Sunday<br>Sunday                   | 0 0 0               | 0                     | 0 0 0 0              | 10/13/2022<br>10/21/2022<br>9/17/2022             | Friday<br>Saturday  | 20<br>18<br>23            | 4<br>6<br>1         | 24<br>24<br>24<br>25                  |  |  |  |  |
| 5/1/2022<br>5/8/2022<br>5/15/2022  | Sunday<br>Sunday<br>Sunday                   | 0                   | 0                     | 0                    | 5/2/2022<br>11/21/2022<br>12/6/2022               | Monday<br>Monday<br>Tuesday                                 | 25<br>17<br>23            | 0<br>8<br>2         | 25<br>25<br>25                        |  |  |  |  |
| 6/12/2022<br>6/19/2022<br>6/26/2022  | Sunday<br>Sunday<br>Sunday                   | 0                   | 0                     | 0                    | 10/6/2022<br>10/27/2022<br>12/29/2022             | Thursday<br>Thursday<br>Thursday                            | 12<br>21<br>25            | 13<br>4<br>0        | 25<br>25<br>25                        |  |  |  |  |
| 7/3/2022<br>7/10/2022<br>7/17/2022   | Sunday<br>Sunday<br>Sunday                   | 0 0 0               | 0                     | 0 0 0 0              | 5/2//2022<br>12/2/2022<br>10/31/2022              | Friday<br>Friday<br>Monday                                  | 17<br>20<br>18            | 8<br>5<br>8         | 25<br>25<br>26                        |  |  |  |  |
| 7/24/2022<br>7/31/2022<br>8/7/2022   | Sunday<br>Sunday<br>Sunday                   | 0                   | 0                     | 0                    | 8/16/2022<br>10/12/2022<br>3/3/2022               | Tuesday<br>Wednesday<br>Thursday                            | 26<br>20<br>21            | 0<br>6<br>5         | 26<br>26<br>26                        |  |  |  |  |
| 8/14/2022<br>8/21/2022<br>9/4/2022   | Sunday<br>Sunday<br>Sunday                   | 0                   | 0                     | 0                    | 9/1/2022<br>9/1/2022<br>10/18/2022                | Thursday<br>Thursday<br>Tuesday                             | 17<br>18<br>21            | 8<br>6              | 26<br>26<br>27                        |  |  |  |  |
| 9/11/2022<br>9/18/2022<br>9/25/2022  | Sunday<br>Sunday<br>Sunday                   | 0                   | 0                     | 0                    | 6/16/2022<br>11/9/2022                            | Thursday<br>Wednesday<br>Wednesday                          | 26<br>20<br>24            | 1 8                 | 27<br>27<br>28<br>28                  |  |  |  |  |
| 10/2/2022<br>10/9/2022<br>10/16/2022   | Sunday<br>Sunday<br>Sunday                   | 0                   | 0                     | 0                    | 12/28/2022<br>11/17/2022<br>12/1/2022             | Thursday<br>Thursday  | 13<br>18<br>25            | 4<br>15<br>11       | 28<br>28<br>29                        |  |  |  |  |
| 10/23/2022<br>10/30/2022<br>11/6/2022  | Sunday<br>Sunday<br>Sunday                   | 0                   | 0                     | 0                    | 6/3/2022<br>4/12/2022<br>5/31/2022                | Tuesday<br>Tuesday  | 25<br>15<br>23            | 4<br>15<br>7        | 30<br>30<br>30                        |  |  |  |  |
| 11/13/2022<br>11/20/2022<br>11/27/2022<br>12/4/2022  | Sunday<br>Sunday<br>Sunday                   | 0                   | 0                     | 0                    | 8/4/2022<br>7/1/2022<br>12/20/2022                | Thursday<br>Friday  | 8<br>14<br>28             | 22<br>16<br>3       | 30<br>30<br>30<br>31                  |  |  |  |  |
| <u>12/11/2022</u><br><u>12/18/2022</u><br><u>12/25/2022</u>  | Sunday<br>Sunday<br>Sunday<br>Sunday         | 0                   | 0                     | 0<br>0<br>0          | 5/6/2022<br>12/5/2022<br>12/19/2022               | Friday<br>Monday<br>Monday                                  | 20<br>31<br>28<br>29      | 0 4 3               | 31<br>32<br>32                        |  |  |  |  |
| 3/21/2022<br>7/4/2022<br>7/11/2022   | Monday<br>Monday<br>Monday                   | 0 0 0 0             | 0 0 0 0               | 0<br>0<br>0          | 12/7/2022<br>8/25/2022<br>6/10/2022               | Wednesday<br>Thursday<br>Friday                             | 26<br>17<br>29            | 6<br>15<br>3        | 32<br>32<br>32                        |  |  |  |  |
| 9/5/2022<br>10/3/2022<br>11/28/2022  | Monday<br>Monday<br>Monday                   | 0 0 0 0             | 0<br>0<br>0           | 0<br>0<br>0          | 5/17/2022<br>6/15/2022<br>8/30/2022               | Tuesday<br>Wednesday<br>Tuesday                             | 32<br>27<br>10            | 1<br>6<br>24        | 33<br>33<br>34                        |  |  |  |  |
| 12/26/2022<br>4/26/2022<br>11/29/2022  | Monday<br>Tuesday<br>Tuesday                 | 0<br>0<br>0         | 0<br>0<br>0           | 0<br>0<br>0          | 10/25/2022<br>12/27/2022<br>3/30/2022             | Tuesday<br>Tuesday<br>Wednesday                             | 26<br>19<br>20            | 8<br>15<br>14       | 34<br>34<br>34                        |  |  |  |  |
| 8/31/2022<br>3/10/2022<br>3/17/2022  | Wednesday<br>Thursday<br>Thursday            | 0<br>0<br>0         | 0<br>0<br>0           | 0<br>0<br>0          | 5/18/2022<br>4/28/2022<br>11/24/2022              | Wednesday<br>Thursday<br>Thursday                           | 26<br>34<br>25            | 8<br>0<br>9         | 34<br>34<br>34                        |  |  |  |  |
| 4/14/2022<br>4/21/2022<br>12/22/2022   | Thursday<br>Thursday<br>Thursday             | 0<br>0<br>0         | 0 0 0 0               | 0<br>0<br>0          | 7/15/2022<br>8/26/2022<br>5/16/2022               | Friday<br>Friday<br>Monday                                  | 26<br>18<br>35            | 8<br>16<br>0        | 34<br>34<br>35                        |  |  |  |  |
| 4/1/2022<br>4/22/2022<br>11/18/2022  | Friday<br>Friday<br>Friday                   | 0 0 0               | 0 0 0                 | 0 0 0 -              | 3/15/2022<br>10/4/2022<br>5/20/2022               | Tuesday<br>Tuesday<br>Friday                                | 29<br>28<br>27            | 6<br>7<br>8         | 35<br>35<br>35                        |  |  |  |  |
| 11/25/2022<br>12/23/2022<br>12/30/2022   | Friday<br>Friday<br>Friday                   | 0                   | 0                     | 0 0 0 0              | 6/24/2022<br>5/11/2022<br>6/9/2022                | Friday<br>Wednesday<br>Thursday                             | 24<br>36<br>34            | 11<br>0<br>2        | 35<br>36<br>36                        |  |  |  |  |
| 4/2/2022<br>4/9/2022<br>4/9/2022   | Saturday<br>Saturday<br>Saturday             | 0                   | 0                     | 0                    | 3/4/2022<br>9/9/2022<br>6/6/2022                  | Friday<br>Friday<br>Monday                                  | 26<br>24<br>28            | 10<br>13            | 36<br>36<br>37                        |  |  |  |  |
| 4/10/2022<br>4/23/2022<br>4/30/2022<br>5/7/2022  | Saturday<br>Saturday<br>Saturday<br>Saturday | 0                   | 0                     | 0                    | 10/24/2022<br>10/11/2022<br>3/2/2022<br>5/25/2022 | Tuesday<br>Wednesday<br>Wednesday                           | 28<br>31<br>29<br>38      | 8<br>10             | 39<br>39<br>39                        |  |  |  |  |
| 5/14/2022<br>6/11/2022<br>6/18/2022  | Saturday<br>Saturday<br>Saturday<br>Saturday | 0                   | 0                     | 0                    | 10/5/2022<br>7/14/2022<br>9/6/2022                | Wednesday<br>Wednesday<br>Thursday                          | 35<br>30<br>30            | 4<br>9<br>10        | 39<br>39<br>40                        |  |  |  |  |
| 6/25/2022<br>7/2/2022<br>7/16/2022   | Saturday<br>Saturday<br>Saturday<br>Saturday | 0                   | 0                     | 0<br>0<br>0          | 3/14/2022<br>6/1/2022<br>8/17/2022                | Monday<br>Wednesday<br>Wednesday                            | 36<br>43<br>41            | 5<br>0<br>2         | 41<br>43<br>43                        |  |  |  |  |
| 7/23/2022<br>7/30/2022<br>8/13/2022  | Saturday<br>Saturday<br>Saturday<br>Saturday | 0                   | 0                     | 0<br>0<br>0          | 9/22/2022<br>6/27/2022<br>8/12/2022               | Thursday<br>Monday<br>Friday                                | 37<br>40<br>30            | 6<br>4<br>14        | 43<br>44<br>44                        |  |  |  |  |
| 9/10/2022<br>10/8/2022<br>10/15/2022   | Saturday<br>Saturday<br>Saturday<br>Saturday | 0                   | 0                     | 0<br>0<br>0          | 7/25/2022<br>8/15/2022<br>8/2/2022                | Monday<br>Monday<br>Tuesday                                 | 36<br>22<br>28            | 9<br>23<br>17       | 45<br>45<br>45<br>45                  |  |  |  |  |
