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Provide signature page.

Engineering Review
07/28/2020 6:45:03 PM
dsdrice
JeffRice@elpasoco.com
(719) 520-7877
EPC Planning & Community Development Department

June 11, 2020

Mr. Jim Morley
Morley-Bentley Investments, LLC
20 Boulder Crescent, 1st Floor
Colorado Springs, CO 80903

See comment letter and TIS checklist also.

RE: Sterling Ranch Filing No. 2 and
Sterling Ranch Phase 2
Traffic Impact Study
El Paso County, Colorado
LSC #184660

Full TIS (If the original TIS is older than three years, an entirely new TIS shall be prepared.)

Dear Mr. Morley:

LSC Transportation Consultants, Inc. has prepared this Transportation Memorandum for Sterling Ranch Filing 2 and Sterling Ranch Phase 2. As shown on Figure 1, Sterling Ranch is located east of Vollmer Road near Lochwinnoch Lane between the future extensions of Marksheffel Road and Stapleton Drive in El Paso County, Colorado. This report is intended as a site-specific, final plat traffic report for the currently proposed filings.

REPORT CONTENTS

The preparation of this report included the following:

- A list of previous Sterling Ranch traffic reports and the context of this project;
- A summary of the proposed land use and access plan;
- 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;
- Existing (2020) traffic volume data;
- Estimates of projected short-term and intermediate-term traffic volumes;
- The projected average weekday and peak-hour vehicle-trips to be generated by the proposed development;
- The assignment of the projected site-generated traffic volumes to the area roadways;
- The projected short-term total traffic volumes on the area roadways;
- The projected levels of service at the key intersections in the vicinity of the site;

- The recommended street classifications for the internal streets within the proposed development;
- The project's obligation to the County roadway improvement fee program; and
- Recommended roadway improvements

RECENT TRAFFIC REPORTS

LSC prepared a traffic impact study (TIS) for the entire Sterling Ranch development dated June 5, 2008. LSC also prepared a traffic impact analysis for the first phase of the Sterling Ranch development, dated March 16, 2015; a memorandum for Phases 1-3, dated October 2, 2017; and a traffic impact analysis for the Sterling Ranch Phase 2 Preliminary Plan, dated December 20, 2018. The following site-specific, final plat traffic reports have also been prepared:

- Branding Iron at Sterling Ranch Filing No. 1 and Homestead at Sterling Ranch Filing No. 1, dated December 19, 2017
- Sterling Ranch Filing No. 2, dated April 3, 2018
- Sterling Ranch Phase 2, dated December 20, 2018
- Copper Chase at Sterling Ranch, dated December 20, 2018
- Homestead at Sterling Ranch Filing No. 2, dated March 3, 2020
- Branding Iron at Sterling Ranch Filing No. 2, dated March 31, 2020 (revised May 6, 2020)

STUDY AREA

The study area for the June 2008 master traffic impact report was best shown on Figure 3 from that report, which has been attached for reference. The study area for this report includes the area bound by Vollmer Road, Marksheffel Road, the wetlands area just east of Dines Boulevard, and Briargate Boulevard. Only those intersections within that study area which exist today or are needed to accommodate the site traffic were analyzed for this report. The study area for the future traffic studies of later phases of the Sterling Ranch development will reflect the appropriate existing conditions at that time and any additional roadway connections/intersections needed to accommodate those specific phases.

Verify ECM B.2.3 requirements

Study Area Land Use

<u>Sketch Plan</u>

Figure 2 shows the location of the Sterling Ranch developments within the study area that are either approved, currently under review, currently proposed, or anticipated to be developed in the intermediate future. These parcels were included as traffic analysis zones (TAZs) 2 through 7 in the 2008 master traffic impact report. Table 1 shows the land uses assumed for these TAZs in the 2008 report and the land uses assumed in this report. A copy of the TAZ map from the 2008 report has been attached. As shown in Table 1, the 2008 report assumed the study area would

be developed with 1,119 single family homes and an elementary school. This same area is now planned to be developed with about 697 single family homes and an elementary school.

Other Recent Projects

Branding Iron at Sterling Ranch Filing No. 1 and Homestead at Sterling Ranch Filing No. 1 have both been approved. At the time traffic counts were conducted at the intersection of Vollmer/Dines, about 83 of the 123 homes had been constructed in these filings. Applications to plat both Branding Iron at Sterling Ranch Filing No. 2 and Homestead at Sterling Ranch Filing No. 2 have been submitted and are currently in the review process. It is our understanding that Copper Chase at Sterling Ranch is currently on hold. However, for the purposes of this report, it was assumed that the same number of residential dwelling units as was assumed in the December 2018 report would be constructed on this parcel in the intermediate-term future.

Previously, the future elementary school site located north of Sterling Ranch Road and west of Dines Boulevard was planned to be included as part of Sterling Ranch Phase 2. It is our understanding that the school site was recently included in the Branding Iron at Sterling Ranch Filing No. 2 plat. This report assumes the school site will be developed in the intermediate future.

TAZ 8, located on the southeast corner of Briargate/Vollmer, has been reduced from the 17 acres assumed in the 2008 master plan study to 14.8 acres. TAZ 8 is planned to be developed with commercial uses, however, this report assumes it will not be developed in the intermediate future.

No changes are currently proposed to the land uses assumed in TAZ 1 and TAZs 8 through 20 of the 2008 master traffic study. This report assumes these parcels will not be developed in the intermediate future.

see comment letter

Study Area Access Plan

The access plan for the current study area is generally consistent with the access plan shown in the master traffic report. The following summarizes the minor changes:

- The proposed access to Vollmer Road to TAZ 2 (Alzada Drive) has been shifted to the south and a deviation has been approved for this new location. The June 2008 report showed the Sterling Ranch development sharing the existing Vollmer Road/Lochwinnoch Lane intersection with the adjacent Barbarick Subdivision industrial development. However, it has since been determined that using this existing access point for the Sterling Ranch development is not possible. Therefore, this site access intersection was moved about 885 feet south (approximately halfway between the future locations of Marksheffel Road and Lochwinnoch Lane). A deviation request for this access point has been submitted and approved. A copy of the approved deviation is attached.

- The originally-proposed right-in/right-out access to TAZ 2 is no longer proposed and is not shown on the existing plans.

Provide a copy of all approved deviations in the appendix

- The Sterling Ranch access to Briargate Parkway just east of Vollmer Road (Wheatland Drive) was previously shown as a right-in/right-out-only intersection in the Sketch Plan. It is now proposed as a three-quarter-movement (left-in/right-in/right-out-only) access. A deviation request for this access point has been submitted and approved.

These changes to the plan will result in some localized shifts in intersection turning movements shown in the master traffic study long-term traffic projections, but nothing significant requiring an update to the master study.

CURRENTLY PROPOSED LAND USE AND ACCESS

Land Use and Vehicle Access

Sterling Ranch Filing 2 is planned to include 49 lots for single-family homes. A full-movement site access is proposed to Sterling Ranch Road about 660 feet north east of Marksheffel Road. Sterling Ranch Filing No. 2 will also utilize the approved access to Vollmer Road located 875 feet north of Marksheffel Road (Alzada Drive). until a second internal point of access is provided.

Sterling Ranch Phase 2 is planned to include 212 lots for single-family homes (50 homes are planned north of Sterling Ranch Road and 162 homes are planned south of Sterling Ranch Road). Two full-movement access points are proposed to Sterling Ranch Road. Figure 3 shows the proposed spacing of these access points. Sterling Ranch Phase 2 will also have access through the proposed Sterling Ranch Filing No. 2. Approval of Sterling Ranch Phase 2 will be dependent on approval and construction of Sterling Ranch Filing No. 2.

Sight Distance Analysis

proposed?

Figure 4 shows a sight distance analysis at the future intersections to Sterling Ranch Road. Based on a design speed of 40 miles per hour (mph) and the criteria contained in Table 2-21 of the ECM, the required intersection sight distance at the future intersections is 445 feet. Based on the criteria contained in Table 2-17 of the ECM, the required stopping sight distance approaching this intersection is 305 feet. As shown in Figure 4, all of the future intersections analyzed will meet the criteria. (CDs don't meet these requirements)

these?

Street Connections

Figure 5 shows the proposed short- and intermediate-term street connection plan. Dines Boulevard has been constructed south from Vollmer Road to the future Sterling Ranch Road. A short half section of Briargate Parkway is planned to be constructed between Vollmer Road and Wheatland Drive and Wheatland Drive is planned to be constructed south from Briargate Parkway as part of the Homestead at Sterling Ranch Filing 2. The section of Sterling Ranch Road between Dines Boulevard and Marksheffel Road and a half section of Marksheffel Road between

Vollmer Road and Sterling Ranch Road are planned to be constructed in the short term with the currently proposed developments. This section will replace an existing emergency only route.

It is also anticipated that Marksheffel Road will be constructed between Sterling Ranch Road and the current terminus just north of Woodmen Road in the intermediate-term future. The section between Sterling Ranch Road and the south boundary of the Sterling Ranch Master Plan area will be the responsibility of Sterling Ranch. The section from the south boundary of the Sterling Ranch Master Plan area to just north of Woodmen Road is anticipated to be constructed in the intermediate-term future as part of the Aspen Meadows development within the City of Colorado Springs.

Pedestrian and Bicycle Access

attached and detached?

An elementary school is planned to be located just north and east of Sterling Ranch Phase 2. Pedestrians will be able to utilize sidewalks along the internal subdivision streets to access the school site. School crossings will be needed at either the intersection of Sterling Ranch Road and School House Drive and/or the intersection of Dines Boulevard and Sterling Ranch Road depending on the final layout of the school site.

Address bicycle access, trails, bike lanes...

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.

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 miles per hour (mph). South of Cowpoke Road, Vollmer Road 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 four-lane Urban Minor Arterial in the vicinity of the site. In the interim, auxiliary turn lanes will be completed on Vollmer Road as shown in the memos by LSC dated October 2, 2017 and February 2, 2019.

Marksheffel Road is a Principal Arterial extending north from the City of Fountain to Woodmen Road. Marksheffel Road is planned to ultimately 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 six-lane Principal Arterial through the site on the El Paso County MTCP. For this report of short- and intermediate-term conditions, it was assumed that the section of Marksheffel Road between Sterling Ranch Road and Dines Boulevard would be constructed in the short-term future and the section of Marksheffel Road between Sterling Ranch Road and the existing terminus just north of Woodmen Road would be constructed in the intermediate-term future.

Vollmer?

All as a 4-lane City standard road?

Briargate Parkway is a six-lane, Principal Arterial that extends east from I-25 to Grand Lawn Circle (about one-half mile east of Powers Boulevard). Briargate Parkway is planned ultimately to extend to Towner Drive. For this report of short- and intermediate-term conditions, it was assumed that only the section of Briargate Parkway between Vollmer Road and the first Sterling Ranch access (Wheatland Drive) would be constructed.

Sterling Ranch Road is a planned Non-Residential Collector shown extending through the Sterling Ranch development between Marksheffel Road and Briargate Parkway. For this report of short- and intermediate-term conditions, it was assumed that only the section of Sterling Ranch Road between Marksheffel Road and Dines Boulevard would be constructed.

Address Tahiti Drive

Existing Traffic Volumes

Figure 6 shows the existing (2020) peak-hour traffic volumes at the intersections of Dines/Vollmer and Lochwinnoch/Vollmer. The traffic volumes shown for the intersection of Dines/Vollmer were based on traffic counts conducted by LSC in May 2020. These traffic counts were conducted at a time when pandemic related restrictions were in place. However, traffic counts conducted at the intersection of Black Forest Road/Vollmer Road in December 2019 (pre-pandemic) and repeated during the same week that the Dines/Vollmer counts were conducted indicate only minor impacts to traffic volumes on Vollmer Road due to these restrictions. The turning movements to and from Lochwinnoch Lane are based on counts conducted by LSC in January 2014. The through traffic volumes on Vollmer Road shown at this intersection were based on the counts at Dines Boulevard. The traffic count sheets are attached.

Figure 6 also shows the daily traffic volumes on Vollmer Road in the vicinity of the site. These volumes are estimates by LSC based on the 2020 peak-hour counts and the ratio of peak-hour to daily traffic volumes from 24-hour traffic counts conducted on Vollmer Road just south of Poco Road by LSC in 2017.

Existing Levels of Service

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 2 shows the level of service delay ranges.

Table 2: Intersection Levels of Service Delay Ranges

Level of Service	Signalized Intersections Average Control Delay (seconds per vehicle)	Unsignalized Intersections Average Control Delay (seconds per vehicle)[(1)]
A	10.0 sec or less	10.0 sec or less
B	10.1-20.0 sec	10.1-15.0 sec
C	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

(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 Vollmer/Dines has been analyzed based on the unsignalized intersection analysis procedures from the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board. All movements at this stop-sign controlled intersection are currently operating at LOS B or better during the peak hours.

BACKGROUND (BASELINE) CONDITIONS

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 both Sterling Ranch Filing No. 2 and Sterling Ranch Phase 2.

Figure 7 shows the projected short-term background traffic volumes at the key area intersections. The short-term background volumes assume only the short-term street connections shown in Figure 6. The short-term background traffic includes the existing traffic volumes (from Figure 6) with some changes in traffic patterns due to new street connections, plus increases in through traffic due to regional growth, plus traffic estimated to be generated by buildout of the Homestead at Sterling Ranch Filings 1 and 2, Branding Iron at Sterling Ranch Filing 1, and the proposed Retreat at Timber Ridge development to be located generally northeast of the intersection of Vollmer Road and Poco Road.

Figure 8 shows the projected intermediate-term background traffic volumes at the key area intersections. These volumes assume Marksheffel Road has been completed from Woodmen Road to Vollmer Road. The intermediate traffic volumes are based on the short-term background traffic volumes shown in Figure 7 with some changes in traffic patterns due to the new street connections, plus traffic estimated to be generated by buildout of the future residential/patio

homes located south of Sterling Ranch Filing No. 2 and the elementary school to be located northwest of the intersection of Sterling Ranch/Dines.

TRIP GENERATION

The site-generated vehicle-trips were estimated using the nationally published trip generation rates from *Trip Generation, 10th Edition*, 2017 by the Institute of Transportation Engineers (ITE). Table 3 shows the trip generation estimates.

Sterling Ranch Filing No. 2 is projected to generate about 463 new external 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 9 vehicles would enter and 27 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 31 vehicles would enter and 18 vehicles would exit the site.

Sterling Ranch Phase 2 is projected to generate about 2,001 new external 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, about 39 vehicles would enter and 118 vehicles would exit the site. During the afternoon peak hour, about 132 vehicles would enter and 77 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. The specific short-term and intermediate-term distribution estimates are shown in Figure 9. The directional distribution estimates are based on the following factors: the location of the site with respect to the Colorado Springs metropolitan area, the planned access system for the site, the street and roadway system serving the site, and the land uses proposed for the site.

The short-term distribution estimate shown in Figure 9 assumes:

- Only the short section of Briargate Parkway between Vollmer Road and Wheatland Drive has been constructed in the vicinity of the site.
- Sterling Ranch Road has been constructed between Marksheffel Road and Dines Boulevard, but not north of Dines Boulevard.
- A half-section of Marksheffel Road has been constructed between Woodmen Road and Vollmer Road, but not west of Vollmer Road.

The intermediate-term distribution estimate shown in Figure 8 assumes:

- Marksheffel Road has been constructed between Woodmen Road and Vollmer Road, but not west of Vollmer Road.

as 4-lane road?

When the distribution percentages (from Figure 9) are applied to the trip generation estimates (from Table 3), the resulting site-generated traffic volumes can be determined. Figures 10 and 11 show the short-term and intermediate-term site-generated traffic volume estimate for Sterling Ranch Filing No. 2 only. Figures 12 and 13 show the short-term and intermediate-term site-generated traffic volume estimate for Sterling Ranch Phase 2 only.

Describe long range analysis horizon per ECM B.2.2.

TOTAL TRAFFIC

Short-Term Total Traffic Volumes

Figure 14 shows the projected short-term total traffic volumes at the key area intersections and site access points. The short-term total traffic volumes include short-term background traffic volumes (from Figure 7) plus the short-term Sterling Ranch Filing No. 2-generated traffic volumes (from Figure 10) plus the short-term Sterling Ranch Phase 2-generated traffic volumes (from Figure 12). The short-term total traffic volumes assume only the short-term street connections shown in Figure 5.

Intermediate-Term Total Traffic Volumes

Figure 15 shows the projected intermediate-term total traffic volumes at the key area intersections and site access points. The intermediate-term total traffic volumes include intermediate-term background traffic volumes (from Figure 8) plus the intermediate-term Sterling Ranch Filing No. 2-generated traffic volumes (from Figure 11) plus the intermediate-term Sterling Ranch Phase 2-generated traffic volumes (from Figure 13). The intermediate-term total traffic volumes assume only the intermediate-term street connections shown in Figure 5.

Long-Term Total Traffic Volumes

add 2040 link ADT analysis to this report

Please refer to the master traffic report—the June 5, 2008 *Sterling Ranch Updated Traffic Impact Analysis* by LSC—for the long-term peak-hour traffic volume projections and level of service analysis. The original report is for the entire Sterling Ranch Sketch Plan. As discussed in the Study Area section above, no significant changes are projected to the results of this study.

LEVEL OF SERVICE ANALYSIS

The key area intersections and site access points have been analyzed to determine the projected intersection levels of service for short- and intermediate-term background and total traffic scenarios for the morning and afternoon peak-hour periods, based on the unsignalized intersection analysis procedures from the *Highway Capacity Manual 6th Edition*. Figures 6, 7, 13 and 14 show the level of service analysis results. The level of service reports are attached.

All of the intersections analyzed are projected to operate at LOS D or better for all movements during the peak hours, based on the projected short-term and intermediate-term total traffic volumes as a stop sign- controlled intersections.

SUBDIVISION STREET CLASSIFICATIONS

Figure 15 shows the recommended street classifications for the streets in the vicinity of the site.

AREA MTCP 2040 ROADWAY IMPROVEMENT PROJECTS

The *El Paso County 2016 Major Transportation Corridors Plan Update* identified the following 2040 roadway improvement projects within the study area:

- C13: Vollmer Road from Marksheffel Road to Stapleton Drive as a Rural 4-Lane Minor Arterial
- N5 Stapleton Drive [Briargate Parkway] from Towner Road to Black Forest Road as a 4-Lane Urban Principal Arterial
- N12: Marksheffel Road from Woodman Road to Research Parkway as a 4-Lane Urban Principal Arterial
- M11: Vollmer Road Bicycle & Primary Regional Trail from Marksheffel Road to Shoup Road

ROADWAY IMPROVEMENTS

Marksheffel Road

The City of Colorado Springs intends to take ownership and maintenance of Marksheffel Road when it is constructed from Black Forest Road to the east and south to where it connects with the current north end of Marksheffel Road in the City. The section of Marksheffel Road adjacent to Sterling Ranch is planned to be constructed on 107 feet of right-of-way to the City's required cross-section(s) and criteria. A copy of the proposed cross section approved by Kathleen Krager of the City of Colorado Springs and Jeff Rice of El Paso County has been attached.

Vollmer Road

Provide overall exhibit and cross-sections

Road improvements to Vollmer Road including auxiliary turn lanes, as discussed in our October 2, 2017 transportation memorandum, are required as part of the Subdivision Improvements Agreement (SIA) for Homestead at Sterling Ranch Filing No. 1 and Branding Iron at Sterling Ranch Filing No. 1. The applicant will be constructing an interim cross section for Vollmer Road between Marksheffel Road and Briargate Parkway, no later than May 30, 2021. The interim road improvement would widen the roadway to the east side. There would continue to be one through lane in each direction, but the interim road improvements would allow for southbound left-turn and northbound right-turn lanes at the Briargate Parkway/Vollmer and Alzada/Vollmer

intersections. Figure 16 shows the timing of these improvements. The developer will be responsible for funding all road improvements.

Sterling Ranch Road

Based on the projected intermediate-term total traffic volumes, the criteria contained in the El Paso County *Engineering Criteria Manual* and the classification of Sterling Ranch Road as an Urban Non-Residential Collector, northeast-bound left-turn lanes would be required approaching the site access points and Dines Boulevard.

A northeast-bound right-turn deceleration lane would be required on Sterling Ranch Road approaching School House Drive. A northeast-bound right-turn deceleration lane would **not** be required on Sterling Ranch Road approaching Dines Boulevard.

Address Tahiti Drive

DEVIATION REQUESTS

A deviation request for the proposed full-movement access point for Sterling Ranch Filing No. 2 to Vollmer Road (Alzada Drive) has been submitted and approved. A copy of the approved deviation is attached. No additional deviations to the El Paso County Engineering Criteria Manual are anticipated for Sterling Ranch Filing No. 2.

It is anticipated that deviations will be submitted for the design of knuckles within Sterling Ranch Phase 2.

TRANSPORTATION IMPROVEMENT FEE PROGRAM

The applicant will be required to participate in the Countywide Transportation Improvement Fee Program. These projects will annex into the 10 mil PID, which has a per-lot upfront building permit fee of $1,221 per dwelling unit. The total building permit fee amount for the 49 lots within Sterling Ranch Filing No. 2 would be $59,829. The total building permit fee amount for the 49 lots within Sterling Ranch Phase 2 would be $258,852.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

Sterling Ranch Filing No. 2 is projected to generate about 463 new external 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 9 vehicles would enter and 27 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 31 vehicles would enter and 18 vehicles would exit the site.

Sterling Ranch Phase 2 is projected to generate about 2,001 new external 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, about 39 vehicles would enter and 118 vehicles would exit the site. During the afternoon peak hour, about 132 vehicles would enter and 77 vehicles would exit the site.

Level of Service

All of the intersection analyzed are projected to operate at a satisfactory level of service (LOS D or better) for all movements during the peak hours based on the projected short-term and intermediate-term total traffic volumes as a stop sign-controlled intersection.

Recommended Improvements

A list of all improvements in the vicinity of the site is presented in Table 4.

* * * * *

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

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

By _____
Kirstin D. Ferrin, P.E.
Senior Transportation Engineer

KDF:jas

Enclosures: Tables 1,3 and 4
Figures 1-15
TAZ Map
MTCP Maps
Approved Deviation for Alzada Drive
Sterling Ranch Vollmer Road (North) Street Improvement Plans
Sterling Ranch Vollmer Road (South) Street Improvement Plans
Proposed Marksheffel Road Deviation
Traffic Count Reports
Level of Service Reports

Tables and Figures

TRANSPORTATION
CONSULTANTS, INC.

Table 1
Sketch Plan Trip Generation Comparison
Sterling Ranch Phase 2

Traffic Analysis Zone	Name	Status	Land Use Code	Land Use Description	Trip Generation Units		Trip Generation Rates [1] Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Evening Peak Hour In	Evening Peak Hour Out	Total External Trips Generated Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Evening Peak Hour In	Evening Peak Hour Out
Trip Generation Estimate Based on the Approved, Under Review and Currently Proposed Land Uses																
2	Future Residential/Patio Homes	Intermediate Future	210	Single-Family Detached Housing	134	DU[2]	9.44	0.19	0.56	0.62	0.37	1,265	25	74	84	49
	Sterling Ranch Filing No. 2	Currently Proposed	210	Single-Family Detached Housing	49	DU	9.44	0.19	0.56	0.62	0.37	463	9	27	31	18
	Sterling Ranch Phase 2	Currently Proposed	210	Single-Family Detached Housing	50	DU	9.44	0.19	0.56	0.62	0.37	472	9	28	31	18
3	Branding Iron at Sterling Ranch Fil No. 2	Intermediate Future	520	Elementary School	500	Students	1.89	0.36	0.31	0.08	0.09	945	181	154	41	44
4	Sterling Ranch Phase 2	Currently Proposed	- - -	drainage and utiilities	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
5&6			210	Single-Family Detached Housing	162	DU	9.44	0.19	0.56	0.62	0.37	1,529	30	90	101	59
7	Branding Iron at Sterling Ranch Fil No. 1	Approved	210	Single-Family Detached Housing	51	DU	9.44	0.19	0.56	0.62	0.37	481	9	28	32	19
	Homestead at Sterling Ranch Fil No. 1	Approved	210	Single-Family Detached Housing	72	DU	9.44	0.19	0.56	0.62	0.37	680	13	40	45	26
	Branding Iron at Sterling Ranch Fil No. 2	Under Review	210	Single-Family Detached Housing	75	DU	9.44	0.19	0.56	0.62	0.37	708	14	42	47	27
	Homestead at Sterling Ranch Fil No. 2	Under Review	210	Single-Family Detached Housing	104	DU	9.44	0.19	0.56	0.62	0.37	982	19	58	65	38
					697	**DU**						**7,525**	**309**	**541**	**477**	**298**
Trip Generation Estimate From the *Sterling Ranch Updated Traffic Impact Analysis* June 5, 2008																
2			210	Single-Family Detached Housing	234	DU	9.57	0.19	0.56	0.64	0.37	2,239	44	132	149	87
3			520	Elementary School	500	Students	1.29	0.23	0.19	0.00	0.01	645	116	95	1	5
4			210	Single-Family Detached Housing	89	DU	9.57	0.19	0.56	0.64	0.37	852	17	50	57	33
5			210	Single-Family Detached Housing	82	DU	9.57	0.19	0.56	0.64	0.37	785	15	46	52	31
6			210	Single-Family Detached Housing	103	DU	9.57	0.19	0.56	0.64	0.37	986	19	58	66	38
7			210	Single-Family Detached Housing	611	DU	9.57	0.19	0.56	0.64	0.37	5,847	115	344	388	227
					1,119	**DU**						**11,354**	**326**	**725**	**713**	**421**
							Change in Trip Generation Estimate					**-3,829**	**-17**	**-184**	**-236**	**-123**

Notes:
(1) Source: "*Trip Generation, 10th Edition, 2017*" by the Institute of Transportation Engineers (ITE)
(2) DU = dwelling unit

Source: LSC Transportation Consultants, Inc.

Table 3
Trip Generation Estimate
Sterling Ranch Phase 2 and Sterling Ranch Filing No. 2

Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates [1] Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Evening Peak Hour In	Evening Peak Hour Out	Total External Trips Generated Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Evening Peak Hour In	Evening Peak Hour Out
Sterling Ranch Filing No. 2												
210	Single-Family Detached Housing	49 DU	9.44	0.19	0.56	0.62	0.37	463	9	27	31	18
Sterling Ranch Phase 2												
210	Single-Family Detached Housing	50 DU[2]	9.44	0.19	0.56	0.62	0.37	472	9	28	31	18
210	Single-Family Detached Housing	162 DU	9.44	0.19	0.56	0.62	0.37	1,529	30	90	101	59
		212 DU						**2,001**	**39**	**118**	**132**	**77**

Notes:
(1) Source: "*Trip Generation, 10th Edition, 2017*" by the Institute of Transportation Engineers (ITE)
(2) DU = dwelling unit

Source: LSC Transportation Consultants, Inc. May-20

Add: Reconfigure Tahiti Drive at Marksheffel/Vollmer intersection -- SR Filing 2

Table 4
Sterling Ranch Filing No. 2 and Sterling Ranch Phase 2
Roadway Improvements

Item	Improvement	Improvement Description	Timing	Responsibility[1]
1	Roadway Segment	Construct Sterling Ranch Road as an Urban Non-Residential Collector from Marksheffel Road to Dines Boulevard	With Sterling Ranch Fil No. 2 Or Sterling Ranch Phase 2	Sterling Ranch
2	Roadway Segment	Construct Sterling Ranch Road as an Urban Non-Residential Collector from Dines Boulevard to Briargate Parkway	Long-Term Future	Sterling Ranch
3	Roadway Segment	Construct a half-section of Marksheffel Road between Vollmer Road and Sterling Ranch Road	Sterling Ranch Fil No. 2	Sterling Ranch
4	Roadway Segment	Construct Marksheffel Road as an Urban Principal Arterial to City of Colorado Springs standards in 107' of right-of-way between Vollmer Road and Sterling Ranch Road	Intermediate Term (With construction of Marksheffel between Woodmen Rd and Vollmer Rd)	Sterling Ranch
5	Roadway Segment	Construct Marksheffel Road as an Urban Principal Arterial to City of Colorado Springs standards in 107' of right-of-way between Sterling Ranch Road and the south boundary of the Sterling Ranch Master Plan Area	Intermediate Term	Sterling Ranch
6	Roadway Segment	Construct Marksheffel Road between the south boundary of the Sterling Ranch Master Plan Area and Woodmen Road	Intermediate Term	Others
7	Roadway Segment	Construct Marksheffel Road between Black Forest Road and Vollmer Road	Long-Term Future	Others
8	Auxiliary Lane	Construct northbound right-turn deceleration lane on Vollmer approaching Marksheffel Road	Road improvements to Vollmer Road including auxiliary turn lanes as discussed in our October 2, 2017 transportation memorandum are required as part of the Subdivision Improvements Agreement (SIA) for Homestead at Sterling Ranch Filing No. 1 and Branding Iron at Sterling Ranch Filing No. 1. The applicant will be constructing an interim cross section for Vollmer Road between Marksheffel Road and Briargate Parkway no later than May 30, 2021. The interim road improvement would widen the roadway to the east side. There would continue to be one through lane in each direction, but the interim road improvements would allow for southbound left-turn and northbound right-turn lanes at the Briargate/Vollmer and Alzada/Vollmer intersections.	Sterling Ranch
9	Auxiliary Lane	Construct southbound left-turn lane on Vollmer approaching Marksheffel Road		
10	Auxiliary Lane	Construct northbound right-turn deceleration lane on Vollmer approaching Alzada Dr		
11	Auxiliary Lane	Construct southbound left-turn lane on Vollmer approaching Alzada Drive		
12	Auxiliary Lane	Construct northeastbound left-turn lane Sterling Ranch Road approaching Bynum Drive. This lane should be 255' feet long plus a 160' taper.	Sterling Ranch Phase 2	Sterling Ranch
13	Auxiliary Lane	Construct northeastbound left-turn lane Sterling Ranch Road approaching School House Drive. This lane should be 305' feet long plus a 160' taper.	Sterling Ranch Phase 2	Sterling Ranch
14	Auxiliary Lane	Construct northeastbound left-turn lane Sterling Ranch Road approaching Dines Boulevard. This lane should be 305' feet long plus a 160' taper.	Sterling Ranch Phase 2	Sterling Ranch
15	Auxiliary Lane	Construct northeastbound right-turn deceleration lane Sterling Ranch Road approaching School House Drive. This lane should be 155' feet long plus a 160' taper.	Sterling Ranch Phase 2	Sterling Ranch

Source: LSC Transportation Consultants, Inc. May 2020

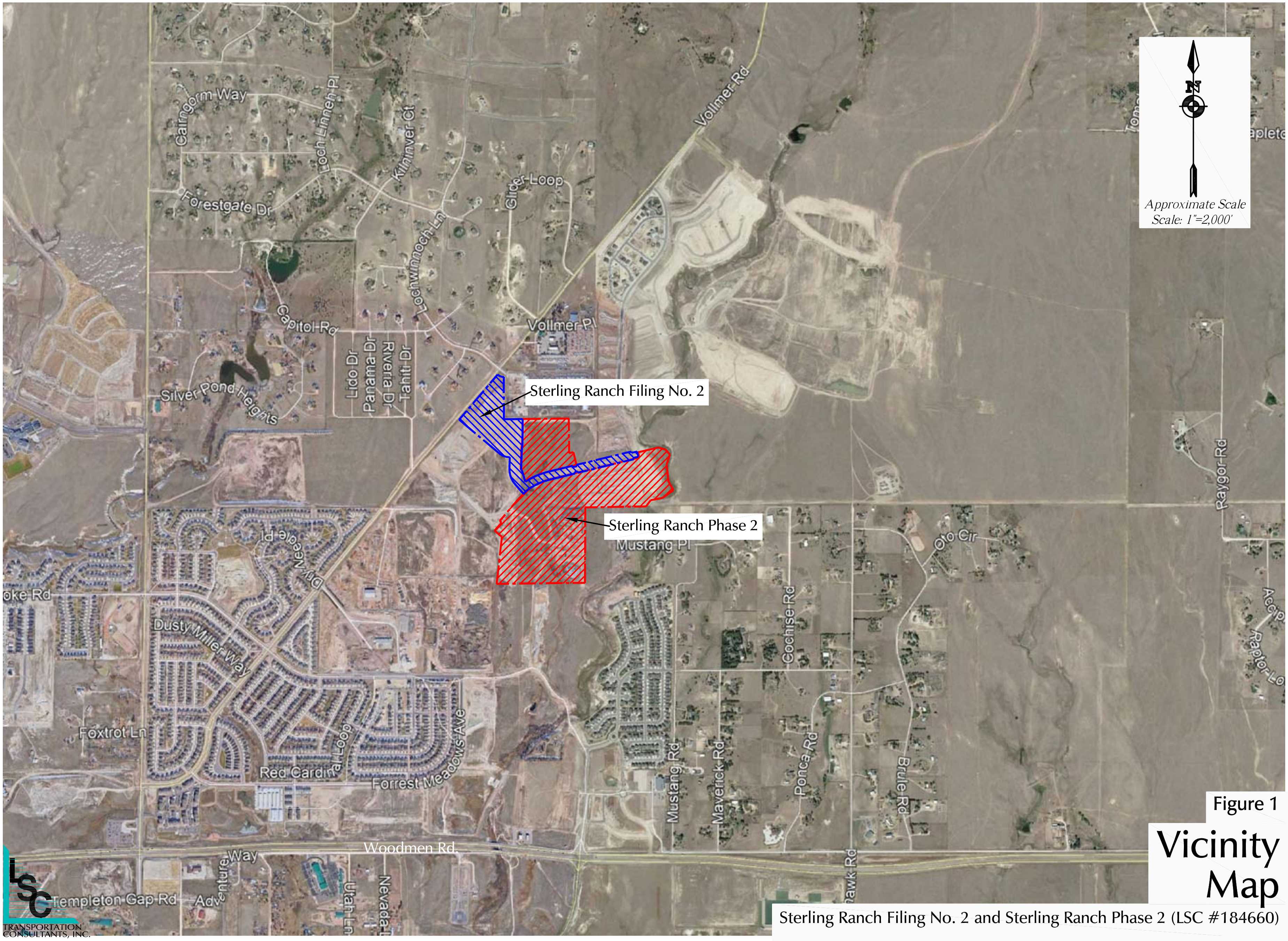
Intermediate Term

Address the "trigger" for this

Left out from Alzada to Vollmer prohibited

This needs to be clarified as to what was approved on Filing 1 CDs and what remains to be done.

Address SW LT from Sterling Ranch Road to Marksheffel Road.



Sterling Ranch Filing No. 2
Sterling Ranch Phase 2
Approximate Scale
Scale: 1"=2,000'
Vollmer Rd
Vollmer Pl
Cairngorm Way
Loch Linnen Pl
Kinnnver Ct
Glider Loop
Forestgate Dr
Lochwinnoch Ln
Capitol Rd
Lido Dr
Panama Dr
Riveria Dr
Tahiti Dr
Silver Pond Heights
Mustang Pl
Oto Cir
Raygor Rd
Dusty Miller Way
Foxtrot Ln
Red Cardinal Loop
Forrest Meadows Ave
Cochise Rd
Mustang Rd
Maverick Rd
Ponca Rd
Brule Rd
Woodmen Rd.
Templeton Gap Rd
Utah Ln
TRANSPORTATION CONSULTANTS, INC.

Figure 1

Vicinity Map

Sterling Ranch Filing No. 2 and Sterling Ranch Phase 2 (LSC #184660)

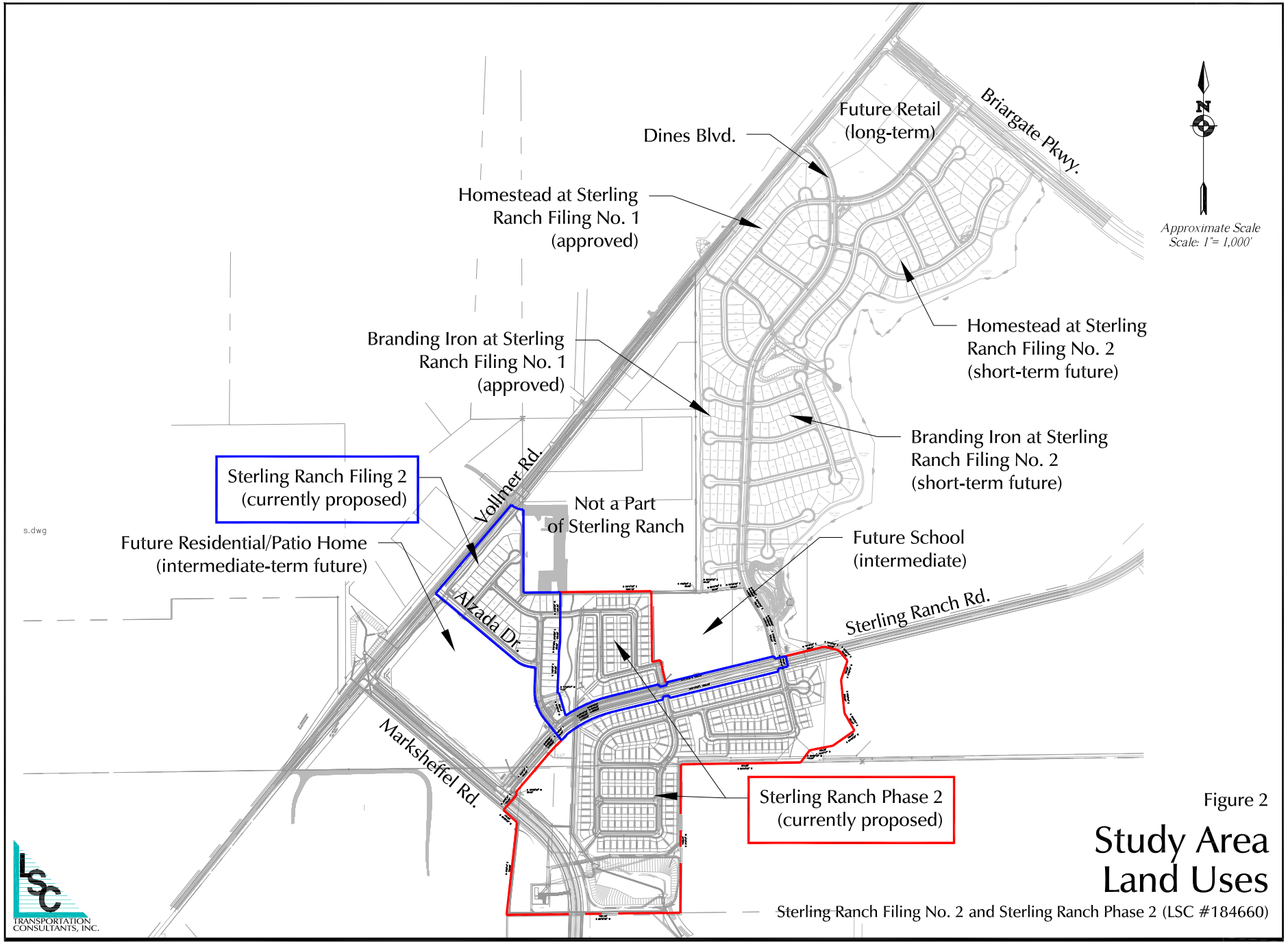


Figure 2

Study Area Land Uses

Sterling Ranch Filing No. 2 and Sterling Ranch Phase 2 (LSC #184660)

Highlight limits of analysis (road segments and intersections)

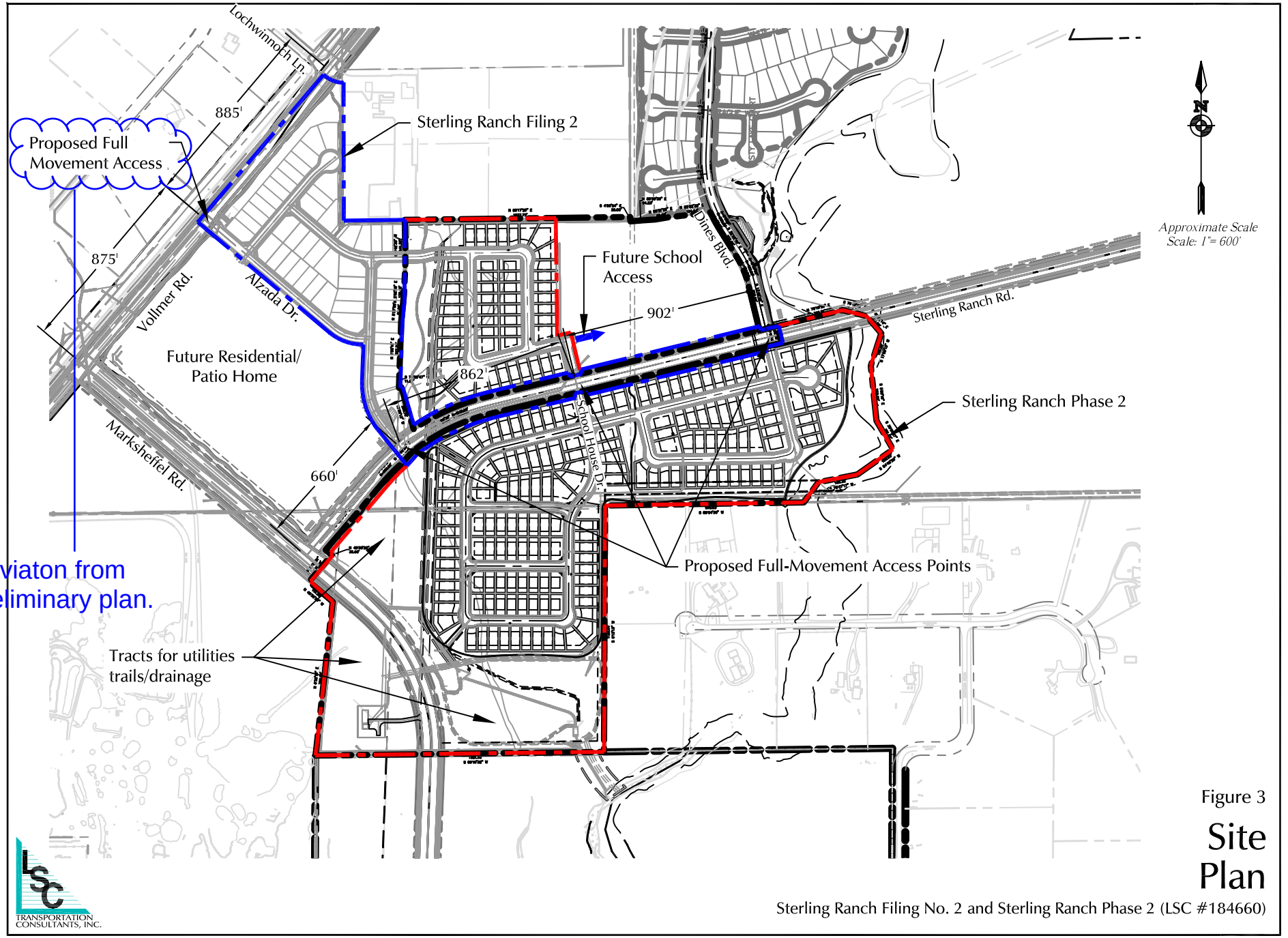


Figure 3

Site Plan

Sterling Ranch Filing No. 2 and Sterling Ranch Phase 2 (LSC #184660)

LSC TRANSPORTATION CONSULTANTS, INC.

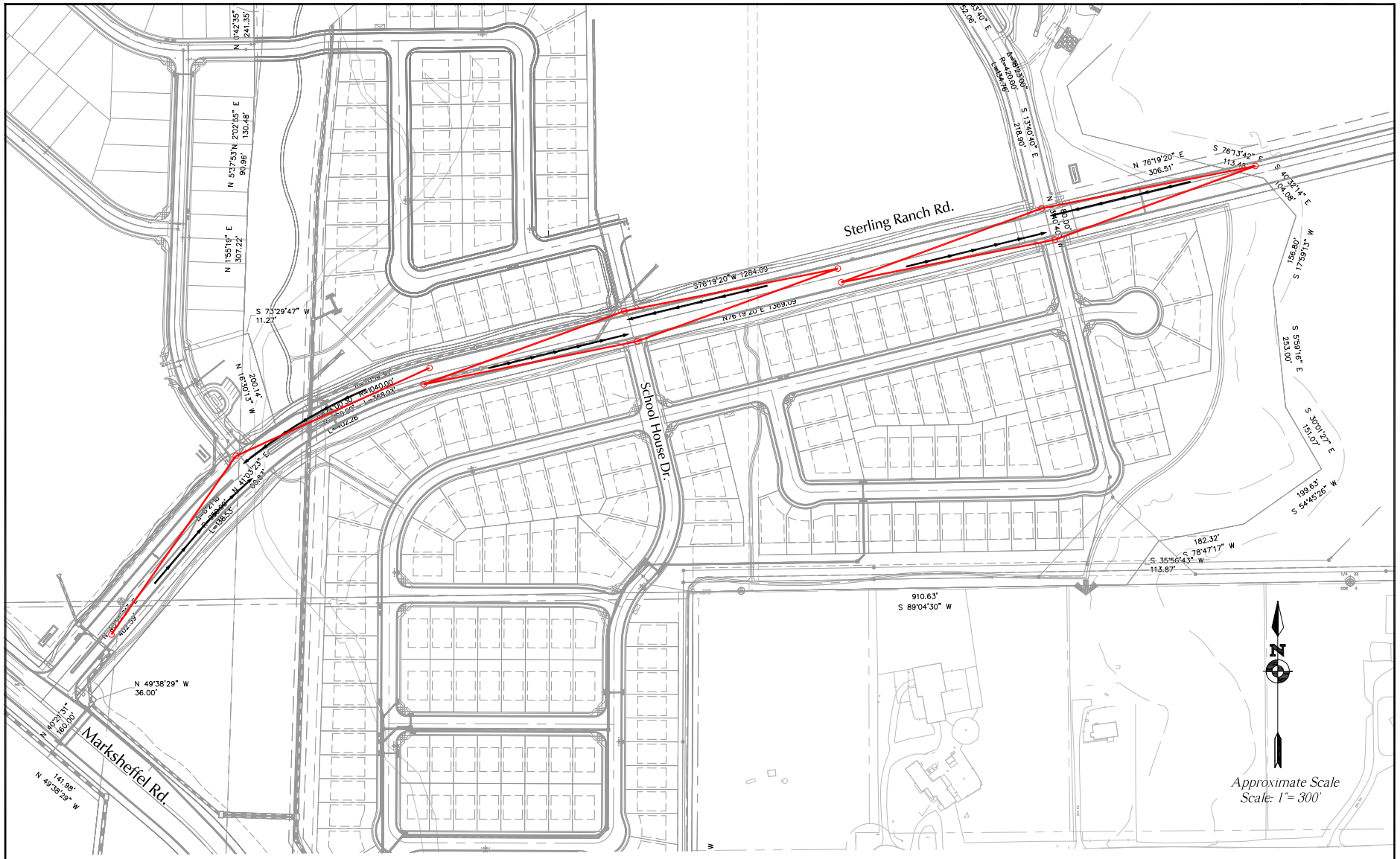


Figure 4

LEGEND:

= ECM Required Intersection Sight Distance (445' from Table 2-21 Based on a Design Speed of 40mph)

= ECM Required Stopping Sight Distance (305' from Table 2-17 Based on a Design Speed of 40mph)

TRANSPORTATION CONSULTANTS, INC.