| 10/22/2022<br>10/29/2022<br>11/12/2022   | Saturday<br>Saturday<br>Saturday<br>Saturday | 0<br>0<br>0         | 0<br>0<br>0           | 0<br>0<br>0          | 5/26/2022<br>7/19/2022<br>7/13/2022               | Thursday<br>Tuesday<br>Wednesday                            | 42<br>34<br>32            | 3<br>12<br>14       | 45<br>46<br>46                        |  |  |  |  |
| 11/19/2022<br>11/26/2022<br>12/3/2022  | Saturday<br>Saturday<br>Saturday             | 0<br>0<br>0         | 0<br>0<br>0           | 0<br>0<br>0          | 5/12/2022<br>8/8/2022<br>10/10/2022               | Thursday<br>Monday<br>Monday                                | 47<br>28<br>35            | 0<br>20<br>13       | 47<br>48<br>48                        |  |  |  |  |
| 12/10/2022<br>12/17/2022<br>12/24/2022   | Saturday<br>Saturday<br>Saturday             | 0<br>0<br>0         | 0<br>0<br>0           | 0<br>0<br>0          | 6/14/2022<br>7/20/2022<br>9/16/2022               | Tuesday<br>Wednesday<br>Friday                              | 39<br>40<br>40            | 9<br>8<br>8         | 48<br>48<br>48                        |  |  |  |  |
| 12/31/2022<br>3/7/2022<br>5/4/2022   | Saturday<br>Monday<br>Wednesday              | 0<br>1<br>3         | 0                     | 0<br>1<br>3          | 9/7/2022<br>9/2/2022<br>8/28/2022                 | Wednesday<br>Friday<br>Sunday                               | 39<br>49<br>43            | 10<br>0<br>7        | 49<br>49<br>50                        |  |  |  |  |
| 11/30/2022<br>10/28/2022<br>5/5/2022   | Wednesday<br>Friday<br>Thursday              | 0<br>3<br>4         | 3<br>0<br>0           | 3<br>3<br>4          | 9/12/2022<br>7/26/2022<br>6/8/2022                | Monday<br>Tuesday<br>Wednesday                              | 50<br>25<br>34            | 0<br>25<br>16       | 50<br>50<br>50                        |  |  |  |  |
| 3/19/2022<br>3/12/2022<br>4/6/2022   | Saturday<br>Saturday<br>Wednesday            | 4<br>5<br>6         | 0                     | 4<br>5<br>6<br>7     | 11/2/2022<br>12/8/2022<br>11/5/2022               | Wednesday<br>Thursday<br>Saturday                           | 44<br>34<br>34            | 6<br>16<br>16       | 50<br>50<br>50                        |  |  |  |  |
| 3/26/2022<br>4/7/2022<br>12/9/2022   | Saturday<br>Thursday<br>Eriday               | 8<br>9<br>7         | 0                     | 9<br>9               | 5/19/2022<br>6/13/2022<br>9/28/2022               | Thursday<br>Monday<br>Wednesday                             | 48<br>39<br>45<br>35      | 12<br>7<br>17       | 51<br>51<br>52<br>52                  |  |  |  |  |
| 9/3/2022<br>5/30/2022<br>4/19/2022   | Saturday<br>Monday<br>Tuesday                | 9<br>10<br>10       | 0                     | 9<br>10<br>10        | 7/21/2022<br>7/27/2022<br>8/29/2022               | Thursday<br>Wednesday<br>Monday                             | 50<br>45<br>32            | 2<br>8<br>22        | 52<br>53<br>54                        |  |  |  |  |
| 11/22/2022<br>12/13/2022<br>3/9/2022   | Tuesday<br>Tuesday<br>Wednesday              | 4<br>10<br>10       | 6<br>0<br>0           | 10<br>10<br>10       | 9/13/2022<br>9/23/2022<br>6/20/2022               | Tuesday<br>Friday<br>Monday                                 | 46<br>47<br>56            | 9<br>8<br>0         | 55<br>55<br>56                        |  |  |  |  |
| 11/23/2022<br>4/4/2022<br>3/22/2022  | Wednesday<br>Monday<br>Tuesday               | 3<br>9<br>11        | 7<br>2<br>0           | 10<br>11<br>11       | 6/22/2022<br>4/8/2022<br>8/6/2022                 | Wednesday<br>Friday<br>Saturday                             | 48<br>11<br>50            | 8<br>45<br>7        | 56<br>56<br>57                        |  |  |  |  |
| 4/27/2022<br>3/11/2022<br>3/18/2022  | Wednesday<br>Friday<br>Friday                | 11<br>11<br>11      | 0<br>0<br>0           | 11<br>11<br>11       | 8/22/2022<br>9/19/2022<br>6/23/2022               | Monday<br>Monday<br>Thursday                                | 48<br>53<br>45            | 10<br>6<br>14       | 58<br>59<br>59                        |  |  |  |  |
| 11/11/2022<br>4/18/2022<br>5/3/2022  | Friday<br>Monday<br>Tuesday                  | 3<br>12<br>12       | 8<br>0<br>0           | 11<br>12<br>12       | 6/28/2022<br>8/9/2022<br>7/6/2022                 | Tuesday<br>Tuesday<br>Wednesday                             | 53<br>48<br>38            | 7<br>12<br>23       | 60<br>60<br>61                        |  |  |  |  |
| 10/1/2022<br>4/25/2022<br>6/21/2022  | Saturday<br>Monday<br>Tuesday                | 3<br>13<br>9        | 9<br>0<br>4           | 12<br>13<br>13       | 8/3/2022<br>9/15/2022<br>3/25/2022                | Wednesday<br>Thursday<br>Friday                             | 38<br>54<br>4             | 23<br>8<br>58       | 61<br>62<br>62                        |  |  |  |  |
| 4/13/2022<br>12/15/2022<br>9/27/2022   | Wednesday<br>Thursday<br>Tuesday             | 13<br>13<br>12      | 0 0 2                 | 13<br>13<br>14       | 4/11/2022<br>8/24/2022<br>9/14/2022               | Monday<br>Wednesday<br>Wednesday                            | 17<br>53<br>56            | 46<br>10<br>7       | 63<br>63<br>63                        |  |  |  |  |
| 3/16/2022<br>4/20/2022<br>12/12/2022   | Wednesday<br>Wednesday<br>Monday             | 8<br>14<br>11       | 6<br>0<br>4           | 14<br>14<br>15       | //22/2022<br>11/8/2022<br>5/10/2022               | Tuesday<br>Tuesday<br>Tuesday                               | 53<br>26<br>66            | 10<br>39<br>0       | 63<br>65<br>66                        |  |  |  |  |
| 3/24/2022<br>8/20/2022   | Thursday<br>Thursday<br>Saturday             | 15<br>15<br>9<br>7  | 0                     | 15<br>15<br>15<br>16 | 8/23/2022<br>3/1/2022<br>8/18/2022                | Tuesday<br>Tuesday<br>Tuesday                               | 51<br>50<br>64            | 15<br>18<br>6       | 68<br>70<br>70                        |  |  |  |  |
| 11/7/2022<br>12/21/2022<br>4/15/2022<br>12/16/2022   | Wednesday<br>Friday<br>Friday                | ,<br>12<br>16<br>16 | 4<br>0<br>0           | 16<br>16<br>16       | 7/29/2022<br>11/4/2022<br>9/26/2022               | Friday<br>Friday<br>Monday                                  | 43<br>44<br>67            | 23<br>27<br>27<br>6 | 70<br>70<br>71<br>73                  |  |  |  |  |
| 11/14/2022<br>11/15/2022<br>10/14/2022   | Monday<br>Tuesday<br>Fridav                  | 9<br>11<br>13       | 8<br>6<br>4           | 17<br>17<br>17<br>17 | 6/7/2022<br>3/28/2022<br>7/5/2022                 | Tuesday<br>Monday<br>Tuesdav                                | 65<br>13<br>65            | 8<br>62<br>10       | 73<br>75<br>75                        |  |  |  |  |
| 3/23/2022<br>9/8/2022<br>6/17/2022   | Wednesday<br>Thursday<br>Friday              | 12<br>10<br>18      | 6<br>8<br>0           | 18<br>18<br>18       | 8/10/2022<br>6/2/2022<br>8/19/2022                | Wednesday<br>Thursday<br>Friday                             | 47<br>72<br>59            | 29<br>4<br>17       | 76<br>76<br>76<br>76                  |  |  |  |  |
| 9/24/2022<br>3/8/2022<br>9/29/2022   | Saturday<br>Tuesday<br>Thursday              | 13<br>20<br>20      | 6<br>0<br>0           | 19<br>20<br>20       | 3/31/2022<br>5/9/2022<br>7/18/2022                | Thursday<br>Monday<br>Monday                                | 16<br>79<br>66            | 61<br>0<br>13       | 77<br>79<br>79<br>79                  |  |  |  |  |
| 10/20/2022<br>11/10/2022<br>4/29/2022  | Thursday<br>Thursday<br>Friday               | 12<br>12<br>20      | 8<br>8<br>0           | 20<br>20<br>20       | 3/29/2022<br>8/11/2022<br>8/1/2022                | Tuesday<br>Thursday<br>Monday                               | 17<br>81<br>75            | 68<br>8<br>24       | 85<br>89<br>99                        |  |  |  |  |
| 4/5/2022<br>10/26/2022<br>8/27/2022  | Tuesday<br>Wednesday<br>Saturday             | 13<br>14<br>21      | 8<br>7<br>0           | 21<br>21<br>21<br>21 | 7/9/2022<br>7/12/2022<br>7/7/2022                 | Saturday<br>Tuesday<br>Thursday                             | 91<br>94<br>71            | 12<br>12<br>37      | 103<br>106<br>108                     |  |  |  |  |
| 5/13/2022<br>8/5/2022<br>10/7/2022   | Friday<br>Friday<br>Friday                   | 22<br>4<br>18       | 0<br>18<br>4          | 22<br>22<br>22<br>22 | 9/21/2022<br>9/20/2022<br>7/8/2022                | Wednesday<br>Tuesday<br>Friday                              | 93<br>98<br>128           | 17<br>13<br>7       | 110<br>111<br>135                     |  |  |  |  |
|  |  |                     |                       |                      | 85t<br>85t  | Maximum<br>h Percentile (Sun-Sat)<br>h Percentile (Mon-Fri) | 128<br>43<br>47           | 68<br>13<br>15      | 135<br>55<br>61                       |  |  |  |  |



## AGENCIES

OWNER/DEVELOPER:

CIVIL ENGINEER:

COUNTY ENGINEERING:

TRAFFIC ENGINEERING:

WATER RESOURCES:

FIRE DISTRICT:

GAS DEPARTMENT:

ELECTRIC DEPARTMENT:

COMMUNICATIONS:

CITY STORMWATER:

SR LAND, LLC 20 BOULDER CRESCENT, SUITE 201 COLORADO SPRINGS, CO 80903 JAMES F. MORLEY (719) 471-1742

JR ENGINEERING, LLC 5475 TECH CENTER DRIVE COLORADO SPRINGS, CO 80919 MIKE BRAMLETT P.E. (303) 267-6240

EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT 2880 INTERNATIONAL CIRCLE, SUITE 110 COLORADO SPRINGS, CO 80910 JEFF RICE, P.E. (719) 520–6300

EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS 3275 AKERS DRIVE COLORADO SPRINGS, CO 80922

JENNIFER IRVINE, P.E. (719) 520-6460 STERLING RANCH METRO DISTRICT ENGINEERS JDS-HYDRO CONSULTANTS

545 E. PIKES PEAK AVE., SUITE 300 COLORADO SPRINGS, CO 80903 JOHN MCGINN (719) 668-8769

BLACK FOREST FIRE PROTECTION DISTRICT 11445 TEACHOUT ROAD COLORADO SPRINGS, CO 80908 CHIEF BRYAN JACK (719) 495-4300

COLORADO SPRINGS UTILITIES 7710 DURANT DR. COLORADO SPRINGS, CO 80947 TIM WENDT (719) 668-3556

MOUNTAIN VIEW ELECTRIC 11140 E. WOODMEN ROAD FALCON, CO 80831 (719) 495–2283

QWEST COMMUNICATIONS (U.N.C.C. LOCATORS) (800) 922–1987 AT&T (LOCATORS) (719) 635–3674

STORMWATER ENTERPRISE 30 S. NEVADA AVENUE, SUITE 401 COLORADO SPRINGS, CO 80903 (719)-385-5918

## BENCHMARKS

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION NORTHING = 411416.273FASTING = 235167.071

|           | _ | 200107.0 |
|-----------|---|----------|
| ELEVATION | = | 7023.42  |
|           |   |          |

- 2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PAWNEE RANCHEROS SUBDIVISION NORTHING = 410095.404
- EASTING = 235052.131
- ELEVATION = 7000.40

3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", AT THE SOUTHWEST BOUNDARY CORNER OF BARBARICK SUBDISION NORTHING = 411399.962EASTING = 233849.817ELEVATION = 7030.82