Sight Distance Analysis

Sterling Ranch Filing No. 2 and Sterling Ranch Phase 2 (LSC #184660)

Also provide for Marksheffel and Vollmer intersections

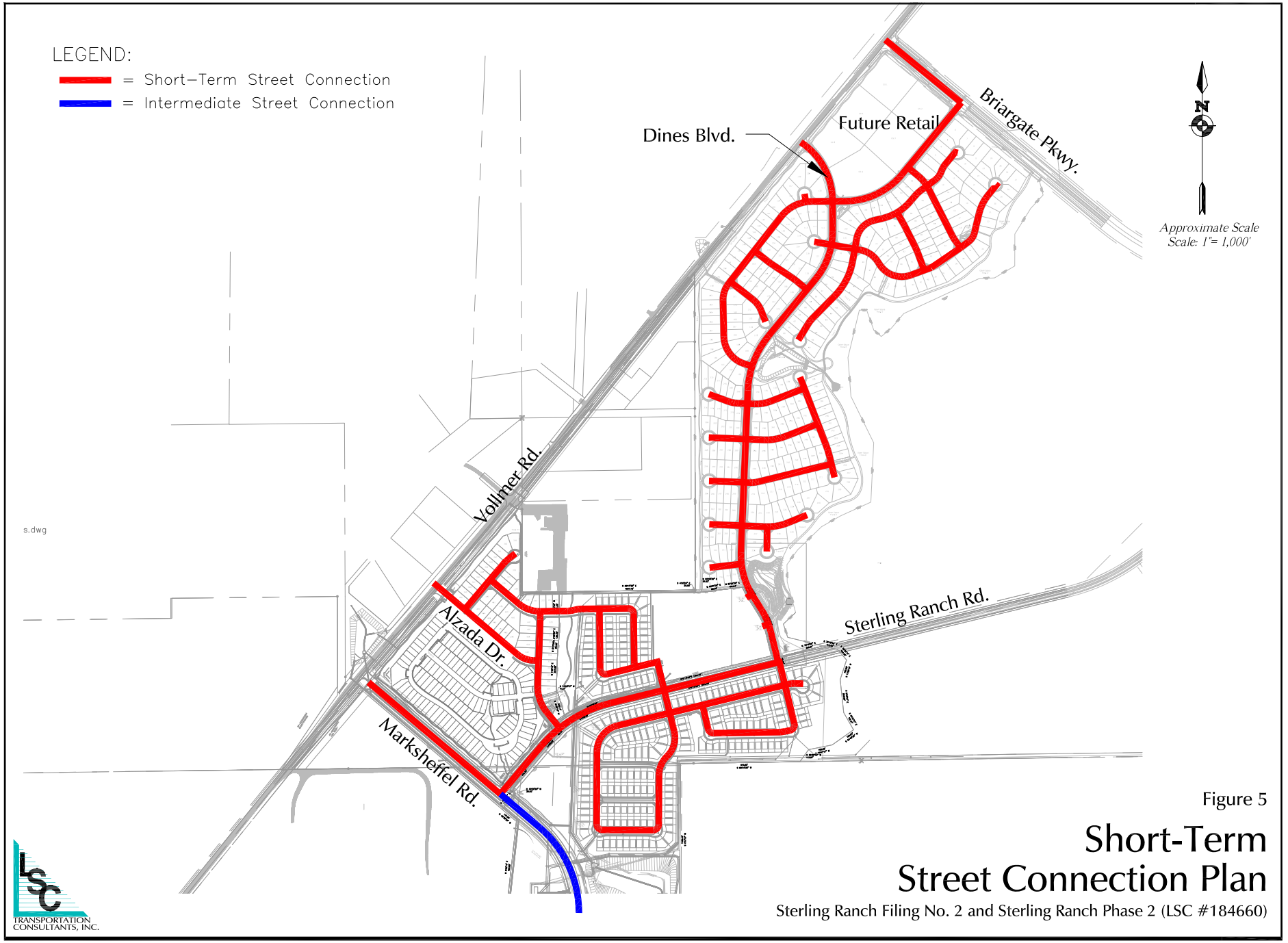
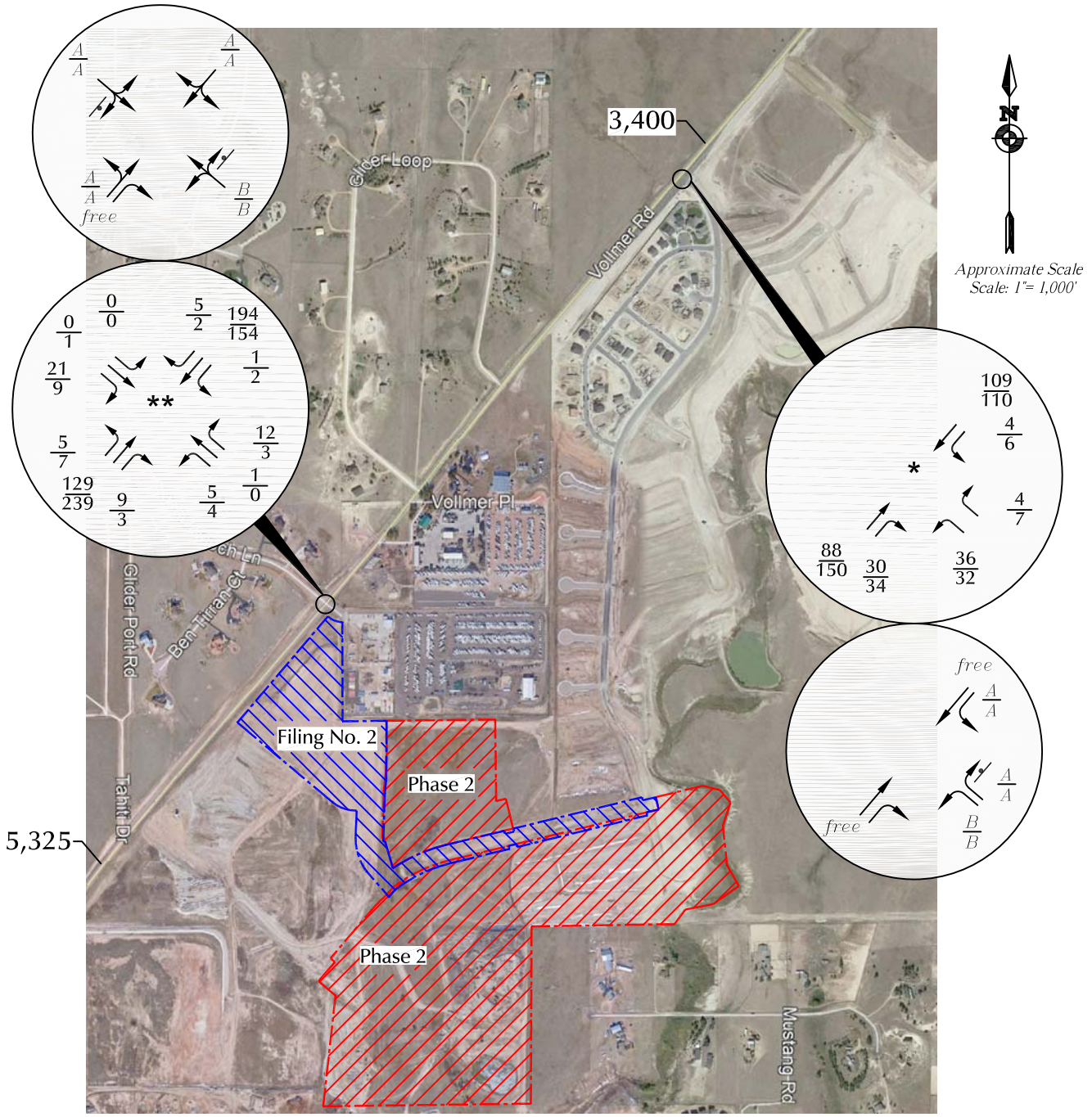


Figure 5

Short-Term Street Connection Plan

Sterling Ranch Filing No. 2 and Sterling Ranch Phase 2 (LSC #184660)

LSC TRANSPORTATION CONSULTANTS, INC.



* Based on counts by LSC May 2020(Note: Counts may be impacted by restrictions due to the Covid 19 pandemic).

** Based on counts conducted by LSC Jan 2014 through traffic volumes on Vollmer Rd. have been adjusted based on more recent counts at Dines Blvd.

LEGEND:

⊦ = Stop Sign

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

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

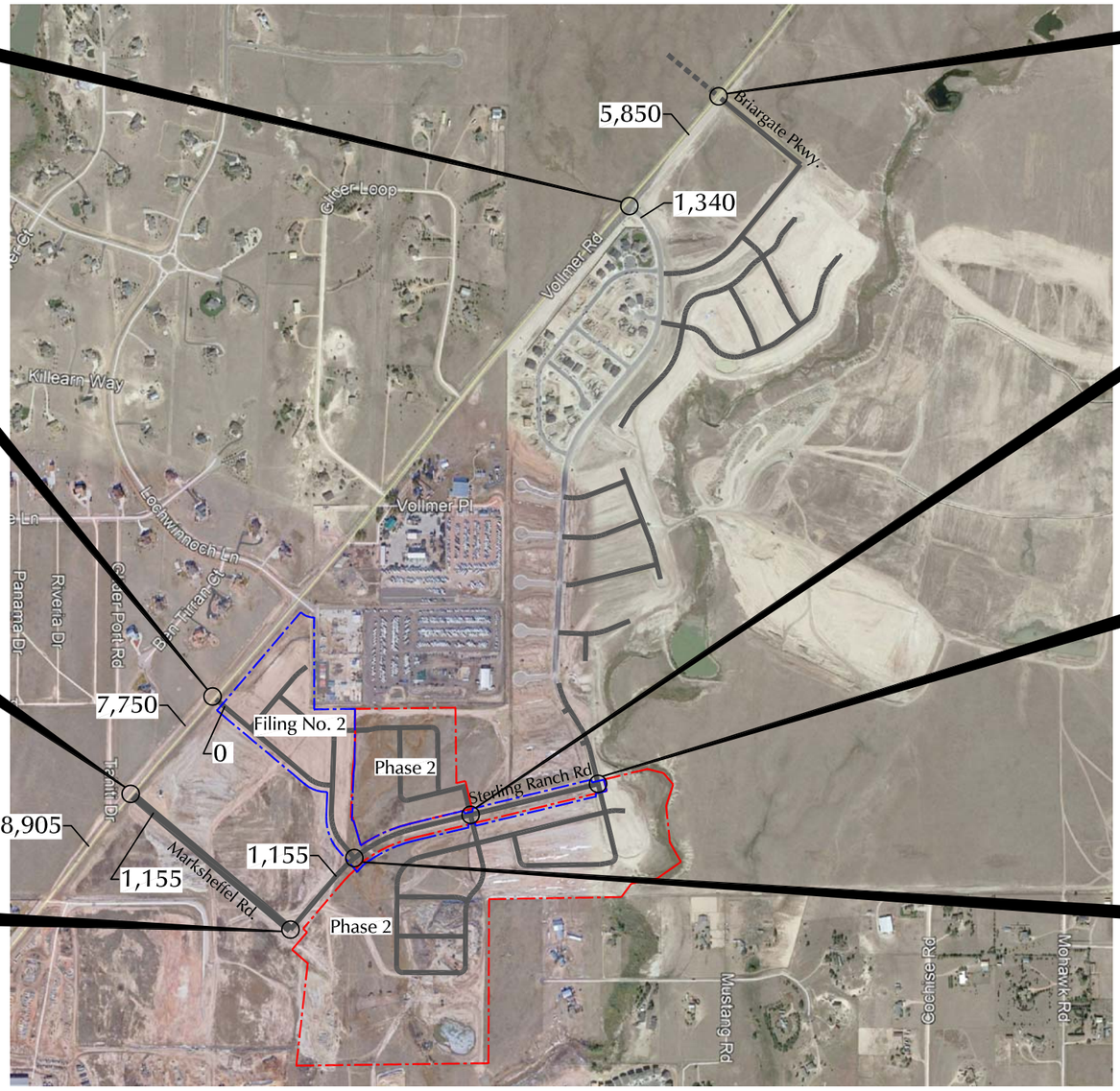
X,XXX = Average Daily Traffic (vehicles per day)

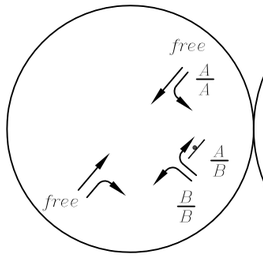
Figure 6

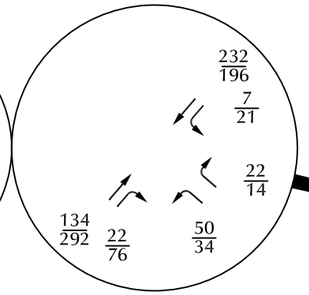
Existing Traffic, Lane Geometry, Traffic Control and Level of Service

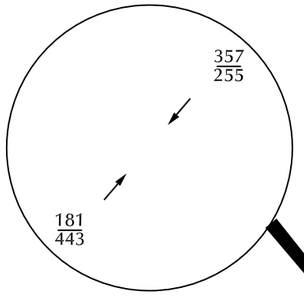
Sterling Ranch Filing No. 2 and Sterling Ranch Phase 2 (LSC #184660)

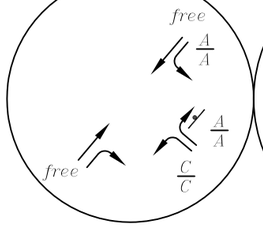
LSC TRANSPORTATION CONSULTANTS, INC.

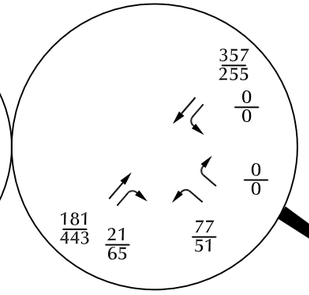


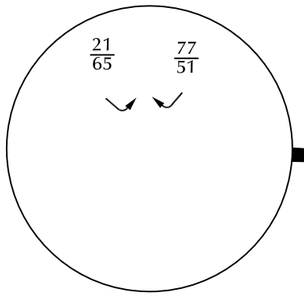


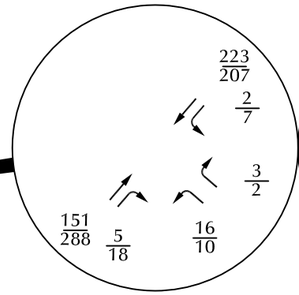


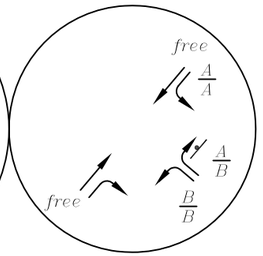


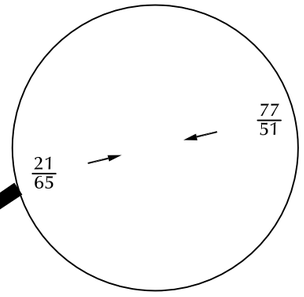


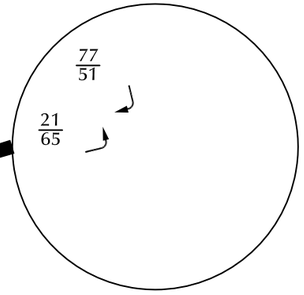


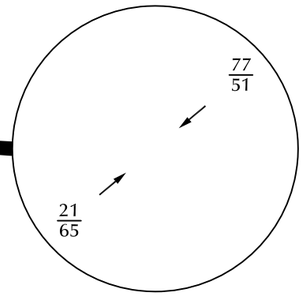












LEGEND:

= Stop Sign

XX/XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

A/B = AM Individual Movement Peak-Hour Level of Service / PM Individual Movement Peak-Hour Level of Service

X,XXX= Average Daily Traffic (vehicles per day)

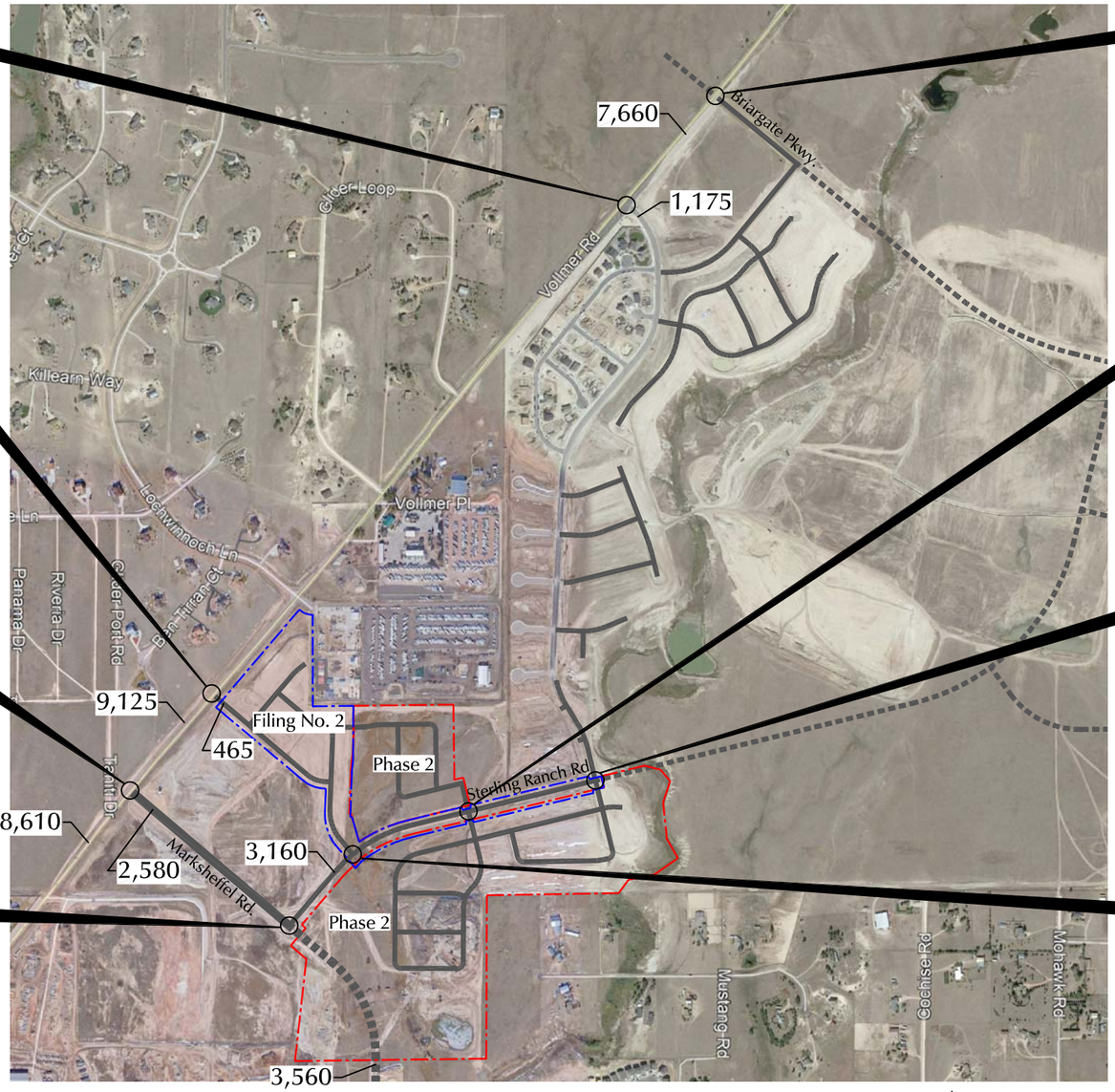
TRANSPORTATION CONSULTANTS, INC.

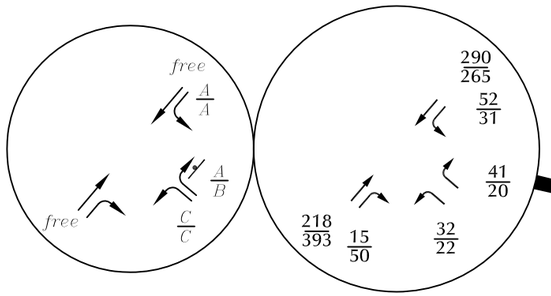
Approximate Scale
Scale: 1"= 1,000'

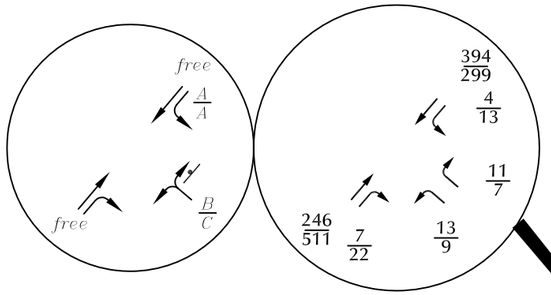
Figure 7

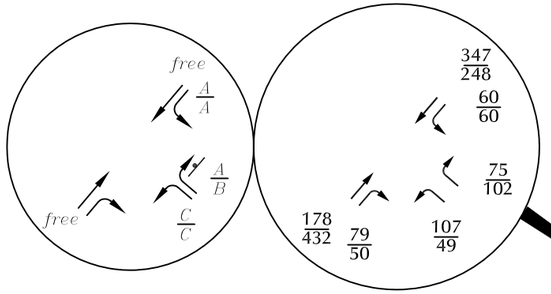
Short Term Background Traffic, Lane Geometry, Traffic Control and Level of Service

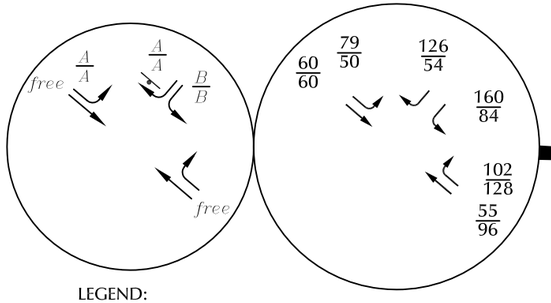
Sterling Ranch Filing No. 2 and Sterling Ranch Phase 2 (LSC #184660)

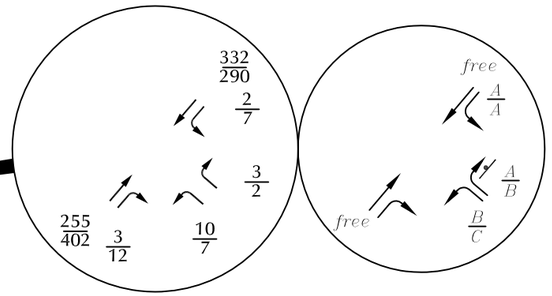


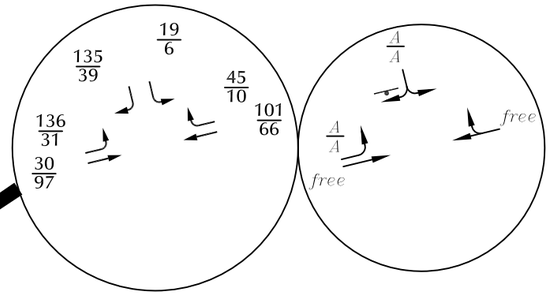


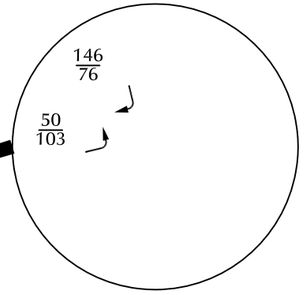


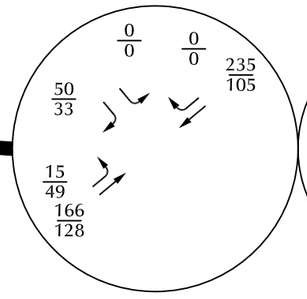


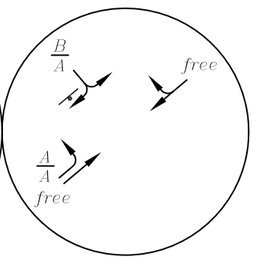












LEGEND:

= Stop Sign

= Traffic Signal

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

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

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

X,XXX= Average Daily Traffic (vehicles per day)

TRANSPORTATION CONSULTANTS, INC.

N

Approximate Scale
Scale: 1"= 1,000'

Figure 8

Intermediate Term Background Traffic, Lane Geometry, Traffic Control and Level of Service

Sterling Ranch Filing No. 2 and Sterling Ranch Phase 2 (LSC #184660)

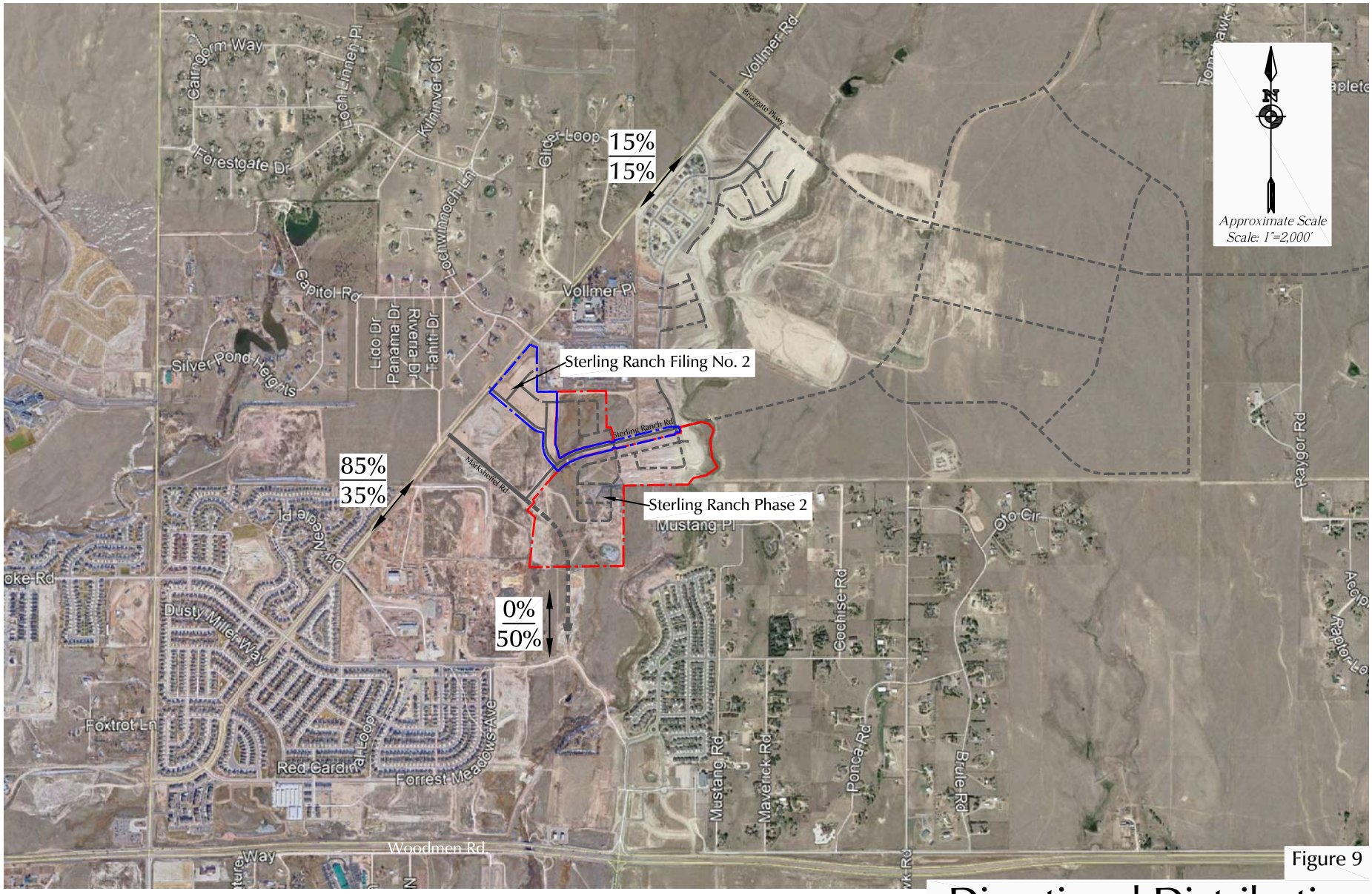


Figure 9

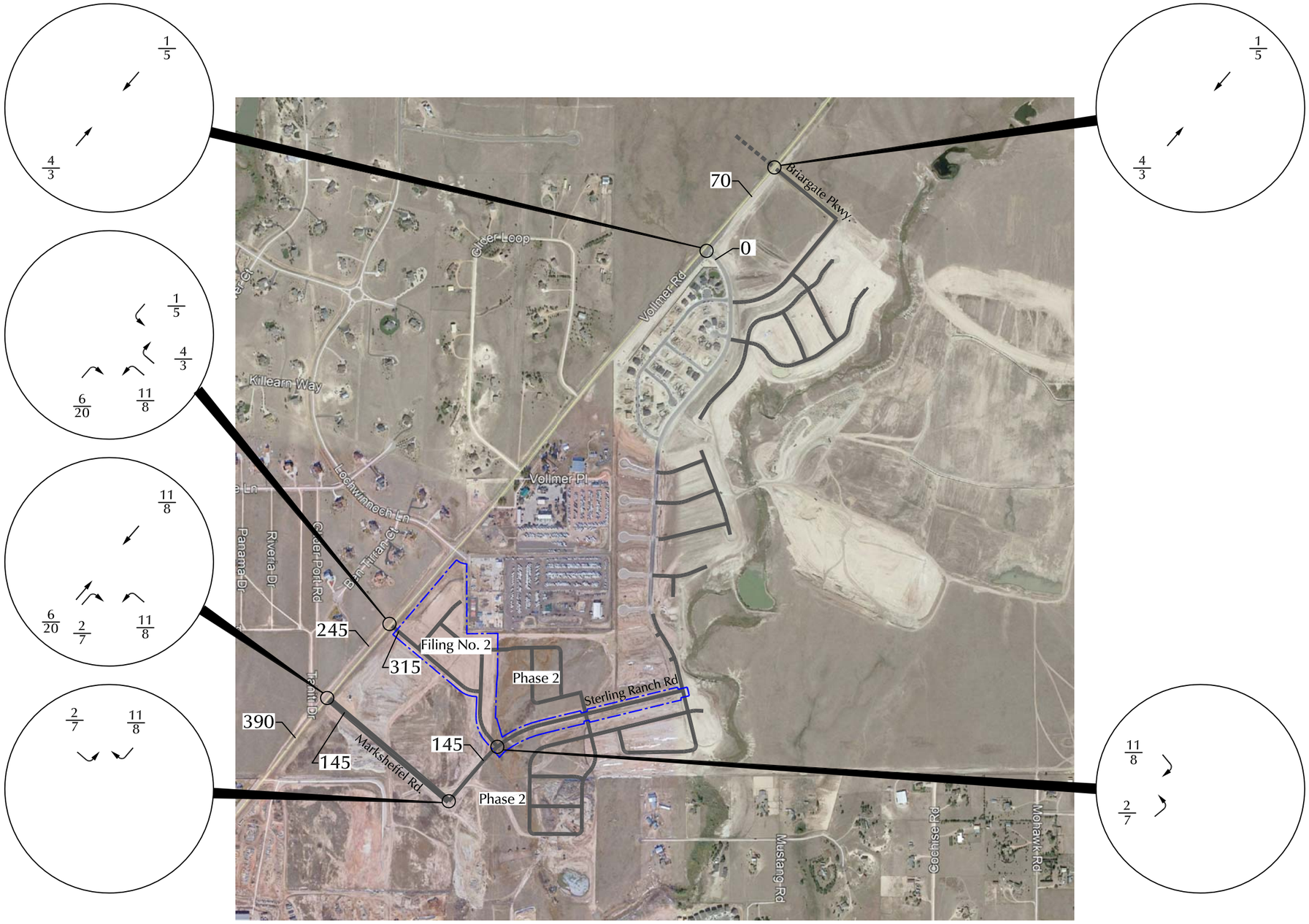
Directional Distribution of Site-Generated Traffic

Sterling Ranch Filing No. 2 and Sterling Ranch Phase 2 (LSC #184660)

LSC TRANSPORTATION CONSULTANTS, INC.

LEGEND:

$\frac{XX\%}{XX\%}$ = Short-Term Percent Directional Distribution / Intermediate-Term Percent Directional Distribution



LEGEND:

XX / XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

X,XXX= Average Daily Traffic (vehicles per day)

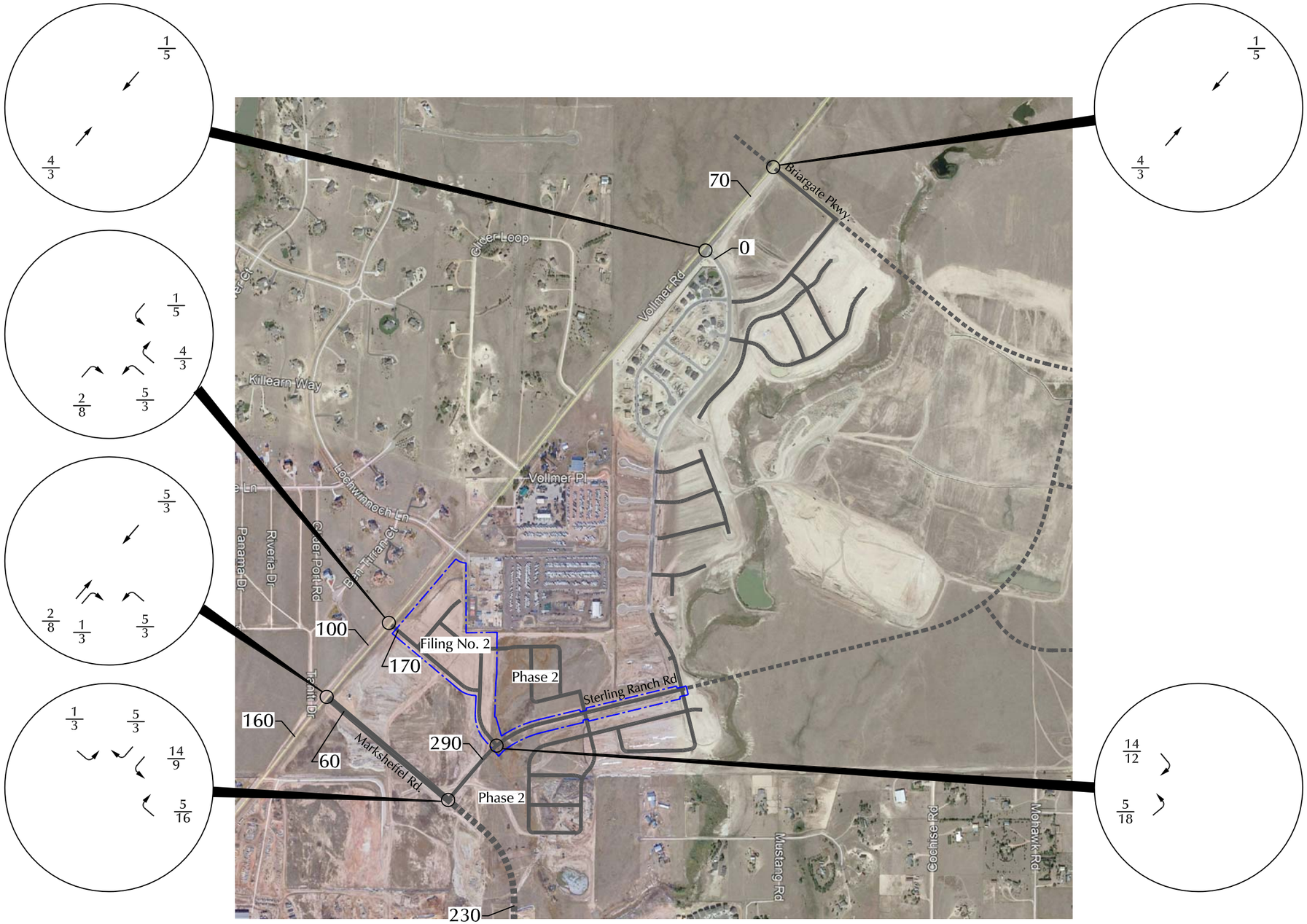
TRANSPORTATION CONSULTANTS, INC.

Approximate Scale
Scale: 1"= 1,000'

Figure 10

Short Term Assignment of Sterling Ranch Filing No. 2 Generated Traffic

Sterling Ranch Filing No. 2 and Sterling Ranch Phase 2 (LSC #184660)



LEGEND:

XX / XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

X,XXX= Average Daily Traffic (vehicles per day)

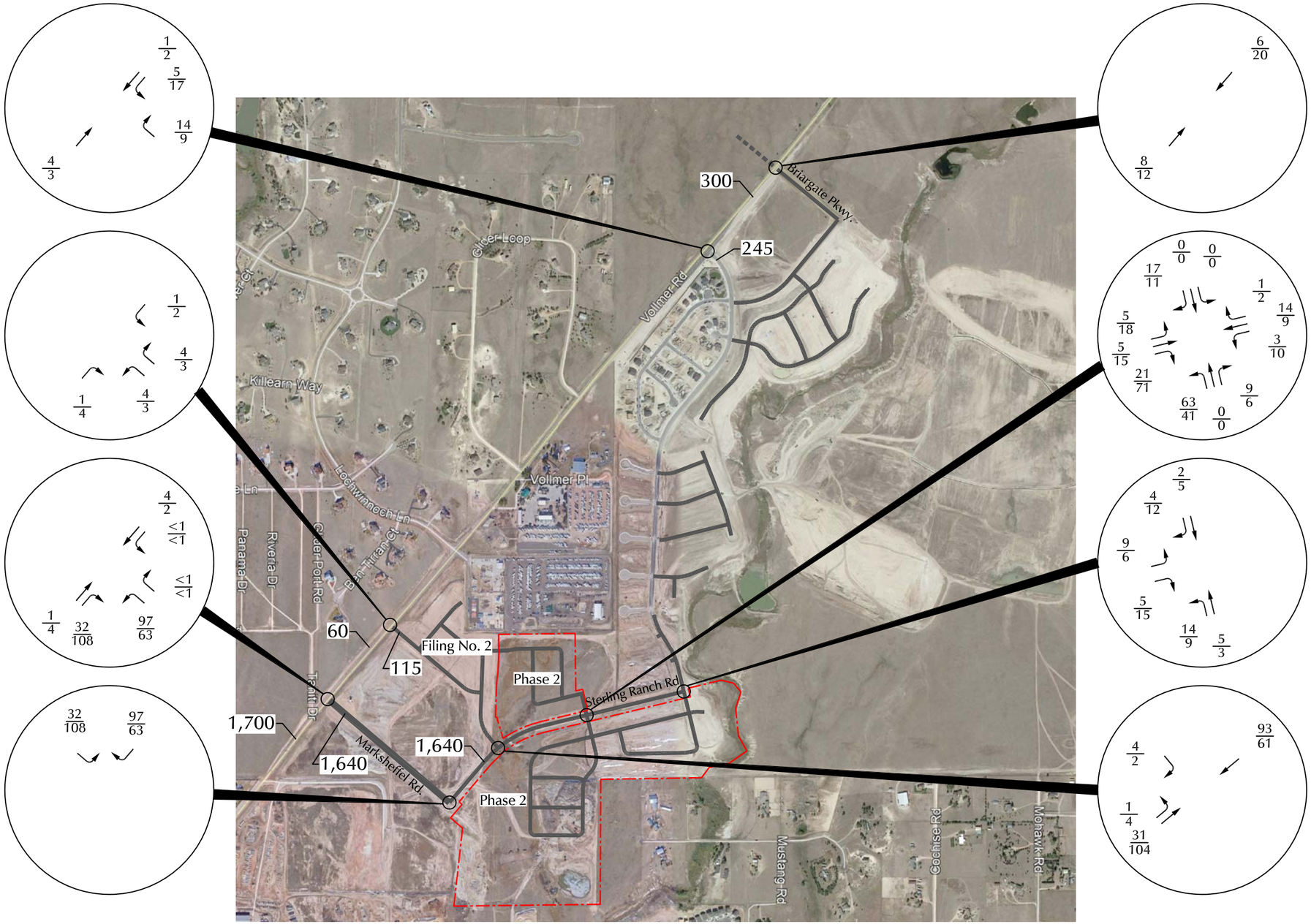
TRANSPORTATION CONSULTANTS, INC.

Approximate Scale
Scale: 1"= 1,000'

Figure 11

Intermediate Term Assignment of Sterling Ranch Filing No. 2 Generated Traffic

Sterling Ranch Filing No. 2 and Sterling Ranch Phase 2 (LSC #184660)



LEGEND:

XX/XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

X,XXX= Average Daily Traffic (vehicles per day)

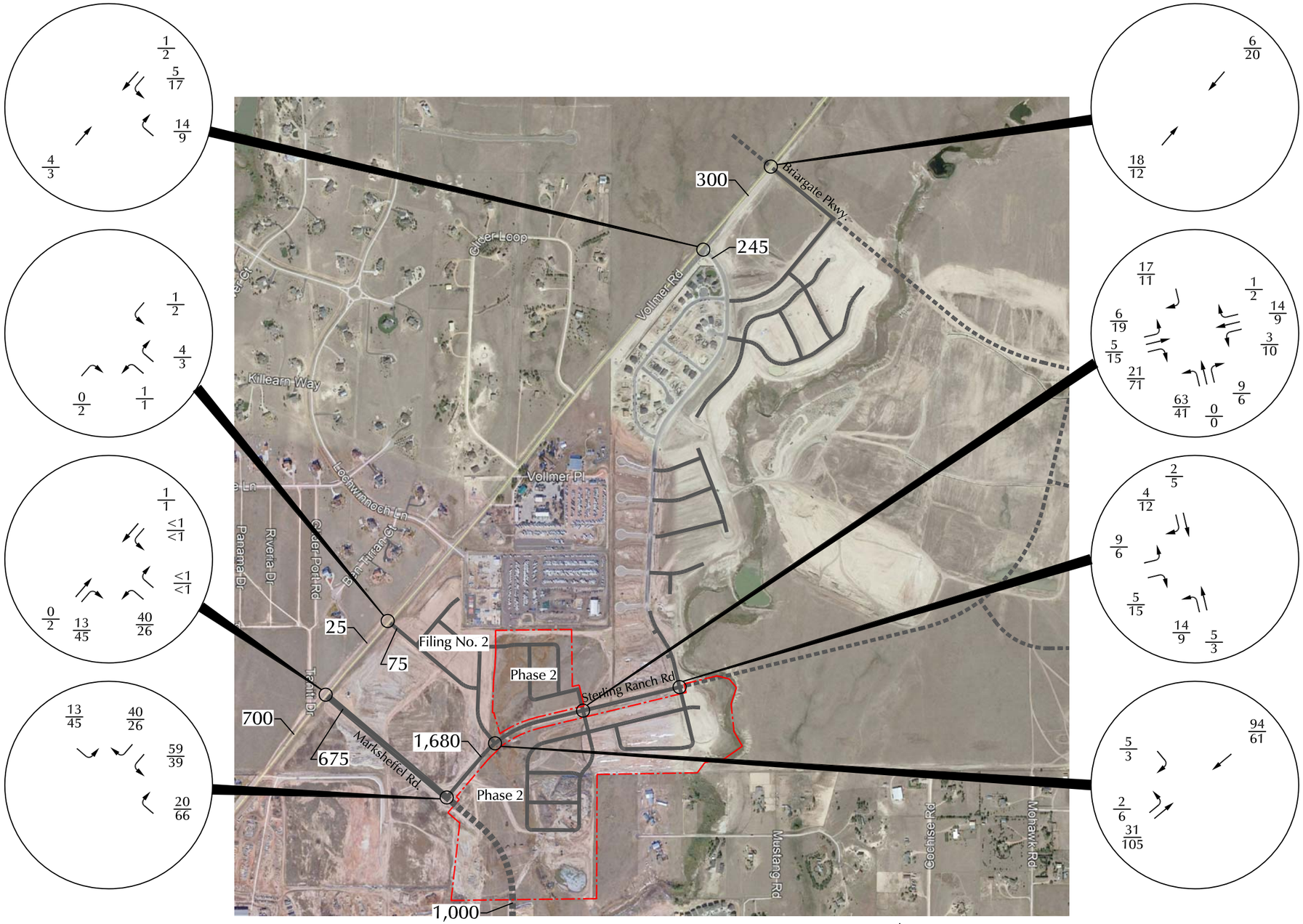
TRANSPORTATION CONSULTANTS, INC.

Approximate Scale
Scale: 1"= 1,000'

Figure 12

Short Term Assignment of Sterling Ranch Phase 2 Generated Traffic

Sterling Ranch Filing No. 2 and Sterling Ranch Phase 2 (LSC #184660)



LEGEND:

XX/XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

X,XXX= Average Daily Traffic (vehicles per day)

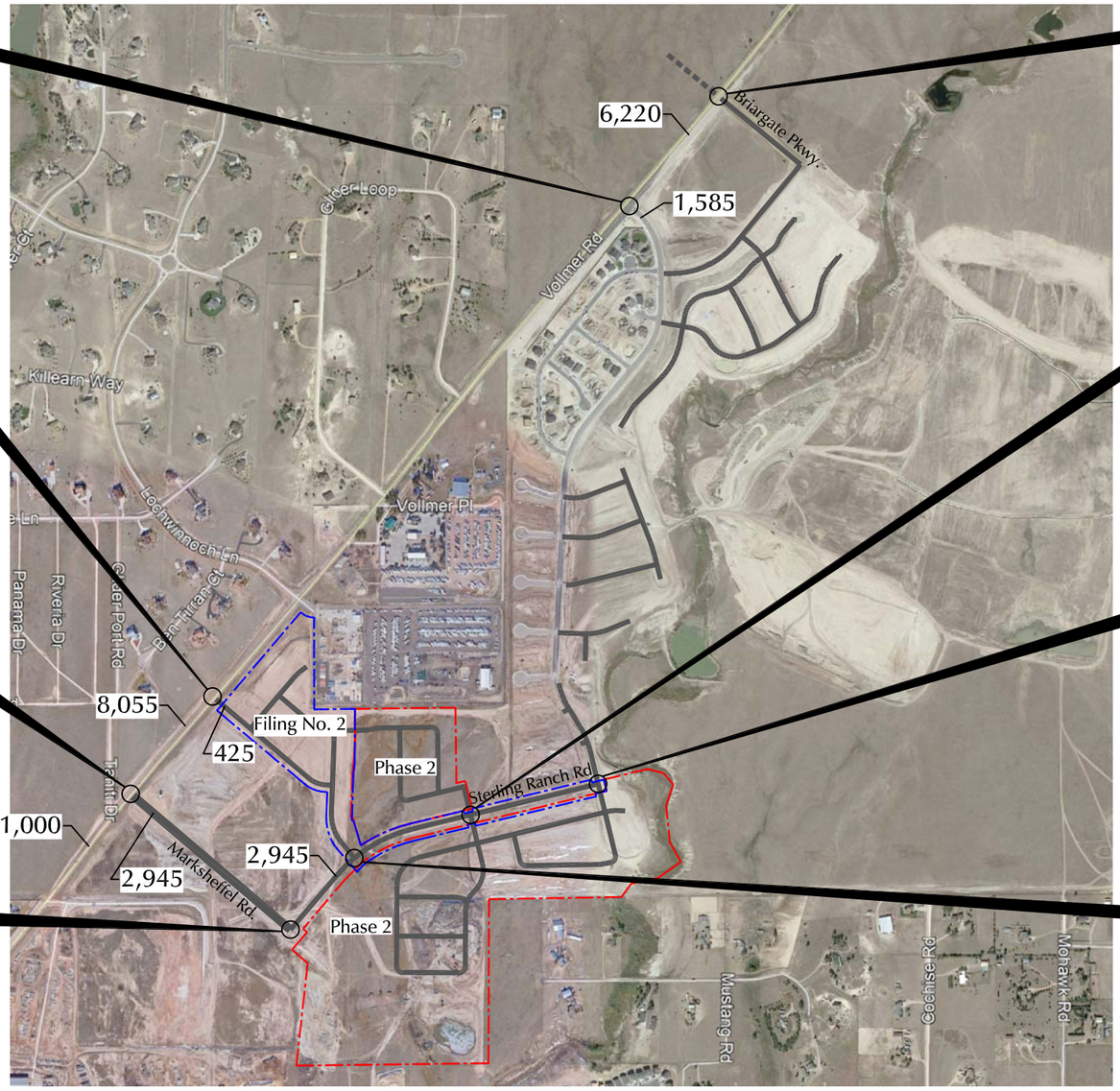
LSC TRANSPORTATION CONSULTANTS, INC.