|  | PREPARED FOR<br><b>SR LAND, LLC</b><br>20 BOULDER CRESCENT<br>SUITE 201<br>SUITE 201<br>SUITE 201<br>SUITE 201<br>SUITE 201<br>JAMES F. MORLEY<br>(719) 471–1742<br>(719) 471–1742 |
|--|--|
| OWNER/DEVELOPER STATEMENT         I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH ALL OF         THE REQUIREMENTS SPECIFIED IN THESE DETAILED PLANS AND         SPECIFICATIONS.         JAMES F. MORLEY         SR LAND, LLC   | CC<br>Centernial 303-740-9393 • Colorado Springs 719-593-2593<br>Fort Collins 970-491-9888 • www.jrengineering.com   |
| EL PASO COUNTY STATEMENT<br>COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH<br>COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY<br>AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL<br>BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH THE APPROVAL OF<br>THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/OR<br>ACCURACY OF THIS DOCUMENT.<br>FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND<br>DEVELOPMENT CODE, DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND<br>ENGINEERING CRITERIA MANUAL AS AMENDED.<br>IN ACCORDANCE WITH ECM SECTION 1.12, THESE CONSTRUCTION DOCUMENTS WILL<br>BE VALID FOR CONSTRUCTION FOR A PERIOD OF 2 YEARS FROM THE DATE<br>SIGNED BY THE EL PASO COUNTY ENGINEER. IF CONSTRUCTION HAS NOT<br>STARTED WITHIN THOSE 2 YEARS, THE PLANS WILL NEED TO BE RESUBMITTED<br>FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND<br>COMMUNITY DEVELOPMENT DIRECTORS DISCRETION. | BY DATE  |
| APPROVED<br>Engineering Department         04/05/2022 17:0:30 PM<br>dsdnijkamp         JENNIFER IRVINE, P.E.         DEVElopment Department         COUNTY ENGINEER/ECM ADMINISTRATOR         ENGINEER/ECM ADMINISTRATOR         ENGINEER/S STATEMENT         THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY<br>DIRECT SUPERVISION. SAID PLANS AND SPECIFICATIONS HAVE BEEN<br>PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY<br>FOR DETAILED ROADWAY, DRAINAGE, GRADING AND EROSION CONTROL<br>PLANS AND SPECIFICATIONS, AND SAID PLANS AND SPECIFICATIONS ARE<br>IN CONFORMITY WITH APPLICABLE MASTER DRAINAGE PLANS AND MASTER<br>TRANSPORTATION PLANS. SAID PLAN AND SPECIFICATIONS MEET THE<br>PURPOSES FOR WHICH THE PARTICULAR ROADWAY AND DRAINAGE<br>EXAMPTICE AND EDESTIONED AND ADE CORPECT TO THE REST OF MY   | H-SCALEN/ANo.REVISIONV-SCALEN/AV-SCALEN/ADATE1/26/22DESIGNED BYRABDESIGNED BYRABDRAWN BYRABCHECKED BYCHECKED BY  |
| KNOWLEDGE AND BELIEF. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY<br>CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART<br>IN PREPARATION OF THESE DETAILED PLANS AND SPECIFICATIONS.  | STERLING RANCH -<br>VOLLMER ROAD FILING 2<br>COVER SHEET   |
| FOR AND ON BEHALF OF THE STERLING RANCH METRO DISTRICT DATE  | SHEET 1 OF 11<br>JOB NO. 25188.01  |

## **GENERAL CONSTRUCTION NOTES:**

- 1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK. THE OMISSION FROM OR THE INCLUSION OF UTILITY LOCATIONS ON THE PLANS IS NOT TO BE CONSIDERED AS THE NONEXISTENCE OF OR A DEFINITE LOCATION OF EXISTING UNDERGROUND UTILITIES.
- 2. THE CONTRACTOR WILL TAKE THE NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES FROM DAMAGE DUE TO THIS OPERATION. ANY DAMAGE TO THE UTILITIES WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, AND ANY SERVICE DISRUPTION WILL BE SETTLED BY THE CONTRACTOR.
- 3. ADDITIONAL EROSION CONTROL STRUCTURES MAY BE REQUIRED AT THE TIME OF CONSTRUCTION.
- 4. ALL BACKFILL, SUB-BASE, AND/OR BASE COURSE (CLASS 6) MATERIAL SHALL BE COMPACTED PER THE SOILS ENGINEER'S RECOMMENDATIONS. AND APPROVED BY EL PASO COUNTY PCD.
- 5. ALL STATIONING IS CENTERLINE OF IMPROVEMENTS UNLESS OTHERWISE INDICATED. ALL ELEVATIONS ARE FLOW LINE UNLESS OTHERWISE INDICATED AS TOP BACK OF CURB (TBC), ASPHALT (ASP), OR TOP OF INLET OR BOX (TOB).
- 6. ALL DISTURBED PAVEMENT EDGES SHALL BE CUT TO NEAT LINES. REPAIR SHALL CONFORM TO EPC ECM APPENDIX K 1.2C.
- 7. ALL INTERSECTION ACCESSES TO BE CONSTRUCTED WITH A 25 FOOT SIGHT VISIBILITY TRIANGLES EXCEPT [VOLLMER ROAD, MARKSHEFFEL ROAD, BRAIRGATE PARKWAY] WHICH IS AN ARTERIAL AND A 50 FOOT SIGHT VISIBILITY TRIANGLE IS REQUIRED AND THERE SHALL BE NO OBSTRUCTIONS GREATER THAN 18" IN THIS AREA.
- 8. ALL CULVERTS AND STORM DRAIN PIPES SHALL BE SMOOTH INTERIOR CORRUGATED POLYETHYLENE PIPE (HDPE), REINFORCED CONCRETE PIPE (RCP). ALL CULVERTS SHALL BE PLACED COMPLETE WITH FLARED END SECTIONS. ADEQUACY OF MATERIAL THICKNESS FOR ANY CSP INSTALLED SHALL BE VERIFIED BY OWNER'S GEOTECHNICAL ENGINEER TO SUPPORT MINIMUM 50 YEAR DESIGN LIFE. CULVERTS MUST CONFORM TO EPC ECM SECTION 3.32 - CULVERTS.
- 9. ASPHALT THICKNESS AND BASE COURSE THICKNESS (COMPACTED) FOR ROADS SHALL BE PER DESIGN REPORT BY OWNER'S GEOTECHNICAL ENGINEER. OWNER'S GEOTECHNICAL ENGINEER TO BE ON SITE AT THE TIME OF ROAD CONSTRUCTION TO EVALUATE SOIL CONDITIONS AND DETERMINE IF ADDITIONAL MEASURES ARE NECESSARY TO ASSURE STABILITY OF THE NEW ROADS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT ENGINEERING DIVISION PRIOR TO CONSTRUCTION.

## SIGNING AND STRIPING NOTES:

- 1. ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN COMPLIANCE WITH THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- 2. REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE ACCOMPLISHED BY A METHOD THAT DOES NOT MATERIALLY DAMAGE THE PAVEMENT. THE PAVEMENT MARKINGS SHALL BE REMOVED TO THE EXTENT THAT THEY WILL NOT BE VISIBLE UNDER DAY OR NIGHT CONDITIONS. AT NO TIME WILL IT BE ACCEPTABLE TO PAINT OVER EXISTING PAVEMENT MARKINGS.
- 3. ANY DEVIATION FROM THE STRIPING AND SIGNING PLAN SHALL BE APPROVED BY EL PASO COUNTY PCD.
- 4. ALL SIGNS SHOWN ON THE SIGNING AND STRIPING PLAN SHALL BE NEW SIGNS. EXISTING SIGNS MAY REMAIN OR BE REUSED IF THEY MEET CURRENT EL PASO COUNTY AND MUTCD STANDARDS.
- 5. STREET NAME AND REGULATORY STOP SIGNS SHALL BE ON THE SAME POST AT INTERSECTIONS.
- 6. ALL REMOVED SIGNS SHALL BE DISPOSED OF IN A PROPER MANNER BY THE CONTRACTOR.
- 7. ALL STREET NAME SIGNS SHALL HAVE "D" SERIES LETTERS, WITH LOCAL ROADWAY SIGNS BEING 4" UPPER-LOWER CASE LETTERING ON 8" BLANK AND NON-LOCAL ROADWAY SIGNS BEING 6" LETTERING, UPPER-LOWER CASE ON 12" BLANK, WITH A WHITE BORDER THAT IS NOT RECESSED. MULTI-LANE ROADWAYS WITH SPEED LIMITS OF 40 MPH OR HIGHER SHALL HAVE 8" UPPER-LOWER CASE LETTERING ON 18" BLANK WITH A WHITE BORDER THAT IS NOT RECESSED. THE WIDTH OF THE NON-RECESSED WHITE BORDERS SHALL MATCH PAGE 255 OF THE 2012 MUTCD "STANDARD HIGHWAY SIGNS"
- 8. ALL TRAFFIC SIGNS SHALL HAVE A MINIMUM HIGH INTENSITY PRISMATIC GRADE SHEETING.
- 9. ALL LOCAL RESIDENTIAL STREET SIGNS SHALL BE MOUNTED ON A 1.75" X 1.75" SQUARE TUBE SIGN POST AND STUB POST BASE. FOR OTHER APPLICATIONS, REFER TO THE CDOT STANDARD S-614-8 REGARDING USE OF THE P2 TUBULAR STEEL POST SLIPBASE DESIGN.
- 10. ALL SIGNS SHALL BE SINGLE SHEET ALUMINUM WITH 0.100" MINIMUM THICKNESS.
- 11. ALL LIMIT LINES/STOP LINES, CROSSWALK LINES, PAVEMENT LEGENDS, AND ARROWS SHALL BE A MINIMUM 125 MIL THICKNESS PREFORMED THERMOPLASTIC PAVEMENT MARKINGS WITH TAPERED LEADING EDGES PER CDOT STANDARD S-627-1. WORD AND SYMBOL MARKINGS SHALL BE THE NARROW TYPE. STOP BARS SHALL BE 24" IN WIDTH. CROSSWALKS LINES SHALL BE 12" WIDE AND 8' LONG PER CDOT S-627-1.
- 12. ALL LONGITUDINAL LINES SHALL BE A MINIMUM 15MIL THICKNESS EPOXY PAINT. ALL NON-LOCAL RESIDENTIAL ROADWAYS SHALL INCLUDE BOTH RIGHT AND LEFT EDGE LINE STRIPING AND ANY ADDITIONAL STRIPING AS REQUIRED BY CDOT S-627-1.
- 13. THE CONTRACTOR SHALL NOTIFY EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT (719) 520-6819 PRIOR TO AND UPON COMPLETION OF SIGNING AND STRIPING.
- 14. THE CONTRACTOR SHALL OBTAIN A WORK IN THE RIGHT OF WAY PERMIT FROM THE EL PASO COUNTY PCD PRIOR TO ANY SIGNAGE OR



## STANDARD NOTES FOR EL PASO COUNTY CONSTRUCTION PLANS:

- 1. ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.
- 2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD NOTIFICATION OF ALL EXISTING UTILITIES. WHETHER SHOWN ON THE PLANS OR NOT, BEFORE BEGINNING CONSTRUCTION. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CALL 811 TO CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC).
- 3. CONTRACTOR SHALL KEEP A COPY OF THESE APPROVED PLANS, THE GRADING AND EROSION CONTROL PLAN, THE STORMWATER MANAGEMENT PLAN (SWMP), THE SOILS AND GEOTECHNICAL REPORT, AND THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES, INCLUDING THE FOLLOWING: a. EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
- b. CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2
- c. COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION d. CDOT M & S STANDARDS
- 4. NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING. ANY MODIFICATIONS NECESSARY TO MEET CRITERIA AFTER-THE-FACT WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
- 5. IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ACCURATELY SHOW EXISTING CONDITIONS, BOTH ONSITE AND OFFSITE, ON THE CONSTRUCTION PLANS. ANY MODIFICATIONS NECESSARY DUE TO CONFLICTS, OMISSIONS, OR CHANGED CONDITIONS WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
- 6. CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH EL PASO COUNTY PCD INSPECTIONS, PRIOR TO STARTING CONSTRUCTION.
- 7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND THE REQUIREMENTS OF ALL JURISDICTIONAL AGENCIES AND TO OBTAIN ALL REQUIRED PERMITS, INCLUDING BUT NOT LIMITED TO EL PASO COUNTY EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP), REGIONAL BUILDING FLOODPLAIN DEVELOPMENT PERMIT, U.S. ARMY CORPS OF ENGINEERS-ISSUED 401 AND/OR 404 PERMITS, AND COUNTY AND STATE FUGITIVE DUST PERMITS.
- 8. CONTRACTOR SHALL NOT DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE DESIGN ENGINEER AND PCD. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.
- 9. ALL STORM DRAIN PIPE SHALL BE CLASS III RCP UNLESS OTHERWISE NOTED AND APPROVED BY PCD.
- 10. CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY PCD PRIOR TO PLACEMENT OF CURB AND GUTTER AND PAVEMENT.
- 11. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
- 12. SIGHT VISIBILITY TRIANGLES AS IDENTIFIED IN THE PLANS SHALL BE PROVIDED AT ALL INTERSECTIONS. OBSTRUCTIONS GREATER THAN 18 INCHES ABOVE FLOWLINE ARE NOT ALLOWED WITHIN SIGHT TRIANGLES.
- 13. SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY PCD AND MUTCD CRITERIA. [IF APPLICABLE, ADDITIONAL SIGNING AND STRIPING NOTES WILL BE PROVIDED.]
- 14. CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY PCD, INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.
- 15. THE LIMITS OF CONSTRUCTION SHALL REMAIN WITHIN THE PROPERTY LINE UNLESS OTHERWISE NOTED. THE OWNER/DEVELOPER SHALL OBTAIN WRITTEN PERMISSION AND EASEMENTS, WHERE REQUIRED, FROM ADJOINING PROPERTY OWNER(S) PRIOR TO ANY OFF-SITE DISTURBANCE, GRADING, OR CONSTRUCTION.



VARIES

















| 20 	 40<br>1' = 20'<br>1' = 20'<br>1'' = 20''<br>1'' = 20'''<br>1'' = 20'''<br>1'' = 20''''<br>1'' = 20''''''''''''''''''''''''''''''''' | ARED FOR<br>AND, LLC<br>ER CRESCENT<br>JER CRESCENT<br>JER CRESCENT<br>JER CRESCENT<br>JER CRESCENT<br>APPROVED BY THE<br>APPROVED BY THE<br>APPROVED BY THE<br>APPROVED BY THE<br>APPROVED BY THE<br>APPROVED BY THE<br>APPROVES THEIR USE<br>ONLY FOR THE PURPOSES<br>DESIGNATED BY WRITTEN<br>AUTHORIZATION. |
|--|---|
|  | PREP<br>SR L<br>20 BOULE<br>SU<br>COLORADO SF<br>JAMES<br>(719)   |
|  | <b>JAR ENGINEERING</b><br><b>A Westrian Company</b><br>Centennial 303–740–9393 • Colorado Springs 719–593–2593<br>Fort Collins 970–491–9888 • www.jrengineering.com   |
|  | BY DATE   |
|  | 2=50' No. REVISION<br>ν/Α<br>7/22<br>RAB<br>KRW<br>KRW  |
|  | H-SCALE     1"       V-SCALE     N       V-SCALE     N       DATE     3/       DESIGNED     BY       DRAWN     BY       CHECKED     BY  |
| EPC 4/5/2022<br>ENGINEER'S STATEMENT<br>PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR<br>ENGINEERING<br>MM R.M.M.M.   | SIGNAGE & STRIPING 2<br>SIGNAGE & STRIPING  |
| MIKE A. BRAMLETT, P.E.<br>COLORADO P.E. 32314<br>FOR AND ON BEHALF OF JR ENGINEERING, JOO AL   | SHEET 7 OF 11<br>JOB NO. 25188.01   |





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| 6996        |    |            |                             |  |    |    |     |    |     |     |          |          |      |   |                 |     |   |    | 6996      |
| 6992<br>_{{ | 30 | _ (        | 50                          |  | 40 | -2 | 20  | (  | )   | 2   | 0        | 4        | 0    | 6 | 0               | 8   | 0 | 10 | 6992<br>0 |

|              |    |            |            |            |    |    |     |    |     |     |   |   |            |             | -      |    |   |    |      |
|--------------|----|------------|------------|------------|----|----|-----|----|-----|-----|---|---|------------|-------------|--------|----|---|----|------|
| 6996         |    |            |            |            |    |    |     |    |     |     |   |   |            |             |        |    |   |    | 6996 |
| 699 <u>2</u> | 80 | -6         | 50         |            | 40 | -: | 20  | (  | )   | 2   | 0 | 4 | 0          | 6           | 0      | 8  | 0 | 10 | 6992 |
|              |    |            |            |            |    |    |     |    |     |     |   |   |            |             |        |    |   |    |      |
|              |    |            |            |            |    |    |     |    |     |     |   |   |            |             |        |    |   |    |      |
|              |    |            |            |            |    |    |     |    |     |     |   |   |            |             |        |    |   |    |      |
|              | FL | : 70<br>(- | )09<br>32. | .49<br>71) |    |    | 12- | +0 | )0. | 00  | ) |   | FL:<br>(33 | 700<br>5.04 | )<br>) | 45 |   |    |      |
| 7016         |    |            |            |            |    |    |     |    |     |     |   |   |            |             |        |    |   |    | 7016 |
| 7012         |    |            |            |            |    |    |     |    |     |     |   |   |            |             |        |    |   |    | 7012 |
| 7008         |    |            |            | ~ -        |    |    |     | (  |     | 1-1 | 、 | 7 |            |             |        |    |   |    | 7008 |