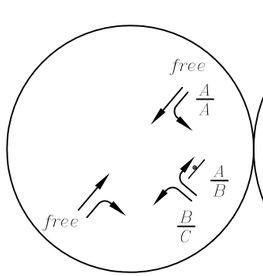
Approximate Scale
Scale: 1"= 1,000'

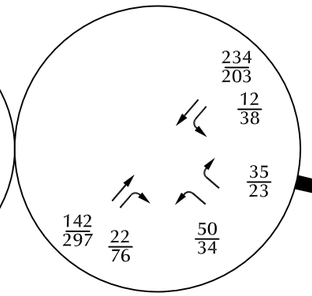
Figure 13

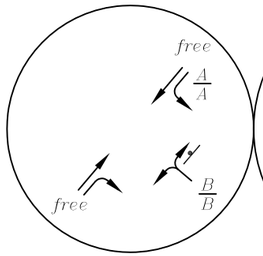
Intermediate Term Assignment of Sterling Ranch Phase 2 Generated Traffic

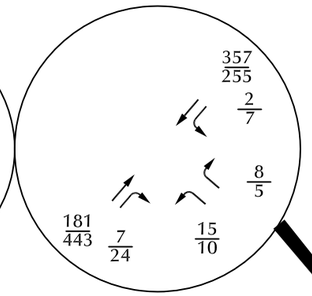
Sterling Ranch Filing No. 2 and Sterling Ranch Phase 2 (LSC #184660)

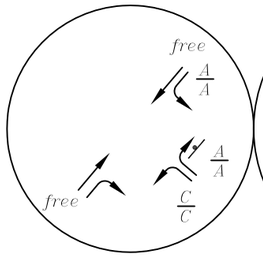


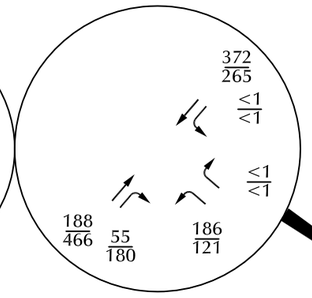


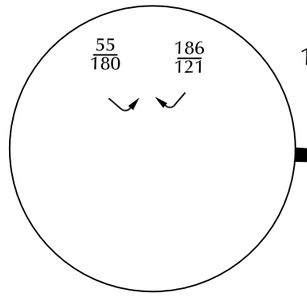


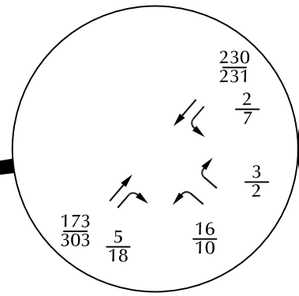


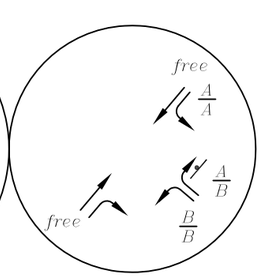


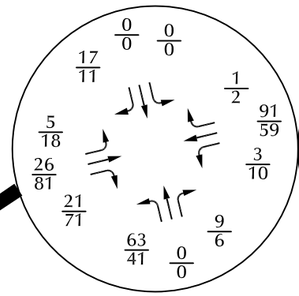


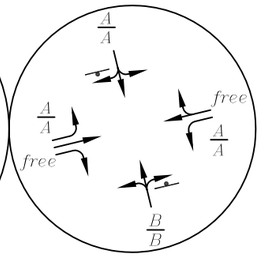


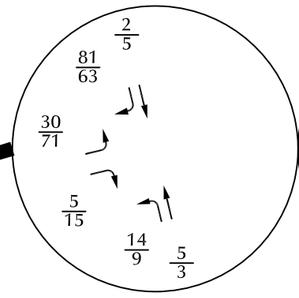


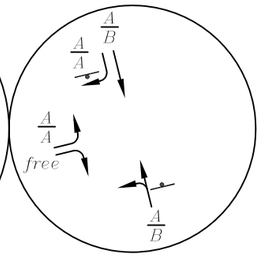


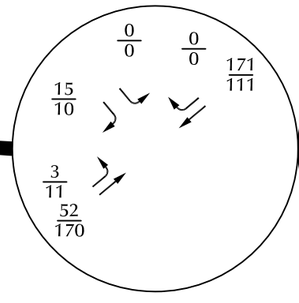


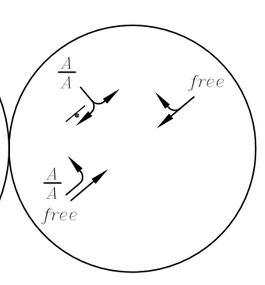












LEGEND:

= Stop Sign

XX/XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

A/B = AM Individual Movement Peak-Hour Level of Service / PM Individual Movement Peak-Hour Level of Service

X,XXX= Average Daily Traffic (vehicles per day)

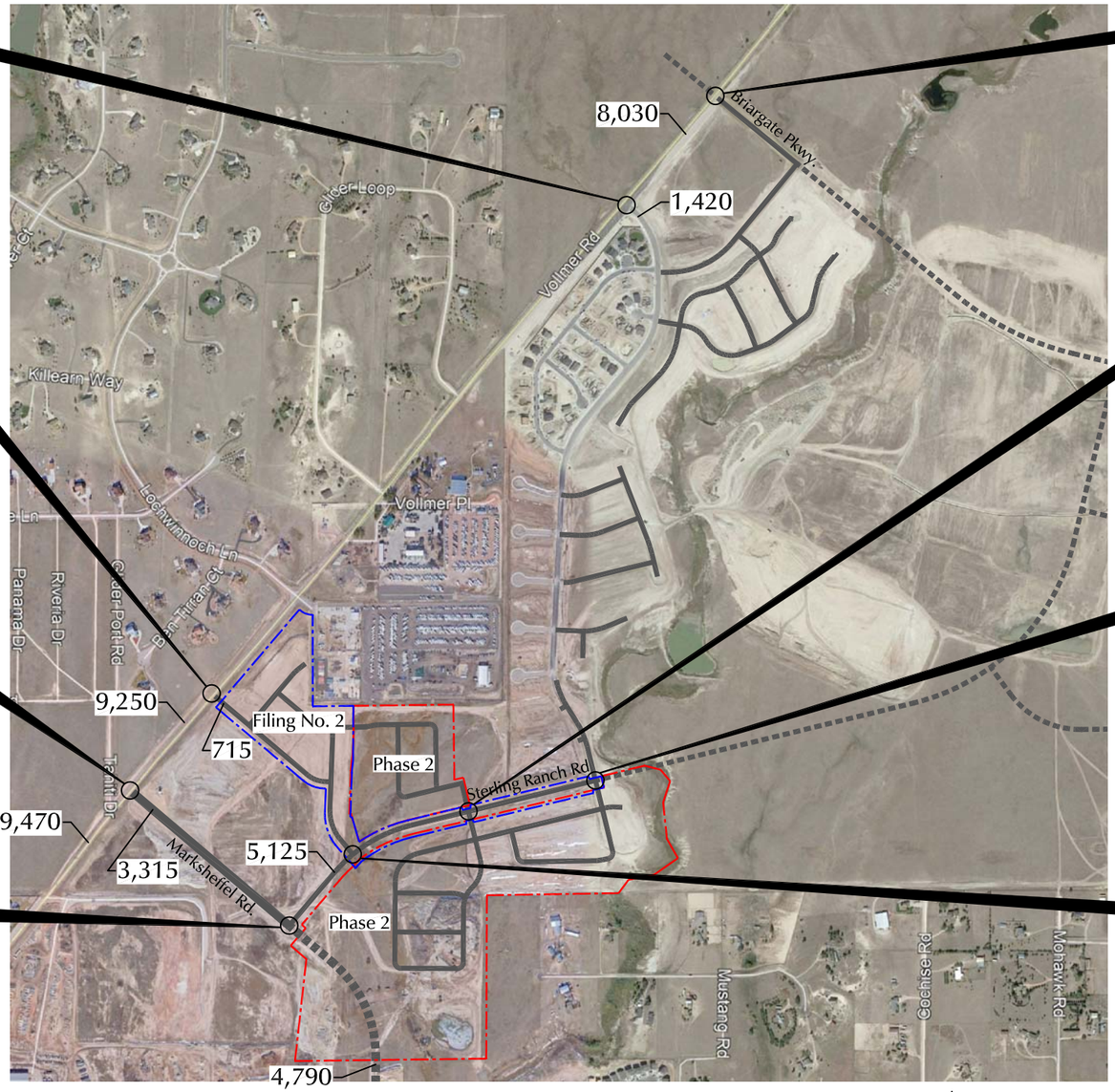
TRANSPORTATION CONSULTANTS, INC.

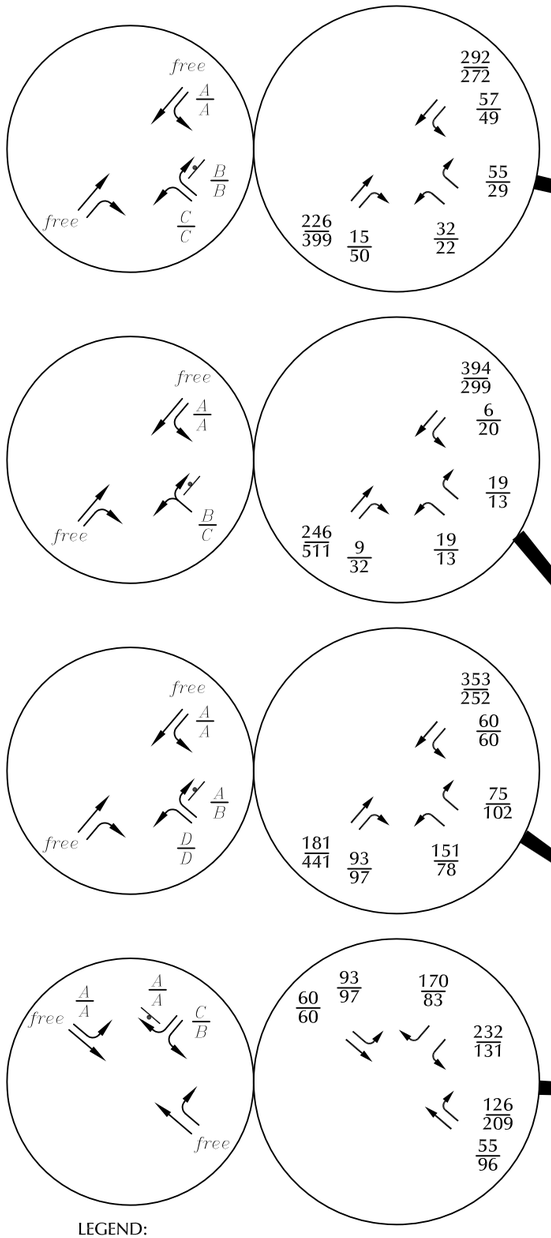
Approximate Scale
Scale: 1"= 1,000'

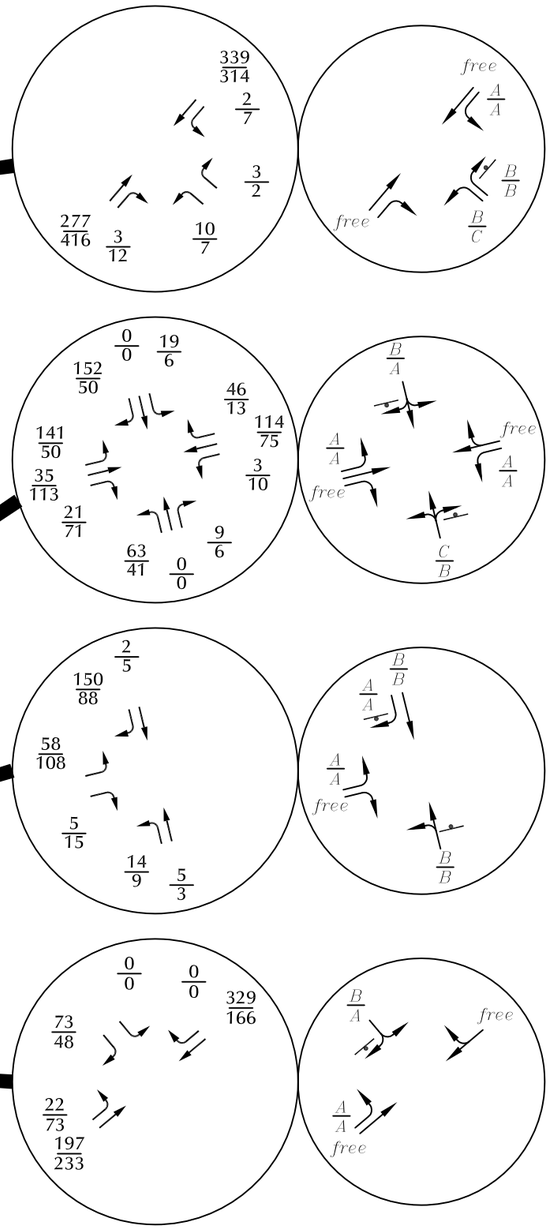
Figure 14

Short Term Total Traffic, Lane Geometry, Traffic Control and Level of Service

Sterling Ranch Filing No. 2 and Sterling Ranch Phase 2 (LSC #184660)







LEGEND:

= Stop Sign

= Traffic Signal

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

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

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

X,XXX= Average Daily Traffic (vehicles per day)

TRANSPORTATION CONSULTANTS, INC.

Approximate Scale
Scale: 1"= 1,000'

Figure 15

Intermediate Term Total Traffic, Lane Geometry, Traffic Control and Level of Service

Sterling Ranch Filing No. 2 and Sterling Ranch Phase 2 (LSC #184660)

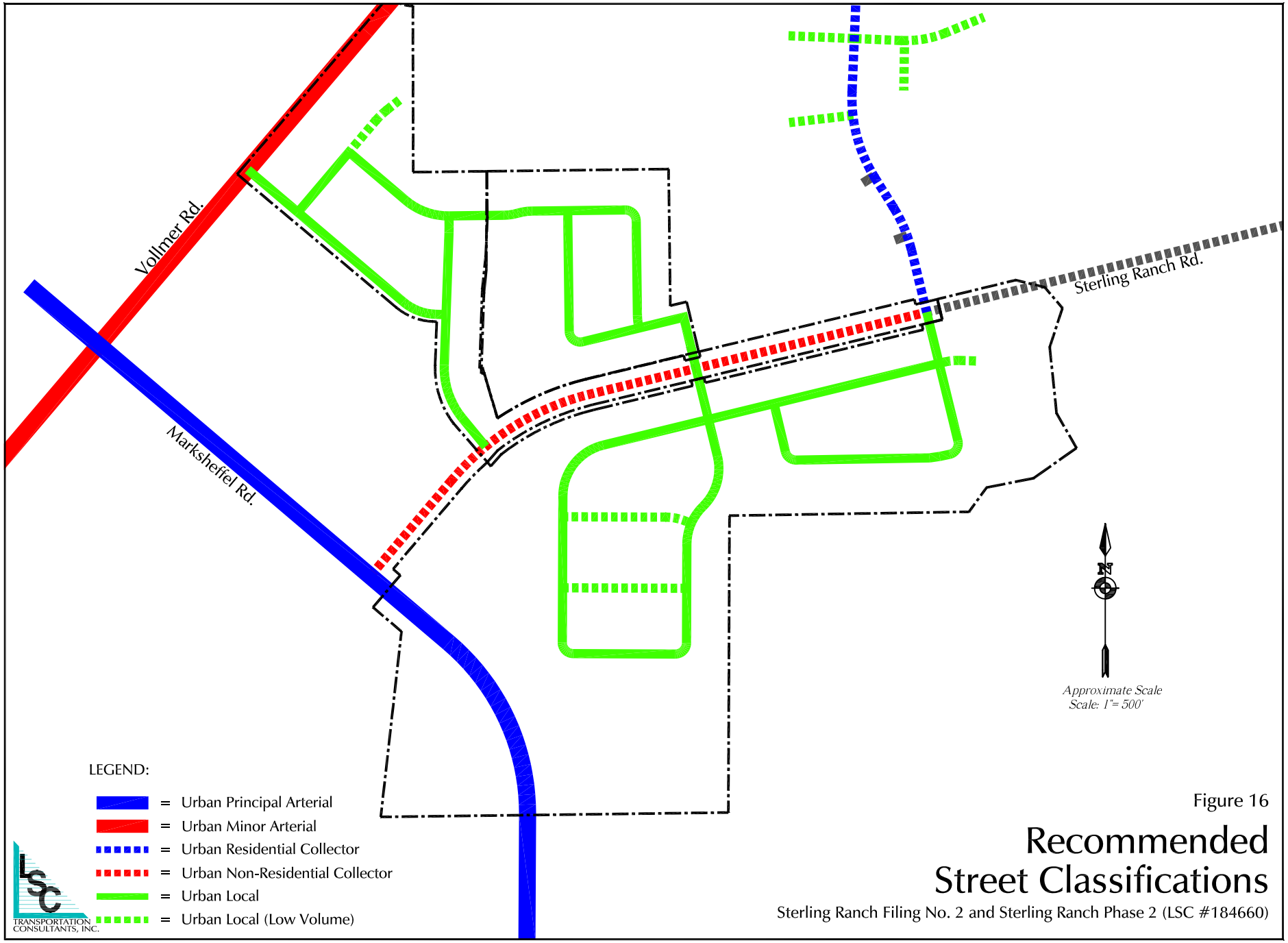
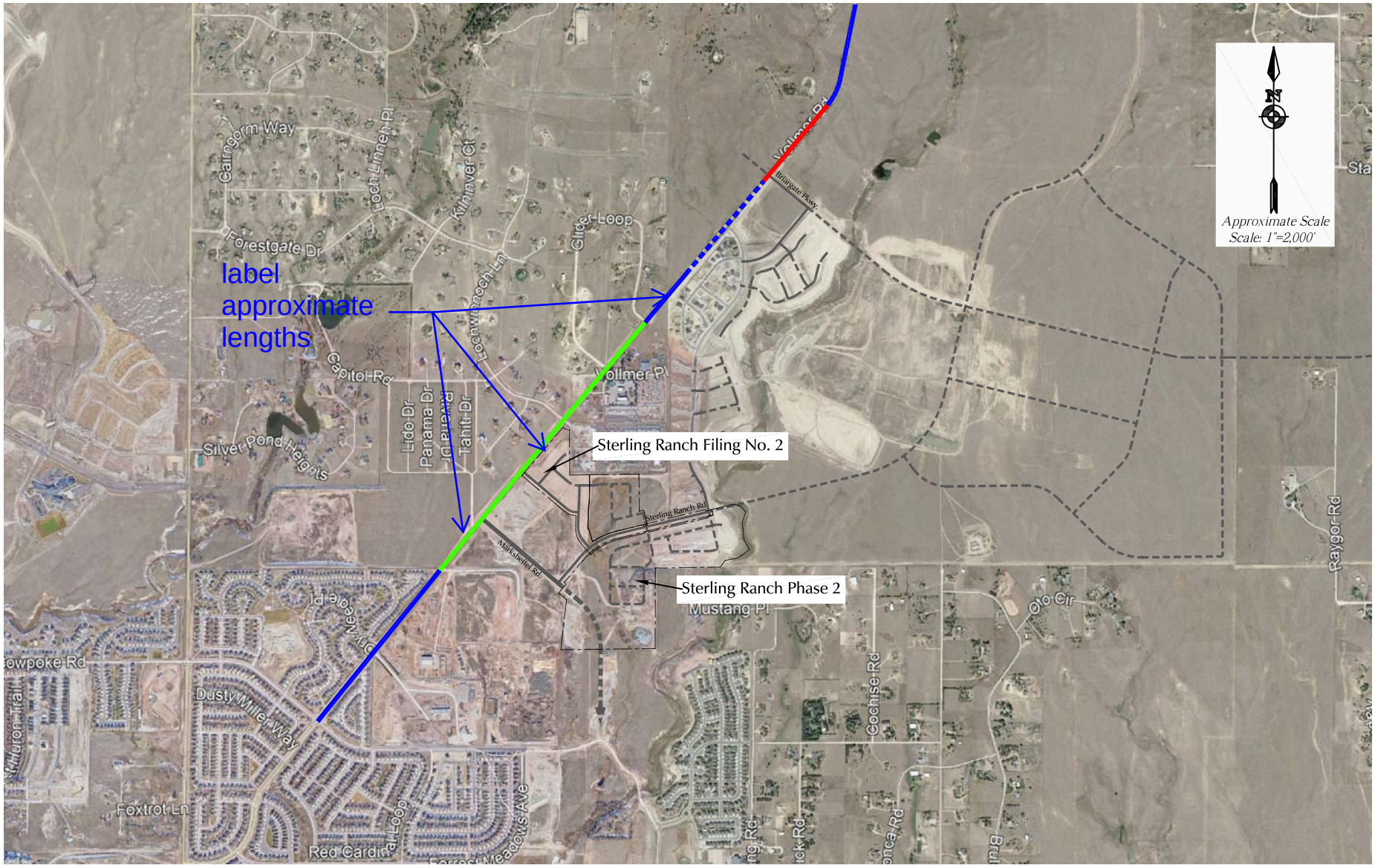


Figure 16

Recommended Street Classifications

Sterling Ranch Filing No. 2 and Sterling Ranch Phase 2 (LSC #184660)



LEGEND:

= Existing Cross Section

= To Be Completed with Homestead at Sterling Ranch Fil 2

= To Be Completed with Sterling Ranch Filing No. 2

= Completed "Interim" Improvements

TRANSPORTATION CONSULTANTS, INC.

Figure 17

Vollmer "Interim" Improvements

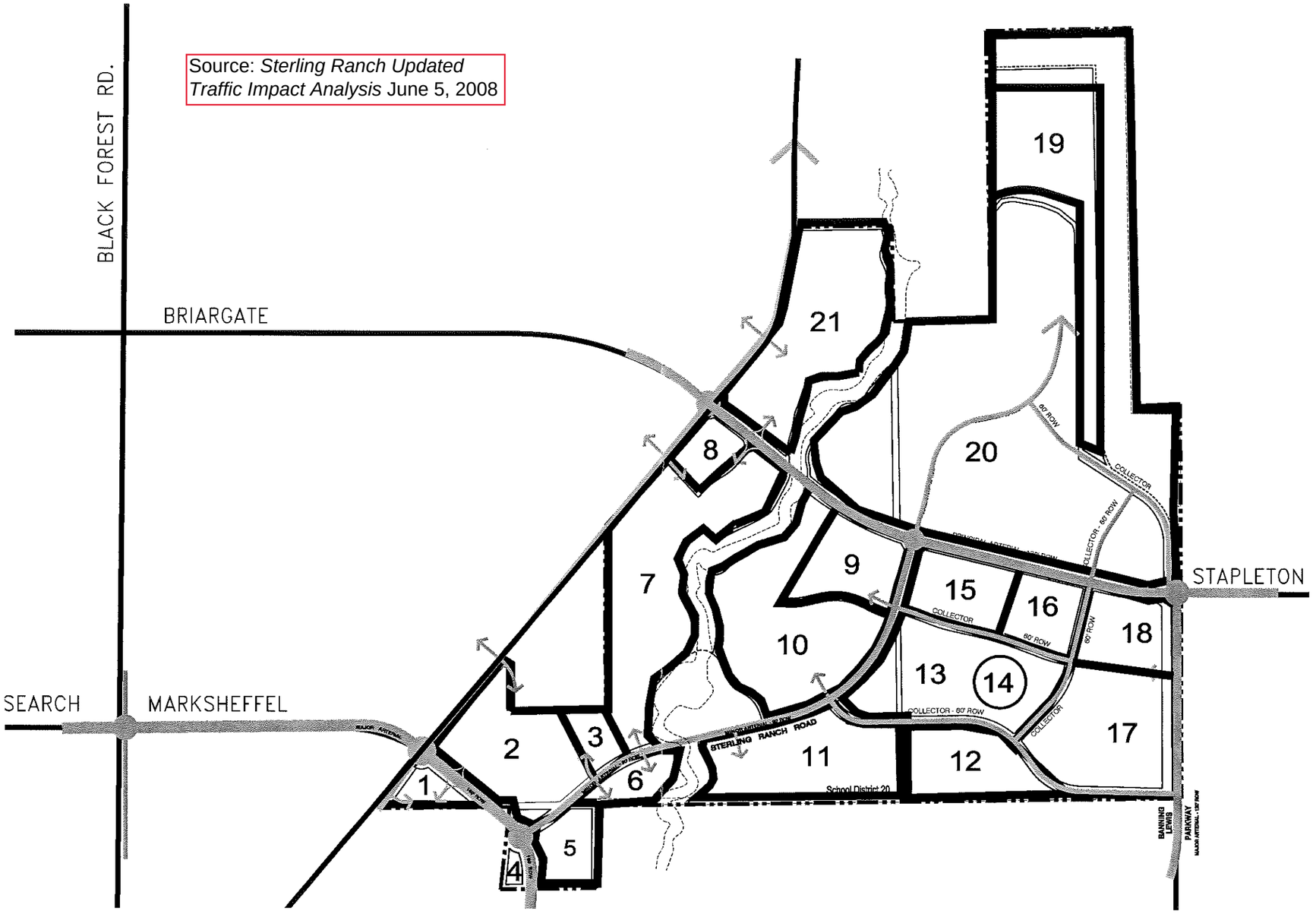
Sterling Ranch Filing No. 2 and Sterling Ranch Phase 2 (LSC #184660)

Provide/label the proposed cross-sections.

TAZ Map

TRANSPORTATION
CONSULTANTS, INC.

Source: *Sterling Ranch Updated Traffic Impact Analysis* June 5, 2008



Not to Scale

TRANSPORTATION CONSULTANTS, INC.

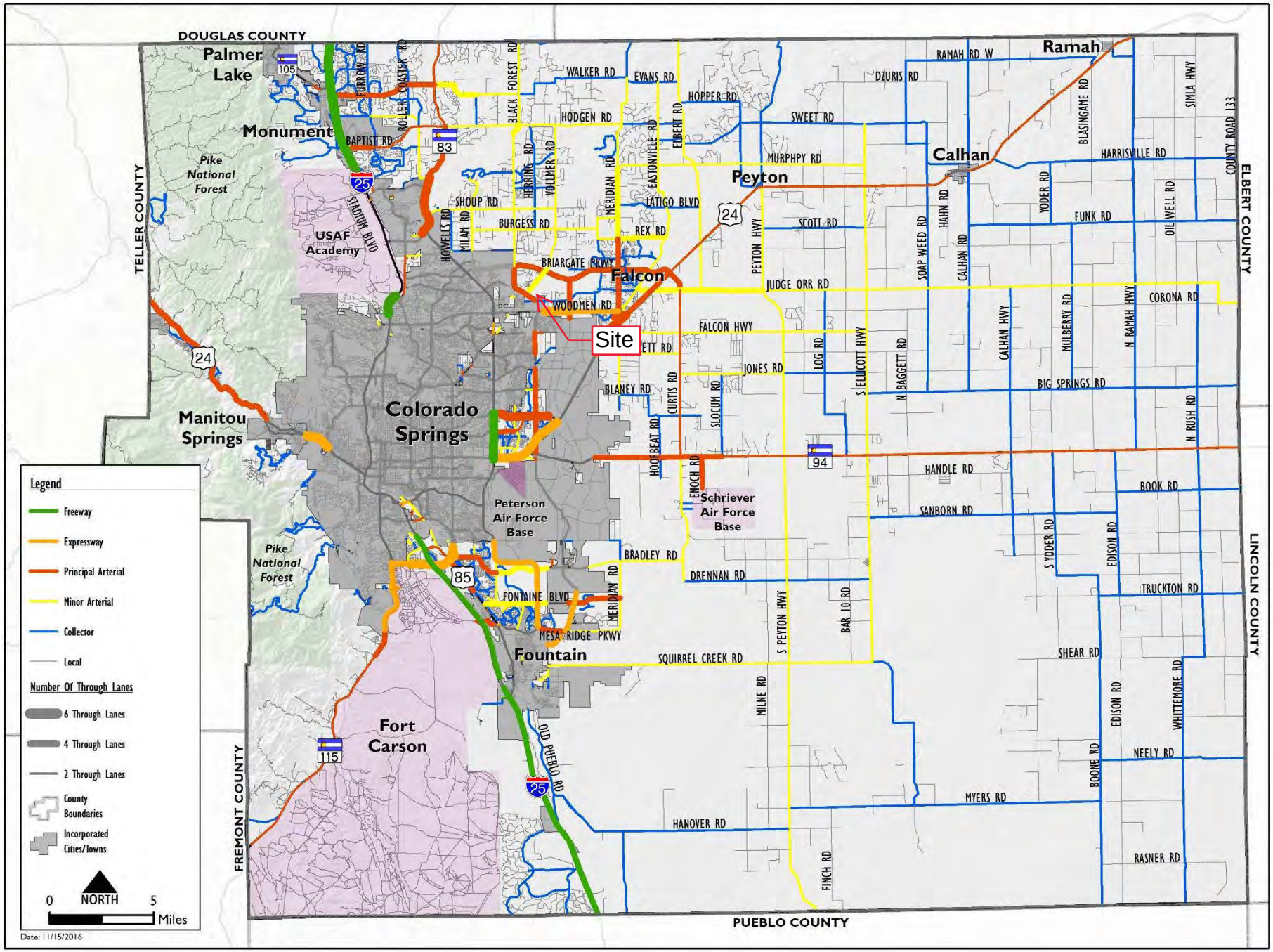
Traffic Analysis Zones

Sterling Ranch

Figure 3
LSC # 074230

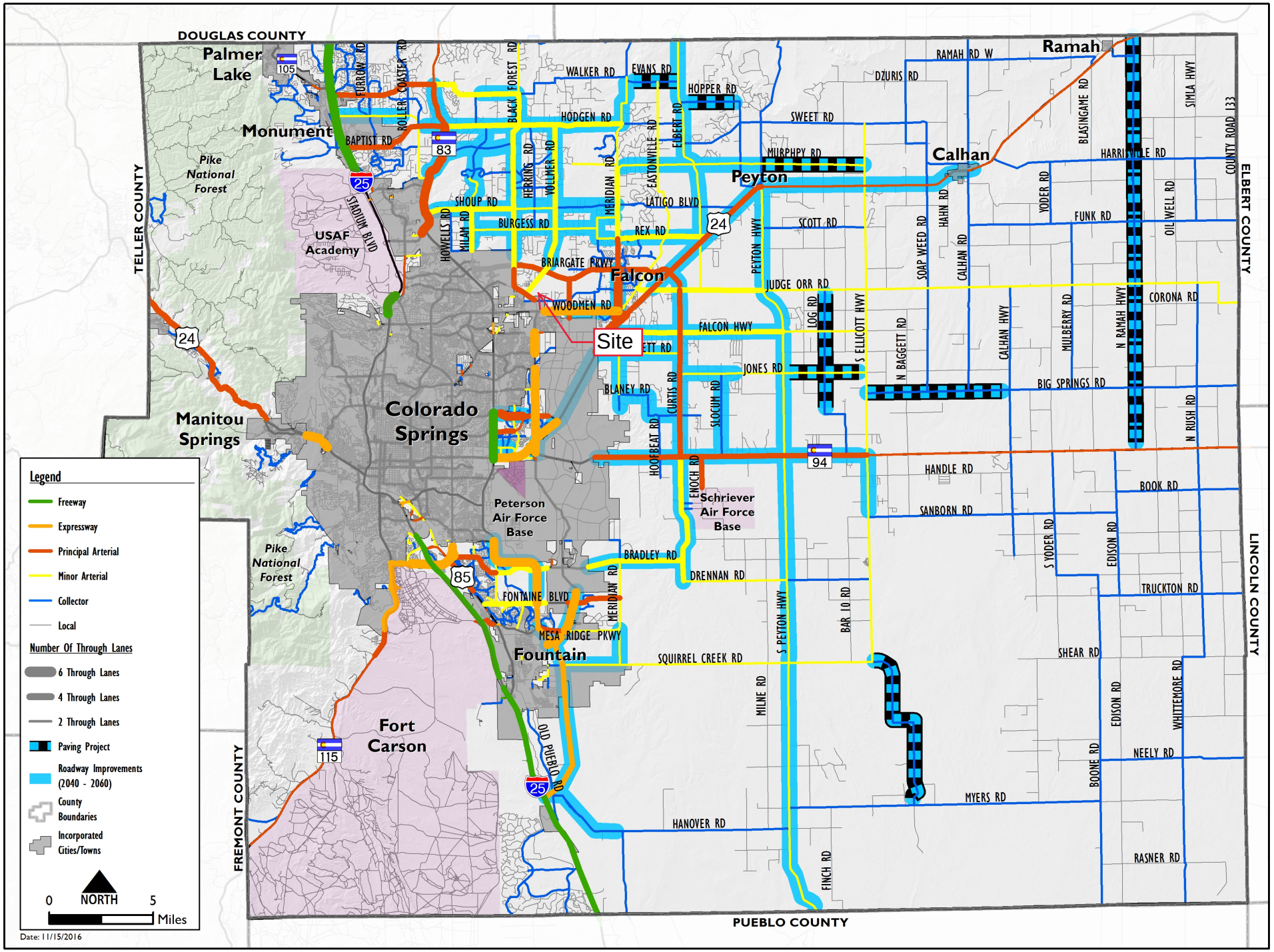
MTCP Maps

TRANSPORTATION
CONSULTANTS, INC.



Map 14: 2040 Roadway Plan (Classification and Lanes)

Map 17: 2060 Corridor Preservation



Approved Deviation for Alzada Drive

TRANSPORTATION
CONSULTANTS, INC.

Development Services Department
2880 International Circle
Colorado Springs, Colorado 80910

Phone: 719.520.6300
Fax: 719.520.6695
Website www.elpasoco.com

DEVIATION REVIEW AND DECISION FORM

Procedure # R-FM-051-07
Issue Date: 12/31/07
Revision Issued: 00/00/00

DSD FILE NO.: SP090005

Project was not approved.

General Property Information:
Address of Subject Property (Street Number/Name): 8715 Vollmer Road
Tax Schedule ID(s) #: 5200000364; 365; 231

Legal Description of Property: PT SE4SE4 LY South of Vollmer Road EX RD W/MR Section 32-12-65

Subdivision or Project Name: Sterling Ranch Phases 1-3

Section of ECM from Which Deviation is Sought: 2.3.2 & 2.2.5.C Urban Minor Arterial Access Criteria

Specific Criteria from Which a Deviation is Sought: One-quarter-mile access spacing on Minor Arterials

Proposed Nature and Extent of Deviation: Allow site access on Vollmer Road about 875 feet north of the planned Marksheffel Road and about 885 feet south of Lochwinnoch Lane

Applicant Information:
Applicant: Morley-Bentley Investments, LLC - Jim Morley Email Address: jmorley3870@aol.com
Applicant is: __X___ Owner _____ Consultant _____ Contractor
Mailing Address: 20 Boulder Crescent, 1st Floor, Colorado Springs State: CO Postal Code: 80903
Telephone Number: 719-471-1742 Fax Number:_____

Engineer Information:
Engineer: Jeffrey C. Hodsdon, P.E., PTOE Email Address: Jeff@LSCTrans.com
Company Name: LSC Transportation Consultants, Inc.
Mailing Address: 516 North Tejon Street, Colorado Springs State: CO Postal Code: 80903
Registration Number: 31684 State of Registration: CO
Telephone Number: 719-633-2868 Fax Number: 719-633-5430

Explanation of Request (Attached diagrams, figures and other documentation to clarify request):
Section of ECM from Which Deviation is Sought: 2.3.2 & 2.2.5.C Urban Minor Arterial Access Criteria

Specific Criteria from Which a Deviation is Sought: One-quarter-mile access spacing on Minor Arterials

Proposed Nature and Extent of Deviation: Allow site access on Vollmer Road about 875 feet north of the planned Marksheffel Road and about 885 feet south of Lochwinnoch Lane

Reason for the Requested Deviation: See attached "Sterling Ranch Phases 1-3 South Vollmer Road Deviation Request Memorandum" dated July 2, 2014 by LSC

Comparison of Proposed Deviation to ECM Standard: ECM Standard: One-quarter-mile access spacing on Minor Arterials
Proposed Deviation: 875-foot access spacing on Vollmer Road between the site access and Marksheffel Road and 885-foot access spacing on Vollmer Road between the site access and Lochwinnoch Lane

Applicable Regional or National Standards used as Basis:

El Paso County Procedures Manual
Procedure # R-FM-051-07
Issue Date: 12/31/07
Revision Issued: 00/00/00

Application Consideration:

CHECK IF APPLICATION MEETS CRITERIA FOR CONSIDERATION	JUSTIFICATION
☐ The ECM standard is inapplicable to a particular situation.	
☒ Topography, right-of-way, or other geographical conditions or impediments impose an undue hardship on the applicant, and an equivalent alternative that can accomplish the same design objective is available and does not compromise public safety or accessibility.	See attached "Sterling Ranch Phases 1-3 South Vollmer Road Deviation Request Memorandum" dated July 2, 2014 by LSC
☐ A change to a standard is required to address a specific design or construction problem, and if not modified, the standard will impose an undue hardship on the applicant with little or no material benefit to the public.	

If at least one of the criteria listed above is not met, this application for deviation cannot be considered.

Criteria for Approval:

PLEASE EXPLAIN HOW EACH OF THE FOLLOWING CRITERIA HAVE BEEN SATISFIED BY THIS REQUEST	
The request for a deviation is not based exclusively on financial considerations.	See attached "Sterling Ranch Phases 1-3 South Vollmer Road Deviation Request Memorandum" dated July 2, 2014 by LSC
The deviation will achieve the intended result with a comparable or superior design and quality of improvement.	See attached "Sterling Ranch Phases 1-3 South Vollmer Road Deviation Request Memorandum" dated July 2, 2014 by LSC
The deviation will not adversely affect safety or operations.	See attached "Sterling Ranch Phases 1-3 South Vollmer Road Deviation Request Memorandum" dated July 2, 2014 by LSC
The deviation will not adversely affect maintenance and its associated cost.	See attached "Sterling Ranch Phases 1-3 South Vollmer Road Deviation Request Memorandum" dated July 2, 2014 by LSC
The deviation will not adversely affect aesthetic appearance.	See attached "Sterling Ranch Phases 1-3 South Vollmer Road Deviation Request Memorandum" dated July 2, 2014 by LSC

Owner, Applicant and Engineer Declaration:

To the best of my knowledge, the information on this application and all additional or supplemental documentation is true, factual and complete. I am fully aware that any misrepresentation of any information on this application may be grounds for denial. I have familiarized myself with the rules, regulations and procedures with respect to preparing and filing this application. I also understand that an incorrect submittal will be cause to have the project removed from the agenda of the Planning Commission, Board of County Commissioners and/or Board of Adjustment or delay review, and that any approval of this application is based on the representations made in the application and may be revoked on any breach of representation or condition(s) of approval.

Jim Morley
Signature of owner (or authorized representative) — Date 7/23/14

Signature of applicant (if different from owner) — Date

Jeffrey C. Hodsdon, P.E., PTOE
Signature of Engineer — Date 7/2/14

Engineer's Seal

COLORADO LICENSED
JEFFREY C. HODSDON
31684
PROFESSIONAL ENGINEER

Review and Recommendation:
APPROVED by the ECM Administrator

Date 7-29-14

This request has been determined to have met the criteria for approval. A deviation from Section _____ of ECM is hereby granted based on the justification provided. Comments:

____ Additional comments or information are attached.

DENIED by the ECM Administrator

Date _____

This request has been determined not to have met criteria for approval. A deviation from Section _____ of ECM is hereby denied. Comments:

____ Additional comments or information are attached.

Sterling Ranch Vollmer Road (North)

Street Improvement Plans

TRANSPORTATION
CONSULTANTS, INC.

RECEIVED VERSION
JAN 04 2018

STERLING RANCH - VOLLMER ROAD (NORTH)

STA 4+79.21 - STA 38+35.40

COUNTY OF EL PASO, STATE OF COLORADO

STREET IMPROVEMENT PLANS

INCLUDING SIGNAGE AND STRIPING PLAN

JANUARY 2018

AGENCIES

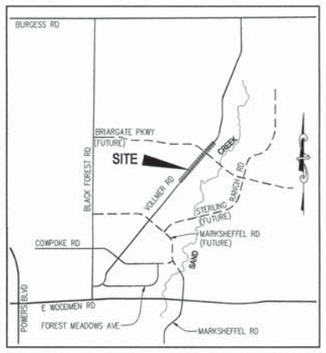
OWNER/DEVELOPER:	SR LAND, LLC 20 BOULDER CRESCENT, SUITE 201 COLORADO SPRINGS, CO 80903 JIM MORLEY (719) 471-1742
CIVIL ENGINEER:	M & S CIVIL CONSULTANTS, INC. 20 BOULDER CRESCENT, SUITE 110 COLORADO SPRINGS, CO 80903 VIRGIL A. SANCHEZ P.E. (719) 955-5485
COUNTY ENGINEERING:	EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT 2880 INTERNATIONAL CIRCLE, SUITE 110 COLORADO SPRINGS, CO 80910 JEFF RICE, P.E. (719) 520-6300
TRAFFIC ENGINEERING:	EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS 3275 AKERS DRIVE COLORADO SPRINGS, CO 80922 JENNIFER IRVINE, P.E. (719) 520-6460
WATER RESOURCES:	STERLING RANCH METRO DISTRICT ENGINEERS JDS-HYDRO CONSULTANTS 545 E. PIKES PEAK AVE., SUITE 300 COLORADO SPRINGS, CO 80903 JOHN MCGINN (719) 668-8769
FIRE DISTRICT:	BLACK FOREST FIRE PROTECTION DISTRICT 11445 TEACHOUT ROAD COLORADO SPRINGS, CO 80908 CHIEF BRYAN JACK (719) 495-4300
GAS DEPARTMENT:	COLORADO SPRINGS UTILITIES 7710 DURANT DR. COLORADO SPRINGS, CO 80947 TIM WENDT (719) 668-3556
ELECTRIC DEPARTMENT:	MOUNTAIN VIEW ELECTRIC 11140 E. WOODMEN ROAD FALCON, CO 80831 (719) 495-2283
COMMUNICATIONS:	CENTURYLINK/COMCAST COMMUNICATIONS (U.N.C.C. LOCATORS) (800) 922-1987 AT&T (LOCATORS) (719) 635-3674

BENCHMARKS:

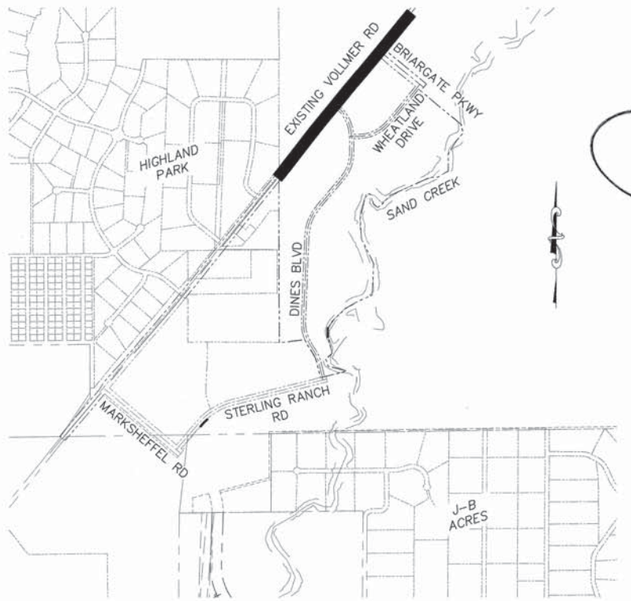
1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PAWNEE RANCHEROS SUBDIVISION
   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 = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

BASIS OF BEARINGS:

THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW1/4) OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID SOUTHWEST QUARTER (SW1/4) BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTHEAST CORNER OF SAID SOUTHWEST QUARTER (SW1/4) BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N 89°14'14" E, A DISTANCE OF 2,722.56 FEET.



VICINITY MAP
N.T.S.



SITE MAP
N.T.S.

APPROVALS:

ENGINEER'S STATEMENT:

DETAILED IMPROVEMENT PLANS AND SPECIFICATIONS ENGINEER'S STATEMENT:
THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID DETAILED PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR DETAILED DRAINAGE PLANS AND SPECIFICATIONS, AND SAID DETAILED PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH THE MASTER PLAN OF THE DRAINAGE BASIN. SAID DETAILED DRAINAGE PLANS AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR DRAINAGE FACILITY(S) IS DESIGNED. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS, OR OMISSIONS ON MY PART IN PREPARATION OF THE DETAILED IMPROVEMENT PLANS AND SPECIFICATIONS.

COLORADO REGISTERED VIRGIL A. SANCHEZ 37160 PROFESSIONAL ENGINEER

VIRGIL A SANCHEZ, COLORADO P.E. NO. 37160
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

DATE 1-4-18

OWNER/DEVELOPER STATEMENT:

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH ALL OF THE REQUIREMENTS SPECIFIED IN THESE DETAILED PLANS AND SPECIFICATIONS.

SR LAND, LLC

DATE 1.4.18

EL PASO COUNTY:

COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA, AND ENGINEERING CRITERIA MANUAL AS AMENDED.

JENNIFER IRVINE, P.E.
COUNTY ENGINEER/ECM ADMINISTRATOR

DATE 30 JAN 18

STERLING RANCH METROPOLITAN DISTRICT:

THESE DOCUMENTS HAVE BEEN REVIEWED AND APPROVED FOR STORM DRAIN AND ASSOCIATED UTILITY SERVICE CONSTRUCTION.

FOR AND ON BEHALF OF THE STERLING RANCH METRO. DISTRICT

DATE 1-4-18

SHEET INDEX

ABBREVIATIONS

ACT	ACTUAL
BCR	BACK OF CURB RETURN
BOV	BLOWOFF VALVE ASSEMBLY
BRK	BREAK
BT	BEGINNING OF TRANSITION
CATV	CABLE TV
CL	CLASS, CENTERLINE
CLR	CLEARANCE
CONST	CONSTRUCT
CSU	COLORADO SPRINGS UTILITIES
ECR	END CURB RETURN
EL	ELEVATION
EOA	EDGE OF ASPHALT
EOP	END OF PAVEMENT
EPC	EL PASO COUNTY
ESMT	EASEMENT
ET	END TRANSITION
EX, EXIST	EXISTING
G	GAS
GB	GRADE BREAK
FL	FLOW LINE
FT	FEET, FOOT
FUT	FUTURE
GRD	GRADE
HORZ	HORIZONTAL
HP	HIGH POINT, ELEVATION
INT	INTERSECTION
LP	LOW POINT ELEVATION
LT	LEFT
LOC	LOCATION
MIN	MINIMUM
N,S,E,W	NORTH,SOUTH,EAST,WEST
NTS	NOT TO SCALE
PC	POINT OF VERTICAL CURVATURE
PCC	POINT OF COMPOUND CURVE
PCR	POINT OF CURB RETURN
PL	PROPERTY LINE
PRC	POINT OF REVERSE CURVE
PUB	PUBLIC
PVI	POINT OF VERTICAL INTERSECTION
PVC	POINT OF VERTICAL CURVE
PVT	POINT OF VERTICAL TANGENT
PT	POINT OF TANGENCY
PROP	PROPOSED
REM	REMOVE
ROW	RIGHTS OF WAY
RSNTS	RESTRAINTS
RT	RIGHT
SAN	SANITARY SEWER
SD	STANDARD DETAIL
STA	STATION
STM	STORM
TOB	TOP CORNER OF BOX
TELE	TELEPHONE
TYP	TYPICAL
UNK	UNKNOWN
@	UNDERGROUND POWER
UTL	UTILITY
VERT	VERTICAL
WTR	WATER LINE
XING	CROSSING
YD	YARD (CUBIC)
	AIR & VACUUM VALVE STA
	ANCHOR, CONC. REVERSE
	ANODE
	CENTERLINE
	FENCE
	EXISTING SANITARY SEWER
	EXISTING GAS
	EXISTING ELECTRIC (OH OR UG)
	EXISTING TELEPHONE
	EXISTING TELEVISION
	EXISTING FIBER OPTIC
	EXISTING WATER

LEGEND

	PROPOSED GAS
	PROPOSED SANITARY SEWER
	PROPOSED WATER
	RIGHT-OF-WAY
	PROPERTY LINE
	FIRE HYDRANT (EXISTING)
	FIRE HYDRANT (PROPOSED)
	STORM DRAIN
	VALVE (PROPOSED)
	VALVE (EXISTING)
	BLOWOFF ASSY. (PROPOSED)
	BLOWOFF ASSY. (EXISTING)
	PLUG (PROPOSED)
	PLUG (EXISTING)

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
FOR BURIED UTILITY INFORMATION
48 HRS BEFORE YOU DIG
CALL 1-800-922-1987

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

CAUTION

REVISIONS:

NO.	DATE:	BY:	DESCRIPTION:	APPVD. BY:	DATE:

STERLING RANCH - VOLLMER ROAD (NORTH)
TITLE SHEET

PROJECT NO. 09-002
DESIGNED BY: VAS
DRAWN BY: ELY
CHECKED BY: GW
SCALE: HORIZONTAL: N/A VERTICAL: N/A
DATE: 01/03/2018
SHEET 1 OF 7
SI01

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE 719.955.5485
M&S CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.
VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160
COLORADO REGISTERED VIRGIL A. SANCHEZ 37160 PROFESSIONAL ENGINEER

File: O:\09002A\Sterling Ranch District\dwg\Const Dwg\Street\Vollmer Rd\SI01.dwg Plotstamp: 1/4/2018 9:24 AM

GENERAL CONSTRUCTION NOTES:

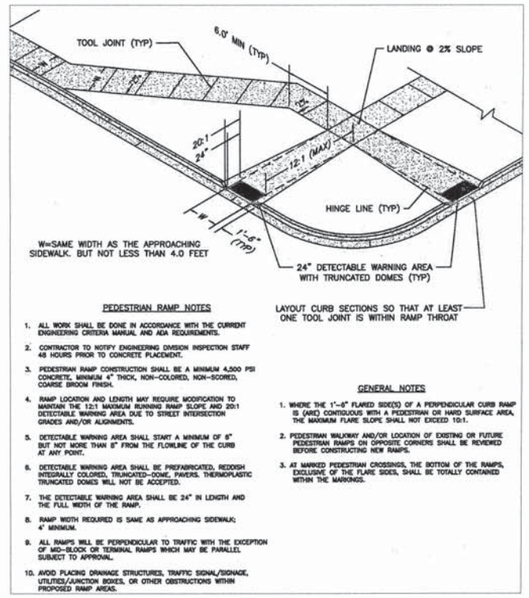
1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK. THE OMISSION FROM OR THE INCLUSION OF UTILITY LOCATIONS ON THE PLANS IS NOT TO BE CONSIDERED AS THE NONEXISTENCE OF OR A DEFINITE LOCATION OF EXISTING UNDERGROUND 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 PLANNING AND COMMUNITY DEVELOPMENT DIVISION.
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 BRAIRGATE PARKWAY AND VOLLMER ROAD WHICH ARE ARTERIALS AND A 50 FOOT SIGHT VISIBILITY TRIANGLE IS REQUIRED AND THERE SHALL BE NO OBSTRUCTIONS GREATER THAN 18" VERTICAL 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 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 PLANNING AND COMMUNITY DEVELOPMENT DIVISION.
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 DEPARTMENT OF PUBLIC WORKS (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 DEPARTMENT OF PUBLIC WORKS PRIOR TO ANY WORK WITHIN AN EXISTING EL PASO COUNTY ROADWAY, INCLUDING SIGNAGE OR STRIPING.

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 PLANNING AND COMMUNITY DEVELOPMENT – 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 DEPARTMENT OF PUBLIC WORKS. 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 DEPARTMENT OF PUBLIC WORKS.
10. CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS 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 VERTICAL ABOVE FLOWLINE ARE NOT ALLOWED WITHIN SIGHT TRIANGLES.
13. SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY DOT AND MUTCD CRITERIA.
14. CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DEPARTMENT PUBLIC WORKS, 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.



PEDESTRIAN RAMP NOTES

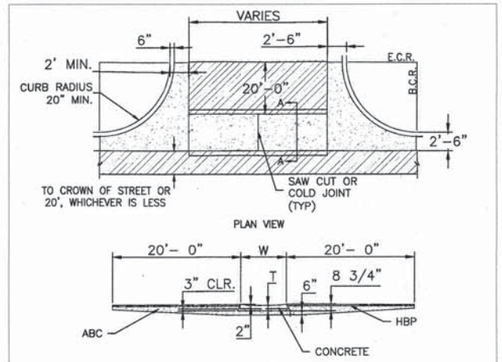
1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CURRENT ENGINEERING CRITERIA MANUAL AND ADA REQUIREMENTS.
2. CONTRACTOR TO NOTIFY ENGINEERING DIVISION INSPECTION STAFF 48 HOURS PRIOR TO CONCRETE PLACEMENT.
3. PEDESTRIAN RAMP CONSTRUCTION SHALL BE A MINIMUM 4,500 PSI CONCRETE, MINIMUM 4" THICK, NON-COLORED, NON-SCORED, COARSE BROOM FINISH.
4. RAMP LOCATION AND LENGTH MAY REQUIRE MODIFICATION TO MAINTAIN THE 12:1 MAXIMUM RUNNING RAMP SLOPE AND 20:1 DETECTABLE WARNING AREA DUE TO STREET INTERSECTION GRADES AND/OR ALIGNMENTS.
5. DETECTABLE WARNING AREA SHALL START A MINIMUM OF 6" BUT NOT MORE THAN 8" FROM THE FLOWLINE OF THE CURB AT ANY POINT.
6. DETECTABLE WARNING AREA SHALL BE PREFABRICATED, REDDISH INTEGRALLY COLORED, TRUNCATED-DOME, PAVERS. THERMOPLASTIC TRUNCATED DOMES WILL NOT BE ACCEPTED.
7. THE DETECTABLE WARNING AREA SHALL BE 24" IN LENGTH AND THE FULL WIDTH OF THE RAMP.
8. RAMP WIDTH REQUIRED IS SAME AS APPROACHING SIDEWALK; 4' MINIMUM.
9. ALL RAMPS WILL BE PERPENDICULAR TO TRAFFIC WITH THE EXCEPTION OF MID-BLOCK OR TERMINAL RAMPS WHICH MAY BE PARALLEL SUBJECT TO APPROVAL.
10. AVOID PLACING DRAINAGE STRUCTURES, TRAFFIC SIGNAL/SIGNAGE, UTILITIES/JUNCTION BOXES, OR OTHER OBSTRUCTIONS WITHIN PROPOSED RAMP AREAS.

GENERAL NOTES

1. WHERE THE 1'-6" FLARED SIDE(S) OF A PERPENDICULAR CURB RAMP IS (ARE) CONTIGUOUS WITH A PEDESTRIAN OR HARD SURFACE AREA, THE MAXIMUM FLARE SLOPE SHALL NOT EXCEED 10:1.
2. PEDESTRIAN WALKWAY AND/OR LOCATION OF EXISTING OR FUTURE PEDESTRIAN RAMPS ON OPPOSITE CORNERS SHALL BE REVIEWED BEFORE CONSTRUCTING NEW RAMPS.
3. AT MARKED PEDESTRIAN CROSSINGS, THE BOTTOM OF THE RAMPS, EXCLUSIVE OF THE FLARE SIDES, SHALL BE TOTALLY CONTAINED WITHIN THE MARKINGS.

PEDESTRIAN INTERSECTION RAMP (SD 2-41)

SCALE: NTS

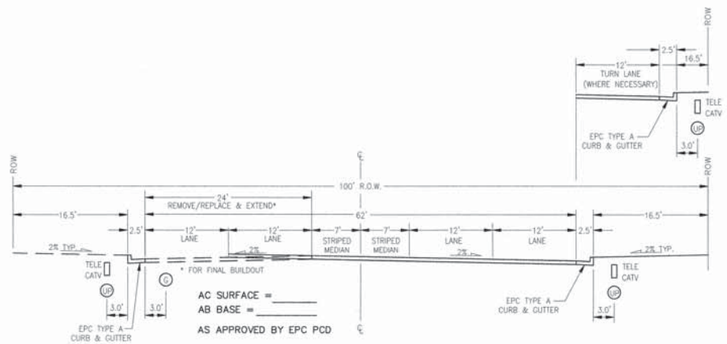


NOTES

1. W – WIDTH SHALL BE 6' FOR LOCAL, 8' FOR COLLECTORS, AND 10' FOR ARTERIAL ROADS.
2. T – SQUARED-OFF RETURN TO BE POURED MONOLITHICALLY, 8" PCC FOR LOCAL ROADS, 9" FOR COLLECTORS WITH 6x6 – 4.4 W.W.F. OR #4 REINFORCING BAR @ 18" EACH WAY.
3. ▨ = 3" MINIMUM ASPHALT DEPTH (2 LIFTS).
4. DESIGN TO SPECIFY ELEVATIONS AT PI AND PCR.

TYPICAL CROSS PAN LAYOUT DETAIL (SD 2-26)

SCALE: NTS

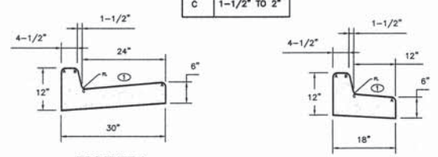


ULTIMATE VOLLMER ROAD
(MODIFIED) URBAN MINOR ARTERIAL CROSS SECTION

SCALE: NTS

DESIGN SPEED = 50 MPH
POSTED SPEED = 45 MPH

LEGEND FOR RADII	
A	1/8" TO 1/4"
B	1-1/2"
C	1-1/2" TO 2"



TYPICAL CURB & GUTTER DETAILS DETAIL (SD 2-20)

SCALE: NTS

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
FOR BURIED UTILITY INFORMATION
48 HRS BEFORE YOU DIG
CALL 1-800-922-1987

File: O:\060024\Sterling Ranch District\Dwg\Const Dwg\Street\Vollmer Rd\SI02.dwg Plotstamp: 1/3/2018 1:12 PM

STERLING RANCH – VOLLMER ROAD (NORTH)
NOTES & DETAILS SHEET
PROJECT NO. 09-002 | SCALE: HORIZONTAL: N/A VERTICAL: N/A | DATE: 01/03/2018 | SHEET 2 OF 7 | SI02
DESIGNED BY: VAS
DRAWN BY: ELY
CHECKED BY: GW

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE 719.955.5485
CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

JARGIL A. SANCHEZ, COLORADO P.E. NO. 37160

REVISIONS:

NO	DATE	BY	DESCRIPTION	APPVD	BY	DATE

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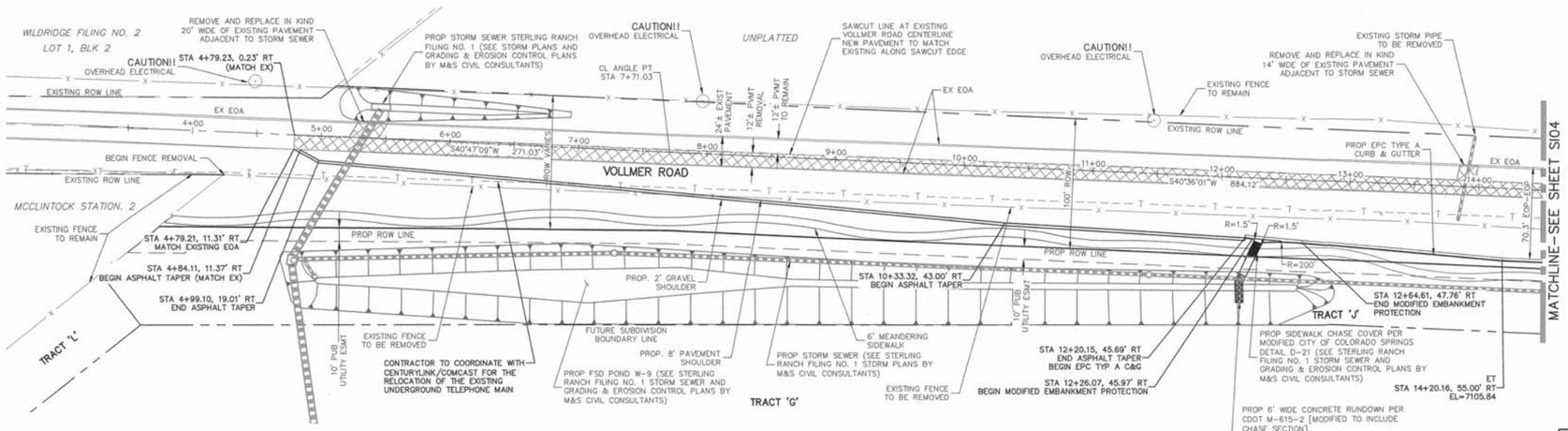
CAUTION



VOLLMER ROAD

1" = 50'

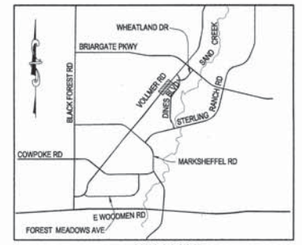
0 25 50 100

Scale in Feet

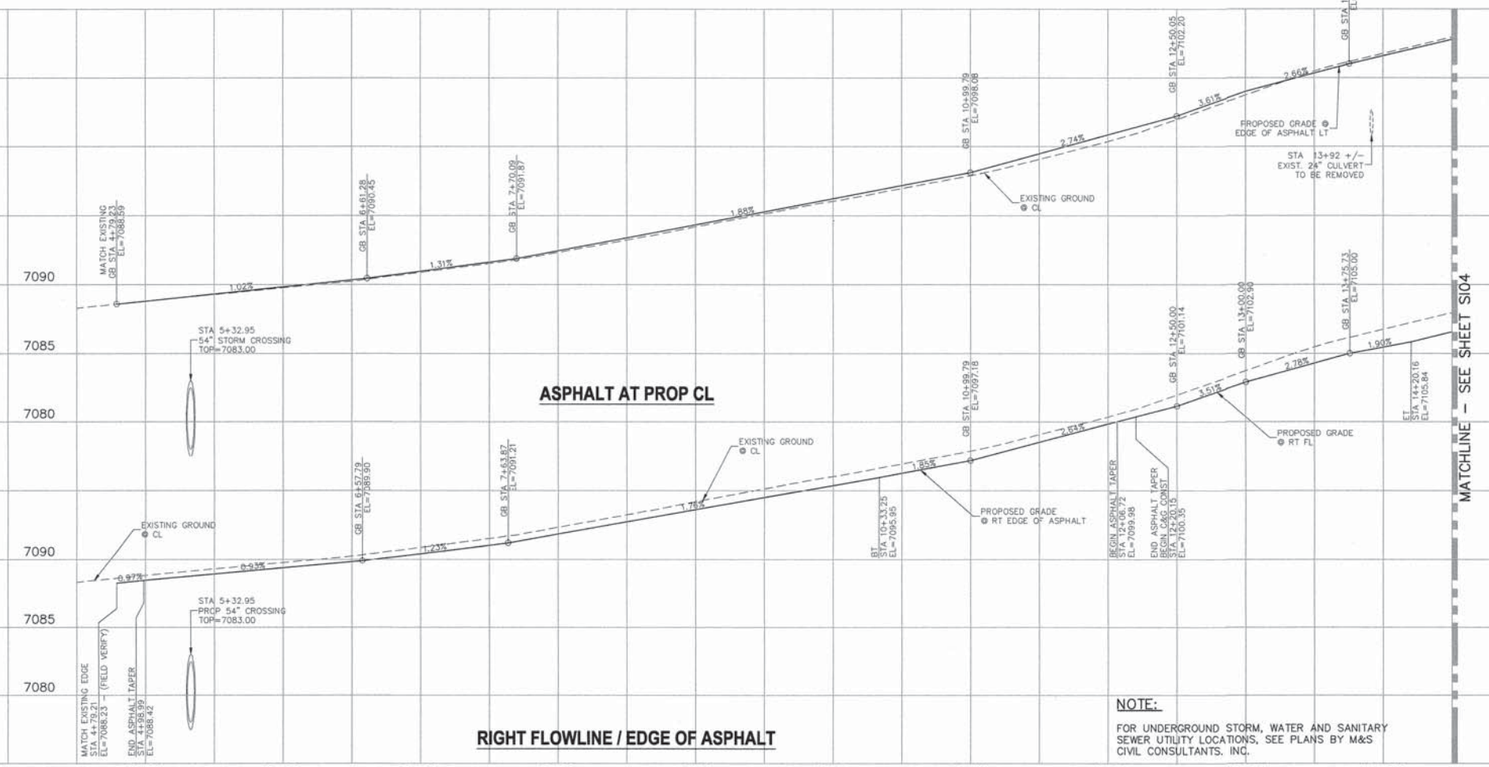
EX ASPHALT TO BE REMOVED

NOTE:

CONTRACTOR TO VERIFY ALL UNDERGROUND UTILITIES LOCATION AND ELEVATION PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.



KEY MAP
N.T.S.



NOTE:

FOR UNDERGROUND STORM, WATER AND SANITARY SEWER UTILITY LOCATIONS, SEE PLANS BY M&S CIVIL CONSULTANTS. INC.

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
FOR BURIED UTILITY INFORMATION
48 HRS BEFORE YOU DIG
CALL 1-800-922-1987

STERLING RANCH - VOLLMER ROAD (NORTH)
P&P - STA 4+79.21 TO STA 14+50.00

PROJECT NO. 09-002
DESIGNED BY: VAS
DRAWN BY: ELY
CHECKED BY: GW
SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'
DATE: 01/03/2018
SHEET 3 OF 7
SI03

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

REVISIONS:

NO.	DATE	BY:	DESCRIPTION:	APP'D. BY:	DATE

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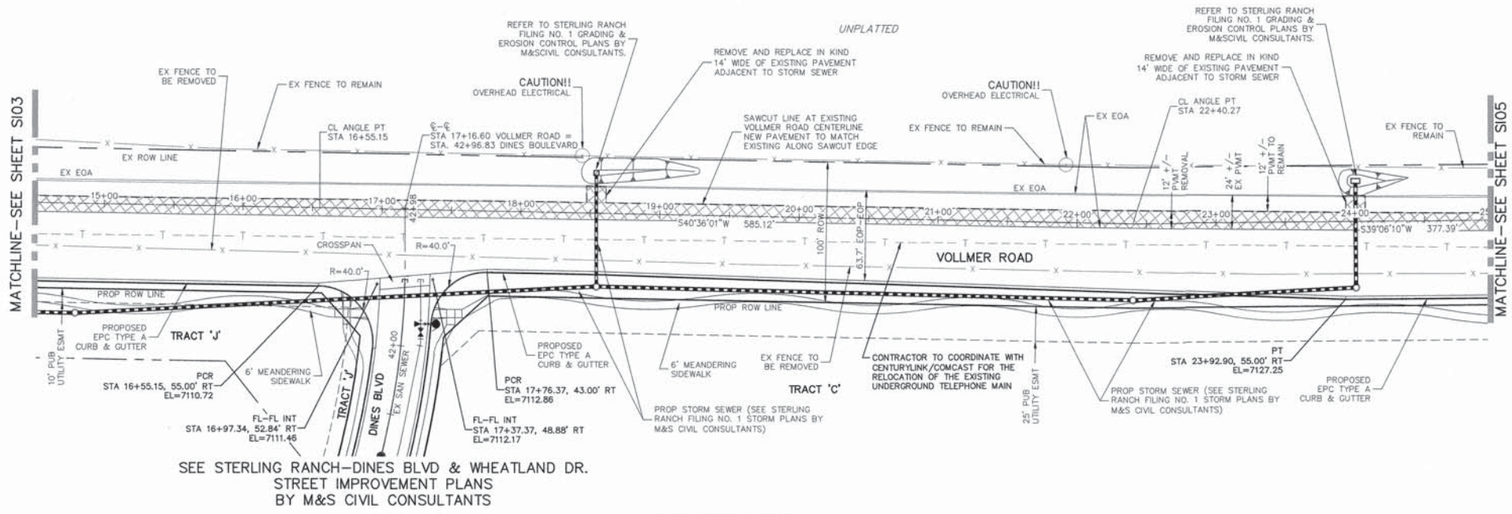
CAUTION



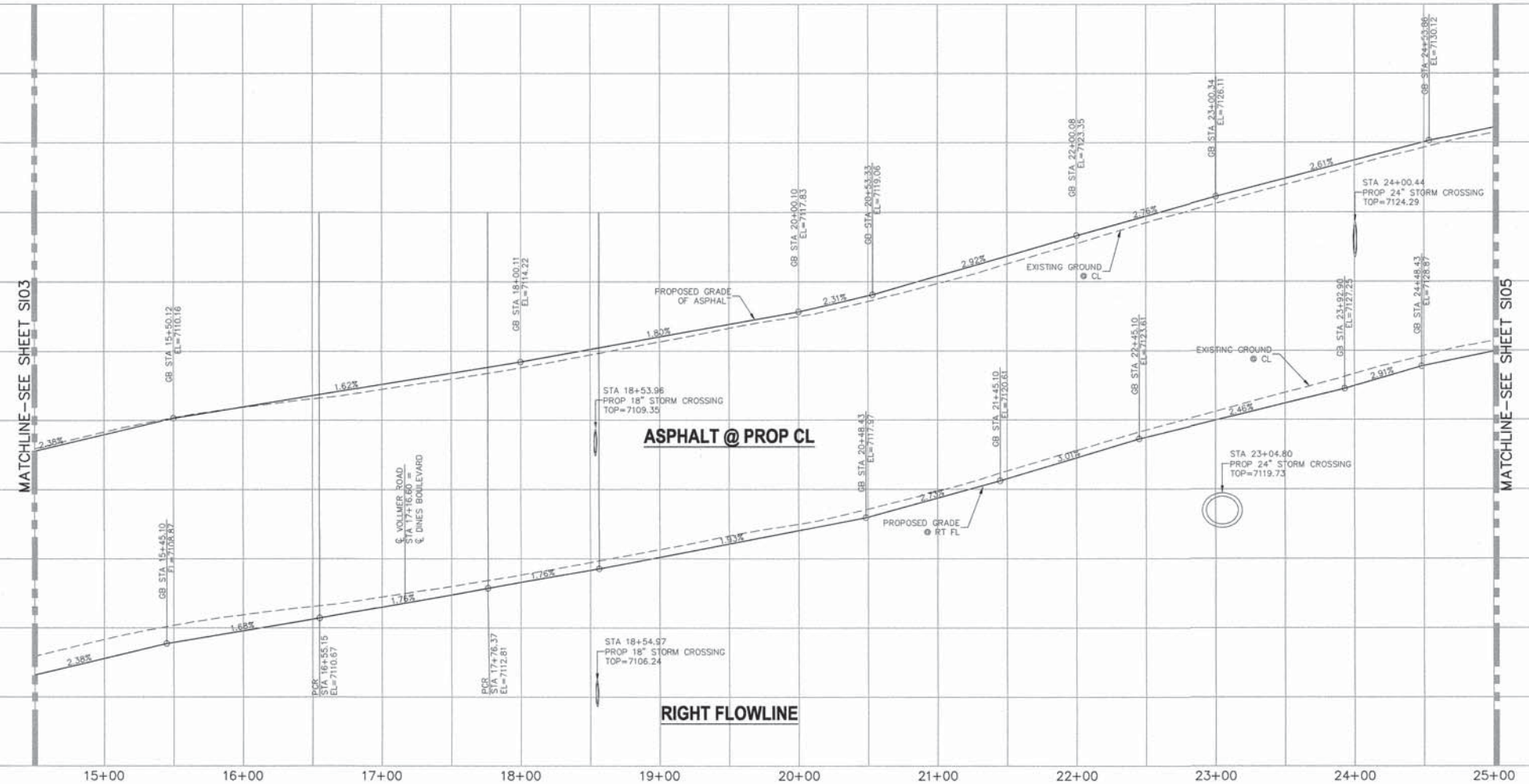
VOLLMER ROAD

EX ASPHALT TO BE REMOVED

NOTE:

CONTRACTOR TO VERIFY ALL UNDERGROUND UTILITIES LOCATION AND ELEVATION PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

KEY MAP
N.T.S.



NOTE:

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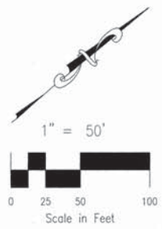
FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
FOR BURIED UTILITY INFORMATION
48 HRS BEFORE YOU DIG
CALL 1-800-922-1987



STERLING RANCH – VOLLMER ROAD (NORTH)
P&P – STA 14+50 TO STA 25+00

PROJECT NO. 09-002
DESIGNED BY: VAS
DRAWN BY: ELY
CHECKED BY: GW
DATE: 01/03/2018
SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'
SHEET 4 OF 7
SI04

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE 719.955.5485
CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

REVISIONS:
NO. DATE BY DESCRIPTION

APPVD. BY: DATE:

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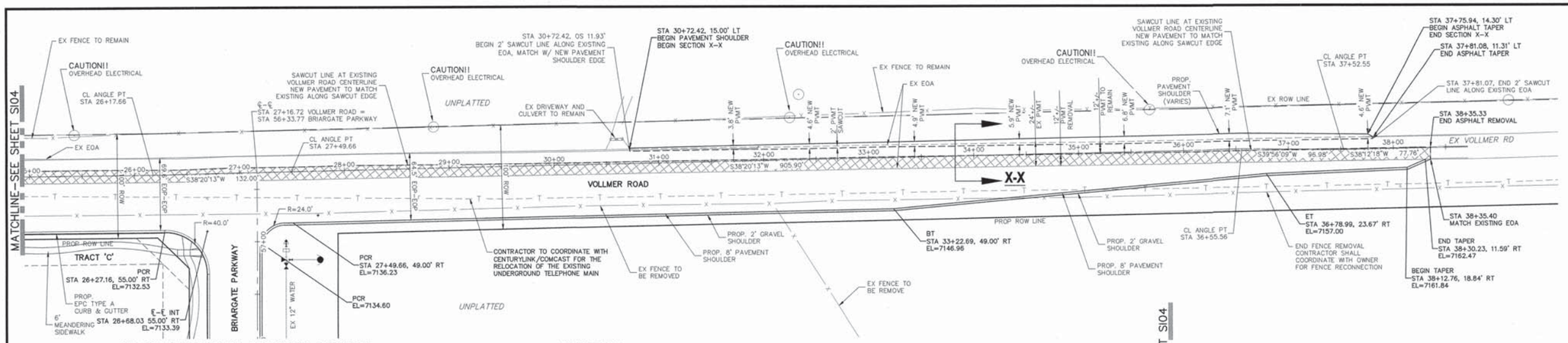
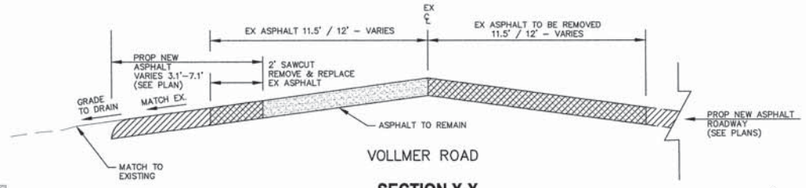
CAUTION

File: O:\09002A\Sterling Ranch District\dwg\Const Dwg\Street\Vollmer Rd\SI04.dwg Plotstamp: 1/3/2018 1:06 PM



SEE STERLING RANCH–BRIARGATE PARKWAY STREET IMPROVEMENT PLANS BY M&S CIVIL CONSULTANTS

"INTERIM"
VOLLMER ROAD-BRIARGATE PARKWAY INTERSECTION



SECTION X-X

EX ASPHALT TO BE REMOVED

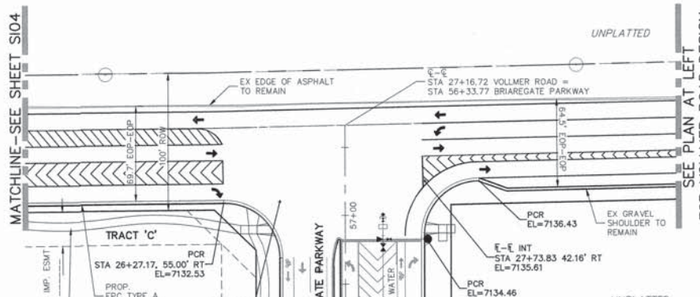
NOTE:

CONTRACTOR TO VERIFY ALL UNDERGROUND UTILITIES LOCATION AND ELEVATION PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

KEY MAP
N.T.S.

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES

FOR BURIED UTILITY INFORMATION 48 HRS BEFORE YOU DIG CALL 1–800–922–1987

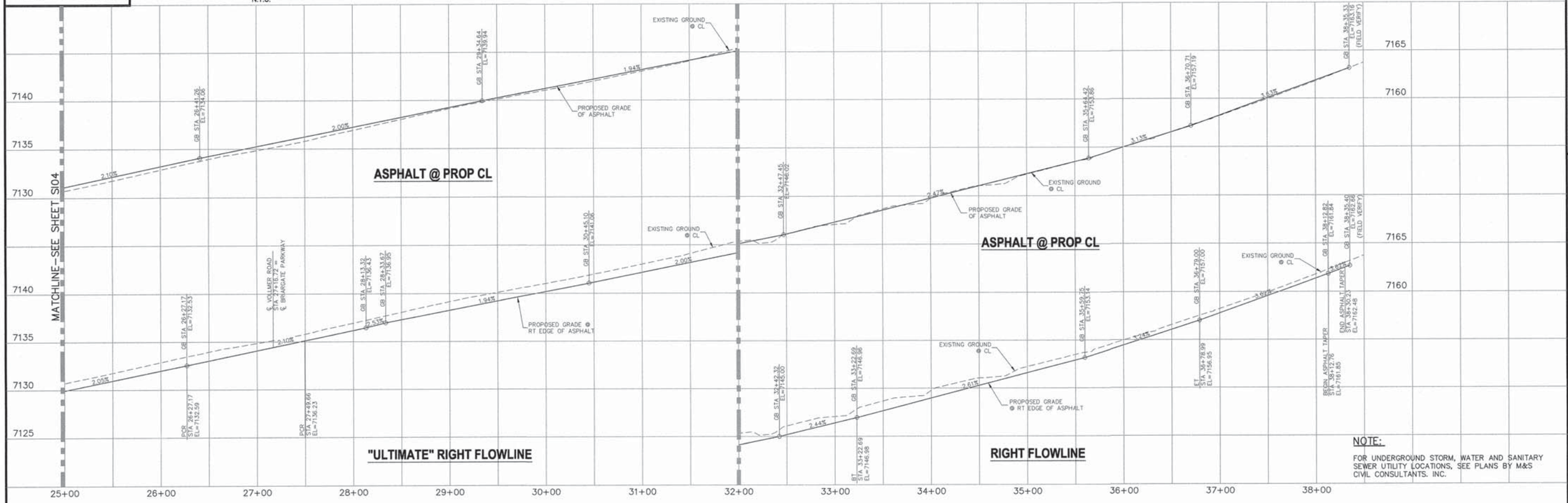


SEE STERLING RANCH–BRIARGATE PARKWAY STREET IMPROVEMENT PLANS BY M&S CIVIL CONSULTANTS

"ULTIMATE"
VOLLMER ROAD-BRIARGATE PARKWAY INTERSECTION

1" = 50'

0 25 50 100
Scale in Feet



STERLING RANCH – VOLLMER ROAD (NORTH)
STREET IMPROVEMENT PLANS

PROJECT NO. 09-002
DATE: 01/03/2018
SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'
SHEET 5 OF 7
SI05

DESIGNED BY: VAS
DRAWN BY: ELY
CHECKED BY: GW

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

REVISIONS:

NO.	DATE	BY	DESCRIPTION	APP'D. BY	DATE

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CAUTION

File: O:\08002A\Sterling Ranch District (dwg)\Const Dwg\Street\Vollmer Rd\SI05.dwg Plotstamp: 1/22/2018 3:41 PM

STRIPING LEGEND		
STRIPE	PAVEMENT MARKINGS	MARKING DESCRIPTION
①	2-WAY LEFT TURN LANE MARKINGS (EPOXY)	OUTSIDE: SOLID YELLOW, 4" WIDE, INSIDE: BROKEN YELLOW, 4" WIDE, 10' SEGMENTS WITH 30" GAPS
②	2-WAY CENTERLINE LANE MARKINGS (EPOXY)	PARALLEL SOLID YELLOW, 4" WIDE, 12" APART
③	LANE LINES (EPOXY)	BROKEN YELLOW, 4" WIDE, 10' SEGMENTS WITH 30" GAPS
④	BROKEN EDGE/BIKE LANE LINES (EPOXY)	BROKEN WHITE, 4" WIDE, 5' SEGMENTS WITH 15" GAPS
⑤	EDGE/BIKE LANE LINES (EPOXY)	SOLID WHITE, 4" WIDE
⑥	CHANNELIZING LINES (EPOXY)	SOLID WHITE, 8" WIDE
⑦	STOP LINES (THERMO PLASTIC)	SOLID WHITE, 24" WIDE
⑧	CROSS HATCHING LINES (EPOXY)	SOLID WHITE, 8" WIDE
⑨	CROSS HATCHING LINES (EPOXY)	SOLID YELLOW, 8" WIDE

NOTE TO CONTRACTOR:

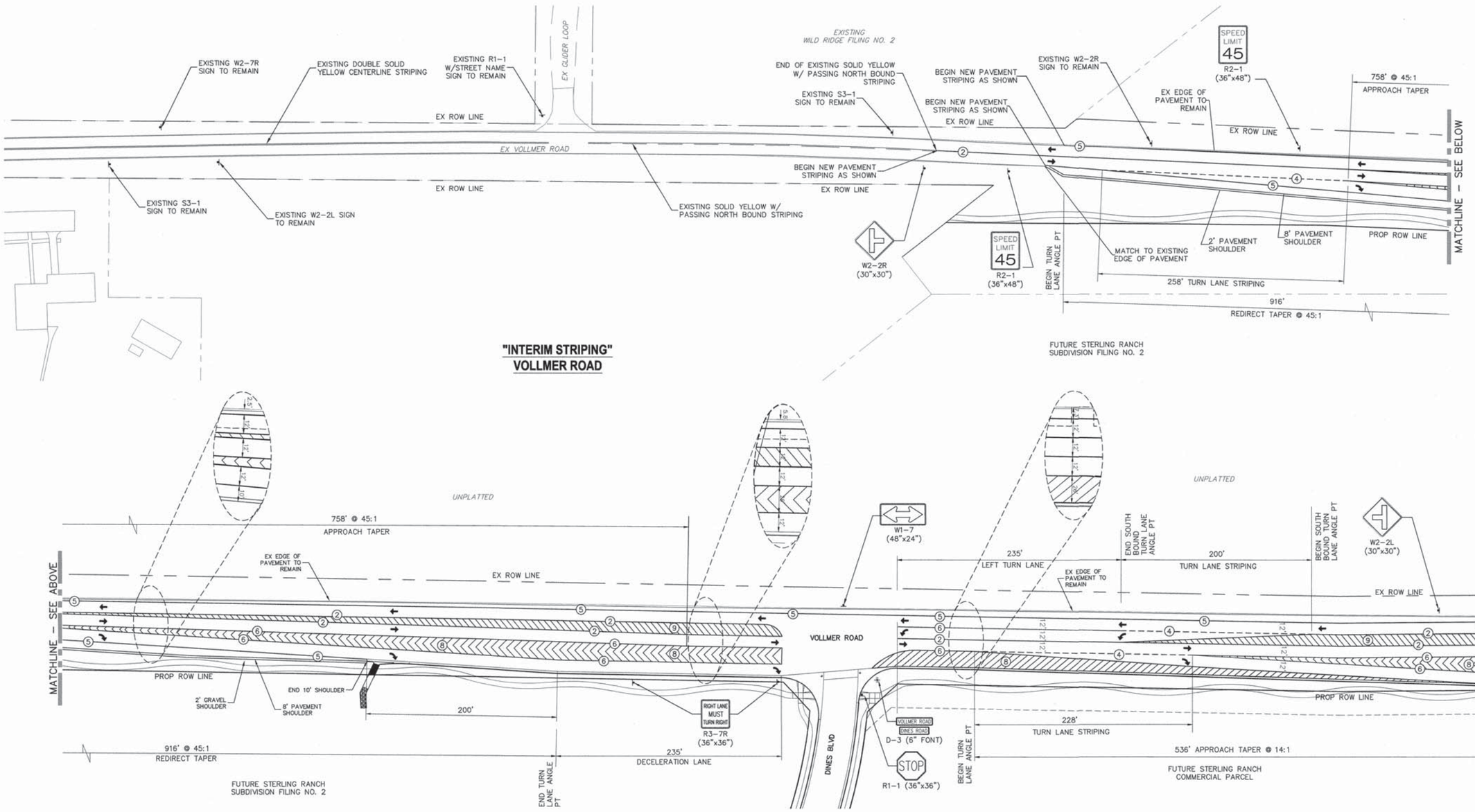
1. ALL 4" AND 8" SOLID OR SKIP PAVEMENT MARKINGS ARE TO BE EPOXY.
2. SIGNS AND POLES SHALL BE PER CDOT STANDARDS S-614-8, S-1614-2, AND S-614-3, LATEST REVISION.
3. ALL SIGNAGE INSTALLATION IS TO BE IN COMPLIANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

1" = 50'

0 25 50 100
Scale in Feet

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
FOR BURIED UTILITY INFORMATION
48 HRS BEFORE YOU DIG
CALL 1-800-922-1987

NOTE: ALL STRIPING INSTALLATION SHALL BE PER COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) "M&S STANDARDS" STANDARD PLAN NO. S-627-1.



STERLING RANCH - VOLLMER ROAD (NORTH)
SIGNAGE AND STRIPING PLAN

PROJECT NO. 09-002 | SCALE: HORIZONTAL: 1"=50' VERTICAL: N/A | DATE: 01/03/2018 | SHEET 6 OF 7 | SI06
DESIGNED BY: VAS
DRAWN BY: ELY
CHECKED BY: GW

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

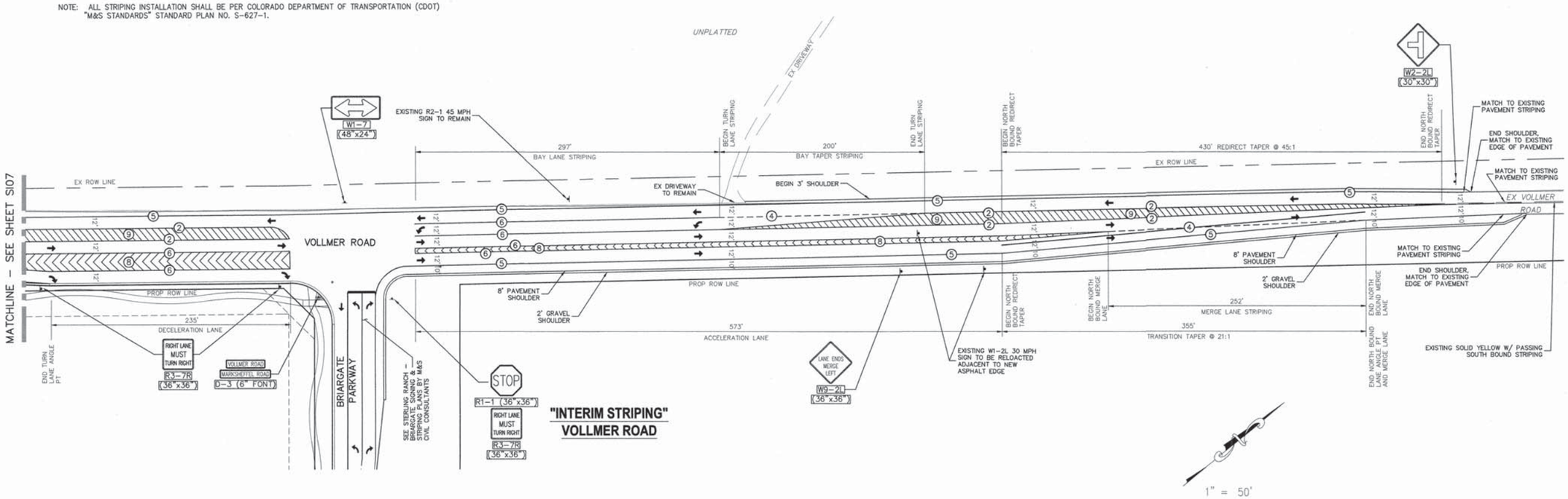
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.
VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

REVISIONS:
NO. | DATE: | BY: | DESCRIPTION: | APPVD. BY: | DATE:

File: O:\09002A\Sterling Ranch District\Engr\Const Dwg\Street\Vollmer Rd\SI06.dwg Plotstamp: 1/22/2018 10:29 AM

STRIPING LEGEND		
STRIPE	PAVEMENT MARKINGS	MARKING DESCRIPTION
①	2-WAY LEFT TURN LANE MARKINGS (EPOXY)	OUTSIDE: SOLID YELLOW, 4" WIDE, INSIDE: BROKEN YELLOW, 4" WIDE, 10' SEGMENTS WITH 30" GAPS
②	2-WAY CENTERLINE LANE MARKINGS (EPOXY)	PARALLEL SOLID YELLOW, 4" WIDE, 12" APART
③	LANE LANES (EPOXY)	BROKEN WHITE, 4" WIDE, 10' SEGMENTS WITH 30" GAPS
④	BROKEN EDGE/BIKE LANE LINES (EPOXY)	BROKEN WHITE, 4" WIDE, 5' SEGMENTS WITH 15" GAPS
⑤	EDGE/BIKE LANE LINES (EPOXY)	SOLID WHITE, 4" WIDE
⑥	CHANNELIZING LINES (EPOXY)	SOLID WHITE, 8" WIDE
⑦	STOP LINES (THERMO PLASTIC)	SOLID WHITE, 24" WIDE
⑧	CROSS HATCHING LINES (EPOXY)	SOLID WHITE, 8" WIDE
⑨	CROSS HATCHING LINES (EPOXY)	SOLID YELLOW, 8" WIDE

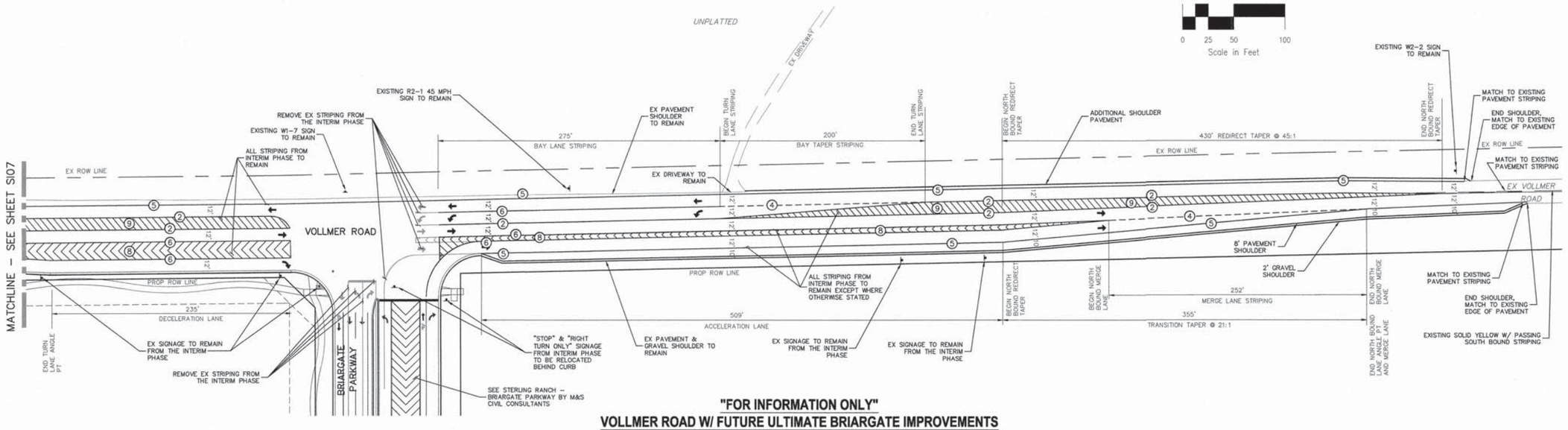
NOTE: ALL STRIPING INSTALLATION SHALL BE PER COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) "M&S STANDARDS" STANDARD PLAN NO. S-627-1.



"INTERIM STRIPING"
VOLLMER ROAD

1" = 50'

0 25 50 100
Scale in Feet



"FOR INFORMATION ONLY"
VOLLMER ROAD W/ FUTURE ULTIMATE BRIARGATE IMPROVEMENTS

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
FOR BURIED UTILITY INFORMATION
48 HRS BEFORE YOU DIG
CALL 1-800-922-1987

STERLING RANCH - VOLLMER ROAD (NORTH)
SIGNAGE AND STRIPING PLAN

PROJECT NO. 09-002 | SCALE: HORIZONTAL: 1"=50' VERTICAL: N/A | DATE: 01/03/2018 | SHEET 7 OF 7 | SI07

DESIGNED BY: VAS
DRAWN BY: ELY
CHECKED BY: GW

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

REVISIONS:

NO.	DATE	BY:	DESCRIPTION:	APP'D. BY:	DATE

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

CAUTION

File: C:\190002A\Sterling Ranch District\dwg\Const Dwg\Street\Vollmer Rd\SI07.dwg Plotstamp: 1/23/2018 1:10 PM

STERLING RANCH - BRIARGATE PARKWAY

FROM VOLLMER ROAD - WHEATLAND DRIVE

COUNTY OF EL PASO, STATE OF COLORADO

STREET IMPROVEMENT PLANS

INCLUDING SIGNAGE AND STRIPING PLAN

JANUARY 2018

AGENCIES

OWNER/DEVELOPER:	SR LAND, LLC 20 BOULDER CRESCENT, SUITE 201 COLORADO SPRINGS, CO 80903 JIM MORLEY (719) 471-1742
CIVIL ENGINEER:	M & S CIVIL CONSULTANTS, INC. 20 BOULDER CRESCENT, SUITE 110 COLORADO SPRINGS, CO 80903 VIRGIL A. SANCHEZ P.E. (719) 955-5485
COUNTY ENGINEERING:	EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT 2880 INTERNATIONAL CIRCLE, SUITE 110 COLORADO SPRINGS, CO 80910 JEFF RICE, P.E. (719) 520-6300
TRAFFIC ENGINEERING:	EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS 3275 AKERS DRIVE COLORADO SPRINGS, CO 80922 JENNIFER IRVINE, P.E. (719) 520-6460
WATER RESOURCES:	STERLING RANCH METRO DISTRICT ENGINEERS JDS-HYDRO CONSULTANTS 545 E. PIKES PEAK AVE., SUITE 300 COLORADO SPRINGS, CO 80903 JOHN MCGINN (719) 668-8769
FIRE DISTRICT:	BLACK FOREST FIRE PROTECTION DISTRICT 11445 TEACHOUT ROAD COLORADO SPRINGS, CO 80908 CHIEF BRYAN JACK (719) 495-4300
GAS DEPARTMENT:	COLORADO SPRINGS UTILITIES 7710 DURANT DR. COLORADO SPRINGS, CO 80947 TIM WENDT (719) 668-3556
ELECTRIC DEPARTMENT:	MOUNTAIN VIEW ELECTRIC 11140 E. WOODMEN ROAD FALCON, CO 80831 (719) 495-2283
COMMUNICATIONS:	CENTURYLINK / COMCAST COMMUNICATIONS (U.N.C.C. LOCATORS) (800) 922-1987 AT&T (LOCATORS) (719) 635-3674

BENCHMARKS:

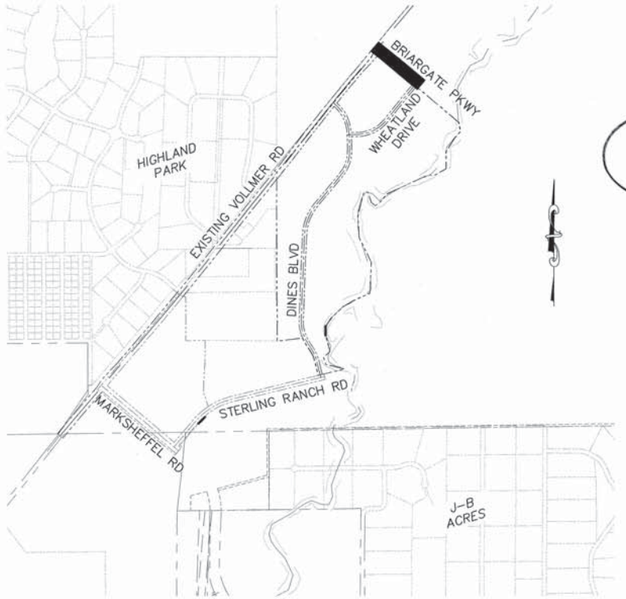
1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PAWNEE RANCHEROS SUBDIVISION
   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 = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

BASIS OF BEARINGS:

THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW1/4) OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID SOUTHWEST QUARTER (SW1/4) BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTHEAST CORNER OF SAID SOUTHWEST QUARTER (SW1/4) BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N 89°14'14" E, A DISTANCE OF 2,722.56 FEET.