| 7016 | FL | : 7(<br>(- | 007<br>32. | 7.56<br>.01) | 5<br>) |    | 11- | +C<br>q | )0.<br>2 | 00  | )  | E<br>( | 7016 |   |   |   |           |
|------|----|------------|------------|--------------|--------|----|-----|---------|----------|-----|----|--------|------|---|---|---|-----------|
| 7010 |    |            |            |              |        |    |     |         |          |     |    |        |      |   |   |   | 7010      |
| 7012 |    |            |            |              |        |    |     |         |          |     |    |        |      |   |   |   | 7012      |
| 7008 |    |            | _          | _            | -1     |    |     |         |          |     | [] | ļ<br>  | j    |   |   |   | 7008      |
| 7004 |    |            |            |              |        | -  | 58' | EO      | P-E      | EOP |    |        |      |   |   |   | 7004      |
| 7000 | 30 | (          | 50         |              | 40     | -: | 20  |         | )        | 2   | 0  | 4      | 0    | 6 | 0 | 8 | 7000<br>0 |

| 7010 | Fl | _:7<br>(_ | 006<br>32. | 5.6<br>03) | 1<br>) |    | 10  | +5<br>9 | 50.<br>2 | 00 | ) / | _E<br>( | :0P<br>18. | : 70<br>07) | )07<br>) | .04 | 7010      |
|------|----|-----------|------------|------------|--------|----|-----|---------|----------|----|-----|---------|------------|-------------|----------|-----|-----------|
| 7012 |    |           |            |            |        |    |     |         |          |    |     |         |            |             |          |     | 7012      |
| 7008 |    |           |            |            |        |    |     |         |          |    | -   |         |            |             |          |     | 7008      |
| 7004 |    |           |            | <u> </u>   |        | 47 | ' E | OP-     | -E0      | P  |     |         | _          |             |          |     | 7004      |
| ,    |    |           |            |            |        |    |     |         |          |    |     |         |            |             |          |     | ,         |
| 7000 | 30 | - (       | 60         |            | 40     | -2 | 20  | (       | )        | 2  | 0   | 4       | 0          | 6           | 0        | 8   | 7000<br>0 |











(43.88)

024

7020

7016

7012

7008

7004

100 120





40

60

80

+73' EOP-EOP+

0

20

![](_page_62_Figure_19.jpeg)

![](_page_62_Figure_20.jpeg)

![](_page_62_Figure_21.jpeg)

![](_page_63_Figure_0.jpeg)

22+00.00 FL: 7021.06 € (33.01)

21+50.00

74' EOP-EOP

7004 100 -80 -60 -40 -20 0 20 40 60 80 100 120 140

7008

FL: 7020.82

FL: 7020.41

 $(-44.99)^{-}$ 

7032г

7028

7024

7020

7016

7012

7032

7028

7024

7020

7016

7008

(-44.99)

![](_page_63_Figure_1.jpeg)

24+50.00

74' EOP-EOP

FL: 7026.67 (-37.60) 7036 7032 7028 7024 7020 7016 7012 10 -120 -100 -80 -60 -40 -20 0 20 40 60 80 100 120 140

7032

7028

7032 <sub>C</sub>

7020

7020

7012

FL: 7020.65

(33.01)

| 7076       |    |    |    |    |    | FI       | L: 7<br>(- | 02<br>- 40           | 5.1(<br>.61 | כ<br>  ( |
|------------|----|----|----|----|----|----------|------------|----------------------|-------------|----------|
| /036       |    |    |    |    |    |          |            |                      |             |          |
| 7032       |    |    |    |    |    |          |            |                      |             |          |
| 7028       |    |    |    |    | /  | ) ,<br>/ | _/         | $\overline{\langle}$ |             |          |
| 7024       |    |    |    |    | ·  |          |            |                      |             |          |
| 7020       |    |    |    |    |    |          |            |                      |             |          |
| 7016       |    |    |    |    |    |          |            |                      |             |          |
| 7012<br>—1 | 40 | -1 | 20 | —1 | 00 | -8       | 30         | 6                    | 50          |          |

![](_page_63_Figure_4.jpeg)

![](_page_63_Figure_5.jpeg)

![](_page_63_Figure_6.jpeg)

![](_page_63_Figure_7.jpeg)

![](_page_63_Figure_8.jpeg)

FL: 7034.24

7044 \_\_\_\_\_

7040

7036

7032

7028

7024

7032

7020

7024

**(−25.69)** 27+00.00

7016 -140 -120 -100 -80 -60 -40 -20 0 20 40 60 80 100 120 140

FL: 7033.96 <sup>—</sup>(52.40)

![](_page_63_Figure_9.jpeg)

| 7048 |       |
|------|-------|
| 7044 |       |
| 7040 |       |
| 7036 |       |
| 7032 |       |
| 7028 |       |
| 7024 | 140 — |

<sub>1</sub>7044

704

-7028

7024

7020

7032

![](_page_63_Picture_11.jpeg)

FL: 7026.57

7016

<sup>-</sup>(40.74)

| ]   | 4  | 23          | +5<br>9 | 50.<br>2 | 00 | ) | Γ | FL:<br>(3 | : 7C<br>4.7 | )23<br>4)    | .80 | ŀ      |    |    |    |    |    | 7076 |
|-----|----|-------------|---------|----------|----|---|---|-----------|-------------|--------------|-----|--------|----|----|----|----|----|------|
|     |    |             |         |          |    |   |   |           |             |              |     |        |    |    |    |    |    | 7036 |
|     |    |             |         |          |    |   |   |           |             |              |     |        |    |    |    |    |    | 7032 |
| ╲.  |    | ~           |         |          |    |   |   |           |             |              |     |        |    |    |    |    |    | 7028 |
|     |    |             |         | /        | ~  |   |   |           | ~           |              |     |        |    |    |    |    |    | 7004 |
|     |    |             |         |          |    |   |   |           | $\setminus$ |              |     |        |    |    |    |    |    | /024 |
| -   | 7. | <b>4'</b> E | EOP     | -E(      | OP | - |   | ``        |             | $\mathbf{h}$ |     |        |    |    |    |    |    | 7020 |
|     |    |             |         |          |    |   |   |           |             | \            |     | $\sum$ |    |    |    |    |    | 7016 |
|     |    |             |         |          |    |   |   |           |             |              |     |        |    |    |    |    |    | 7012 |
| +   |    |             |         |          |    |   |   |           |             |              |     |        |    |    |    |    |    |      |
| -40 |    | ∟<br>20     | (       | )        | 2  | 0 | 4 | 0         | 6           | 0            | 8   | 0      | 10 | )0 | 12 | 20 | 14 | 7008 |