RECEIVED VERSION
JAN 04 2018

VICINITY MAP
N.T.S.



SITE MAP
N.T.S.

APPROVALS:

ENGINEER'S STATEMENT:

DETAILED IMPROVEMENT PLANS AND SPECIFICATIONS ENGINEER'S STATEMENT:
THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID DETAILED PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR DETAILED DRAINAGE PLANS AND SPECIFICATIONS, AND SAID DETAILED PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH THE MASTER PLAN OF THE DRAINAGE BASIN. SAID DETAILED DRAINAGE PLANS AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR DRAINAGE FACILITY(S) IS DESIGNED. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS, OR OMISSIONS ON MY PART IN PREPARATION OF THE DETAILED IMPROVEMENT PLANS AND SPECIFICATIONS.

COLORADO REGISTERED VIRGIL A. SANCHEZ 37160 PROFESSIONAL ENGINEER

VIRGIL A SANCHEZ, COLORADO P.E. NO. 37160
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

1-4-18
DATE

OWNER/DEVELOPER STATEMENT:

I, THE OWNER HAVE READ AND WILL COMPLY WITH ALL OF THE REQUIREMENTS SPECIFIED IN THESE DETAILED PLANS AND SPECIFICATIONS.

SR LAND, LLC

1-4-18
DATE

EL PASO COUNTY:

COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA, AND ENGINEERING CRITERIA MANUAL AS AMENDED.

JENNIFER IRVINE, P.E.
COUNTY ENGINEER/ECM ADMINISTRATOR

30 JAN 18
DATE

STERLING RANCH METROPOLITAN DISTRICT:

THESE DOCUMENTS HAVE BEEN REVIEWED AND APPROVED FOR STORM DRAIN AND ASSOCIATED UTILITY SERVICE CONSTRUCTION.

FOR AND ON BEHALF OF THE STERLING RANCH METRO. DISTRICT

1-4-18
DATE

SHEET INDEX

ABBREVIATIONS

ACT	ACTUAL	FL	FLOW LINE	PT	POINT OF TANGENCY	AIR & VACUUM VALVE STA	
BCR	BACK OF CURB RETURN	FT	FEET, FOOT	PROP	PROPOSED	ANCHOR, CONC. REVERSE	
BOV	BLOWOFF VALVE ASSEMBLY	FUT	FUTURE	REM	REMOVE	ANODE	
BRK	BREAK	GRD	GRADE	ROW	RIGHTS OF WAY	CENTERLINE	
BT	BEGINNING OF TRANSITION	HORZ	HORIZONTAL	RSNTS	RESTRAINTS	FENCE	
CATV	CABLE TV	HP	HIGH POINT ELEVATION	RT	RIGHT	EXISTING SANITARY SEWER	
CL	CLASS, CENTERLINE	INT	INTERSECTION	SAN	SANITARY SEWER	EXISTING GAS	
CLR	CLEARANCE	LP	LOW POINT ELEVATION	SD	STANDARD DETAIL	EXISTING ELECTRIC (OH OR UG)	
CONST	CONSTRUCT	LT	LEFT	STA	STATION	EXISTING TELEPHONE	
CSU	COLORADO SPRINGS UTILITIES	LOC	LOCATION	STM	STORM	EXISTING TELEVISION	
ECR	END CURB RETURN	MIN	MINIMUM	TOB	TOP CORNER OF BOX	EXISTING FIBER OPTIC	
EL	ELEVATION	N,S,E,W	NORTH,SOUTH,EAST,WEST	TELE	TELEPHONE	EXISTING WATER	
EOA	EDGE OF ASPHALT	NTS	NOT TO SCALE	TYP	TYPICAL		
EOP	END OF PAVEMENT	PC	POINT OF VERTICAL CURVATURE	UNK	UNKNOWN		
EPC	EL PASO COUNTY	PCC	POINT OF COMPOUND CURVE	UP	UNDERGROUND POWER		
ESMT	EASEMENT	PCR	POINT OF CURB RETURN	UTL	UTILITY		
ET	END TRANSITION	PL	PROPERTY LINE	VERT	VERTICAL		
EX. EXIST	EXISTING	PRC	POINT OF REVERSE CURVE	WTR	WATER LINE		
G	GAS	PUB	PUBLIC	XING	CROSSING		
GB	GRADE BREAK	PVI	POINT OF VERTICAL INTERSECTION	YD	YARD (CUBIC)		
		PVC	POINT OF VERTICAL CURVE				
		PVT	POINT OF VERTICAL TANGENT				

LEGEND

PROPOSED GAS	G
PROPOSED SANITARY SEWER	S
PROPOSED WATER	W
RIGHT-OF-WAY	
PROPERTY LINE	
FIRE HYDRANT (EXISTING)	
FIRE HYDRANT (PROPOSED)	
STORM DRAIN	
VALVE (PROPOSED)	
VALVE (EXISTING)	
BLOWOFF ASSY. (PROPOSED)	
BLOWOFF ASSY. (EXISTING)	
PLUG (PROPOSED)	
PLUG (EXISTING)	

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
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CAUTION

STERLING RANCH - BRIARGATE PARKWAY
STREET IMPROVEMENT PLAN

PROJECT NO. 09-002 | SCALE: HORIZONTAL: N/A VERTICAL: N/A | DATE: 1/3/2018 | SHEET 1 OF 5 | SI01

DESIGNED BY: DLM
DRAWN BY: ELY
CHECKED BY: VAS

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE 719.955.5485
CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

Files: Q:\09002A\Sterling Ranch District\dwg\Const Dwg\Street\Briargate Pkwy\SI01.dwg Plotstamp: 1/4/2018 8:01 AM

SF 16-013

GENERAL CONSTRUCTION NOTES:

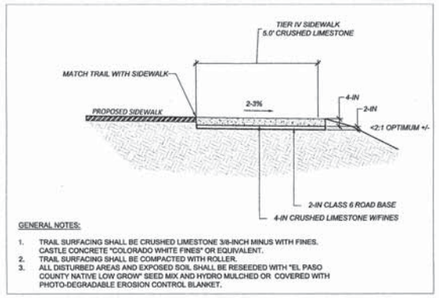
1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK. THE OMISSION FROM OR THE INCLUSION OF UTILITY LOCATIONS ON THE PLANS IS NOT TO BE CONSIDERED AS THE NONEXISTENCE OF OR A DEFINITE LOCATION OF EXISTING UNDERGROUND 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 PLANNING AND COMMUNITY DEVELOPMENT DIVISION.
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 BRAIRGATE PARKWAY AND VOLLMER ROAD WHICH ARE ARTERIALS AND A 50 FOOT SIGHT VISIBILITY TRIANGLE IS REQUIRED AND THERE SHALL BE NO OBSTRUCTIONS GREATER THAN 18" VERTICAL 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 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 PLANNING AND COMMUNITY DEVELOPMENT DIVISION.
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 DEPARTMENT OF PUBLIC WORKS (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 DEPARTMENT OF PUBLIC WORKS PRIOR TO ANY WORK WITHIN AN EXISTING EL PASO COUNTY ROADWAY, INCLUDING SIGNAGE OR STRIPING.

STANDARD NOTES FOR EL PASO COUNTY CONSTRUCTION PLANS

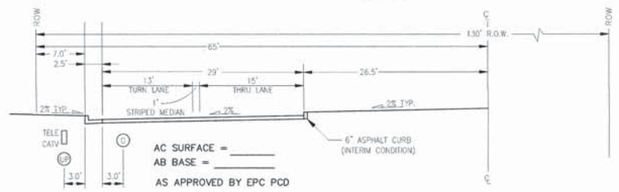
1. ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD NOTIFICATION 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 PLANNING AND COMMUNITY DEVELOPMENT – 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 DEPARTMENT OF PUBLIC WORKS. 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 DEPARTMENT OF PUBLIC WORKS.
10. CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS 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 VERTICAL ABOVE FLOWLINE ARE NOT ALLOWED WITHIN SIGHT TRIANGLES.
13. SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY DOT AND MUTCD CRITERIA.
14. CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DEPARTMENT PUBLIC WORKS, 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.



GENERAL NOTES:

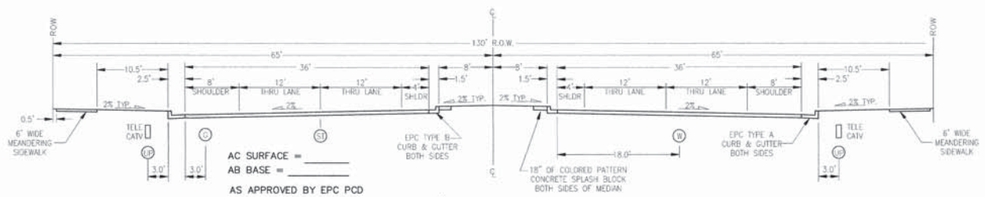
1. TRAIL SURFACING SHALL BE CRUSHED LIMESTONE 3/8-INCH MINUS WITH FINES. CASTLE CONCRETE "COLORADO WHITE FINES" OR EQUIVALENT.
2. TRAIL SURFACING SHALL BE COMPACTED WITH ROLLER.
3. ALL DISTURBED AREAS AND EXPOSED SOIL SHALL BE RESEEDED WITH "EL PASO COUNTY NATIVE LOW GROW" SEED MIX AND HYDRO MULCHED OR COVERED WITH PHOTO-DEGRADABLE EROSION CONTROL BLANKET.

TIER IV 5-FT SIDEWALK DETAIL
SCALE: NTS



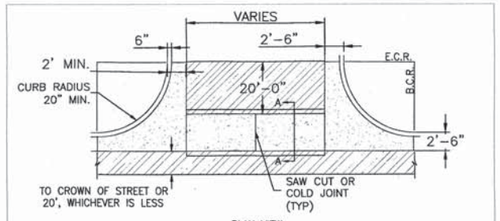
"INTERIM" BRIARGATE PARKWAY
SCALE: NTS

DESIGN SPEED = 50 MPH
POSTED SPEED = 25 MPH



"ULTIMATE" BRIARGATE PARKWAY
(MODIFIED) 4 LANE URBAN PRINCIPAL ARTERIAL CROSS SECTION
SCALE: NTS

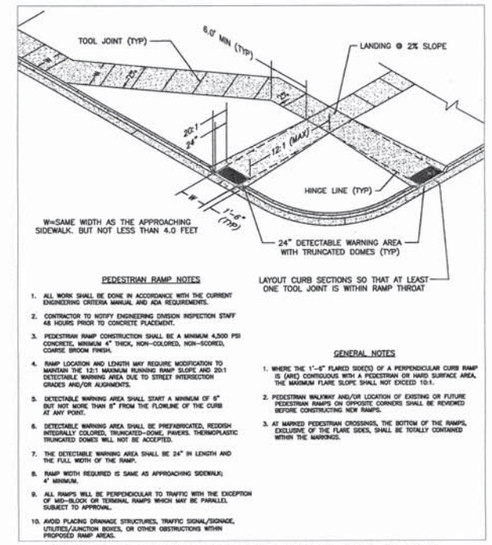
DESIGN SPEED = 50 MPH
POSTED SPEED = 45 MPH



NOTES

1. W – WIDTH SHALL BE 6' FOR LOCAL, 8' FOR COLLECTORS, AND 10' FOR ARTERIAL ROADS.
2. T – SQUARED-OFF RETURN TO BE POURED MONOLITHICALLY, 8" PCC FOR LOCAL ROADS, 9" FOR COLLECTORS WITH 6x6 – 4.4 W.W.F. OR #4 REINFORCING BAR @ 18" EACH WAY.
3. ▨ = 3" MINIMUM ASPHALT DEPTH (2 LIFTS).
4. DESIGN TO SPECIFY ELEVATIONS AT PI AND PCR.

TYPICAL CROSS PAN LAYOUT DETAIL (SD 2-26)
SCALE: NTS



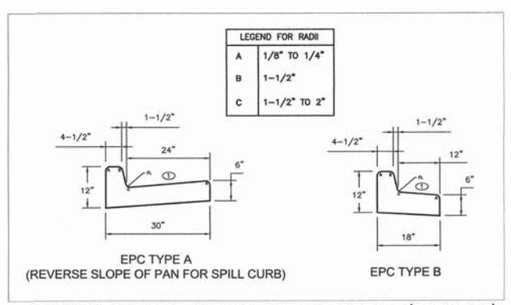
PEDESTRIAN RAMP NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CURRENT ENGINEERING CRITERIA MANUAL AND ADA REQUIREMENTS.
2. CONTRACTOR TO NOTIFY ENGINEERING DIVISION INSPECTION STAFF 48 HOURS PRIOR TO CONCRETE PLACEMENT.
3. PEDESTRIAN RAMP CONSTRUCTION SHALL BE A MINIMUM 4,500 PSI CONCRETE, MINIMUM 4" THICK, NON-COLORED, NON-SCORED, COARSE BROOM FINISH.
4. RAMP LOCATION AND LENGTH MAY REQUIRE MODIFICATION TO MAINTAIN THE 12:1 MAXIMUM RUNNING RAMP SLOPE AND 20:1 DETECTABLE WARNING AREA DUE TO STREET INTERSECTION GRADES AND/OR ALIGNMENTS.
5. DETECTABLE WARNING AREA SHALL START A MINIMUM OF 6" BUT NOT MORE THAN 8" FROM THE FLOWLINE OF THE CURB AT ANY POINT.
6. DETECTABLE WARNING AREA SHALL BE PREFABRICATED, REDDISH INTEGRALLY COLORED, TRUNCATED-DOME, PAVERS. THERMOPLASTIC TRUNCATED DOMES WILL NOT BE ACCEPTED.
7. THE DETECTABLE WARNING AREA SHALL BE 24" IN LENGTH AND THE FULL WIDTH OF THE RAMP.
8. RAMP WIDTH REQUIRED IS SAME AS APPROACHING SIDEWALK; 4' MINIMUM.
9. ALL RAMPS WILL BE PERPENDICULAR TO TRAFFIC WITH THE EXCEPTION OF MID-BLOCK OR TERMINAL RAMPS WHICH MAY BE PARALLEL SUBJECT TO APPROVAL.
10. AVOID PLACING DRAINAGE STRUCTURES, TRAFFIC SIGNAL/SIGNAGE, UTILITIES/JUNCTION BOXES, OR OTHER OBSTRUCTIONS WITHIN PROPOSED RAMP AREAS.

GENERAL NOTES

1. WHERE THE 1'-6" FLARED SIDE(S) OF A PERPENDICULAR CURB RAMP IS (ARE) CONTIGUOUS WITH A PEDESTRIAN OR HARD SURFACE AREA, THE MAXIMUM FLARE SLOPE SHALL NOT EXCEED 10:1.
2. PEDESTRIAN WALKWAY AND/OR LOCATION OF EXISTING OR FUTURE PEDESTRIAN RAMPS ON OPPOSITE CORNERS SHALL BE REVIEWED BEFORE CONSTRUCTING NEW RAMPS.
3. AT MARKED PEDESTRIAN CROSSINGS, THE BOTTOM OF THE RAMPS, EXCLUSIVE OF THE FLARE SIDES, SHALL BE TOTALLY CONTAINED WITHIN THE MARKINGS.

PEDESTRIAN INTERSECTION RAMP (SD 2-41)
SCALE: NTS



TYPICAL CURB & GUTTER DETAILS DETAIL (SD 2-20)
SCALE: NTS

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
FOR BURIED UTILITY INFORMATION
48 HRS BEFORE YOU DIG
CALL 1-800-922-1987

REVISIONS:

NO.	DATE:	BY:	DESCRIPTION:	APPR. BY:	DATE:

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

CAUTION

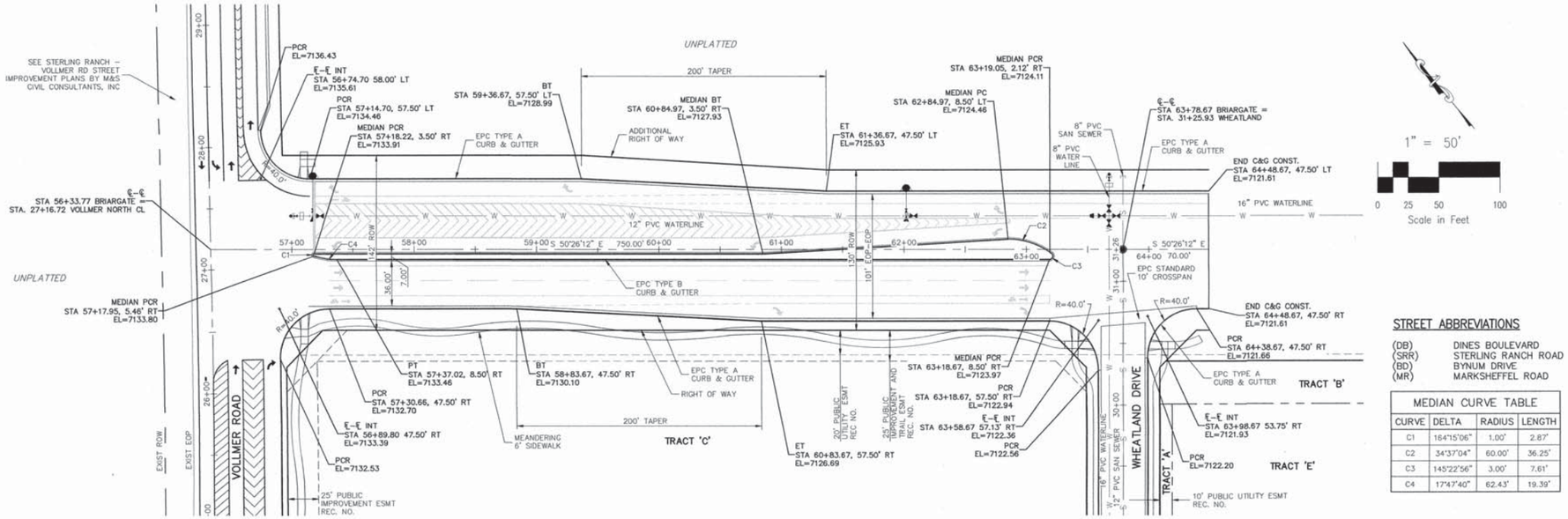
STERLING RANCH – BRIARGATE PARKWAY
NOTES & DETAILS SHEET

PROJECT NO. 09-002	SCALE:	DATE: 1/3/2018	SHEET 2 OF 5	SI02
DESIGNED BY: DLM	HORIZONTAL: N/A			
DRAWN BY: ELY	VERTICAL: N/A			
CHECKED BY: VAS				

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE 719.955.5485
CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

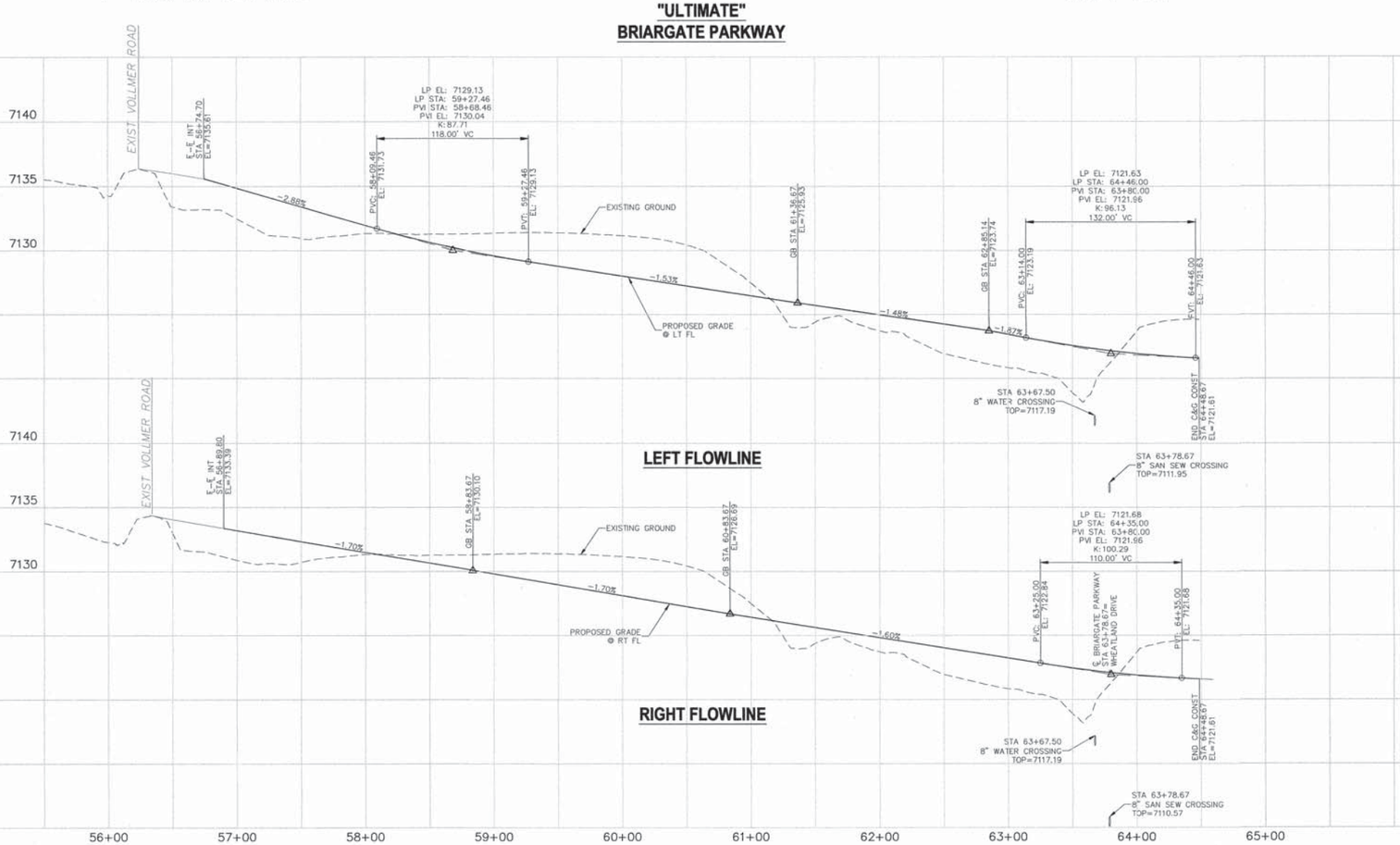


"ULTIMATE" BRIARGATE PARKWAY

STREET ABBREVIATIONS

(DB)	DINES BOULEVARD
(SRR)	STERLING RANCH ROAD
(BD)	BYNUM DRIVE
(MR)	MARKSHEFFEL ROAD

MEDIAN CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C1	164°15'06"	1.00'	2.87'
C2	34°37'04"	60.00'	36.25'
C3	145°22'56"	3.00'	7.61'
C4	17°47'40"	62.43'	19.39'



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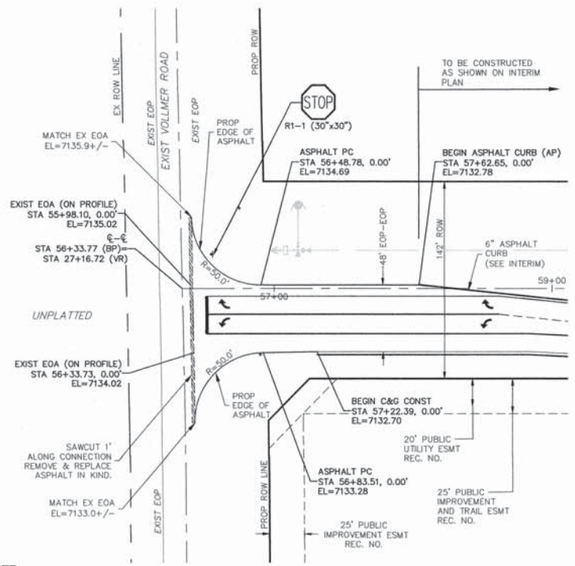
STERLING RANCH – BRIARGATE PARKWAY
"ULTIMATE" STREET IMPROVEMENT PLANS
DATE: 1/3/2018
SHEET 3 OF 5
SI03
PROJECT NO. 09-002
SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'
DESIGNED BY: DLM
DRAWN BY: ELY
CHECKED BY: VAS

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE 719.955.5485
CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.
VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

REVISIONS:
NO. | DATE: | BY: | DESCRIPTION: | APPVD: BY: | DATE:

File: O:\09002A\Sterling Ranch (District\dwg\Const Dwg\Street\Briargate Pkwy\SI03.dwg Plotstamp: 1/4/2018 9:42 AM

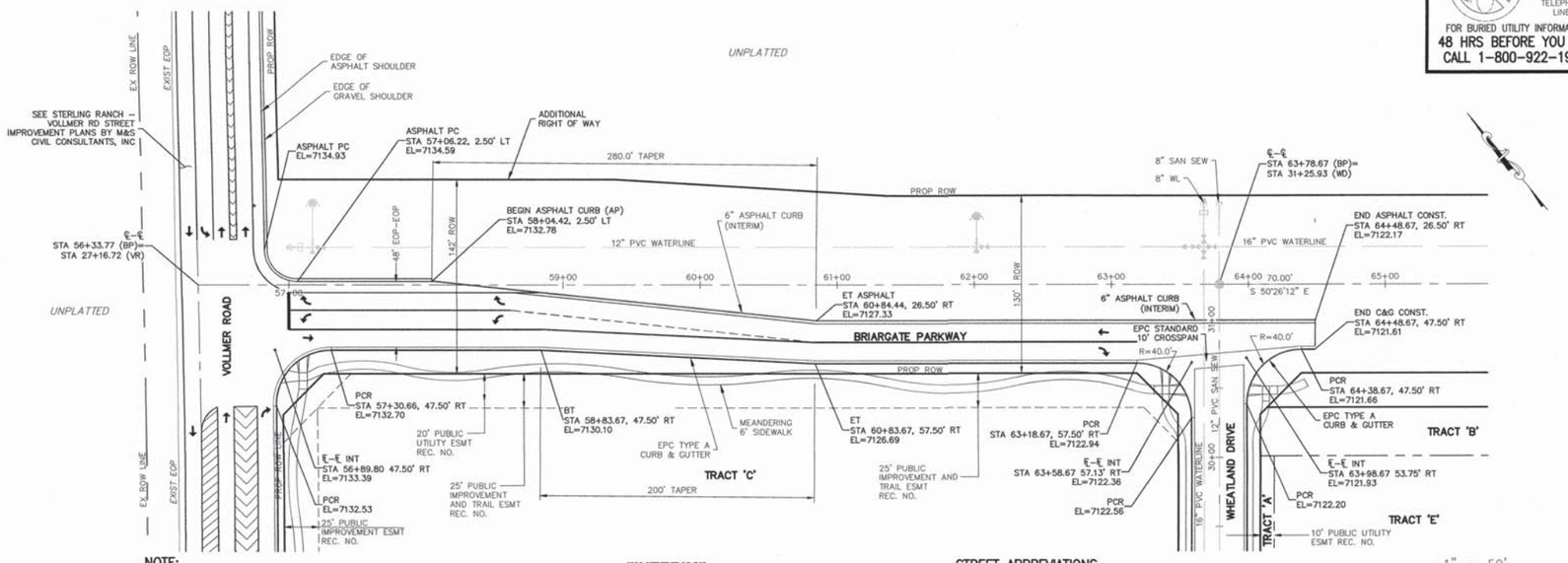


NOTE:

ALL STATION/ELEVATION LABELS REFERENCE TEMPORARY EOA STATIONING.

"TEMPORARY" BRIARGATE PARKWAY W/SIGNAGE & STRIPING *

* REMAINDER OF ROAD (TO EAST) TO BE SIGNED AND STRIPED AS SHOWN ON INTERIM PLAN ON PAGE SI05.



NOTE:

ALL STATION/ELEVATION LABELS REFERENCE ULTIMATE CENTERLINE STATIONING.

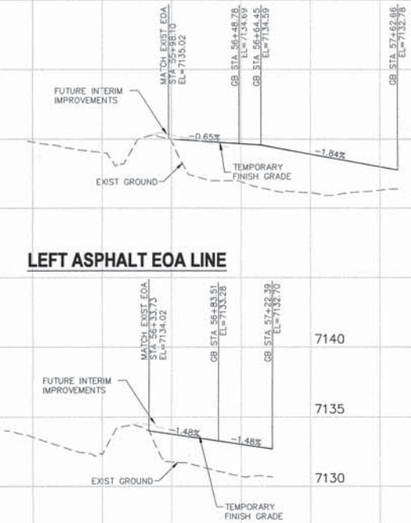
"INTERIM" BRIARGATE PARKWAY

STREET ABBREVIATIONS

(VR) VOLLMER ROAD
(BP) BRIARGATE PARKWAY
(WD) WHEATLAND DRIVE

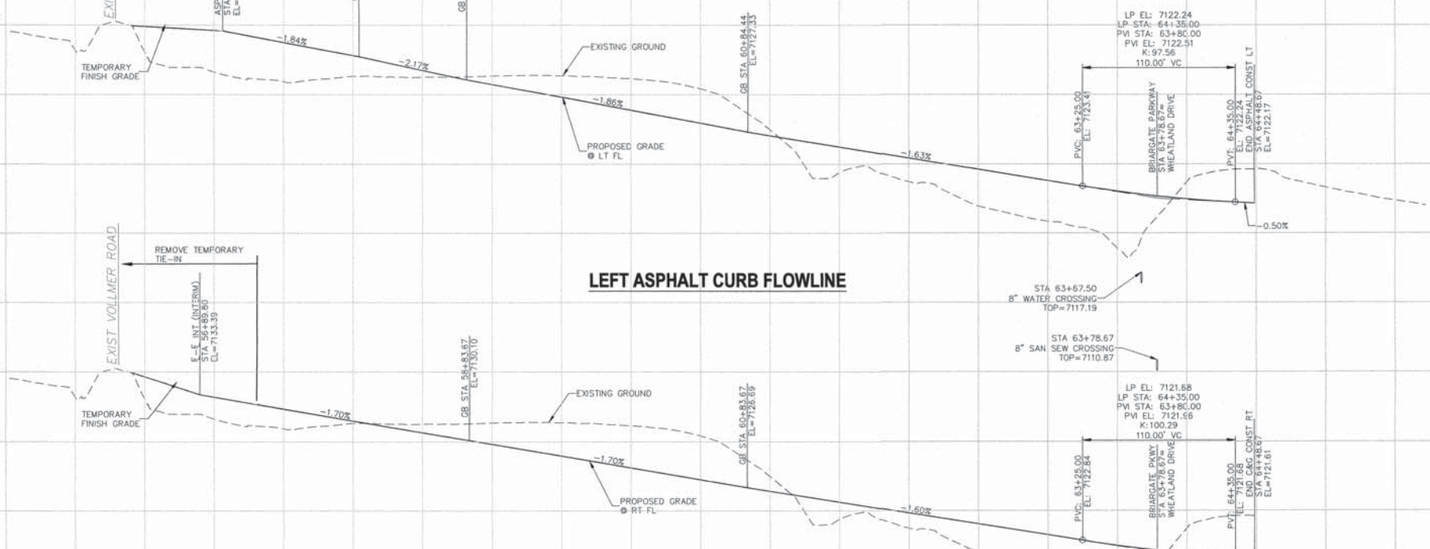
1" = 50'

0 25 50 100
Scale in Feet



LEFT ASPHALT EOA LINE

RIGHT ASPHALT EOA LINE



LEFT ASPHALT CURB FLOWLINE

RIGHT FLOWLINE

55+00 56+00 57+00 56+00 57+00 58+00 59+00 60+00 61+00 62+00 63+00 64+00 65+00

File: Q:\JOB02A\Sterling Ranch District V.dwg\Const Dwg\Street\Briargate Pkwy\SI04.dwg PlotStamp: 1/4/2018 9:54 AM

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48 HRS BEFORE YOU DIG
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STERLING RANCH – BRIARGATE PARKWAY
"INTERIM" STREET IMPROVEMENT PLANS

PROJECT NO. 09-002 | SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5' | DATE: 1/3/2018 | SHEET 4 OF 5 | SI04

DESIGNED BY: DLM
DRAWN BY: ELY
CHECKED BY: VAS

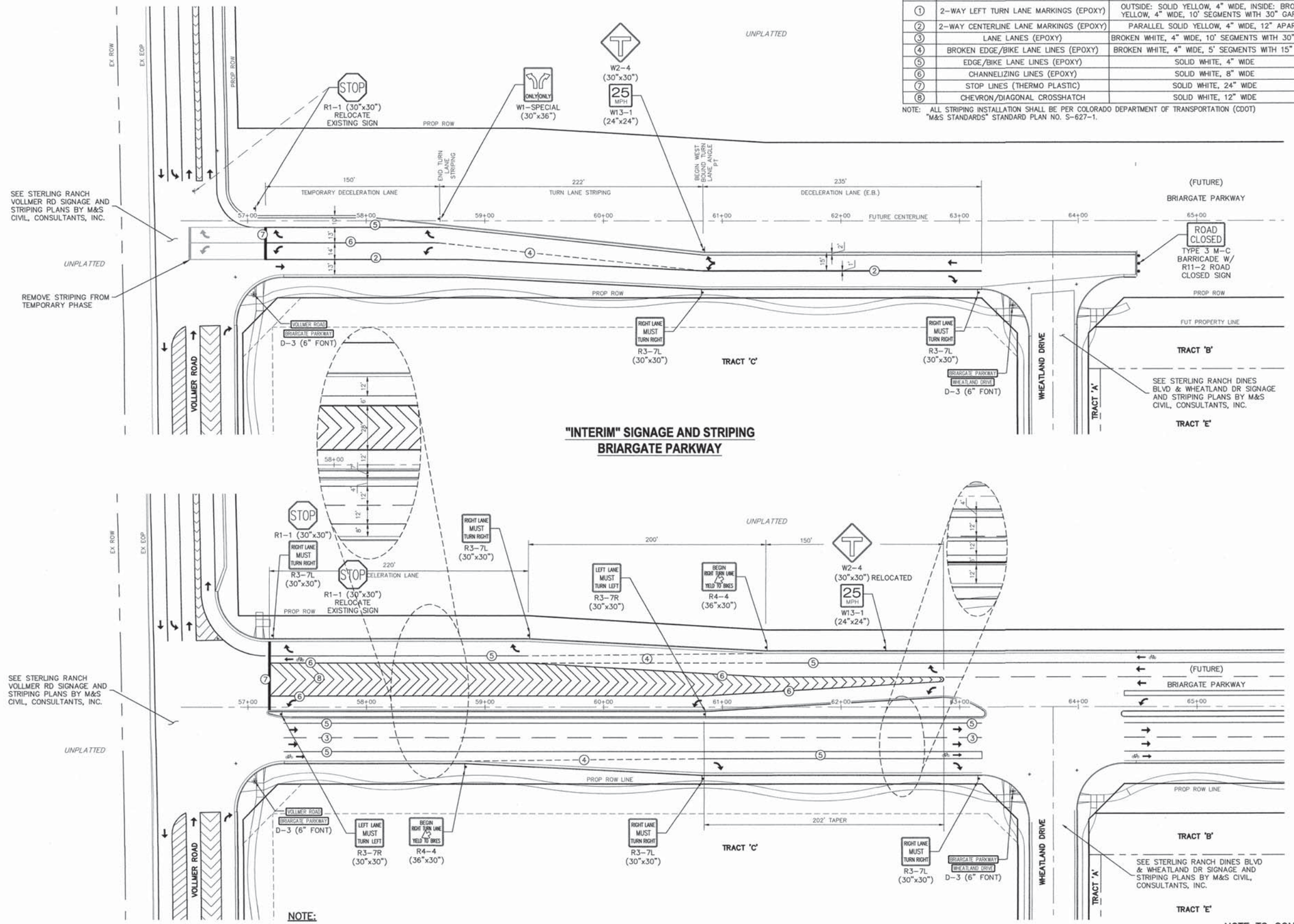
20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE 719.955.5485
CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.
VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

REVISIONS:
NO. | DATE: | BY: | DESCRIPTION: | APPR'D: BY: | DATE:

STRIPING LEGEND		
STRIPE	PAVEMENT MARKINGS	MARKING DESCRIPTION
①	2-WAY LEFT TURN LANE MARKINGS (EPOXY)	OUTSIDE: SOLID YELLOW, 4" WIDE, INSIDE: BROKEN YELLOW, 4" WIDE, 10' SEGMENTS WITH 30' GAPS
②	2-WAY CENTERLINE LANE MARKINGS (EPOXY)	PARALLEL SOLID YELLOW, 4" WIDE, 12" APART
③	LANE LANES (EPOXY)	BROKEN WHITE, 4" WIDE, 10' SEGMENTS WITH 30' GAPS
④	BROKEN EDGE/BIKE LANE LINES (EPOXY)	BROKEN WHITE, 4" WIDE, 5' SEGMENTS WITH 15" GAPS
⑤	EDGE/BIKE LANE LINES (EPOXY)	SOLID WHITE, 4" WIDE
⑥	CHANNELIZING LINES (EPOXY)	SOLID WHITE, 8" WIDE
⑦	STOP LINES (THERMO PLASTIC)	SOLID WHITE, 24" WIDE
⑧	CHEVRON/DIAGONAL CROSSHATCH	SOLID WHITE, 12" WIDE

NOTE: ALL STRIPING INSTALLATION SHALL BE PER COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) "M&S STANDARDS" STANDARD PLAN NO. S-627-1.



"INTERIM" SIGNAGE AND STRIPING BRIARGATE PARKWAY

NOTE:

ULTIMATE CONDITION SHOWN ASSUMES ALL INTERIM STRIPING AND SIGNAGE REMOVED AS REQUIRED.

FUTURE "ULTIMATE" SIGNAGE AND STRIPING BRIARGATE PARKWAY

"FOR INFORMATION ONLY"

1" = 40'

0 20 40 80

Scale in Feet

NOTE TO CONTRACTOR:

1. ALL 4" AND 8" SOLID OR SKIP PAVEMENT MARKINGS ARE TO BE EPOXY.
2. SIGNS AND POLES SHALL BE PER CDOT STANDARDS S-614-8, S-1614-2, AND S-614-3, LATEST REVISION.
3. ALL SIGNAGE INSTALLATION IS TO BE IN COMPLIANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
4. SIGN LOCATIONS ARE CONCEPTUAL. APPROVAL OF THE CONSTRUCTION DRAWINGS DOES NOT INCLUDE SIGN LOCATIONS.

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES

FOR BURIED UTILITY INFORMATION
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STERLING RANCH - BRIARGATE PARKWAY

SIGNAGE & STRIPING PLAN

PROJECT NO. 09-002 | DESIGNED BY: DLM | DRAWN BY: ELY | CHECKED BY: VAS | SCALE: HORIZONTAL: 1"=40' VERTICAL: N/A | DATE: 1/3/2018 | SHEET 5 OF 5 | SI05

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE 719.955.5485
CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

REVISIONS:

NO.	DATE	BY	DESCRIPTION:	APPR. BY	DATE

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CAUTION

STERLING RANCH-DINES BLVD & WHEATLAND DR.

COUNTY OF EL PASO, STATE OF COLORADO

STREET IMPROVEMENT PLAN

APRIL 2017

AGENCIES

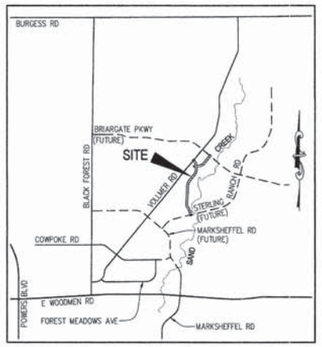
OWNER/DEVELOPER:	SR LAND, LLC 20 BOULDER CRESCENT, SUITE 201 COLORADO SPRINGS, CO 80903 JIM MORLEY (719) 471-1742
CIVIL ENGINEER:	M & S CIVIL CONSULTANTS, INC. 20 BOULDER CRESCENT, SUITE 110 COLORADO SPRINGS, CO 80903 VIRGIL A. SANCHEZ P.E. (719) 955-5485
COUNTY ENGINEERING:	EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT 2880 INTERNATIONAL CIRCLE, SUITE 110 COLORADO SPRINGS, CO 80910 JEFF RICE, P.E. (719) 520-6300
TRAFFIC ENGINEERING:	EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS 3275 AKERS DRIVE COLORADO SPRINGS, CO 80922 JENNIFER IRVINE, P.E. (719) 520-6460
WATER RESOURCES:	STERLING RANCH METRO DISTRICT ENGINEERS JDS-HYDRO CONSULTANTS 545 E. PIKES PEAK AVE., SUITE 300 COLORADO SPRINGS, CO 80903 JOHN MCGINN (719) 668-8769
FIRE DISTRICT:	BLACK FOREST FIRE PROTECTION DISTRICT 11445 TEACHOUT ROAD COLORADO SPRINGS, CO 80908 CHIEF BRYAN JACK (719) 495-4300
GAS DEPARTMENT:	COLORADO SPRINGS UTILITIES 7710 DURANT DR. COLORADO SPRINGS, CO 80947 TIM WENDT (719) 668-3556
ELECTRIC DEPARTMENT:	MOUNTAIN VIEW ELECTRIC 11140 E. WOODMEN ROAD FALCON, CO 80831 (719) 495-2283
COMMUNICATIONS:	CENTURYLINK / COMCAST COMMUNICATIONS (U.N.C.C. LOCATORS) (800) 922-1987 AT&T (LOCATORS) (719) 635-3674

BENCHMARKS

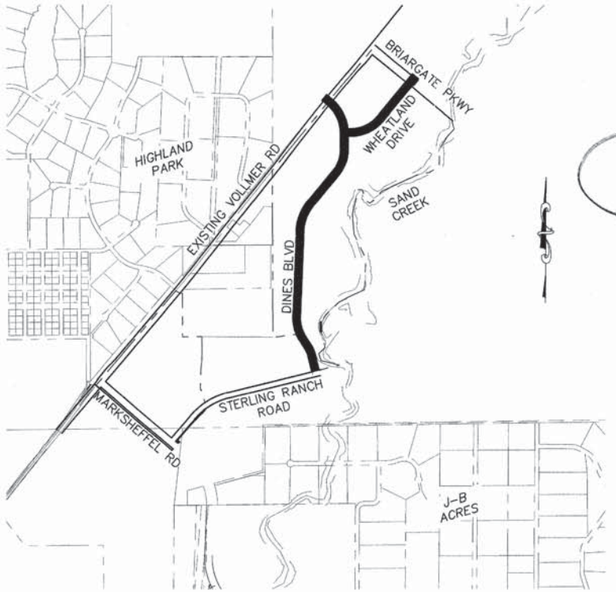
1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853"
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE
   NORTHING = 410095.404
   EASTING = 235052.131
   ELEVATION = 7000.40
3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141"
   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

BASIS OF BEARINGS:

THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW1/4) OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID SOUTHWEST QUARTER (SW1/4) BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTHEAST CORNER OF SAID SOUTHWEST QUARTER (SW1/4) BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N 89°14'14" E, A DISTANCE OF 2,722.56 FEET.



VICINITY MAP
N.T.S.



SITE MAP
N.T.S.

RECEIVED VERSION
MAY 01 2017

APPROVALS:

ENGINEER'S STATEMENT:

DETAILED IMPROVEMENT PLANS AND SPECIFICATIONS ENGINEER'S STATEMENT:
THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID DETAILED PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR DETAILED DRAINAGE PLANS AND SPECIFICATIONS, AND SAID DETAILED PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH THE MASTER PLAN OF THE DRAINAGE BASIN. SAID DETAILED DRAINAGE PLANS AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR DRAINAGE FACILITY(S) IS DESIGNED. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS, OR OMISSIONS ON MY PART IN PREPARATION OF THE DETAILED IMPROVEMENT PLANS AND SPECIFICATIONS.

COLORADO REGISTERED VIRGIL A. SANCHEZ 37160 PROFESSIONAL ENGINEER

VIRGIL A SANCHEZ, COLORADO P.E. NO. 37160
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

4-17-17
DATE

OWNER/DEVELOPER STATEMENT:

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH ALL OF THE REQUIREMENTS SPECIFIED IN THESE DETAILED PLANS SPECIFICATIONS.

SR LAND, LLC

4/17/2017
DATE

EL PASO COUNTY:

COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA, AND ENGINEERING CRITERIA MANUAL AS AMENDED.

JENNIFER IRVINE, P.E.
COUNTY ENGINEER/ECM ADMINISTRATOR

30 JUNE 18
DATE

STERLING RANCH METROPOLITAN DISTRICT:

THESE DOCUMENTS HAVE BEEN REVIEWED AND APPROVED FOR STORM DRAIN AND ASSOCIATED UTILITY SERVICE CONSTRUCTION.

FOR AND ON BEHALF OF THE STERLING RANCH METRO. DISTRICT

4-17-17
DATE

SHEET INDEX

ABBREVIATIONS

ACT	ACTUAL	FL	FLOW LINE	PT	POINT OF TANGENCY
BCR	BACK OF CURB RETURN	FT	FEET, FOOT	PROP	PROPOSED
BOV	BLOWOFF VALVE ASSEMBLY	FUT	FUTURE	REM	REMOVE
BRK	BREAK	GRD	GRADE	ROW	RIGHT OF WAY
BT	BEGINNING OF TRANSITION	HORZ	HORIZONTAL	RSNTS	RESTRAINTS
CATV	CABLE TV	HP	HIGH POINT ELEVATION	RT	RIGHT
CL	CLASS, CENTERLINE	INT	INTERSECTION	SAN	SANITARY SEWER
CLR	CLEARANCE	LP	LOW POINT ELEVATION	SD	STANDARD DETAIL
CONST	CONSTRUCT	LT	LEFT	STA	STATION
CSU	COLORADO SPRINGS UTILITIES	LOC	LOCATION	STM	STORM
ECR	END CURB RETURN	MIN	MINIMUM	COB	TOP CORNER OF BOX
EL	ELEVATION	N,S,E,W	NORTH,SOUTH,EAST,WEST	TELE	TELEPHONE
EOA	EDGE OF ASPHALT	NTS	NOT TO SCALE	TYP	TYPICAL
EOP	END OF PAVEMENT	PC	POINT OF VERTICAL CURVATURE	UNK	UNKNOWN
EPC	EL PASO COUNTY	PCC	POINT OF COMPOUND CURVE	@	UNDERGROUND POWER
ESMT	EASEMENT	PCR	POINT OF CURB RETURN	UTL	UTILITY
ET	END TRANSITION	PL	PROPERTY LINE	VERT	VERTICAL
EX	EXISTING	PRC	POINT OF REVERSE CURVE	WTR	WATER LINE
G	GAS	PUB	PUBLIC	XING	CROSSING
GB	GRADE BREAK	PVI	POINT OF VERTICAL INTERSECTION	YD	YARD (CUBIC)
		PVC	POINT OF VERTICAL CURVE		
		PVT	POINT OF VERTICAL TANGENT		

LEGEND

AIR & VACUUM VALVE STA
ANCHOR, CONC. REVERSE ANODE
CENTERLINE
FENCE
EXISTING SANITARY SEWER
EXISTING GAS
EXISTING ELECTRIC (OH OR UG)
EXISTING TELEPHONE
EXISTING TELEVISION
EXISTING FIBER OPTIC
EXISTING WATER

PROPOSED GAS
PROPOSED SANITARY SEWER
PROPOSED WATER
RIGHT-OF-WAY
PROPERTY LINE
FIRE HYDRANT (EXISTING)
FIRE HYDRANT (PROPOSED)
STORM DRAIN
VALVE (PROPOSED)
VALVE (EXISTING)
BLOWOFF ASSY. (PROPOSED)
BLOWOFF ASSY. (EXISTING)
PLUG (PROPOSED)
PLUG (EXISTING)

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REVISIONS:

NO.	DATE:	BY:	DESCRIPTION:

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CAUTION

STERLING RANCH-DINES BLVD & WHEATLAND DR.
STREET IMPROVEMENT PLAN
PROJECT NO. 09-006 | FILE: g:\99006A\Drafting Files\1-3 Plans\Cover Sheet\Cover Sheet (Dines Blvd)(SI01).dwg | DESIGNED BY: DM | DRAWN BY: BB | CHECKED BY: WAS | SCALE: HORIZ: N/A VERT: N/A | DATE: 04/17/2017 | SHEET 1 OF 10 | SI01

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.
VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160
COLORADO REGISTERED VIRGIL A. SANCHEZ 37160 PROFESSIONAL ENGINEER

APPROVD: BY: DATE:

File: G:\99006A\Sterling Ranch No 3\dwg\Const. Dwg\Street Plans\Dines Blvd\SI01.dwg Plotstamp: 2/9/2017 10:48 AM

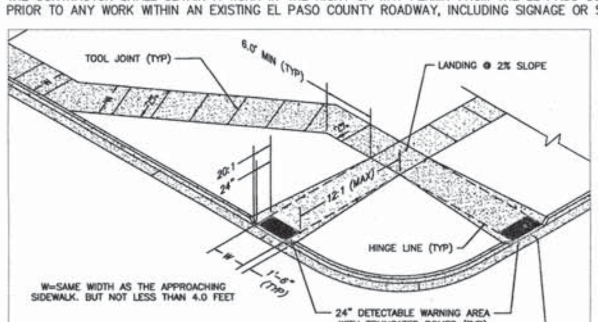
SF-16-013

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 PLANNING AND COMMUNITY DEVELOPMENT DIVISION.
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 BRAIRGATE PARKWAY AND VOLLMER ROAD WHICH ARE ARTERIALS AND A 50 FOOT SIGHT VISIBILITY TRIANGLE IS REQUIRED AND THERE SHALL BE NO OBSTRUCTIONS GREATER THAN 18" VERTICAL 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 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 PLANNING AND COMMUNITY DEVELOPMENT DIVISION.
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 DEPARTMENT OF PUBLIC WORKS (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 DEPARTMENT OF PUBLIC WORKS PRIOR TO ANY WORK WITHIN AN EXISTING EL PASO COUNTY ROADWAY, INCLUDING SIGNAGE OR STRIPING.



PEDESTRIAN RAMP NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CURRENT ENGINEERING CRITERIA MANUAL AND ADA REQUIREMENTS.
2. CONTRACTOR TO NOTIFY ENGINEERING DIVISION INSPECTION STAFF 48 HOURS PRIOR TO CONCRETE PLACEMENT.
3. PEDESTRIAN RAMP CONSTRUCTION SHALL BE A MINIMUM 4,500 PSI CONCRETE, MINIMUM 4" THICK, NON-COLORED, NON-SCORED, COARSE BROOM FINISH.
4. RAMP LOCATION AND LENGTH MAY REQUIRE MODIFICATION TO MAINTAIN THE 12:1 MAXIMUM RUNNING RAMP SLOPE AND 20:1 DETECTABLE WARNING AREA DUE TO STREET INTERSECTION GRADES AND/OR ALIGNMENTS.
5. DETECTABLE WARNING AREA SHALL START A MINIMUM OF 6" BUT NOT MORE THAN 8" FROM THE FLOWLINE OF THE CURB AT ANY POINT.
6. DETECTABLE WARNING AREA SHALL BE PREFABRICATED, REDDISH INTEGRALLY COLORED, TRUNCATED-DOME, PAVERS. THERMOPLASTIC TRUNCATED DOMES WILL NOT BE ACCEPTED.
7. THE DETECTABLE WARNING AREA SHALL BE 24" IN LENGTH AND THE FULL WIDTH OF THE RAMP.
8. RAMP WIDTH REQUIRED IS SAME AS APPROACHING SIDEWALK; 4' MINIMUM.
9. ALL RAMPS WILL BE PERPENDICULAR TO TRAFFIC WITH THE EXCEPTION OF MID-BLOCK OR TERMINAL RAMPS WHICH MAY BE PARALLEL SUBJECT TO APPROVAL.
10. AVOID PLACING DRAINAGE STRUCTURES, TRAFFIC SIGNAL/SIGNAGE, UTILITIES/JUNCTION BOXES, OR OTHER OBSTRUCTIONS WITHIN PROPOSED RAMP AREAS.

GENERAL NOTES

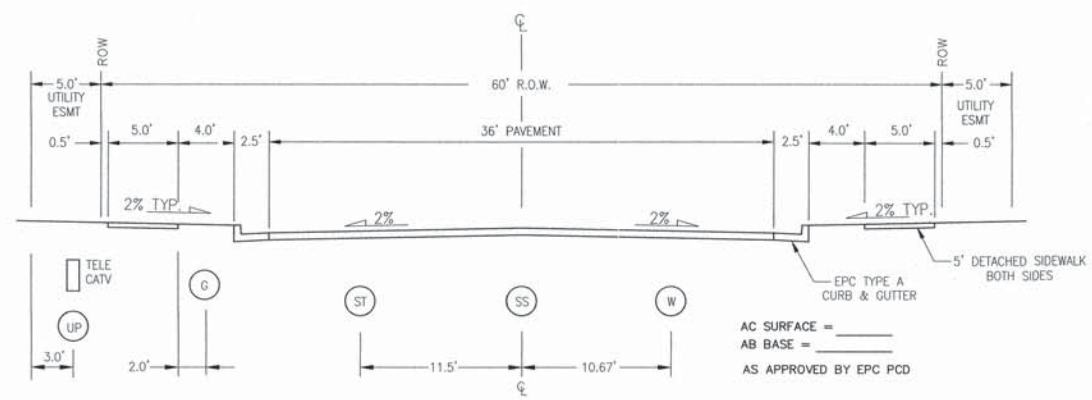
1. WHERE THE 1'-6" FLARED SIDE(S) OF A PERPENDICULAR CURB RAMP IS (ARE) CONTIGUOUS WITH A PEDESTRIAN OR HARD SURFACE AREA, THE MAXIMUM FLARE SLOPE SHALL NOT EXCEED 10:1.
2. PEDESTRIAN WALKWAY AND/OR LOCATION OF EXISTING OR FUTURE PEDESTRIAN RAMPS ON OPPOSITE CORNERS SHALL BE REVIEWED BEFORE CONSTRUCTING NEW RAMPS.
3. AT MARKED PEDESTRIAN CROSSINGS, THE BOTTOM OF THE RAMPS, EXCLUSIVE OF THE FLARE SIDES, SHALL BE TOTALLY CONTAINED WITHIN THE MARKINGS.

PEDESTRIAN INTERSECTION RAMP (SD 2-41)

SCALE: NTS

STANDARD NOTES FOR EL PASO COUNTY CONSTRUCTION PLANS

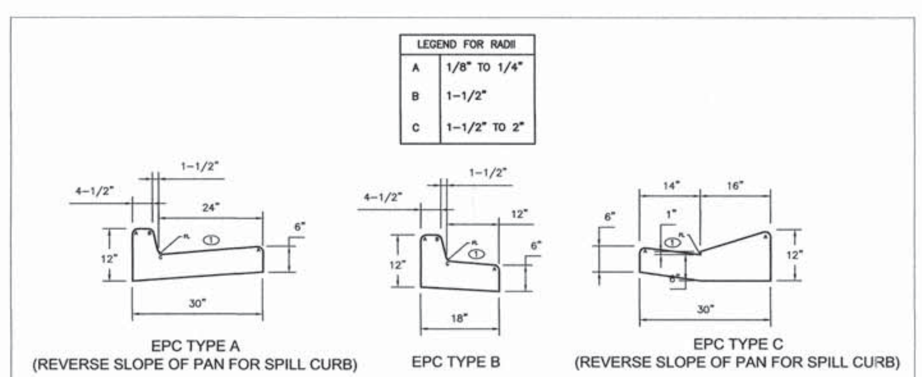
1. ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD NOTIFICATION 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 PLANNING AND COMMUNITY DEVELOPMENT – 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 DEPARTMENT OF PUBLIC WORKS. 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 DEPARTMENT OF PUBLIC WORKS.
10. CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS 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 VERTICAL ABOVE FLOWLINE ARE NOT ALLOWED WITHIN SIGHT TRIANGLES.
13. SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY DOT AND MUTCD CRITERIA.
14. CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DEPARTMENT PUBLIC WORKS, 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.



URBAN RESIDENTIAL COLLECTOR "DINES BOULEVARD" & "WHEATLAND DRIVE"

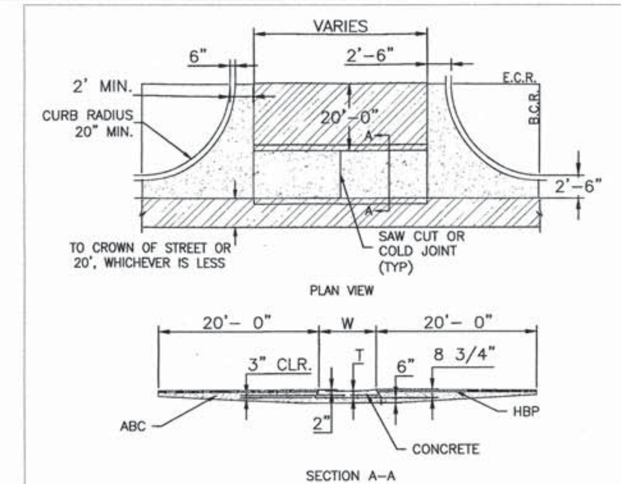
SCALE: NTS

DESIGN SPEED = 40 MPH
POSTED SPEED = 35 MPH



TYPICAL CURB & GUTTER DETAILS DETAIL (SD 2-20)

SCALE: NTS

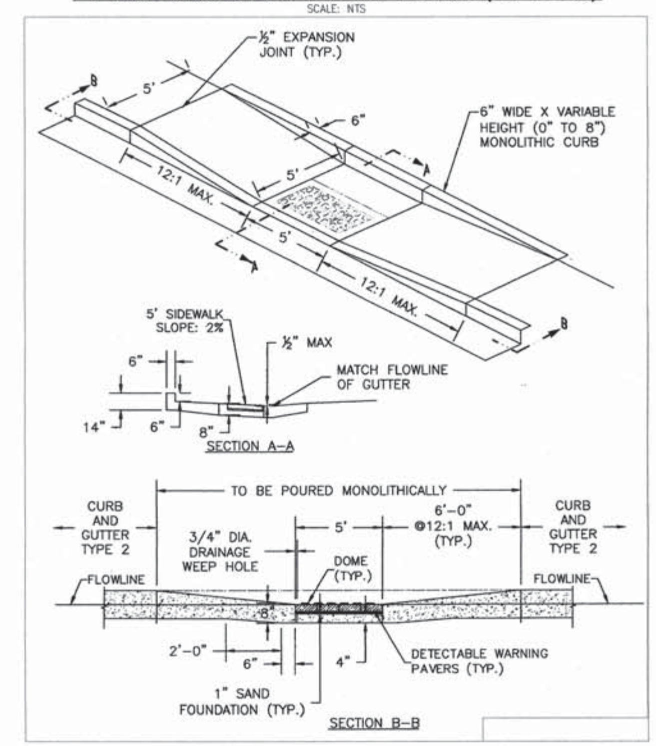


NOTES

1. W – WIDTH SHALL BE 6' FOR LOCAL, 8' FOR COLLECTORS, AND 10' FOR ARTERIAL ROADS.
2. T – SQUARED-OFF RETURN TO BE POURED MONOLITHICALLY, 8" PCC FOR LOCAL ROADS, 9" FOR COLLECTORS WITH 6x6 – 4.4 W.W.F. OR #4 REINFORCING BAR @ 18" EACH WAY.
3. [hatch] = 3" MINIMUM ASPHALT DEPTH (2 LIFTS).
4. DESIGN TO SPECIFY ELEVATIONS AT PI AND PCR.

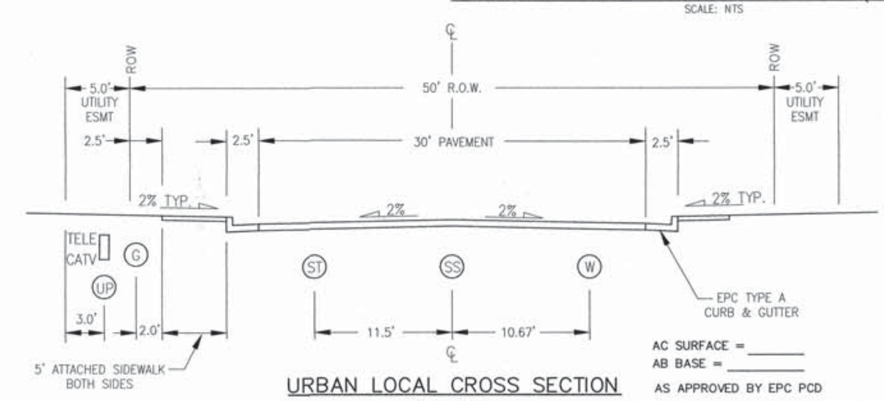
TYPICAL CROSS PAN LAYOUT DETAIL (SD 2-26)

SCALE: NTS



PARALLEL PEDESTRIAN RAMP DETAIL (SD 2-50)

SCALE: NTS



URBAN LOCAL CROSS SECTION

SCALE: NTS

DESIGN SPEED = 25 MPH
POSTED SPEED = 25 MPH

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
FOR BURIED UTILITY INFORMATION
48 HRS BEFORE YOU DIG
CALL 1-800-922-1987

REVISIONS: NO. | DATE | BY | DESCRIPTION | APPR'D. BY | DATE

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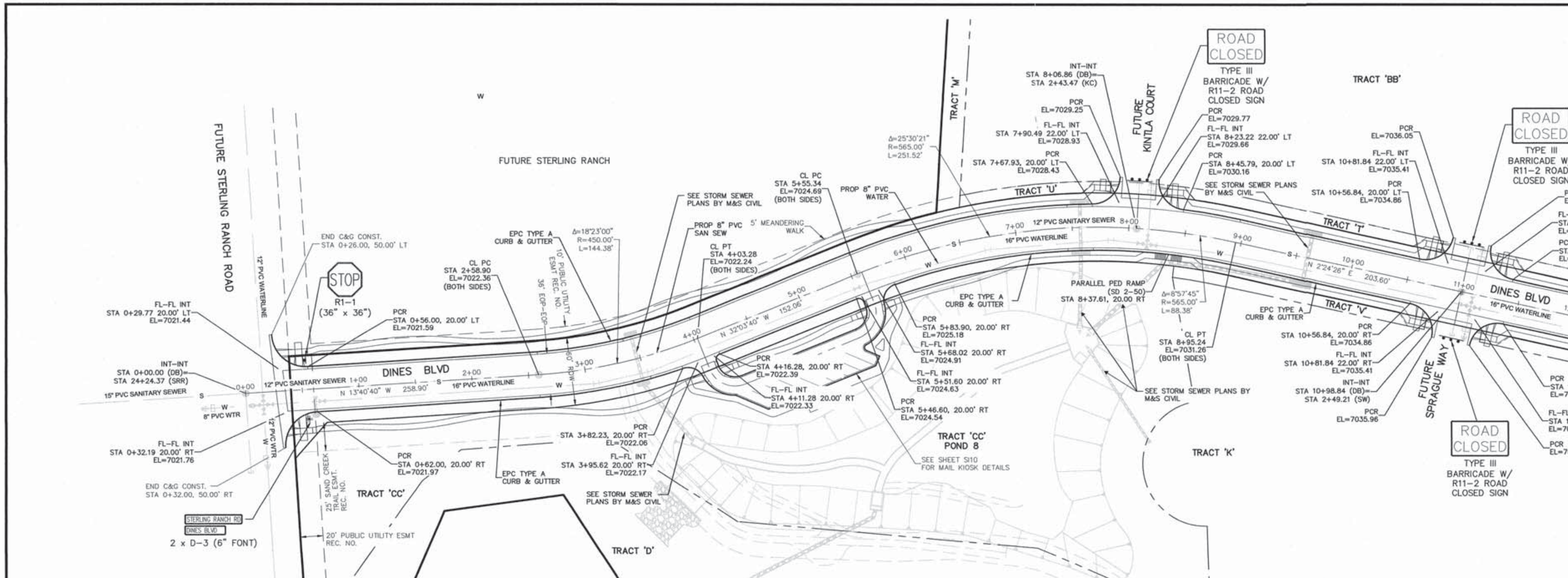
CAUTION

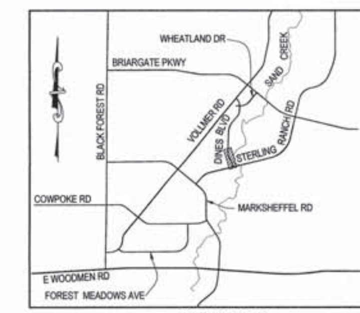
VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

M&S CIVIL CONSULTANTS, INC.
20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485

STERLING RANCH–DINES BLVD & WHEATLAND DR.
NOTES & DETAIL SHEET

PROJECT NO. 09-006 | DATE: 04/17/2017 | SHEET 2 OF 10 | S102
DESIGNED BY: DM | DRAWN BY: BB | CHECKED BY: VAS
SCALE: HORIZ: N/A | VERT: N/A





KEY MAP

N.T.S.

DINES BOULEVARD

STREET ABBREVIATIONS

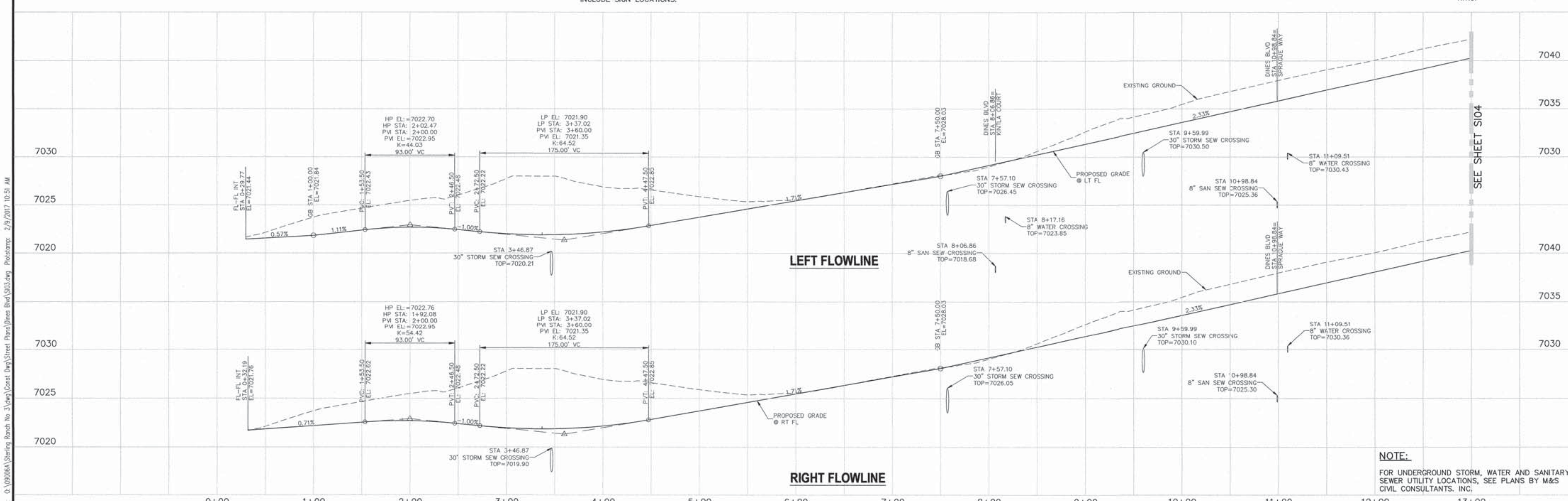
(DB)	DINES BOULEVARD
(SRR)	STERLING RANCH ROAD
(KC)	KINTLA COURT
(SW)	SPRAGUE WAY

NOTES:

1. ALL CURB RETURN RADIUS SHALL BE 25.00' UNLESS OTHERWISE NOTED.
2. ALL SIDEWALKS SHALL BE 5' WIDE AND DETACHED UNLESS OTHERWISE STATED.
3. ALL CROSS PANS SHALL BE EL PASO COUNTY STD SD 2-26.
4. ALL PED RAMPS LOCATED AT INTERSECTIONS SHALL BE EL PASO COUNTY STD SD 2-41 AND ALL MID STREET PED RAMPS SHALL BE EL PASO COUNTY STD SD 2-50.

NOTE:

1. STREET SIGNS FOR (FUTURE) ROADWAYS SHALL BE INSTALLED WITH ADJACENT SUBDIVISION STREET PLANS. ALL SIGNAGE SHOWN ON THIS SET OF PLANS SHALL BE INSTALLED.
2. ALL PROPOSED SIGN LOCATIONS ARE CONCEPTUAL. APPROVAL OF THE CONSTRUCTION DRAWINGS DOES NOT INCLUDE SIGN LOCATIONS.



NOTE:

FOR UNDERGROUND STORM, WATER AND SANITARY SEWER UTILITY LOCATIONS, SEE PLANS BY M&S CIVIL CONSULTANTS, INC.

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES

FOR BURIED UTILITY INFORMATION
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STERLING RANCH–DINES BLVD & WHEATLAND DR.

STREET IMPROVEMENT PLANS

PROJECT NO. 09-006 | DESIGNED BY: DM | DRAWN BY: BB | CHECKED BY: VAS | SCALE HORIZ: 1"=50' VERT: 1"=5' | DATE: 04/17/2017 | SHEET 3 OF 10

SI03

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485

M&S CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

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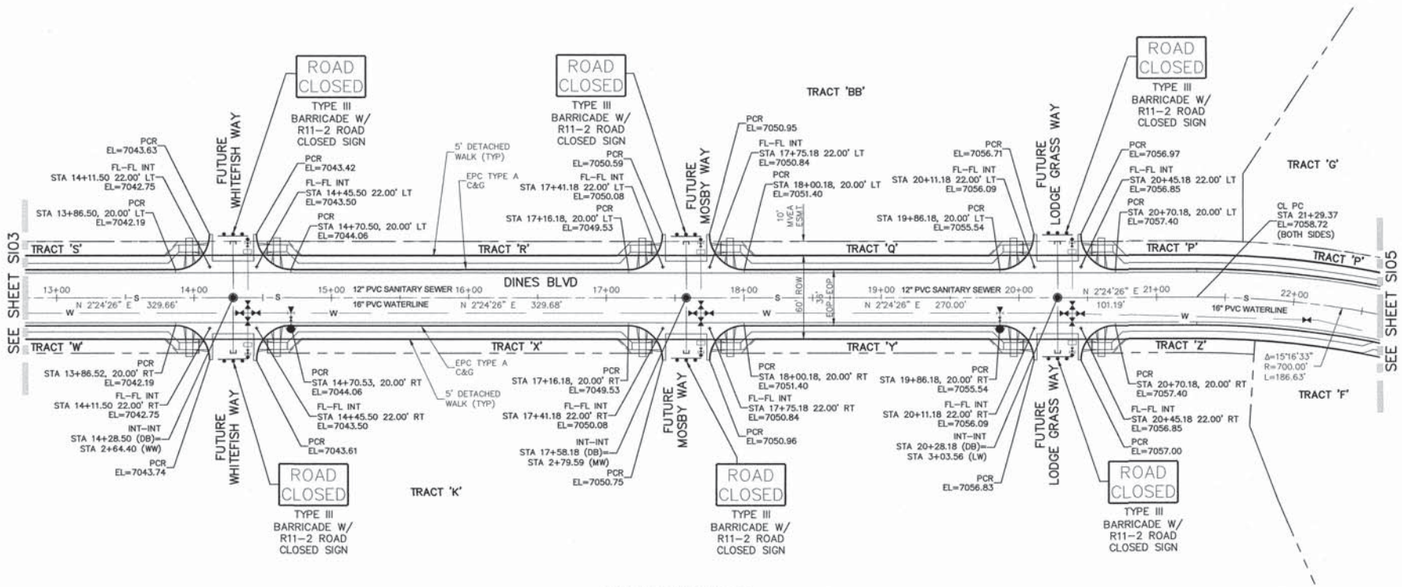
STREET ABBREVIATIONS

(DB)	DINES BOULEVARD
(WW)	WHITEFISH WAY (FUTURE)
(MW)	MOSBY WAY (FUTURE)
(LW)	LODGE GRASS WAY (FUTURE)



DINES BOULEVARD

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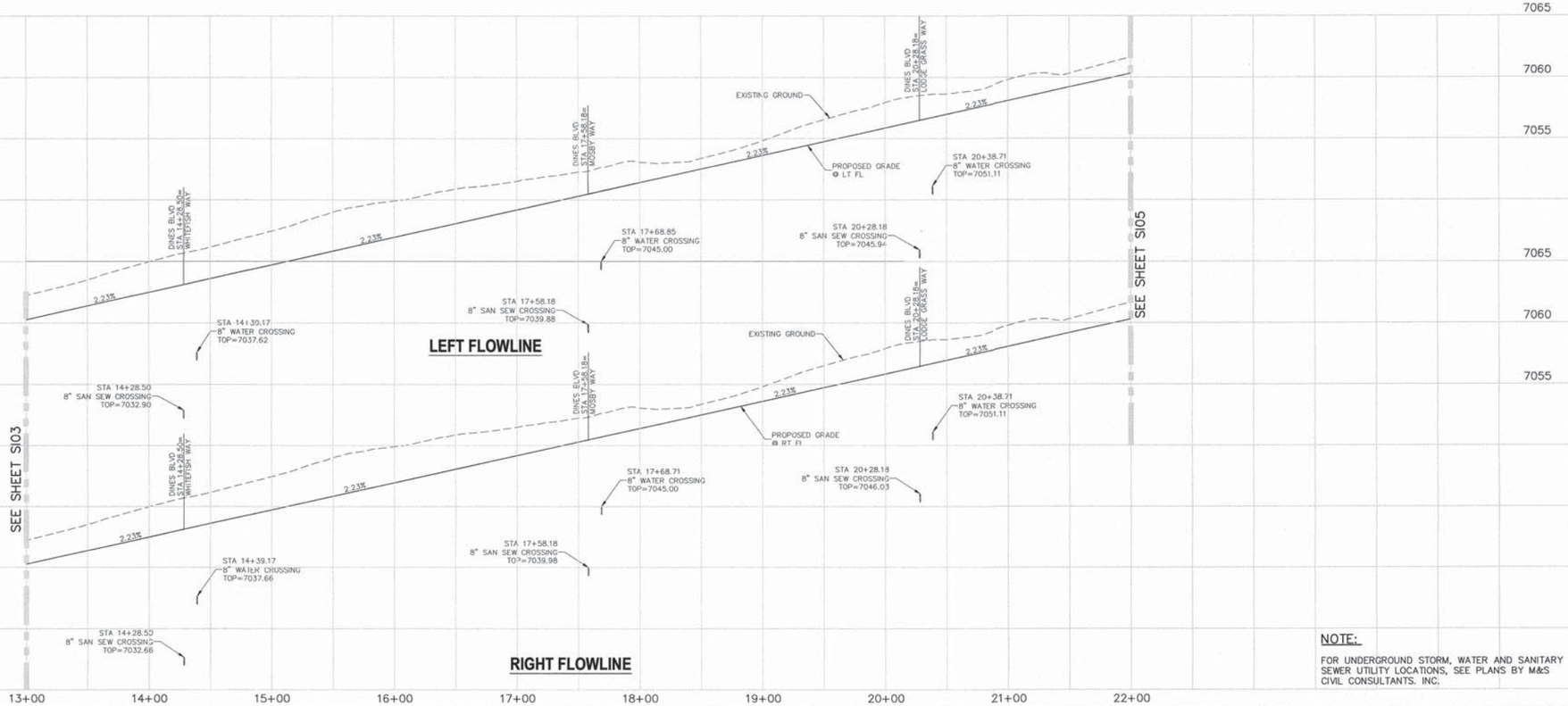

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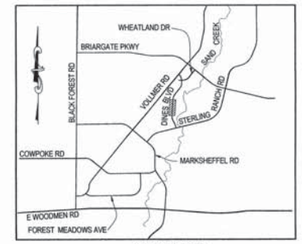
1" = 50'
0 25 50 100
Scale in Feet



KEY MAP
N.T.S.

STERLING RANCH-DINES BLVD & WHEATLAND DR.
STREET IMPROVEMENT PLANS

PROJECT NO. 09-006
DESIGNED BY: DM
DRAWN BY: BB
CHECKED BY: VAS
FILE: O:\09006A\Sterling Ranch No. 3\dwg\Const Dwg\Street Plans\Dines Blvd\SI04.dwg
SCALE: DATE: 04/17/2017
HORIZ: 1"=50'
VERT: 1"=5'
SHEET 4 OF 10
SI04

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.
VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160
COLORADO REGISTERED 37160 PROFESSIONAL ENGINEER

REVISIONS:
NO. DATE: BY: DESCRIPTION:

APPVD. BY: DATE:

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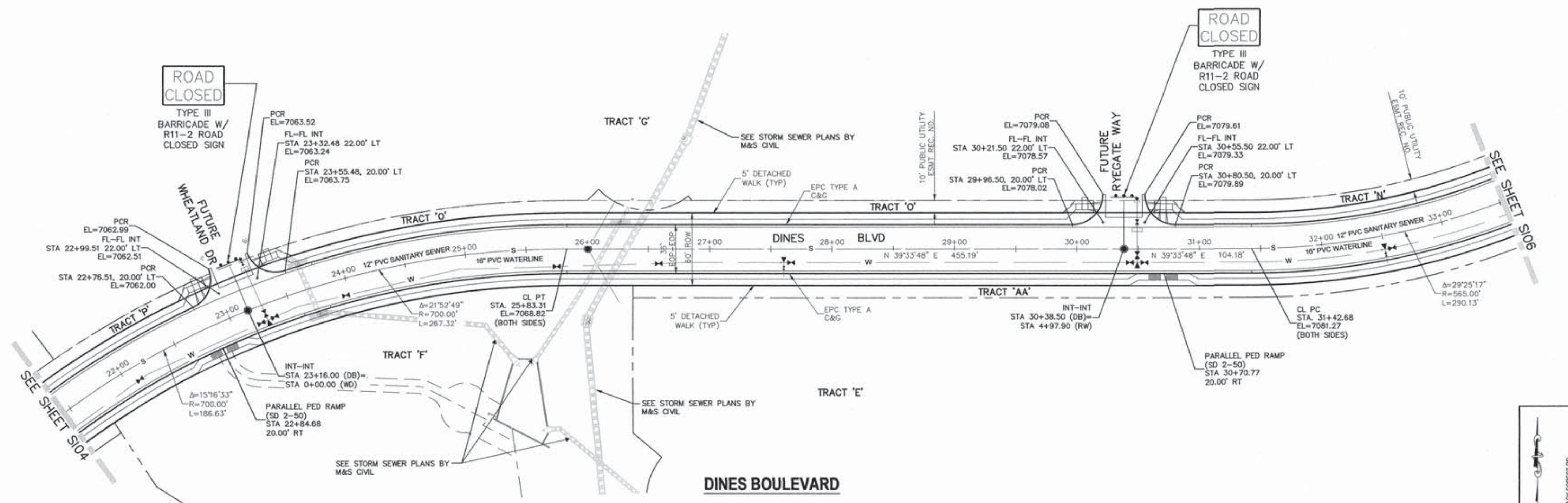
CAUTION

File: O:\09006A\Sterling Ranch No 3\dwg\Const Dwg\Street Plans\Dines Blvd\SI04.dwg Plotstamp: 2/9/2017 10:53 AM



DINES BOULEVARD

STREET ABBREVIATIONS

(DB) DINES BOULEVARD
(RW) RYEGATE WAY
(WD) WHEATLAND DRIVE

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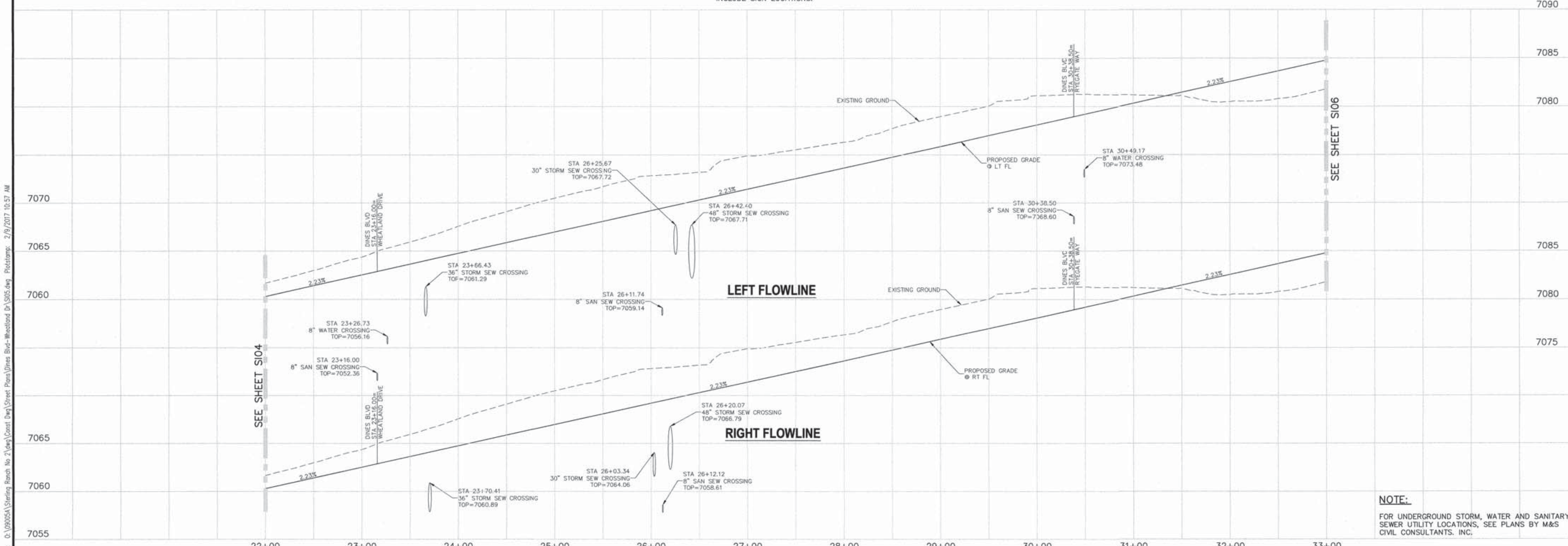
1" = 50'

KEY MAP
N.T.S.



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STERLING RANCH–DINES BLVD & WHEATLAND DR.
STREET IMPROVEMENT PLANS

PROJECT NO. 09-006
DESIGNED BY: DM
DRAWN BY: BB
CHECKED BY: VAS
SCALE HORIZ: 1"=50' VERT: 1"=5'
DATE: 04/17/2017
SHEET 5 OF 10
SI05

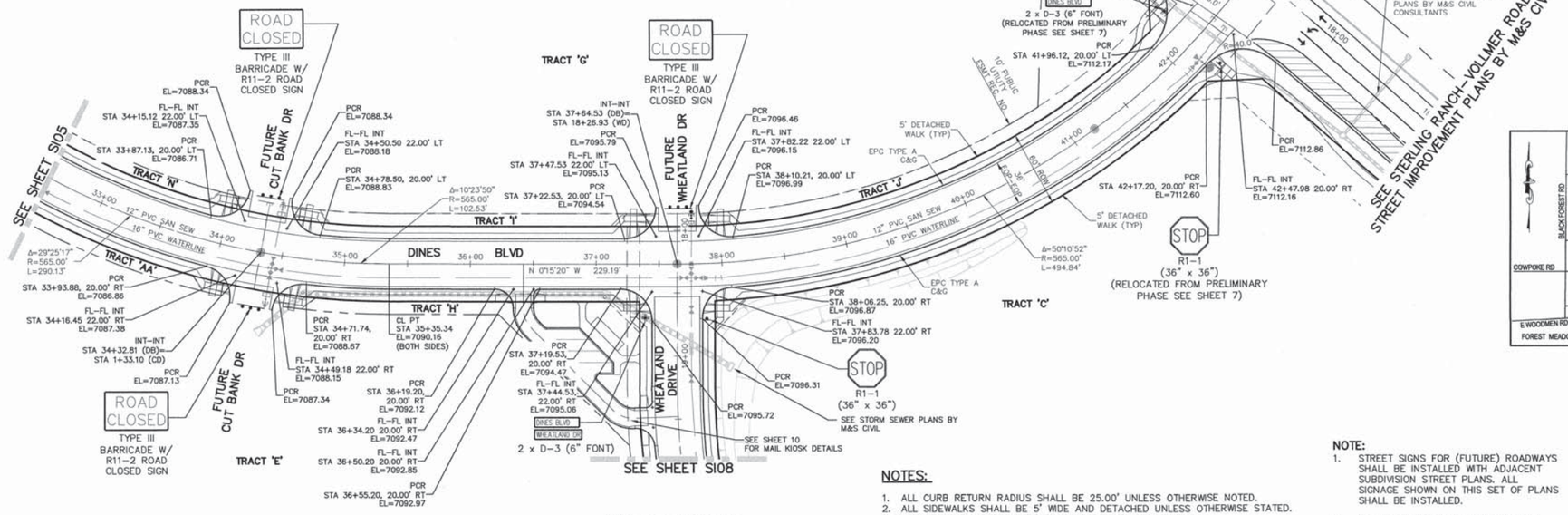
M&S CIVIL CONSULTANTS, INC.
20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

REVISIONS: NO. | DATE | BY | DESCRIPTION | APPR'D. BY | DATE

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

CAUTION



FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
FOR BURIED UTILITY INFORMATION
48 HRS BEFORE YOU DIG
CALL 1-800-922-1987

1" = 50'
0 25 50 100
Scale in Feet

KEY MAP
N.T.S.

DINES BOULEVARD

NOTES:

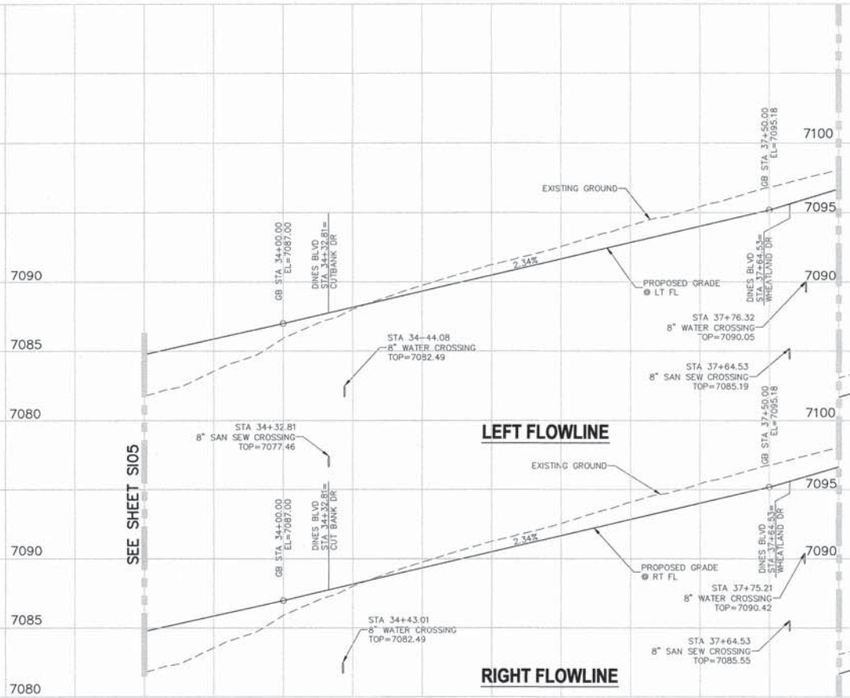
1. ALL CURB RETURN RADIUS SHALL BE 25.00' UNLESS OTHERWISE NOTED.
2. ALL SIDEWALKS SHALL BE 5' WIDE AND DETACHED UNLESS OTHERWISE STATED.
3. ALL CROSS PANS SHALL BE EL PASO COUNTY STD SD 2-26.
4. ALL PED RAMPS LOCATED AT INTERSECTIONS SHALL BE EL PASO COUNTY STD SD 2-41 AND ALL MID STREET PED RAMPS SHALL BE EL PASO COUNTY STD SD 2-50.

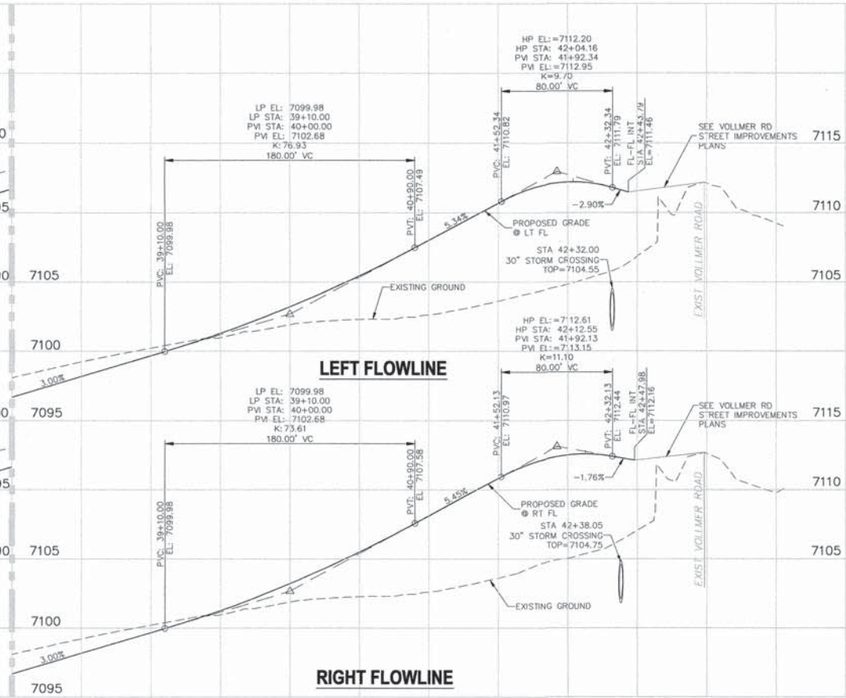
NOTE:

1. STREET SIGNS FOR (FUTURE) ROADWAYS SHALL BE INSTALLED WITH ADJACENT SUBDIVISION STREET PLANS. ALL SIGNAGE SHOWN ON THIS SET OF PLANS SHALL BE INSTALLED.
2. ALL PROPOSED SIGN LOCATIONS ARE CONCEPTUAL. APPROVAL OF THE CONSTRUCTION DRAWINGS DOES NOT INCLUDE SIGN LOCATIONS.

STREET ABBREVIATIONS

(DB)	DINES BOULEVARD
(SRR)	STERLING RANCH ROAD
(BD)	BYNUM DRIVE
(RW)	RYEGATE WAY
(WD)	WHEATLAND DRIVE
(CD)	CUT BANK DR
(VR)	VOLLMER ROAD





NOTE:

INTERIM CONDITION IMPROVEMENTS REQUIRE REMOVAL OF TEMPORARY DINES CONNECTION FROM STA 41+96.12 TO VOLLMER RD.

NOTE:

FOR UNDERGROUND STORM, WATER AND SANITARY SEWER UTILITY LOCATIONS, SEE PLANS BY M&S CIVIL CONSULTANTS. INC.

STERLING RANCH-DINES BLVD & WHEATLAND DR
STREET IMPROVEMENT PLANS

PROJECT NO. 09-006 | DESIGNED BY: DLM | DRAWN BY: ELY | CHECKED BY: VAS | SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5' | DATE: 4/14/2017 | SHEET 6 OF 10 | SI06

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

REVISIONS:

NO.	DATE:	BY:	DESCRIPTION:

APPVD. BY: DATE:

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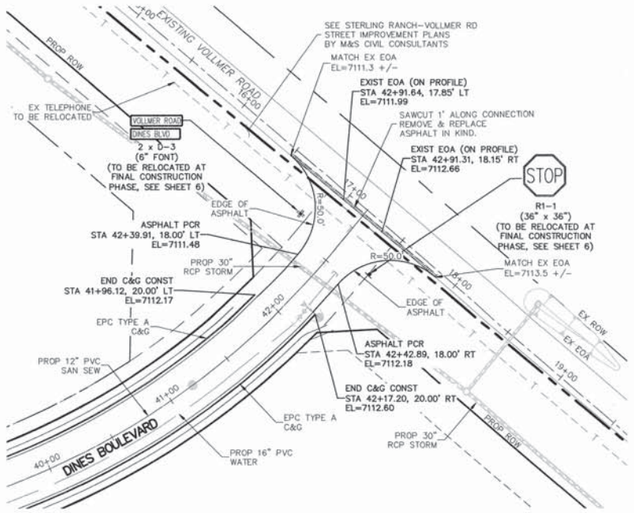
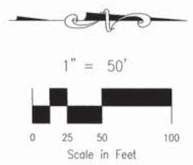
CAUTION

File: O:\09006A\Sterling Ranch No 2\dwg\Const Dwg\Street Plans\Dines Blvd-Wheatland Dr\SI06.dwg Plotstamp: 1/4/2018 10:55 AM



"TEMPORARY"
DINES BOULEVARD



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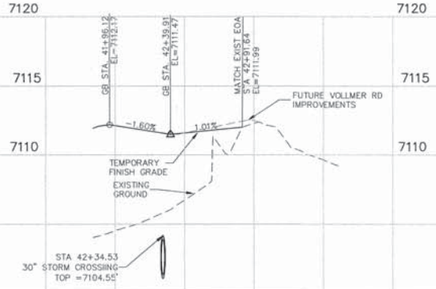
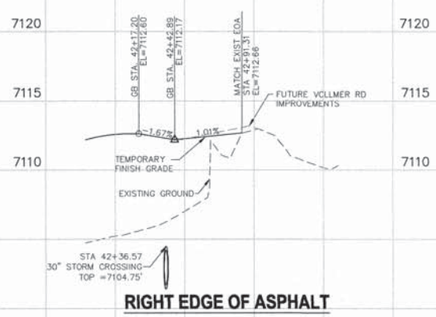


LEFT EDGE OF ASPHALT



RIGHT EDGE OF ASPHALT

NOTE:

FOR UNDERGROUND STORM, WATER AND SANITARY SEWER UTILITY LOCATIONS, SEE PLANS BY M&S CIVIL CONSULTANTS. INC.

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STERLING RANCH-DINES BLVD & WHEATLAND DR
STREET IMPROVEMENT PLANS

PROJECT NO. 09-006
DESIGNED BY: DLM
DRAWN BY: ELY
CHECKED BY: VAS
SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'
DATE: 4/14/2017
SHEET 7 OF 10
SI07

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

REVISIONS:

NO.	DATE	BY	DESCRIPTION:

APRV'D. BY: DATE:

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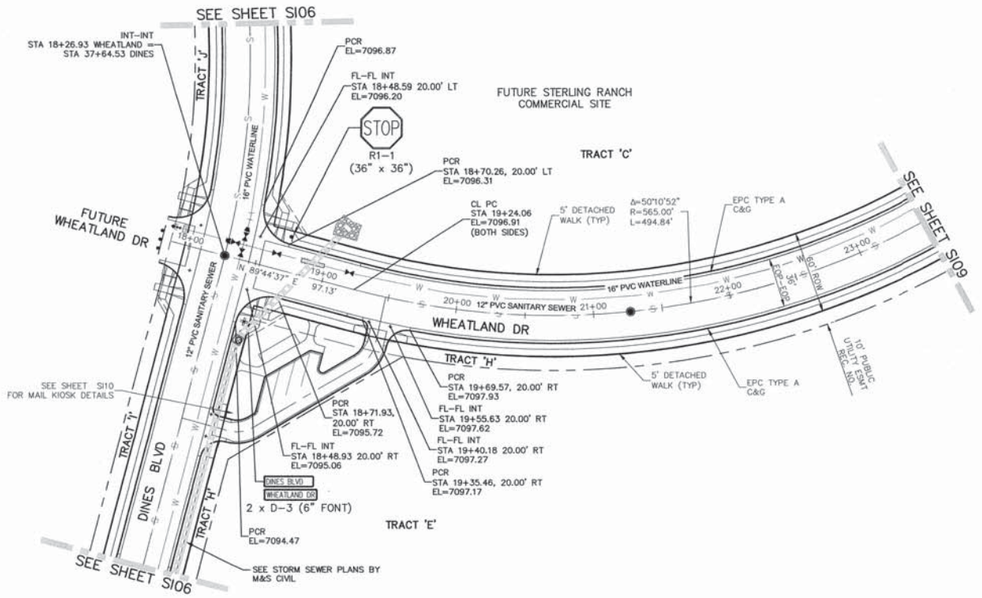
CAUTION

File: O:\09006A\Sterling Ranch No 2\dwg\Const Dwg\Street Plans\Dines Blvd-Wheatland Dr\SI07.dwg Plotstamp: 1/4/2018 10:35 AM



WHEATLAND DRIVE

STREET ABBREVIATIONS

(DB) DINES BOULEVARD
(WD) WHEATLAND DRIVE

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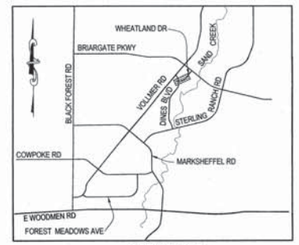

KEY MAP
N.T.S.