|            |    |    |     |            |    |   | F   | L: 7<br>(- | '03<br>-28 | 2.7<br>3.13 | '2_<br>3) | ] 4      | 26 | و<br>+ | <u>}</u><br>0. | 00  | )   |   | [     | _ F<br>[_(· | L: 7<br>49.1 | '03:<br>96)     | 2.4 | 7  |   |    |    |    |           |
|------------|----|----|-----|------------|----|---|-----|------------|------------|-------------|-----------|----------|----|--------|----------------|-----|-----|---|-------|-------------|--------------|-----------------|-----|----|---|----|----|----|-----------|
| 7040       |    |    |     |            |    |   |     |            |            |             |           |          |    |        |                |     |     |   |       |             |              |                 |     |    |   |    |    |    | 7040      |
| 7036       |    |    | - • | <u> </u>   |    |   |     |            |            |             | , ,       |          | /  |        |                | //  |     |   |       |             |              |                 |     |    |   |    |    |    | 7036      |
| 7032       |    |    |     | <u>`</u> , |    | \ | /   |            | A          |             |           | <b>ب</b> |    |        |                |     |     |   | _   _ |             |              | $\overline{\ }$ |     |    |   |    |    |    | 7032      |
| 7028       |    |    |     |            |    | / | _ / |            |            |             |           |          |    | 74'    | EO             | P-1 | EOP |   |       |             |              |                 |     |    |   |    |    |    | 7028      |
| 7024       |    |    |     |            |    |   |     |            |            |             |           |          |    |        |                |     |     |   |       |             |              | ~ _             | ` - |    |   |    |    |    | 7024      |
| 7020       |    |    |     |            |    |   |     |            |            |             |           |          |    |        |                |     |     |   |       |             |              |                 |     |    |   |    |    |    | 7020      |
| 7016<br>—1 | 40 | -1 | 20  | -1         | 00 |   | 80  | -6         | 50         |             | 40        | -2       | 20 | (      | )              | 2   | 0   | 4 | 0     | 6           | 0            | 8               | 0   | 10 | 0 | 12 | 20 | 14 | 7016<br>0 |

| 020  |    |    |    |                        |                  |    |    |     |           |      |            |   |     |          |           |     |   |   |   |       |               |     |              |    |   |    |    |    | /020 |
|------|----|----|----|------------------------|------------------|----|----|-----|-----------|------|------------|---|-----|----------|-----------|-----|---|---|---|-------|---------------|-----|--------------|----|---|----|----|----|------|
| 7016 |    |    |    |                        |                  |    |    |     |           |      |            |   |     |          |           |     |   |   |   |       |               |     |              |    |   |    |    |    | 7016 |
| -1   | 40 | -1 | 20 | -1                     | 00               | -8 | 30 | -6  | 50        |      | 40         | _ | 20  | (        | )         | 2   | 0 | 4 | 0 | 6     | 0             | 8   | 0            | 1C | 0 | 12 | 20 | 14 | 0    |
|      |    |    |    |                        |                  |    |    |     |           |      |            |   |     |          |           |     |   |   |   |       |               |     |              |    |   |    |    |    |      |
|      |    |    |    |                        |                  |    |    |     |           |      |            |   |     |          |           |     |   |   |   |       |               |     |              |    |   |    |    |    |      |
|      |    |    |    |                        |                  |    |    |     |           |      |            |   |     |          |           |     |   |   |   |       |               |     |              |    |   |    |    |    |      |
|      |    |    |    |                        |                  |    |    |     |           |      |            |   |     |          |           |     |   |   |   |       |               |     |              |    |   |    |    |    |      |
|      |    |    |    |                        |                  |    |    |     |           |      |            |   |     |          |           |     |   |   |   |       |               |     |              |    |   |    |    |    |      |
|      |    |    |    |                        |                  |    |    | . 7 | <u>07</u> | 1 0/ | <u>_</u>   |   | ~ ~ |          |           | ~ ~ |   |   |   |       | . 7           | ารถ | ۰ <b>م</b> ر | S  |   |    |    |    |      |
|      |    |    |    |                        |                  |    | ГІ | (–  | 30        | .57  | )<br>)<br> |   | 26  | +(       | )().<br>D | 00  | ) |   | Γ | -' (4 | -7.5          | 52) | ).93         | 9  |   |    |    |    |      |
| '040 |    |    |    |                        |                  |    |    |     |           |      |            |   |     |          |           |     |   |   |   |       |               |     |              |    |   |    |    |    | 7040 |
| 7036 |    |    |    |                        |                  |    |    |     |           |      |            |   |     |          |           |     |   |   |   |       |               |     |              |    |   |    |    |    | 7036 |
|      |    |    |    |                        |                  |    |    | /   |           | _    | <u> </u>   |   |     | <u> </u> |           |     |   |   |   |       |               |     |              |    |   |    |    |    |      |
| '032 |    |    |    | $\left  \right\rangle$ | $\left[ \right]$ |    |    | 4   | /         |      | -          | É |     |          |           |     |   |   | _ |       | $\overline{}$ |     |              |    |   |    |    |    | 7032 |
|      |    |    |    |                        | 1                |    |    | /   |           |      |            | h |     |          |           |     |   |   |   |       |               |     |              |    |   |    |    |    |      |

| 7040       |    |                |    |       |    |     |        | (- | 30     | <br>ן<br>ר | 2      | 26 | +( | )0.<br><u>}</u> | 00     | )  |   |   | (4 | 7.5 | 50<br>52)    | .95          | ,  |              |    |   |    | 7040 |
|------------|----|----------------|----|-------|----|-----|--------|----|--------|------------|--------|----|----|-----------------|--------|----|---|---|----|-----|--------------|--------------|----|--------------|----|---|----|------|
| 7040       |    |                |    |       |    |     |        |    |        |            |        |    |    |                 |        |    |   | _ |    |     |              |              |    |              |    |   |    | /0+0 |
| 7036       |    |                |    |       |    |     |        |    |        |            |        | /  | /  |                 |        |    |   |   |    |     |              |              |    |              |    |   |    | 7036 |
| 7032       |    |                |    |       |    | ~ . | /      | /  |        | -          | $\sum$ |    |    |                 | `\<br> |    |   | _ |    |     |              |              |    |              |    |   |    | 7032 |
| 7028       |    |                |    |       |    |     |        |    |        |            |        |    |    |                 |        |    |   |   |    |     | $\backslash$ |              |    |              |    |   |    | 7028 |
| 7024       |    |                |    |       |    |     |        |    |        |            |        |    | 4  | FOF             | '-Е    | OP |   |   |    |     |              | $\mathbf{i}$ |    |              |    |   |    | 7024 |
| 7024       |    |                |    |       |    |     |        |    |        |            |        |    |    |                 |        |    |   |   |    |     | $\searrow$   |              |    | $\mathbf{X}$ |    |   |    | /02+ |
| 7020       |    |                |    |       |    |     |        |    |        |            |        |    |    |                 |        |    |   |   |    |     |              |              |    |              |    |   |    | 7020 |
| 7016<br>-1 | 40 | <u> </u><br>-1 | 20 | <br>1 | 00 | 8   | <br>30 |    | <br>50 | <br>10     |        | 20 | (  | )               | 2      | 0  | 4 | 0 | 6  | 0   | 80           | <br>C        | 10 | 0            | 12 | 0 | 14 | 7016 |
|            |    |                |    |       |    |     |        |    |        |            |        |    |    |                 |        |    |   |   |    |     |              |              |    |              |    |   |    |      |

![](_page_63_Figure_16.jpeg)

![](_page_63_Figure_17.jpeg)

| 7048 | <br> |
|------|------|
| /040 |      |
| 7044 |      |
| 7040 |      |
| 7036 |      |
| 7032 |      |
| 7028 |      |
| 7024 |      |
|      |      |

![](_page_63_Figure_19.jpeg)

![](_page_63_Figure_20.jpeg)

|            | EOG: 70<br>(- | 39.64 | 29- | +50.<br>ç | 00 |    | EOG: 7<br>(41.99 | 039.11<br>) |          |     | 7048        |
|------------|---------------|-------|-----|-----------|----|----|------------------|-------------|----------|-----|-------------|
|            |               |       |     |           |    |    |                  |             |          |     | 7040        |
|            |               |       |     |           |    |    |                  |             |          |     | 7044        |
|            |               | /-    |     |           |    |    |                  |             |          |     | 7040        |
|            |               |       |     | 54' EC    |    |    |                  |             |          |     | 7036        |
|            |               |       |     |           |    |    |                  |             | <u> </u> |     | 7032        |
|            |               |       |     |           |    |    |                  |             |          |     | 7028        |
| 20 - 100 - | ·80 -60       | ) -40 | -20 |           | 20 | 40 | 60               | 80          | 100      | 120 | 7024<br>140 |