NOTE:

FOR UNDERGROUND STORM, WATER AND SANITARY SEWER UTILITY LOCATIONS, SEE PLANS BY M&S CIVIL CONSULTANTS. INC.

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1" = 50'
0 25 50 100
Scale in Feet

STERLING RANCH–DINES BLVD & WHEATLAND DR.
STREET IMPROVEMENT PLANS
PROJECT NO. 09–006
DESIGNED BY: DM
DRAWN BY: BB
CHECKED BY: VAS
FILE: G:\09005A\Sterling Ranch No. 2\dwg\Coord. Dwg\Street Plans\Dines Blvd–Wheatland Dr\SI08.dwg Plotstamp: 12/7/2016 10:42 AM
SCALE
DATE: 04/17/2017
HORIZ: 1"=50'
VERT: 1"=5'
SHEET 8 OF 10
SI08

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

REVISIONS:
NO. DATE: BY: DESCRIPTION: APP'D. BY: DATE:

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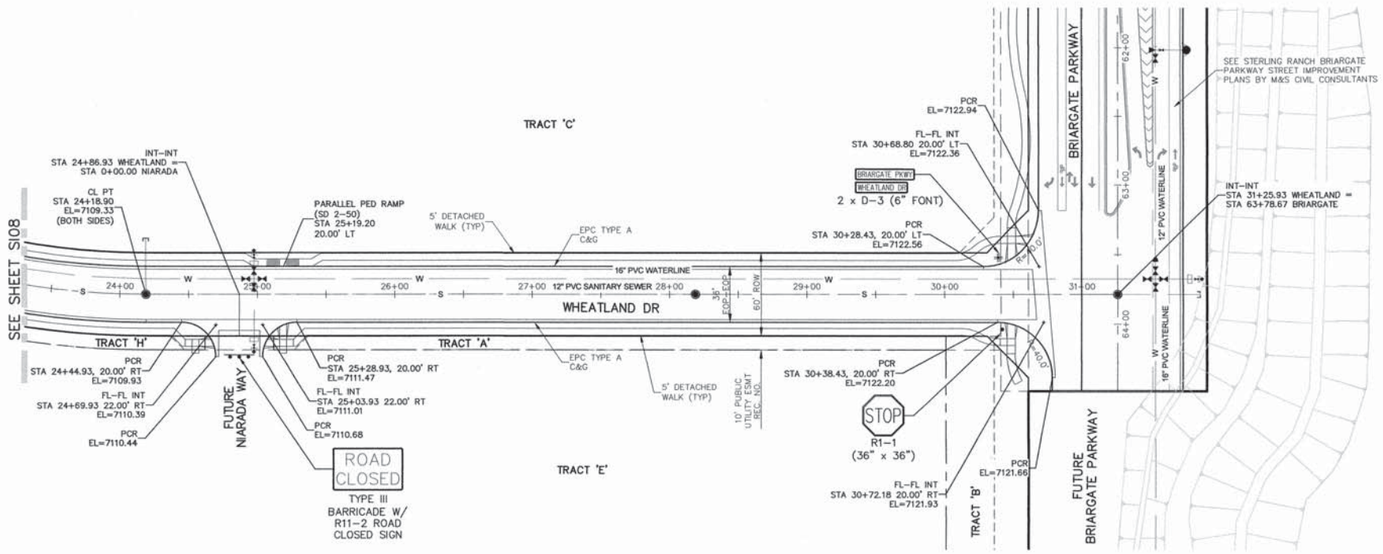
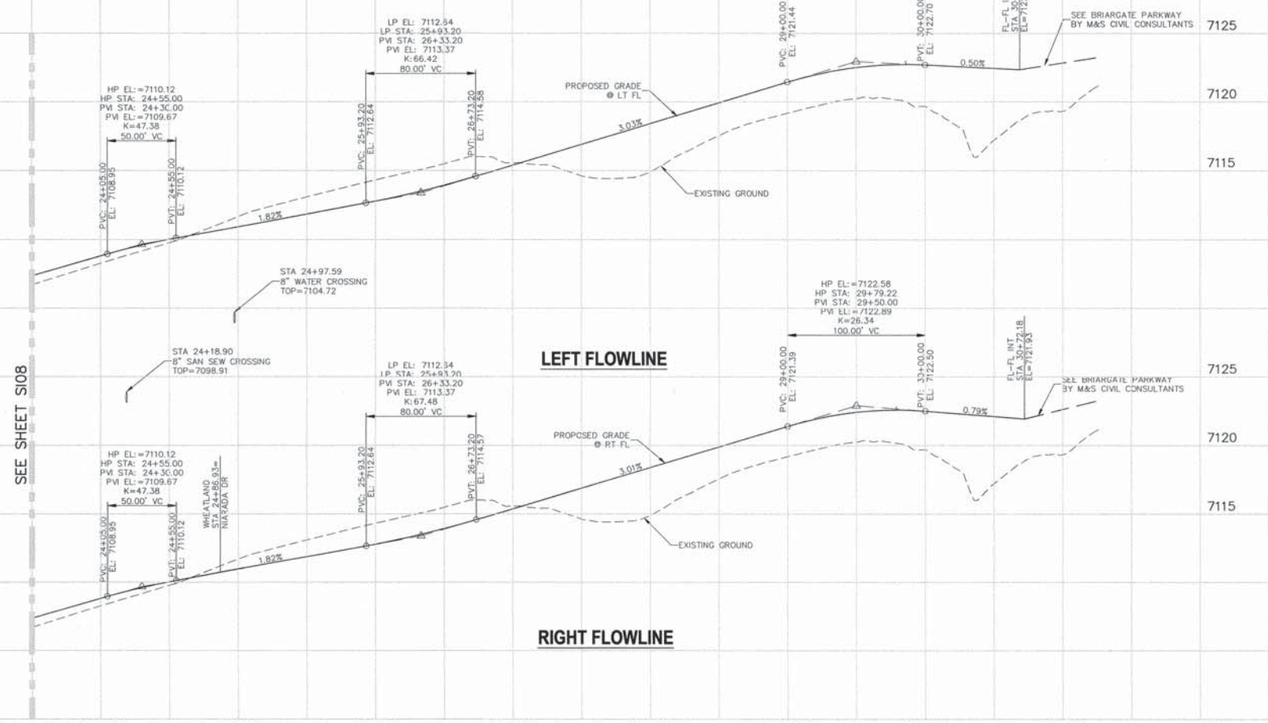


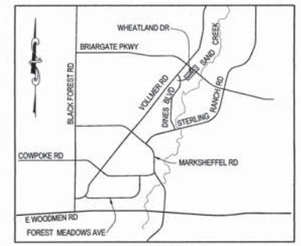
WHEATLAND DRIVE



1" = 50'

0 25 50 100

Scale in Feet



KEY MAP
N.T.S.

STREET ABBREVIATIONS

(BP) BRIARGATE PARKWAY
(WD) WHEATLAND DRIVE
(NW) NIARADIA WAY

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STERLING RANCH-DINES BLVD & WHEATLAND DR.

STREET IMPROVEMENT PLANS

PROJECT NO. 09-006
FILE: G:\09006\Sterling Ranch No 2\dwg\Street Plans\Dines Blvd-Wheatland Dr\SI09.dwg Plotstamp: 2/9/2017 11:18 AM
DESIGNED BY: DM
DRAWN BY: BB
CHECKED BY: VAS
DATE: 04/17/2017
SCALE: HORIZ: 1"=50' VERT: 1"=5'
SHEET 9 OF 10
SI09

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

REVISIONS:

NO.	DATE:	BY:	DESCRIPTION:	APP'D. BY:	DATE:

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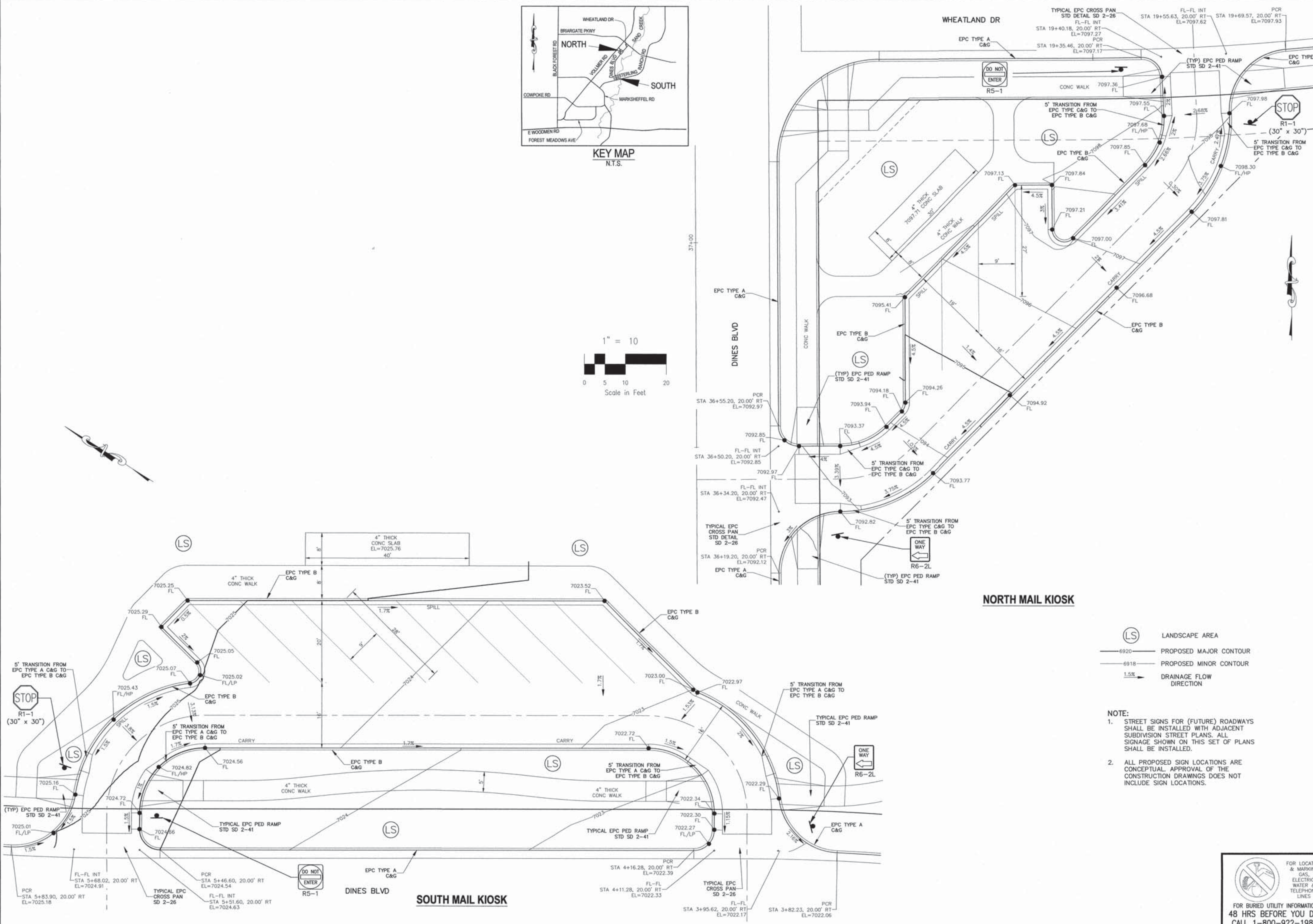

(LS) LANDSCAPE AREA

—6920— PROPOSED MAJOR CONTOUR

—6918— PROPOSED MINOR CONTOUR

1.5% → DRAINAGE FLOW DIRECTION

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STERLING RANCH–DINES BLVD & WHEATLAND DR.
MAIL KIOSK DETAIL SHEET

PROJECT NO. 09-006	
DESIGNED BY: DM	DATE: 04/17/2017
DRAWN BY: BB	SCALE HORIZ: 1"=10' VERT: N/A
CHECKED BY: VAS	SHEET 10 OF 10

SI10

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485

M&S CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

NO.	DATE	BY	DESCRIPTION	APPR'D. BY	DATE
REVISIONS:					

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CAUTION

Sterling Ranch Vollmer Road (South)

Street Improvement Plans

TRANSPORTATION
CONSULTANTS, INC.

STERLING RANCH - VOLLMER ROAD

STA 10+00.00 - STA 45+34.37

COUNTY OF EL PASO, STATE OF COLORADO

STREET IMPROVEMENT PLANS

INCLUDING SIGNAGE & STRIPING

FEBRUARY 2018

AGENCIES

OWNER/DEVELOPER:	SR LAND, LLC 20 BOULDER CRESCENT, SUITE 201 COLORADO SPRINGS, CO 80903 JAMES F. MORLEY (719) 471-1742
CIVIL ENGINEER:	M & S CIVIL CONSULTANTS, INC. 20 BOULDER CRESCENT, SUITE 110 COLORADO SPRINGS, CO 80903 VIRGIL A. SANCHEZ P.E. (719) 955-5485
COUNTY ENGINEERING:	EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT 2880 INTERNATIONAL CIRCLE, SUITE 110 COLORADO SPRINGS, CO 80910 JEFF RICE, P.E. (719) 520-6300
TRAFFIC ENGINEERING:	EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS 3275 AKERS DRIVE COLORADO SPRINGS, CO 80922 JENNIFER IRVINE, P.E. (719) 520-6460
WATER RESOURCES:	STERLING RANCH METRO DISTRICT ENGINEERS JDS-HYDRO CONSULTANTS 545 E. PIKES PEAK AVE., SUITE 300 COLORADO SPRINGS, CO 80903 JOHN MCGINN (719) 668-8769
FIRE DISTRICT:	BLACK FOREST FIRE PROTECTION DISTRICT 11445 TEACHOUT ROAD COLORADO SPRINGS, CO 80908 CHIEF BRYAN JACK (719) 495-4300
GAS DEPARTMENT:	COLORADO SPRINGS UTILITIES 7710 DURANT DR. COLORADO SPRINGS, CO 80947 TIM WENDT (719) 668-3556
ELECTRIC DEPARTMENT:	MOUNTAIN VIEW ELECTRIC 11140 E. WOODMEN ROAD FALCON, CO 80831 (719) 495-2283
COMMUNICATIONS:	QWEST COMMUNICATIONS (U.N.C.C. LOCATORS) (800) 922-1987 AT&T (LOCATORS) (719) 635-3674

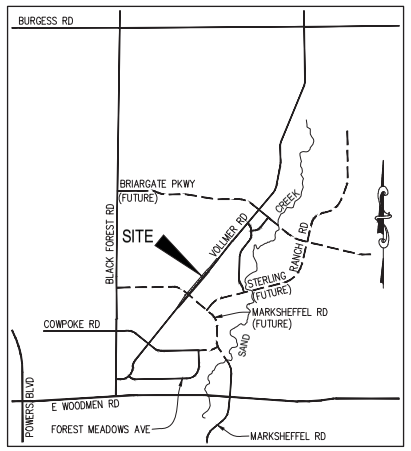
BENCHMARKS

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", LOCATED AT THE SOUTHEAST CORNER OF LOT 4, BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42

2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, LOCATED AT THE NORTHWEST CORNER OF LOT 13, PAWNEE RANCHEROS SUBDIVISION FILING NO. 2
   NORTHING = 410095.404
   EASTING = 235052.131
   ELEVATION = 7000.40

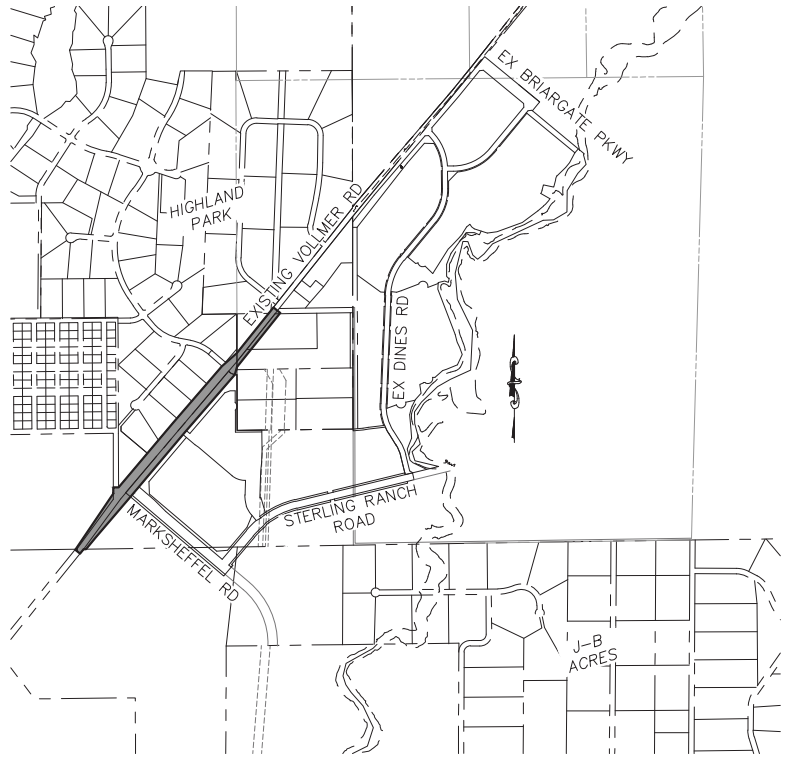
3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", LOCATED AT THE SOUTHWEST CORNER OF LOT 2, BARBARICK SUBDIVISION
   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

(We need an updated submittal of the Vollmer Road plans.)



VICINITY MAP

N.T.S.



SITE MAP

SCALE: NTS

ABBREVIATIONS

ACT	ACTUAL	FL	FLOW LINE	PT	POINT OF TANGENCY
BCR	BACK OF CURB RETURN	FT	FEET, FOOT	PROP	PROPOSED
BOV	BLOWOFF VALVE ASSEMBLY	FUT	FUTURE	REM	REMOVE
BRK	BREAK	GRD	GRADE	ROW	RIGHT OF WAY
BT	BEGINNING OF TRANSITION	HORZ	HORIZONTAL	RSNTS	RESTRAINTS
CATV	CABLE TV	HP	HIGH POINT ELEVATION	RT	RIGHT
CL	CLASS, CENTERLINE	INT	INTERSECTION	SAN	SANITARY SEWER
CLR	CLEARANCE	LP	LOW POINT ELEVATION	SD	STANDARD DETAIL
CONST	CONSTRUCT	LT	LEFT	STA	STATION
CSU	COLORADO SPRINGS UTILITIES	LOC	LOCATION	STM	STORM
ECR	END CURB RETURN	MIN	MINIMUM	COB	TOP CORNER OF BOX
EL	ELEVATION	N,S,E,W	NORTH,SOUTH,EAST,WEST	TELE	TELEPHONE
EOA	EDGE OF ASPHALT	NTS	NOT TO SCALE	TYP	TYPICAL
EOP	END OF PAVEMENT	PC	POINT OF VERTICAL CURVATURE	UNK	UNKNOWN
EPC	EL PASO COUNTY	PCC	POINT OF COMPOUND CURVE	@	UNDERGROUND POWER
ESMT	EASMENT	PCR	POINT OF CURB RETURN	UTL	UTILITY
ET	END TRANSITION	PL	PROPERTY LINE	VERT	VERTICAL
EX	EXISTING	PRC	POINT OF REVERSE CURVE	WTR	WATER LINE
G	GAS	PUB	PUBLIC	XING	CROSSING
GB	GRADE BREAK	PVI	POINT OF VERTICAL INTERSECTION	YD	YARD (CUBIC)
		PVC	POINT OF VERTICAL CURVE		
		PVT	POINT OF VERTICAL TANGENT		

APPROVALS:

ENGINEER'S STATEMENT:

DETAILED IMPROVEMENT PLANS AND SPECIFICATIONS ENGINEER'S STATEMENT:

THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID DETAILED PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR DETAILED DRAINAGE PLANS AND SPECIFICATIONS, AND SAID DETAILED PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH THE MASTER PLAN OF THE DRAINAGE BASIN. SAID DETAILED DRAINAGE PLANS AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR DRAINAGE FACILITY(S) IS DESIGNED. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS, OR OMISSIONS ON MY PART IN PREPARATION OF THE DETAILED IMPROVEMENT PLANS AND SPECIFICATIONS.

VIRGIL A SANCHEZ, COLORADO P.E. NO. 37160 — DATE
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

OWNER/DEVELOPER STATEMENT:

THE OWNER WILL COMPLY WITH THE REQUIREMENTS OF THE DRAINAGE REPORT AND PLAN AND THIS SET OF CONSTRUCTION DOCUMENTS. THE OWNER WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

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

EL PASO COUNTY:

COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA, AND ENGINEERING CRITERIA MANUAL AS AMENDED.

JENNIFER IRVINE, P.E. — DATE
COUNTY ENGINEER / ECM ADMINISTRATOR

STERLING RANCH METROPOLITAN DISTRICT:

THESE DOCUMENTS HAVE BEEN REVIEWED AND APPROVED FOR STORM DRAIN AND ASSOCIATED UTILITY SERVICE CONSTRUCTION.

FOR AND ON BEHALF OF THE STERLING RANCH METRO. DISTRICT — DATE

BLACK FOREST FIRE PROTECTION DISTRICT:

ALL FIRE HYDRANTS SHALL BE INSTALLED ACCORDING TO THE BLACK FOREST FIRE PROTECTION DISTRICT SPECIFICATIONS. THE NUMBER OF FIRE HYDRANTS AND HYDRANT LOCATIONS AS SHOWN ON THE WATER INSTALLATION PLAN ARE CORRECT AND ADEQUATE TO SATISFY THE FIRE PROTECTION REQUIREMENTS AS SPECIFIED BY THE BLACK FOREST FIRE PROTECTION DISTRICT.

FOR AND ON BEHALF OF THE BLACK FOREST FIRE PROTECTION DISTRICT — DATE

SHEET INDEX

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
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STERLING RANCH – VOLLMER ROAD
STREET IMPROVEMENT PLANS
DATE: 2/26/2018
SHEET 1 OF 10
SI01
PROJECT NO. 09-002
SCALE: HORIZONTAL: N/A VERTICAL: N/A
DESIGNED BY: DLM
DRAWN BY: JWP
CHECKED BY: VAS

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

REVISIONS:

NO.	DATE:	BY:	DESCRIPTION:	APP'D:	BY:	DATE:

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

CAUTION

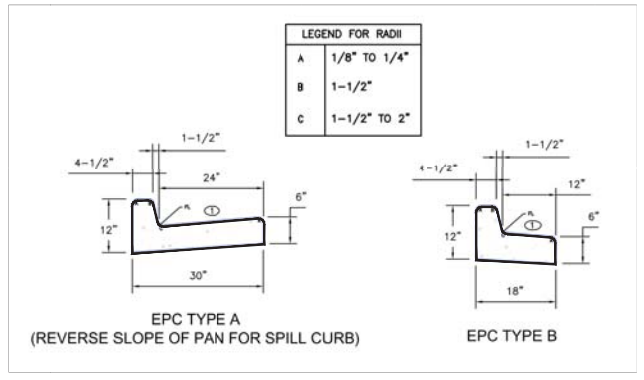
File: O:\08002A\Sterling Ranch District - Filing 2\dwg\Const Dwg\Street\Vollmer Rd\SI01.dwg Plotstamp: 2/28/2018 3:04 PM

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 DEVELOPMENT SERVICES ENGINEERING DIVISION.
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 DEVELOPMENT SERVICES ENGINEERING DIVISION PRIOR TO CONSTRUCTION.

SIGNING AND STRIPING NOTES:

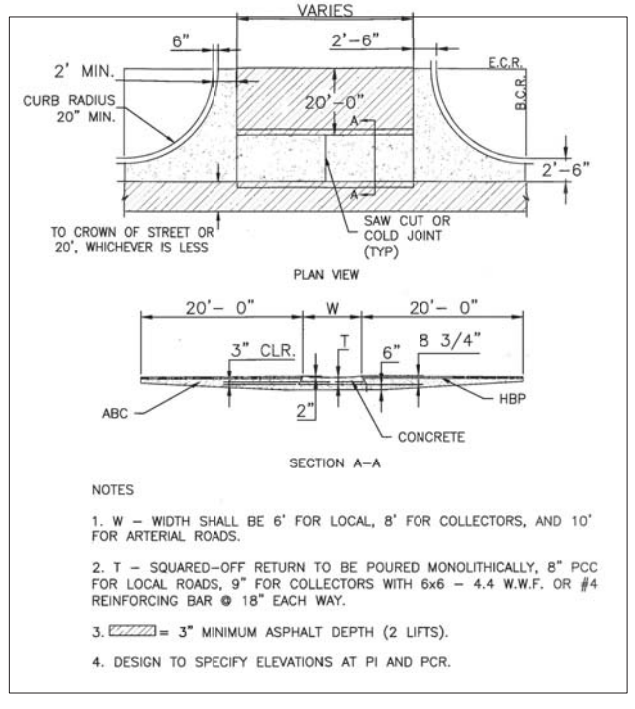
1. ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN COMPLIANCE WITH THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE ACCOMPLISHED BY A METHOD THAT DOES NOT MATERIALLY DAMAGE THE PAVEMENT. THE PAVEMENT MARKINGS SHALL BE REMOVED TO THE EXTENT THAT 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 DEVELOPMENT SERVICES.
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 DEVELOPMENT SERVICES (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 PUBLIC SERVICE DEPARTMENT (PSD) PRIOR TO ANY SIGNAGE OR STRIPING WORK WITHIN AN EXISTING EL PASO COUNTY ROADWAY.



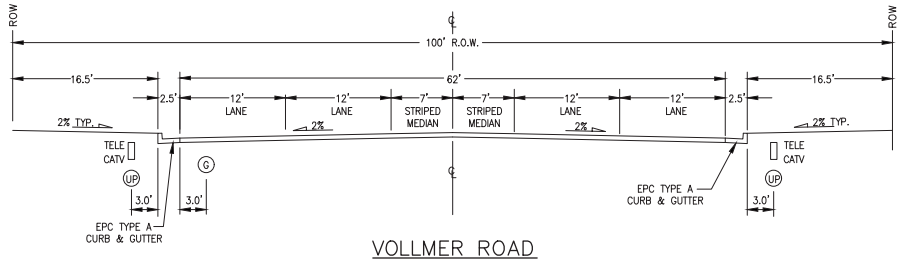
TYPICAL CURB & GUTTER DETAILS DETAIL (SD 2-20)
SCALE: NTS

STANDARD NOTES FOR EL PASO COUNTY CONSTRUCTION PLANS:

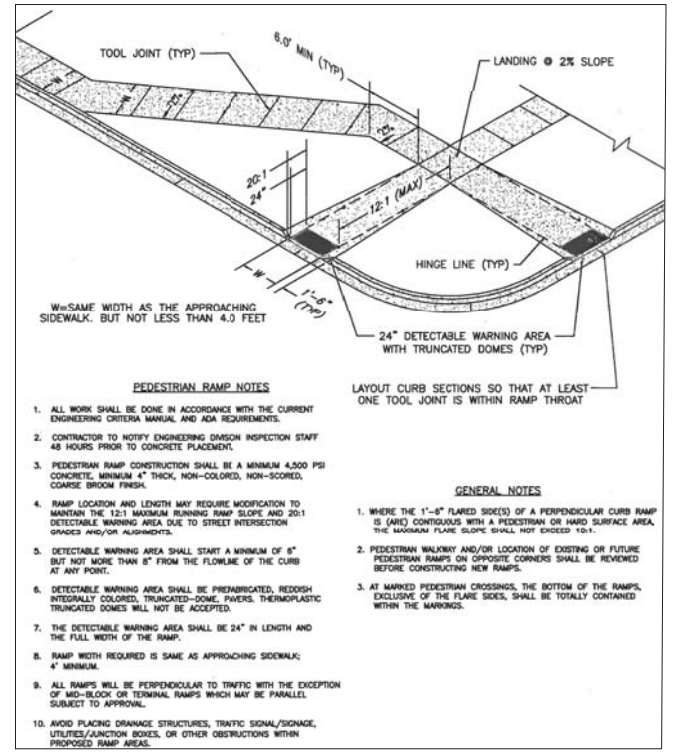
1. ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD NOTIFICATION 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 DEVELOPMENT SERVICES DEPARTMENT (DSD) – 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 DSD. 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 DSD.
10. CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY DSD 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 DOT AND MUTCD CRITERIA. [IF APPLICABLE, ADDITIONAL SIGNING AND STRIPING NOTES WILL BE PROVIDED.]
14. CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DOT, 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.



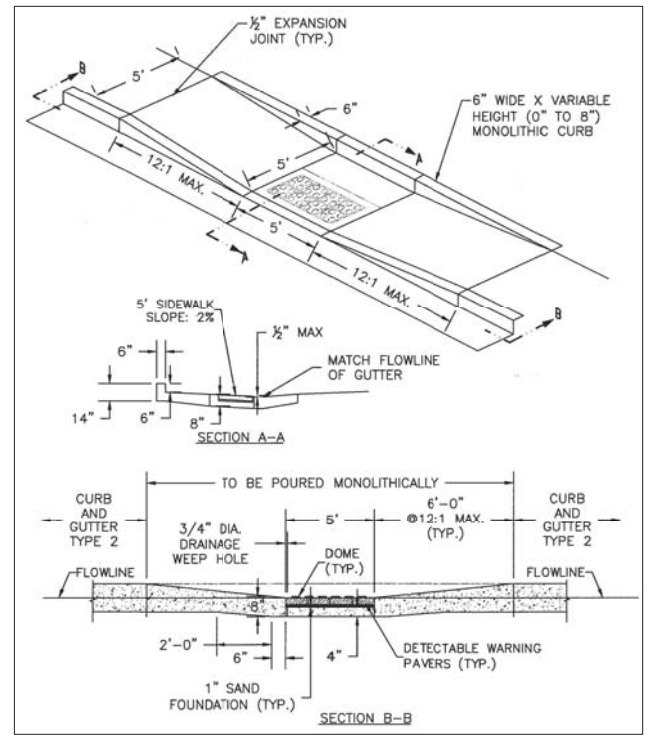
TYPICAL CROSS PAN LAYOUT DETAIL (SD 2-26)
SCALE: NTS



VOLLMER ROAD
(MODIFIED) URBAN MINOR ARTERIAL CROSS SECTION
SCALE: NTS



PEDESTRIAN INTERSECTION RAMP (SD 2-41)
SCALE: NTS



PARALLEL PEDESTRIAN RAMP DETAIL (SD 2-50)
SCALE: NTS

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
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STERLING RANCH – VOLLMER ROAD
NOTES AND DETAILS SHEET
PROJECT NO. 09-002 | SCALE: HORIZONTAL: N/A VERTICAL: N/A | DATE: 2/26/2018 | SHEET 2 OF 10 | SI02
DESIGNED BY: DLM
DRAWN BY: JWP
CHECKED BY: VAS

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.
VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

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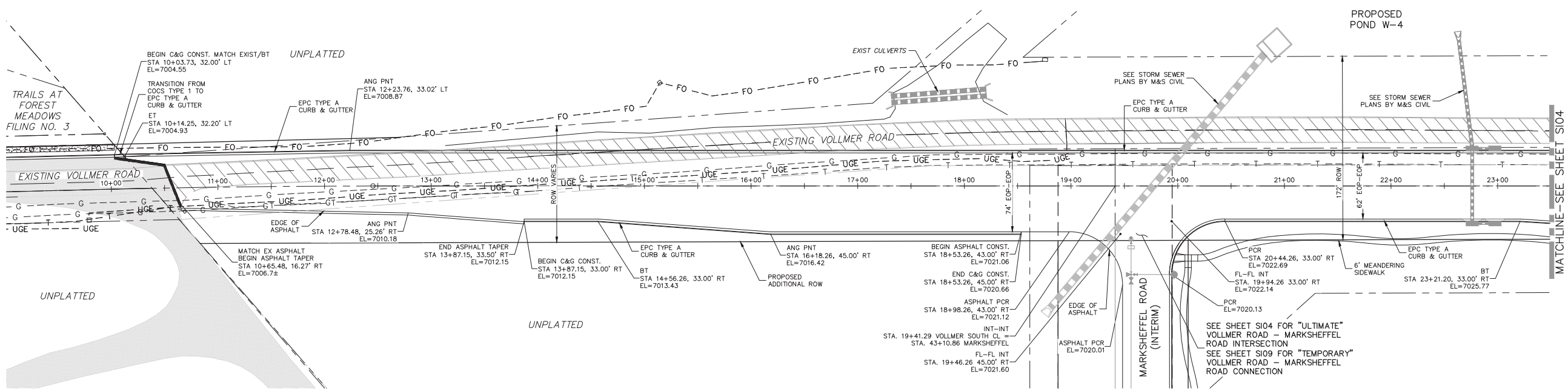
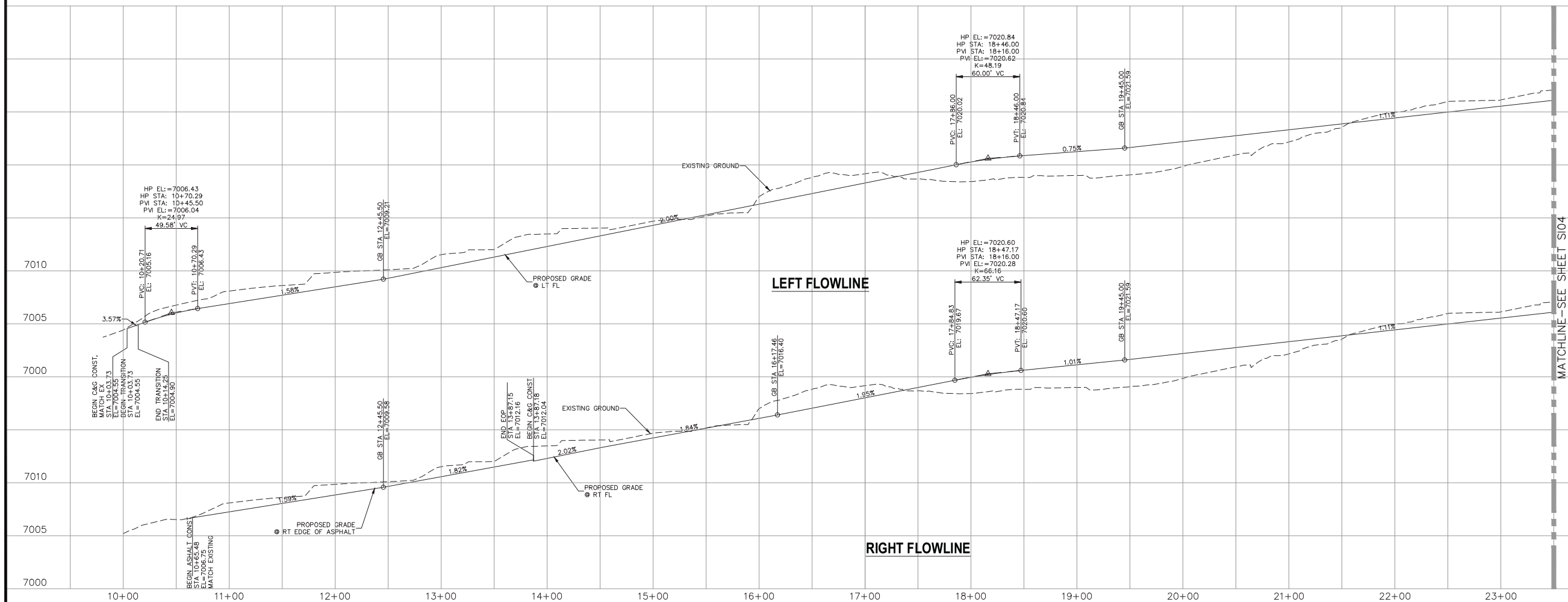


SEE STERLING RANCH–MARKSHEFFEL ROAD STREET IMPROVEMENT PLANS BY M&S CIVIL CONSULTANTS

VOLLMER ROAD
STA 10+00.00 TO STA 23+50.00



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1" = 50'
0 25 50 100
Scale in Feet

STERLING RANCH – VOLLMER ROAD
STREET IMPROVEMENT PLANS

PROJECT NO. 09-002	SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'
DESIGNED BY: DLM	DATE: 2/26/2018
DRAWN BY: JWP	SHEET 3 OF 10
CHECKED BY: VAS	SI03

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

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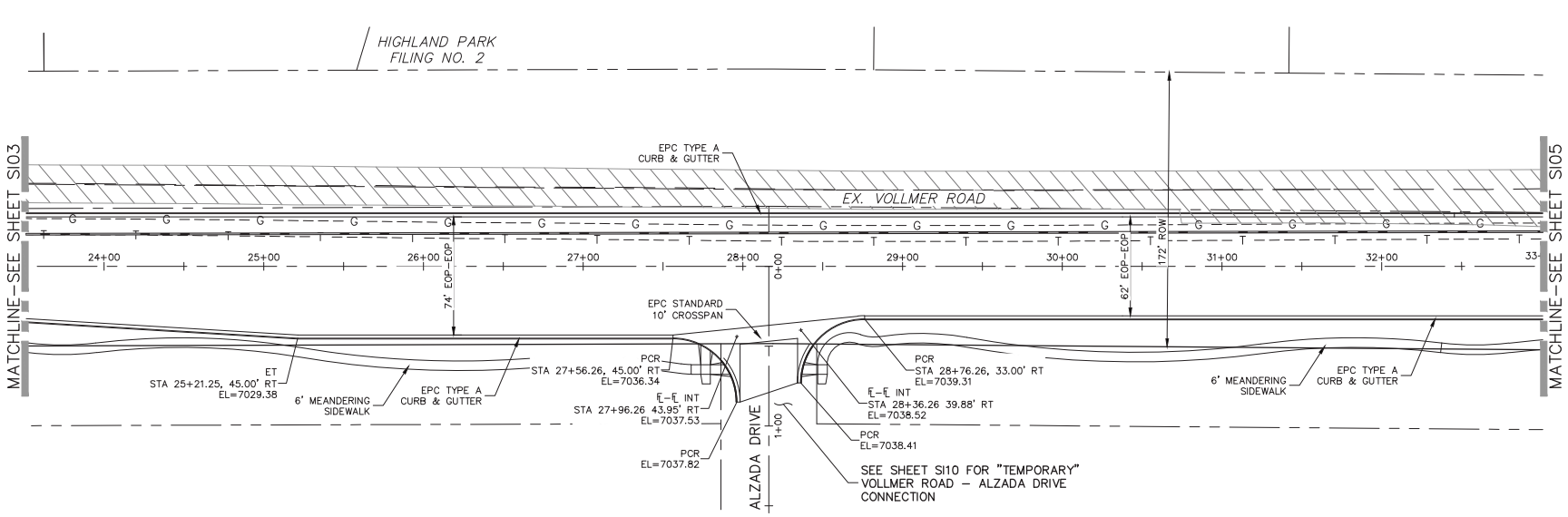
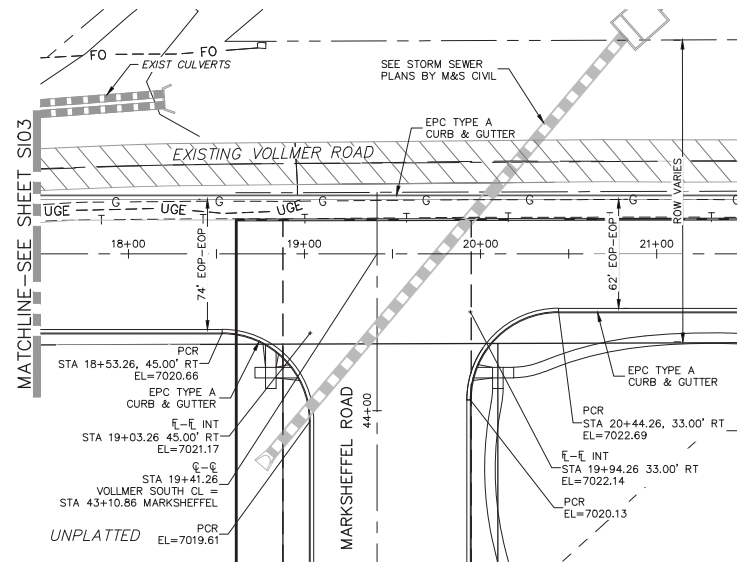


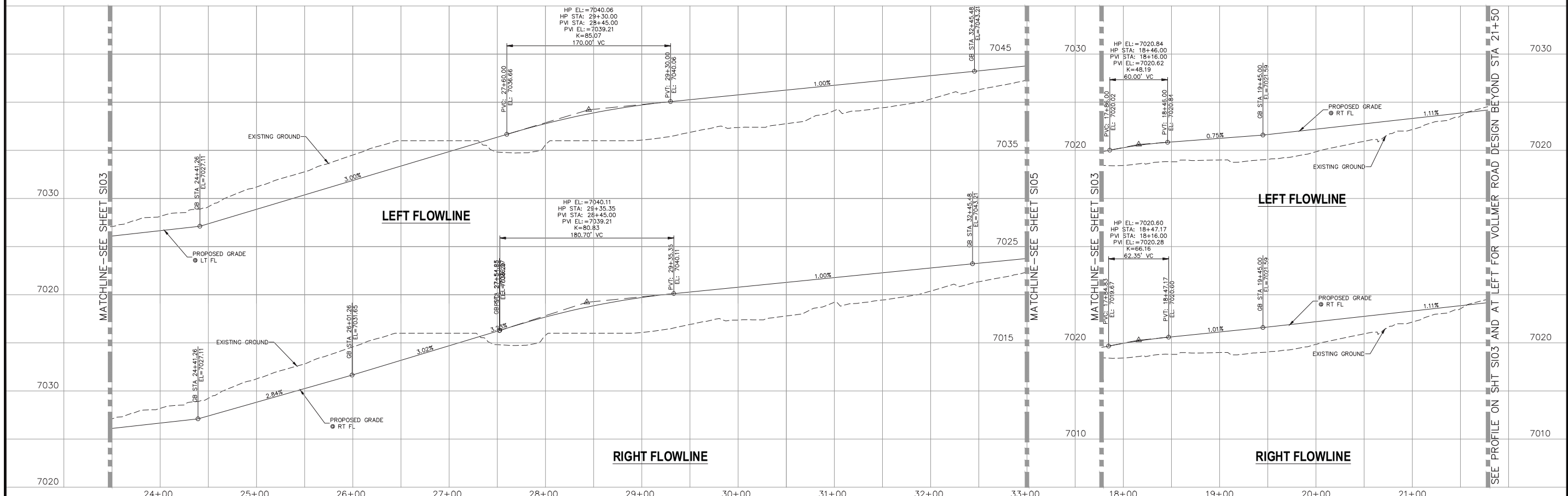
SEE STERLING RANCH–ALZADA DRIVE
STREET IMPROVEMENT PLANS
BY M&S CIVIL CONSULTANTS

VOLLMER ROAD
STA 23+50.00 TO STA 33+00.00



SEE STERLING RANCH–MARKSHEFFEL ROAD
STREET IMPROVEMENT PLANS
BY M&S CIVIL CONSULTANTS

"ULTIMATE"
VOLLMER ROAD - MARKSHEFFEL ROAD
INTERSECTION



— ASPHALT TO BE REMOVED

1" = 50'
0 25 50 100
Scale in Feet

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
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STERLING RANCH – VOLLMER ROAD
STREET IMPROVEMENT PLANS

PROJECT NO. 09–002
DESIGNED BY: DLM
DRAWN BY: JWP
CHECKED BY: VAS
SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'
DATE: 2/26/2018
SHEET 4 OF 10
SI04

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE 719.955.5485
CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.
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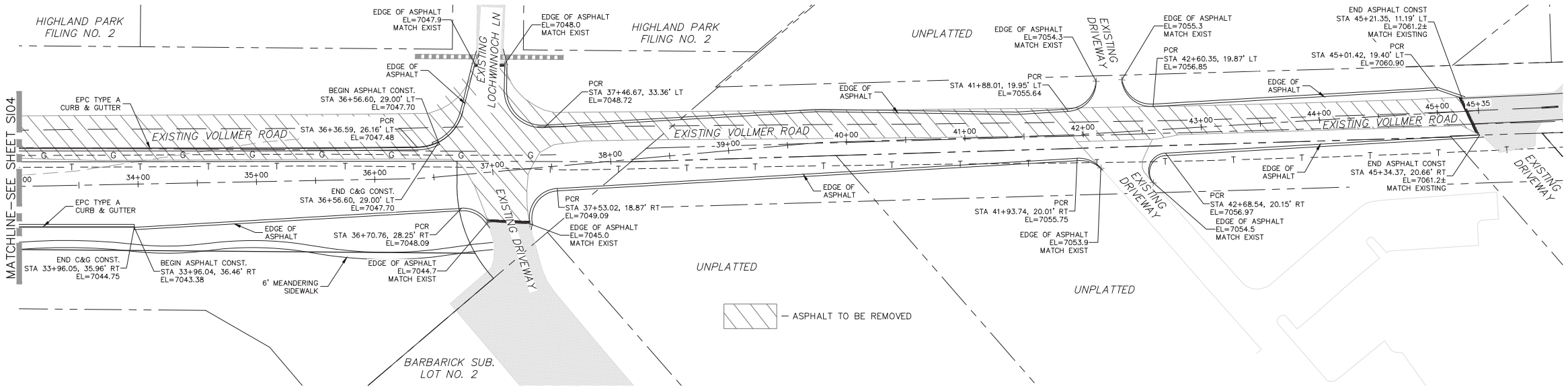
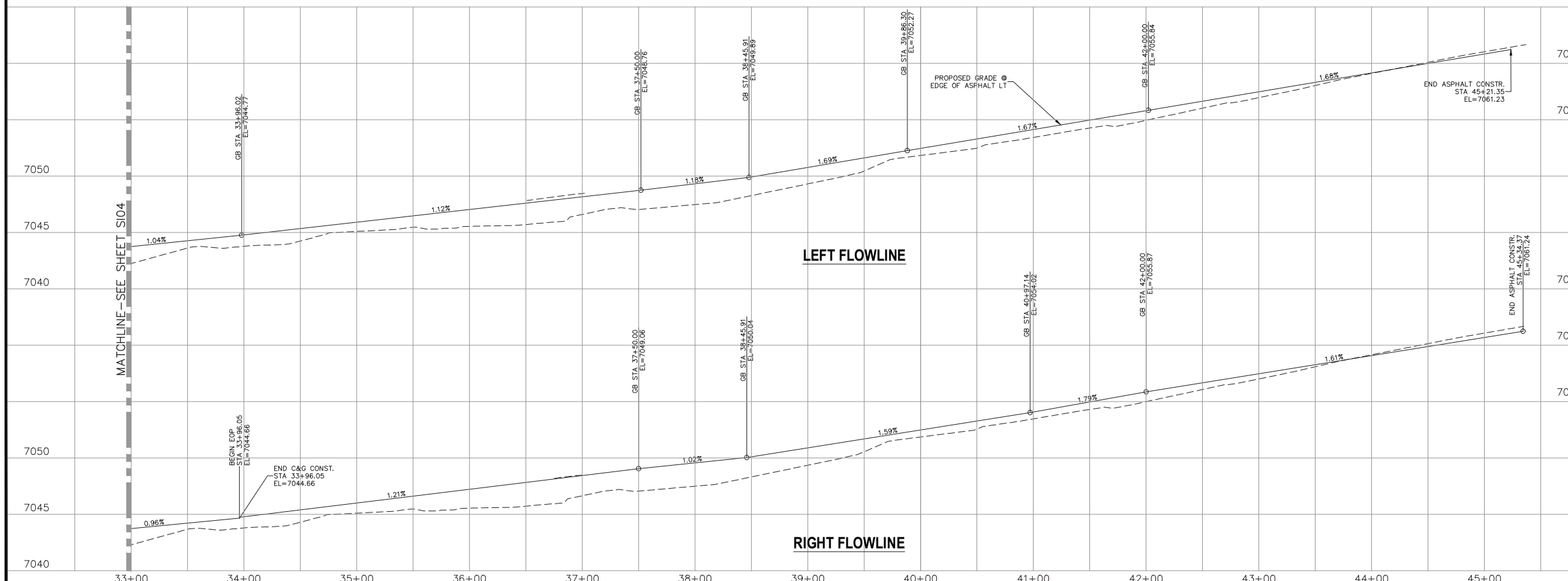
CAUTION



VOLLMER ROAD
STA 33+00.00 TO STA 45+34.37



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1" = 50'
0 25 50 100
Scale in Feet

STERLING RANCH – VOLLMER ROAD
STREET IMPROVEMENT PLANS

DATE: 2/26/2018
SHEET 5 OF 10
SI05

SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'
PROJECT NO. 09-002
DESIGNED BY: DLM
DRAWN BY: JWP
CHECKED BY: VAS

20 BOULDER CRESCENT, SUITE 110
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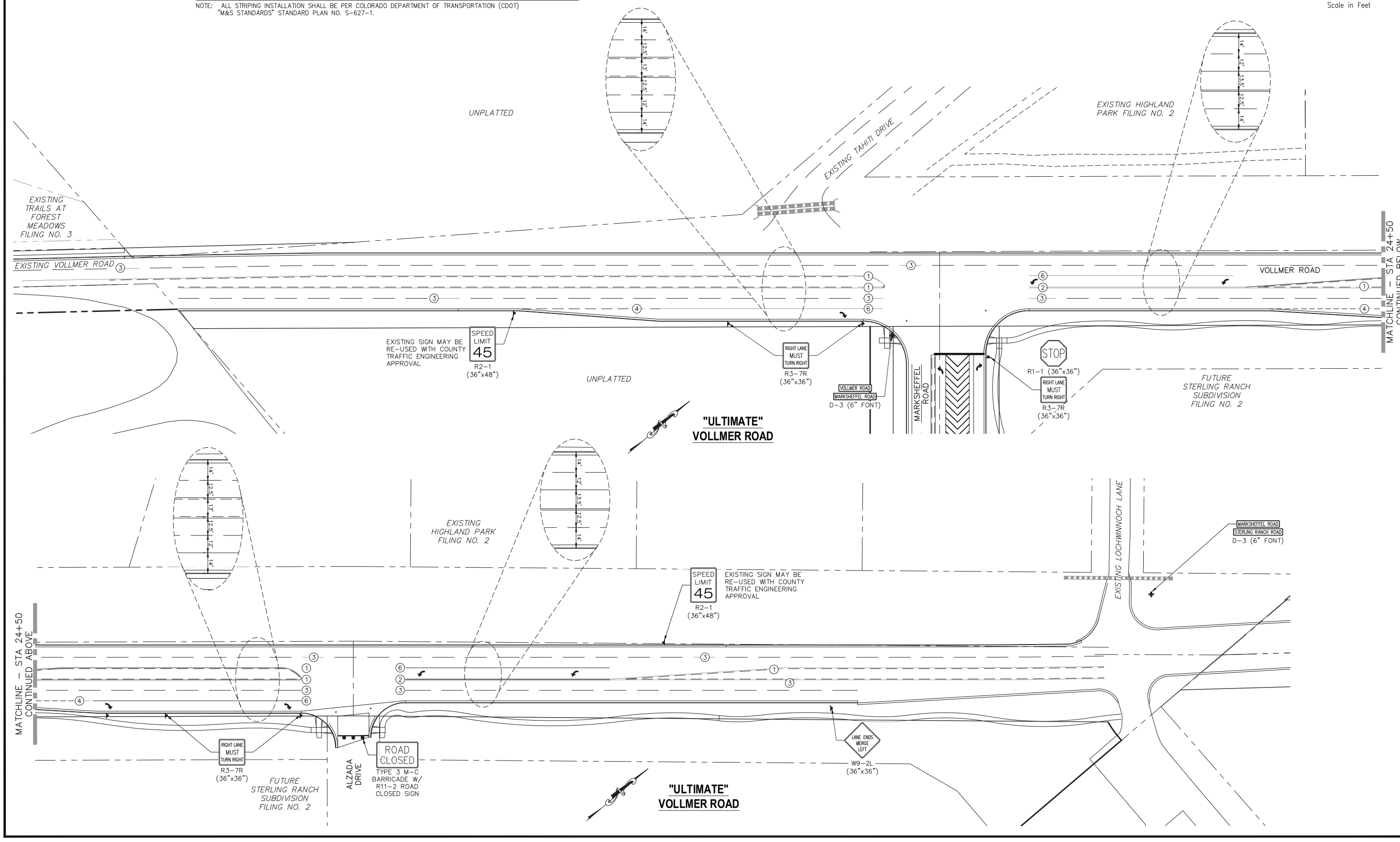
STRIPING LEGEND		
STRIPE	PAVEMENT MARKINGS	MARKING DESCRIPTION
①	2-WAY LEFT TURN LANE MARKINGS (EPOXY)	OUTSIDE: SOLID YELLOW, 4" WIDE, INSIDE: BROKEN YELLOW, 4" WIDE, 10' SEGMENTS WITH 30" GAPS
②	2-WAY CENTERLINE LANE MARKINGS (EPOXY)	PARALLEL SOLID YELLOW, 4" WIDE, 12" APART
③	LANE LANES (EPOXY)	BROKEN WHITE, 4" WIDE, 10' SEGMENTS WITH 30" GAPS
④	BROKEN EDGE/BIKE LANE LINES (EPOXY)	BROKEN WHITE, 4" WIDE, 5' SEGMENTS WITH 15" GAPS
⑤	EDGE/BIKE LANE LINES (EPOXY)	SOLID WHITE, 4" WIDE
⑥	CHANNELIZING LINES (EPOXY)	SOLID WHITE, 8" WIDE
⑦	STOP LINES (THERMO PLASTIC)	SOLID WHITE, 24" WIDE

NOTE: ALL STRIPING INSTALLATION SHALL BE PER COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) "M&S STANDARDS" STANDARD PLAN NO. S-627-1.