| 7049                   | FL:7038.8829+00.00<br>(−15.92)2 | EOG: 7038.42<br>└(45.67) | 7049            |
|------------------------|---------------------------------|--------------------------|-----------------|
| /040                   |                                 |                          | /048            |
| 7044                   |                                 |                          | 7044            |
| 7040                   |                                 |                          | 7040            |
| 7036                   |                                 |                          | 7036            |
| 7032                   |                                 |                          | 7032            |
| 7028                   |                                 |                          | 7028            |
| 7024                   |                                 |                          | 7024            |
| 7020 -140 -120 -100 -8 | 80 -60 -40 -20 0 20             | 40 60 80 100             | 7020<br>120 140 |

| 7049       |    |   |    |   |                        |              |     | FL: | 70<br>(–1 | 38.<br>18.3 | 04<br>36) | <u>:</u> | 28 | ;<br>;<br>; | 50.<br>2 | .00 | ) |   |   | Γ | _FL<br>_(5 | : 70<br>5.7 | )38<br>1) | .02 | 2  |    |    |    | 7040 |
|------------|----|---|----|---|------------------------|--------------|-----|-----|-----------|-------------|-----------|----------|----|-------------|----------|-----|---|---|---|---|------------|-------------|-----------|-----|----|----|----|----|------|
| /048       |    |   |    |   |                        |              |     |     |           |             |           |          |    |             |          |     |   |   |   |   |            |             |           |     |    |    |    |    | /048 |
| 7044       |    |   |    |   |                        |              |     |     |           |             |           |          |    |             |          |     |   |   |   |   |            |             |           |     |    |    |    |    | 7044 |
| 7040       |    |   |    |   |                        | N,           |     |     |           |             |           |          |    |             |          |     |   |   |   | 5 |            |             | _         |     |    |    |    |    | 7040 |
| 7036       |    |   |    |   | $\left  \right\rangle$ |              | `\` | 5   |           | /           |           |          |    | <br>-<br>-  |          |     |   |   |   |   |            |             |           |     | /  | ٦  |    |    | 7036 |
| 7032       |    |   |    |   |                        | $\backslash$ |     | _ ′ | /         |             |           |          | -  |             |          | EOF |   |   | - |   |            |             |           |     |    |    |    |    | 7032 |
| 7028       |    |   |    |   |                        |              |     |     |           |             |           |          |    |             |          |     |   |   |   |   |            | <u> </u>    |           |     |    |    |    |    | 7028 |
| 7024       |    |   |    |   |                        |              |     |     |           |             |           |          |    |             |          |     |   |   |   |   |            |             |           |     |    |    |    |    | 7024 |
| 7020<br>—1 | 40 | 1 | 20 | 1 | 00                     | 8            | 30  | (   | 50        |             | 10        |          | 20 |             | <br>>    | 2   | 0 | 4 | 0 | 6 | 0          | 8           | 0         | 10  | )0 | 12 | 20 | 14 | 7020 |

![](_page_63_Figure_24.jpeg)

**LEGEND** 

|  |  |              | UNTIL SUCH TIME AS | THESE DRAWINGS ARE    | APPROPRIATE REVIEWING   | AGENCIES, JK ENGINEERING<br>APPROVES THEIR USE | ONLY FOR THE PURPOSES<br>DESIGNATED BY WRITTEN          | AU THORIZA TION.                                  |
|--|--|--------------|--------------------|-----------------------|-------------------------|--|---|---|
|  |  | PREPARED FOR |                    | SR LAND, LLC          | 20 BOULDER CRESCENT     | COLODADO SULLE 201<br>COLODADO SDENICS CO ROMA | JAMES F. MORLEY   | (719) 471–1742                                    |
| 948<br>944<br>936<br>932<br>928<br>924 |  |              |                    | I'D ENCINEEDING       | Allection Communication |  | Centennial 303-740-9393 • Colorado Springs 719-593-2593 | Fort Collins 9/0-491-9888 • www.jrengineering.com |
| 44                                     |  | DATE         |                    |                       |                         |  |   |   |
| 032<br>028<br>024<br>020               |  | BY           |                    |                       |                         |  |   |   |
| 948<br>944                             |  | .   REVISION |                    |                       |                         |  |   |   |
| 40<br>36                               |  | 50, No       | 2                  | =10'                  | /22                     | AB   | N X   |   |
| 132<br>128                             |  | بر<br>       | -<br>-<br>-        | E   1"=               | 3/7                     | BYR  | 3Y KI   | BΥ  |
| 24                                     |  | H-SCAL       |                    | V-SCAL                | DATE                    | DESIGNED                                       | DRAWN F   | CHECKED   |
| EPC 4/5/<br><b>LEGEND</b>              |  |              | STERLING RANCH -   | VOLLMER ROAD FILING 2 |                         | CKOSS SECTIONS                                 |   |   |
|  | PROPOSED SURFACE<br>EXISTING SURFACE<br>FILING NO. 2 SURFACE | S<br>J       | HE                 | ET<br>NO              | 9                       | c<br>251                                       | 9F<br>88.   | 11<br>01  |

![](_page_64_Figure_0.jpeg)

|                           |  | UNTIL SUCH TIME AS<br>THESE DRAWINGS ARE<br>APPROVED BY THE<br>APPROPRIATE REVIEWING<br>AGENCIES, JR ENGINEERING<br>AGENCIES, JR ENGINEERING<br>APPROVES THEIR USE<br>ONLY FOR THE PURPOSES<br>DESIGNATED BY WRITTEN<br>AUTHORIZATION. |                       |   |                    |   |   |
|---------------------------|--|--|-----------------------|---|--------------------|---|---|
|                           |  | PREPARED FOR   | SR LAND, LLC          | 20 BOULDER CRESCENT   | COLOPADA SULLE 201 | UULURADU JERNINGS, UU OUGI<br>JAMES F. MORLEY | (719) 471–1742                                    |
|                           |  |  | LP ENCINEEDING        | A Westrian Company<br>Centennial 303-740-9393 • Colorado Springs 719-593-2593<br>Exet Colline 270-401-0888 • www.innoninoning.com |                    |   | Fort Collins 9/0-491-3888 • www.jrengineering.com |
|                           |  | DATE   |                       |   |                    |   |   |
|                           |  | REVISION BY  |                       |   |                    |   |   |
|                           |  | 50' No.  | 10,                   | /22   | В                  | >   |   |
|                           |  | H-SCALE 1"=  | V-SCALE 1"=           | DATE 3/7,   | DESIGNED BY RA     | DRAWN BY KR                                   | СНЕСКЕД ВҮ  |
| EPC 4/5,<br><b>LEGEND</b> | /2022  |  | VOLIMER ROAD FILING 2 |   | CKOSS SECTIONS     |   |   |
|                           | PROPOSED SURFACE<br>EXISTING SURFACE<br>FILING NO. 2 SURFACE | SH   | EET<br>3 NO           | 10  | C<br>251           | )F<br>88                                      | 11<br>01  |
|                           |  | JUt  | טאו כ                 | •   | ادے                | JO.   | 51  |

LEGEND

![](_page_65_Figure_0.jpeg)

| Know what's below.<br>Call before you dig.   | PREPARED FOR<br>SR LAND, LLC<br>20 BOULDER CRESCENT<br>20 BOULDER CRESCENT<br>SUITE 201<br>COLORADO SPRINGS, CO 80903<br>JAMES F. MORLEY<br>(719) 471–1742<br>(719) 471–1742   |
|--|--|
| 7 (44.99'LT)       YPR.)       G <th>BY     DATE       Image: Description of the sector o</th> | BY     DATE       Image: Description of the sector o |
|  | H-SCALE1"=50'No.REVISIONV-SCALE1"=5'V-SCALE1"=5'DATE3/7/22DATE3/7/22DATE3/7/22DATE3/7/22DATE3/7/22DATE3/7/22DATE3/7/22DATE3/7/22DESIGNED BYRAB-DRAWN BYKRW-CHECKED BYCHECKED BY-   |
| EPC 4/5/2022<br>ENGINEER'S STATEMENT<br>PREPARED UNDER MY DIRECT SUPERVISION, AND ON BEHALF OF JR<br>ENGINEERING<br>MIKE A. BRAMLETT, P.E.<br>COLOR AND ON BEHALF OF JR ENGINEERING  | SHEET 11 OF 11<br>JOB NO. 25188.01   |