NOTE TO CONTRACTOR:

1. ALL 4" AND 8" SOLID OR SKIP PAVEMENT MARKINGS ARE TO BE EPOXY.
2. SIGNS AND POLES SHALL BE PER CDOT STANDARDS S-614-8, S-1614-2, AND S-614-3, LATEST REVISION.
3. ALL SIGNAGE INSTALLATION IS TO BE IN COMPLIANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

1" = 50'
0 25 50 100
Scale in Feet



STERLING RANCH - VOLLMER ROAD
SIGNAGE & STRIPING PLANS

DATE: 2/26/2018
SHEET 6 OF 10
SI06

SCALE: HORIZONTAL: 1"=50' VERTICAL: N/A

PROJECT NO. 09-002
DESIGNED BY: DLM
DRAWN BY: JWP
CHECKED BY: VAS

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
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File: Q:\09002A\Sterling Ranch District - Filing 2\dwg\Const Dwg\Street\Vollmer Rd\SI06.dwg Plotstamp: 2/28/2018 2:37 PM

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STRIPING LEGEND		
STRIPE	PAVEMENT MARKINGS	MARKING DESCRIPTION
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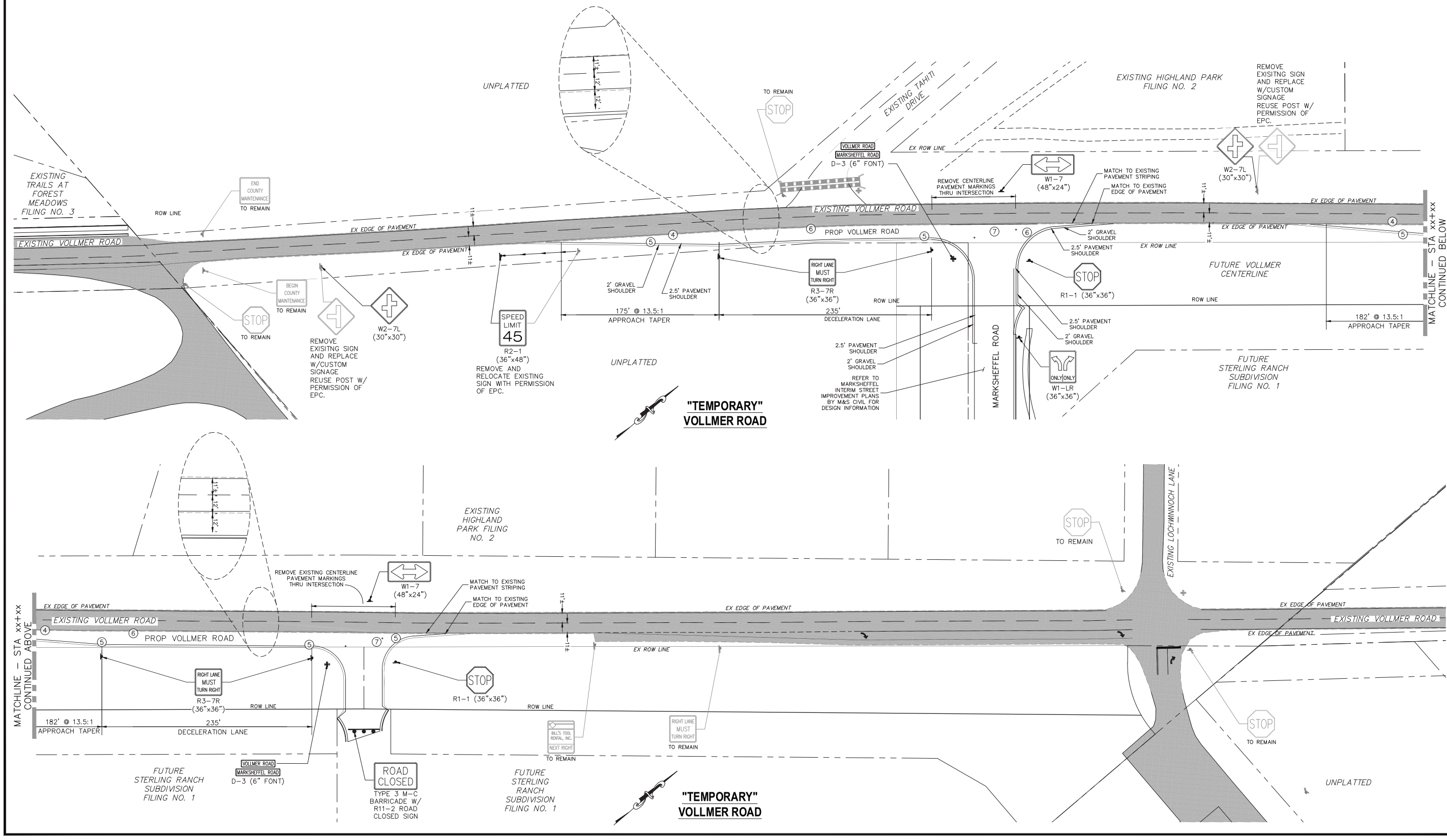
②	2-WAY CENTERLINE LANE MARKINGS (EPOXY)	PARALLEL SOLID YELLOW, 4" WIDE, 12" APART
③	LANE LANES (EPOXY)	BROKEN WHITE, 4" WIDE, 10' SEGMENTS WITH 30" GAPS
④	BROKEN EDGE/BIKE LANE LINES (EPOXY)	BROKEN WHITE, 4" WIDE, 5' SEGMENTS WITH 15" GAPS
⑤	EDGE/BIKE LANE LINES (EPOXY)	SOLID WHITE, 4" WIDE
⑥	CHANNELIZING LINES (EPOXY)	SOLID WHITE, 8" WIDE
⑦	STOP LINES (THERMO PLASTIC)	SOLID WHITE, 24" WIDE

NOTE: ALL STRIPING INSTALLATION SHALL BE PER COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) "M&S STANDARDS" STANDARD PLAN NO. S-627-1.

NOTE TO CONTRACTOR:

1. ALL 4" AND 8" SOLID OR SKIP PAVEMENT MARKINGS ARE TO BE EPOXY.
2. SIGNS AND POLES SHALL BE PER CDOT STANDARDS S-614-8, S-1614-2, AND S-614-3, LATEST REVISION.
3. ALL SIGNAGE INSTALLATION IS TO BE IN COMPLIANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

1" = 50'
0 25 50 100
Scale in Feet



STERLING RANCH - VOLLMER ROAD
SIGNAGE & STRIPING PLANS

PROJECT NO. 09-002	DESIGNED BY: DLM	DRAWN BY: JWP	CHECKED BY: VAS
DATE: 2/26/2018	SCALE: HORIZONTAL: 1"=50' VERTICAL: N/A	SHEET 7 OF 10	SI07

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

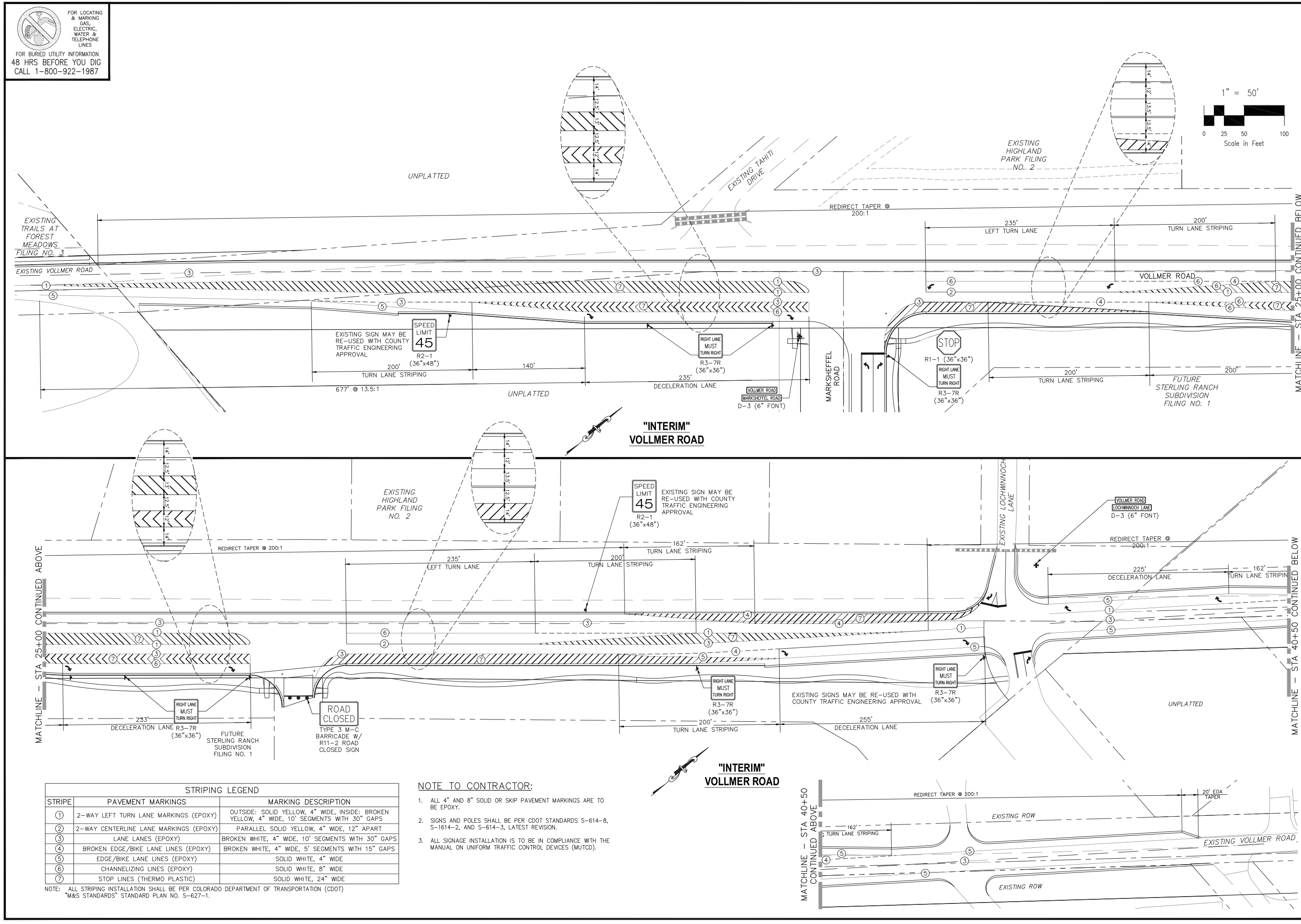
JORGIL A. SANCHEZ, COLORADO P.E. NO. 37160

REVISIONS:	NO.	DATE:	BY:	DESCRIPTION:	APPV'D. BY:	DATE:

File: O:\09002A\Sterling Ranch District - Filing 2\dwg\Const Dwg\Street\Vollmer Rd\SI07.dwg Plotstamp: 2/28/2018 2:39 PM

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES

FOR BURIED UTILITY INFORMATION
48 HRS BEFORE YOU DIG
CALL 1-800-922-1987



"INTERIM" VOLLMER ROAD

"INTERIM" VOLLMER ROAD

STRIPING LEGEND		
STRIPE	PAVEMENT MARKINGS	MARKING DESCRIPTION
①	2-WAY LEFT TURN LANE MARKINGS (EPOXY)	OUTSIDE: SOLID YELLOW, 4" WIDE, INSIDE: BROKEN YELLOW, 4" WIDE, 10' SEGMENTS WITH 30" GAPS
②	2-WAY CENTERLINE LANE MARKINGS (EPOXY)	PARALLEL SOLID YELLOW, 4" WIDE, 12" APART
③	LANE LANES (EPOXY)	BROKEN WHITE, 4" WIDE, 10' SEGMENTS WITH 30" GAPS
④	BROKEN EDGE/BIKE LANE LINES (EPOXY)	BROKEN WHITE, 4" WIDE, 5' SEGMENTS WITH 15" GAPS
⑤	EDGE/BIKE LANE LINES (EPOXY)	SOLID WHITE, 4" WIDE
⑥	CHANNELIZING LINES (EPOXY)	SOLID WHITE, 8" WIDE
⑦	STOP LINES (THERMO PLASTIC)	SOLID WHITE, 24" WIDE

NOTE: ALL STRIPING INSTALLATION SHALL BE PER COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) "M&S STANDARDS" STANDARD PLAN NO. S-627-1.

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STERLING RANCH - VOLLMER ROAD
SIGNAGE & STRIPING PLANS

PROJECT NO. 09-002
DESIGNED BY: DLM
DRAWN BY: JWP
CHECKED BY: VAS
SCALE: HORIZONTAL: 1"=50' VERTICAL: N/A
DATE: 2/26/2018
SHEET 8 OF 10
SI08

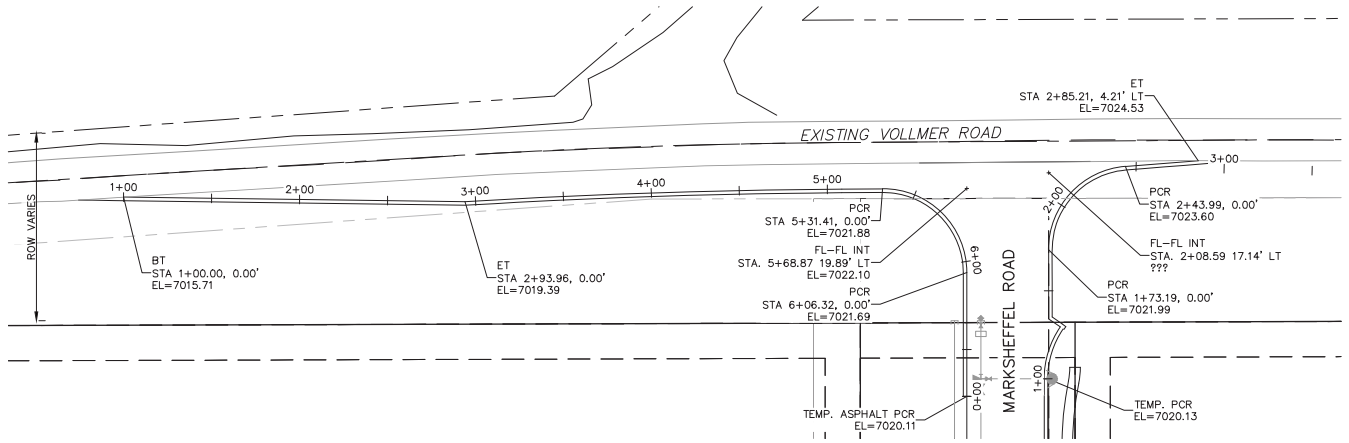
20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.
VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

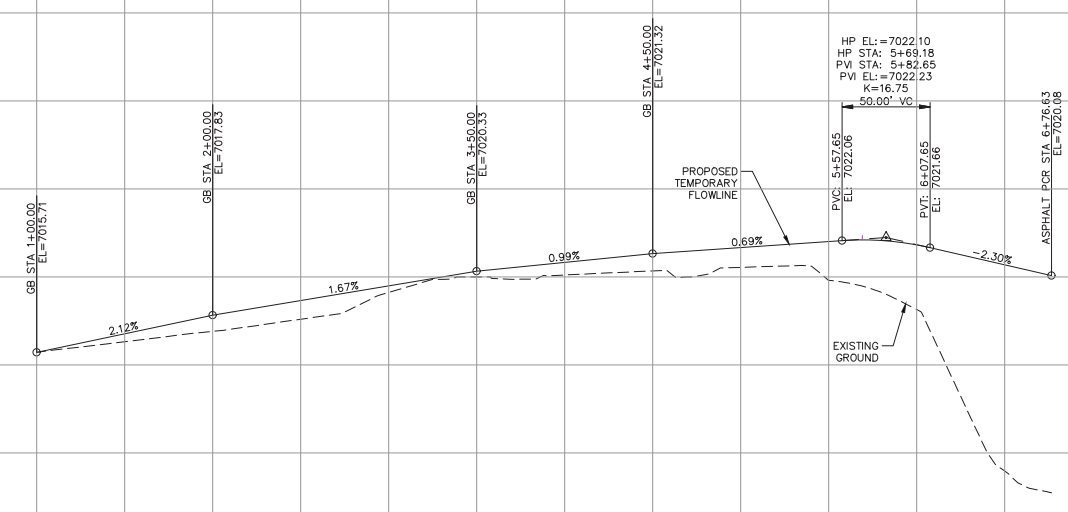
REVISIONS:
NO. DATE: BY: DESCRIPTION: APPR'D. BY: DATE:

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

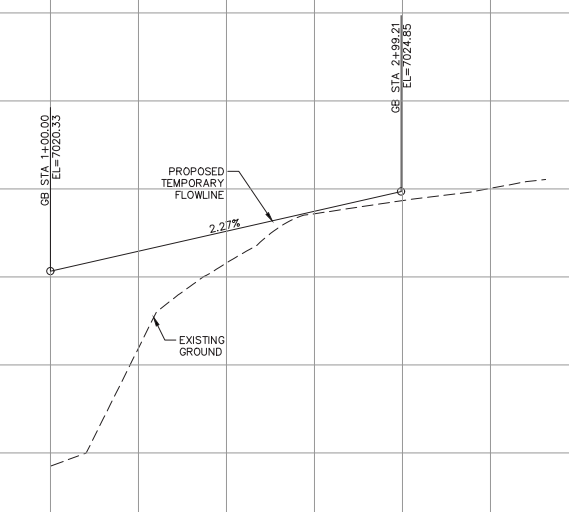
CAUTION



VOLLMER ROAD - TEMPORARY CONNECTION AT MARKSHEFFEL ROAD



VOLLMER TEMP FLOWLINE 1



VOLLMER TEMP FLOWLINE 2

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
FOR BURIED UTILITY INFORMATION
48 HRS BEFORE YOU DIG
CALL 1-800-922-1987

1" = 50'
0 25 50 100
Scale in Feet

STERLING RANCH – VOLLMER ROAD
STREET IMPROVEMENT PLANS

PROJECT NO. 09-002	SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'	DATE: 2/26/2018	SHEET 9 OF 10 SI09
DESIGNED BY: DLM			
DRAWN BY: JWP			
CHECKED BY: VAS			

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

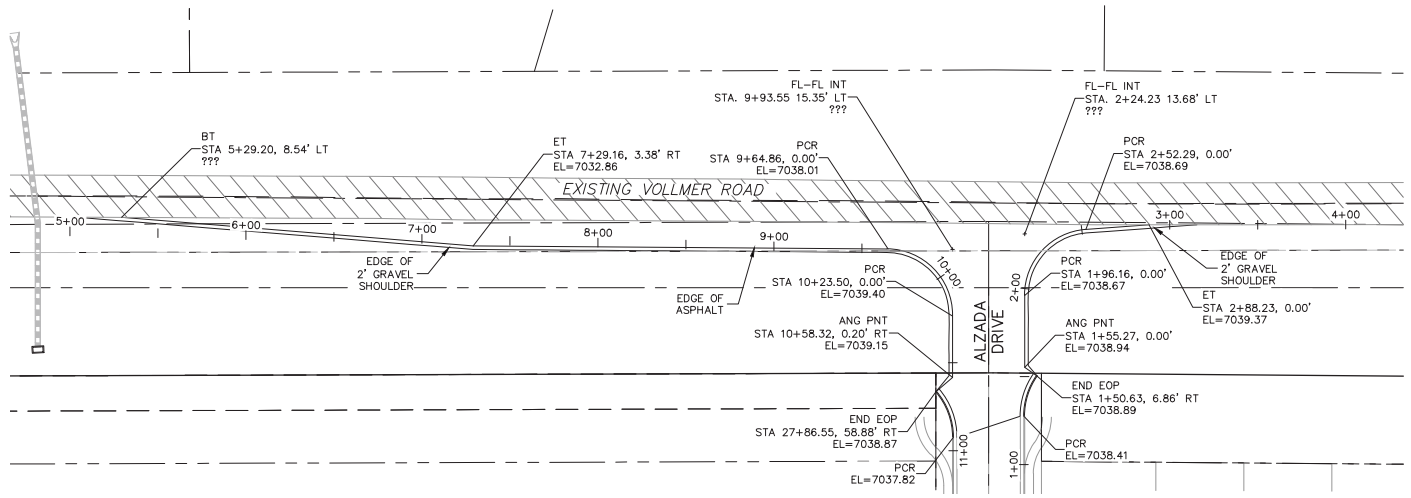
VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

REVISIONS:

NO.	DATE:	BY:	DESCRIPTION:	APPR'D. BY:	DATE:

File: O:\09002A\Sterling Ranch District - Filing 2\dwg\Const Dwg\Street\Vollmer Rd\SI09.dwg Plotstamp: 2/28/2018 2:46 PM



VOLLMER ROAD - TEMPORARY CONNECTION AT ALZADA DRIVE

VOLLMER TEMP FLOWLINE 3

VOLLMER TEMP FLOWLINE 4

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
FOR BURIED UTILITY INFORMATION
48 HRS BEFORE YOU DIG
CALL 1-800-922-1987

1" = 50'

0 25 50 100
Scale in Feet

STERLING RANCH – VOLLMER ROAD
STREET IMPROVEMENT PLANS

DATE:	2/26/2018
SCALE: HORIZONTAL:	1"=50'
VERTICAL:	1"=5'
SHEET	10 OF 10
PROJECT NO.	09-002
DESIGNED BY:	DLM
DRAWN BY:	JWP
CHECKED BY:	VAS

SI10

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

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REVISIONS:

NO.	DATE:	BY:	DESCRIPTION:	APPR'D. BY:	DATE:

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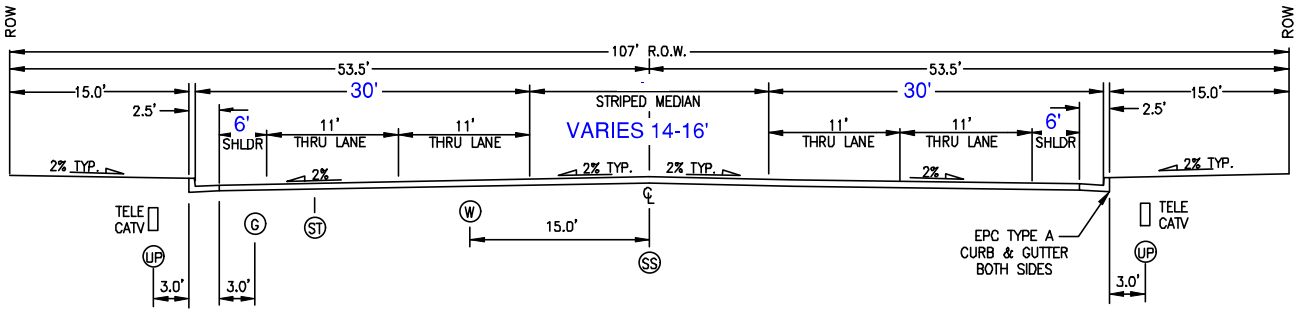
CAUTION

File: O:\09002A\Sterling Ranch District - Filing 2\dwg\Const Dwg\Street\Vollmer Rd\SI10.dwg Plotstamp: 2/28/2018 2:47 PM

Proposed Marksheffel Road Deviation

Provide deviation request form

TRANSPORTATION
CONSULTANTS, INC.



NOTE:
MEANDERING SIDEWALK TO BE PROVIDED WITHIN TRACTS IMMEDIATELY ADJACENT TO ROADWAY (NOT SHOWN)

MARKSHEFFEL ROAD (107' ROW)
(MODIFIED) 4 LANE URBAN MINOR ARTERIAL CROSS SECTION
SCALE: NTS

PROPOSED SECTION (DEVIATION)

Cross section above is as agreed to by Kathleen Krager and Jeff Rice on November 29, 2018.

Conditions of deviation approval:

1. El Paso County will not maintain Marksheffel Road with the proposed design, and will only facilitate approvals and coordinate transfer of the road, upon completion of construction, to the City of Colorado Springs. Ultimate plan approval, notice to proceed, and MS4/stormwater enforcement remains under the County's jurisdiction until such time that the road is actually annexed into the City.
2. Construction of the approved cross-section (above) is at the developer's risk as the County cannot guarantee City acceptance of the road and associated deeds. Any revisions necessary to meet County requirements due to a change in City commitments will be the developer's responsibility.
3. The City may require construction of the full four-lane cross-section from Vollmer Road southeast along platted areas (Sterling Ranch Filing No. 2).
4. The City may require a 25% escrow contribution to the traffic signal at Vollmer Road.
5. The intersection at Vollmer Road shall be designed and constructed to allow for realignment of Tahiti Drive from the northwest at an appropriate location entering the new intersection.
6. Any additional easements necessary for drainage, slope easements and other public improvements shall be shown on plans as "public improvements easements." If these easements are required, they shall be provided by separate recorded document (non-exclusive public easements) approved by El Paso County and referenced on the plans prior to plan approval.
7. A 25-foot non-exclusive County trail corridor easement is required along the northeast side of Marksheffel Road and shall be shown on all plans. It is assumed that this corridor will remain under County Jurisdiction.

Traffic Counts

TRANSPORTATION
CONSULTANTS, INC.

LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Black Forest Rd - Vollmer Rd PM 12-19
Site Code : 00194990
Start Date : 12/5/2019

Groups Printed- Unshifted

	Black Forest Rd Southbound					Vollmer Rd Westbound					Black Forest Rd Northbound					Eastbound					
Start Time	**Left**	**Through**	**Right**	**Peds**	**App. Total**	**Left**	**Through**	**Right**	**Peds**	**App. Total**	**Left**	**Through**	**Right**	**Peds**	**App. Total**	**Left**	**Through**	**Right**	**Peds**	**App. Total**	**Int. Total**
04:00 PM	3	100	0	0	103	95	0	2	0	97	0	81	119	0	200	0	0	0	0	0	400
04:15 PM	2	73	0	0	75	82	0	4	0	86	0	98	145	0	243	0	0	0	0	0	404
04:30 PM	1	94	0	0	95	92	0	0	0	92	0	74	125	0	199	0	0	0	0	0	386
04:45 PM	2	81	0	0	83	84	0	7	0	91	0	123	130	0	253	0	0	0	0	0	427
Total	8	348	0	0	356	353	0	13	0	366	0	376	519	0	895	0	0	0	0	0	1617
05:00 PM	2	95	0	0	97	97	0	2	0	99	0	90	121	0	211	0	0	0	0	0	407
05:15 PM	1	93	0	0	94	87	0	3	0	90	0	70	102	0	172	0	0	0	0	0	356
05:30 PM	2	69	0	0	71	82	0	1	0	83	0	88	130	0	218	0	0	0	0	0	372
05:45 PM	1	67	0	0	68	79	0	2	0	81	0	72	121	0	193	0	0	0	0	0	342
Total	6	324	0	0	330	345	0	8	0	353	0	320	474	0	794	0	0	0	0	0	1477
Grand Total	14	672	0	0	686	698	0	21	0	719	0	696	993	0	1689	0	0	0	0	0	3094
Apprch %	2	98	0	0		97.1	0	2.9	0		0	41.2	58.8	0		0	0	0	0		
Total %	0.5	21.7	0	0	22.2	22.6	0	0.7	0	23.2	0	22.5	32.1	0	54.6	0	0	0	0	0	

LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210
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File Name : Black Forest Rd - Vollmer Rd PM 12-19
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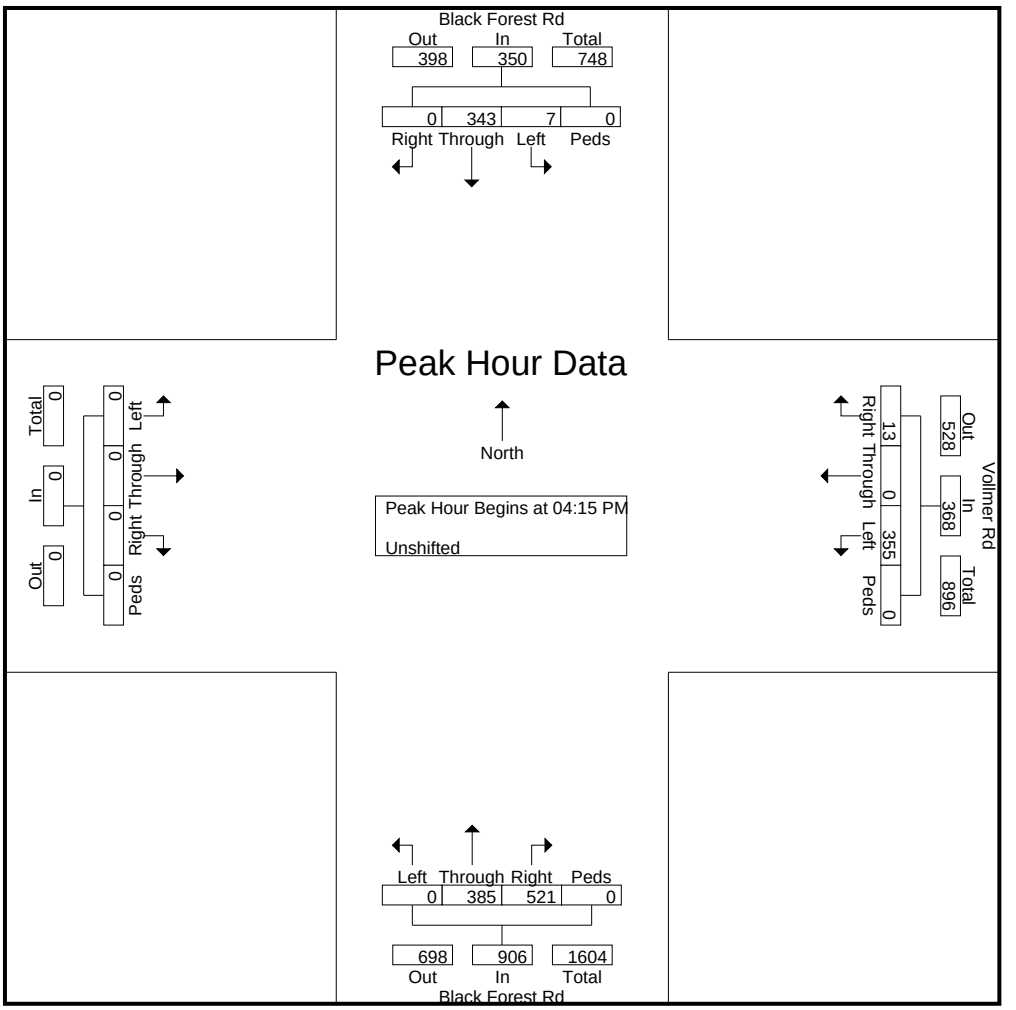
Start Date : 12/5/2019
Page No : 2

	Black Forest Rd Southbound					Vollmer Rd Westbound					Black Forest Rd Northbound					Eastbound					
Start Time	**Left**	**Through**	**Right**	**Peds**	**App. Total**	**Left**	**Through**	**Right**	**Peds**	**App. Total**	**Left**	**Through**	**Right**	**Peds**	**App. Total**	**Left**	**Through**	**Right**	**Peds**	**App. Total**	**Int. Total**
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	**2**	73	0	0	75	82	0	4	0	86	0	98	**145**	0	243	0	0	0	0	0	404
04:30 PM	1	94	0	0	95	92	0	0	0	92	0	74	125	0	199	0	0	0	0	0	386
04:45 PM	2	81	0	0	83	84	0	**7**	0	91	0	**123**	130	0	**253**	0	0	0	0	0	**427**
05:00 PM	2	**95**	0	0	**97**	**97**	0	2	0	**99**	0	90	121	0	211	0	0	0	0	0	407
Total Volume	7	343	0	0	350	355	0	13	0	368	0	385	521	0	906	0	0	0	0	0	1624
% App. Total	2	98	0	0		96.5	0	3.5	0		0	42.5	57.5	0		0	0	0	0		
PHF	.875	.903	.000	.000	.902	.915	.000	.464	.000	.929	.000	.783	.898	.000	.895	.000	.000	.000	.000	.000	.951



LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Black Forest Rd - Vollmer Rd PM
Site Code : 00204380
Start Date : 5/26/2020
Page No : 1

Groups Printed- Unshifted

	Black Forest Rd Southbound					Vollmer Rd Westbound					Black Forest Rd Northbound					Eastbound					
Start Time	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**Int. Total**
03:55 PM	1	91	0	0	92	86	0	5	0	91	0	68	111	0	179	0	0	0	0	0	362
04:10 PM	2	89	0	0	91	89	0	3	0	92	0	92	119	0	211	0	0	0	0	0	394
04:25 PM	2	100	0	0	102	88	0	5	1	94	0	103	126	0	229	0	0	0	0	0	425
04:40 PM	2	78	0	0	80	88	0	4	0	92	0	65	103	0	168	0	0	0	0	0	340
04:55 PM	0	107	0	0	107	116	0	1	0	117	0	79	128	0	207	0	0	0	0	0	431
05:10 PM	2	92	0	0	94	98	0	2	0	100	0	107	140	0	247	0	0	0	0	0	441
05:25 PM	1	84	0	0	85	87	0	2	2	91	0	77	129	0	206	0	0	0	0	0	382
05:40 PM	3	67	0	0	70	75	0	3	0	78	0	92	141	0	233	0	0	0	0	0	381
Grand Total	13	708	0	0	721	727	0	25	3	755	0	683	997	0	1680	0	0	0	0	0	3156
Apprch %	1.8	98.2	0	0		96.3	0	3.3	0.4		0	40.7	59.3	0		0	0	0	0		
Total %	0.4	22.4	0	0	22.8	23	0	0.8	0.1	23.9	0	21.6	31.6	0	53.2	0	0	0	0	0	

LSC Transportation Consultants, Inc.
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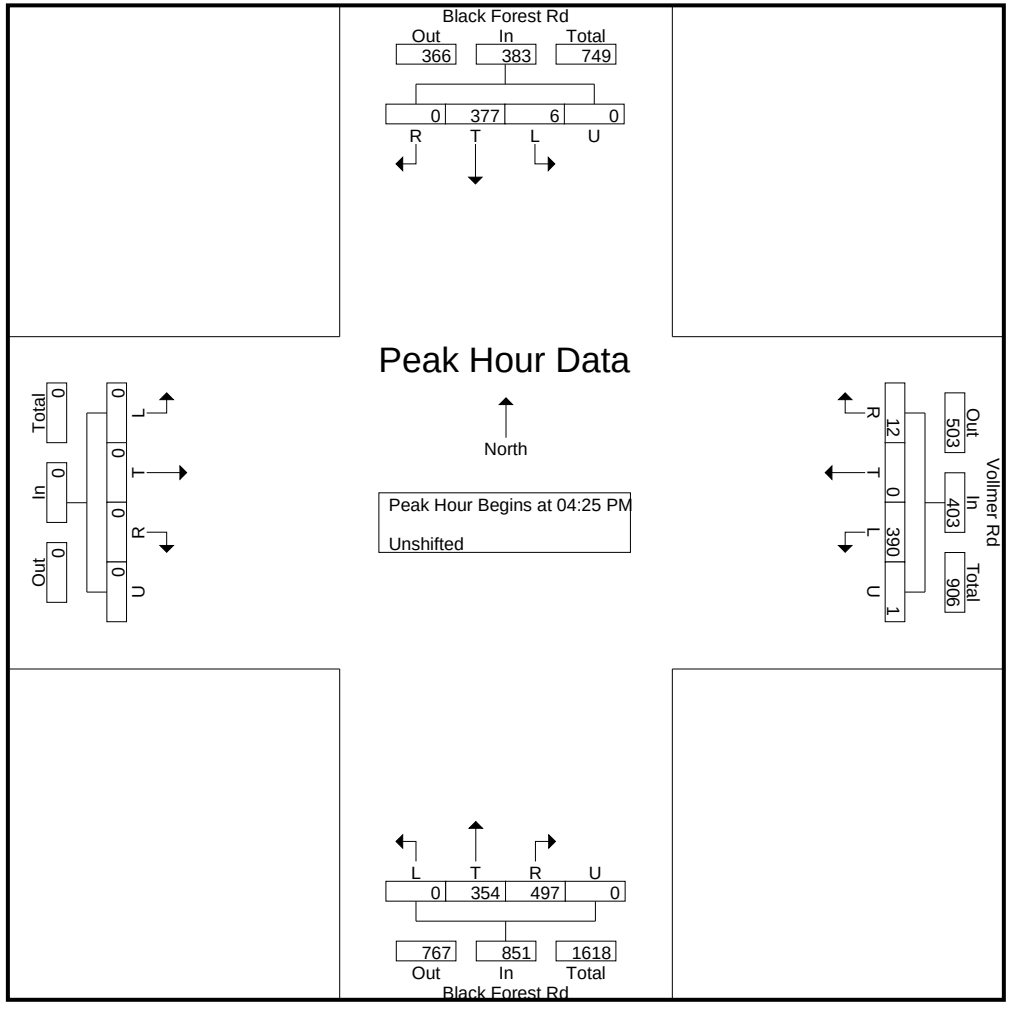
Colorado Springs, CO 80905
719-633-2868

File Name : Black Forest Rd - Vollmer Rd PM
Site Code : 00204380
Start Date : 5/26/2020
Page No : 3



LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Vollmer Rd - Dines Blvd AM
Site Code : 00204380
Start Date : 5/27/2020
Page No : 1

Groups Printed- Unshifted

	Vollmer Rd Southbound					Dines Blvd Westbound					Vollmer Rd Northbound					Eastbound					
Start Time	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**Int. Total**
06:30 AM	1	30	0	0	31	2	0	1	0	3	0	4	3	0	7	0	0	0	0	0	41
06:45 AM	1	28	0	0	29	3	0	2	0	5	0	11	2	0	13	0	0	0	0	0	47
Total	2	58	0	0	60	5	0	3	0	8	0	15	5	0	20	0	0	0	0	0	88
07:00 AM	1	24	0	0	25	8	0	3	0	11	0	19	3	0	22	0	0	0	0	0	58
07:15 AM	1	29	0	0	30	4	0	0	0	4	0	26	5	0	31	0	0	0	0	0	65
07:30 AM	0	27	0	0	27	9	0	1	0	10	0	21	8	0	29	0	0	0	0	0	66
07:45 AM	0	33	0	0	33	8	0	3	1	12	0	21	6	0	27	0	0	0	0	0	72
Total	2	113	0	0	115	29	0	7	1	37	0	87	22	0	109	0	0	0	0	0	261
08:00 AM	1	25	0	0	26	7	0	0	0	7	0	23	6	0	29	0	0	0	0	0	62
08:15 AM	3	24	0	0	27	12	0	0	0	12	0	23	10	0	33	0	0	0	0	0	72
Grand Total	8	220	0	0	228	53	0	10	1	64	0	148	43	0	191	0	0	0	0	0	483
Apprch %	3.5	96.5	0	0		82.8	0	15.6	1.6		0	77.5	22.5	0		0	0	0	0		
Total %	1.7	45.5	0	0	47.2	11	0	2.1	0.2	13.3	0	30.6	8.9	0	39.5	0	0	0	0	0	

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Colorado Springs, CO 80905
719-633-2868

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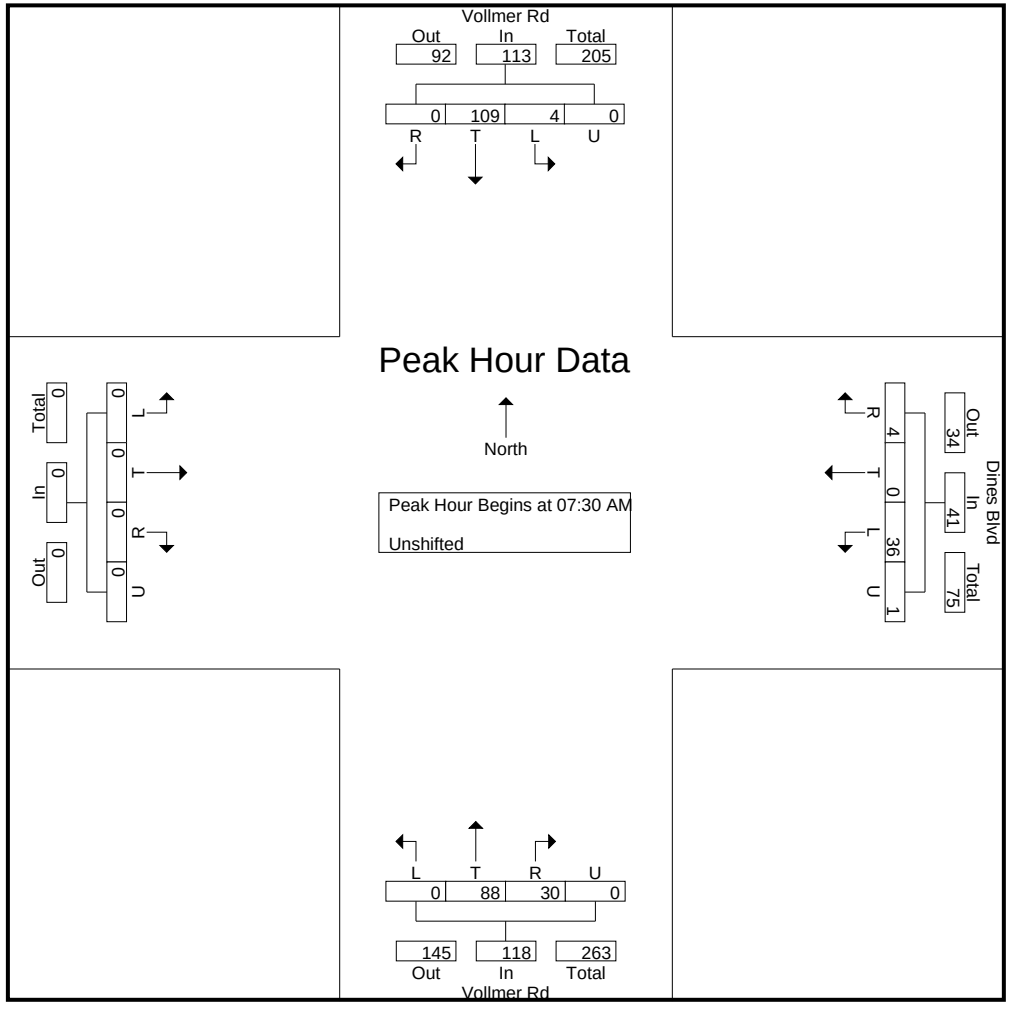
Page No : 3



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545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

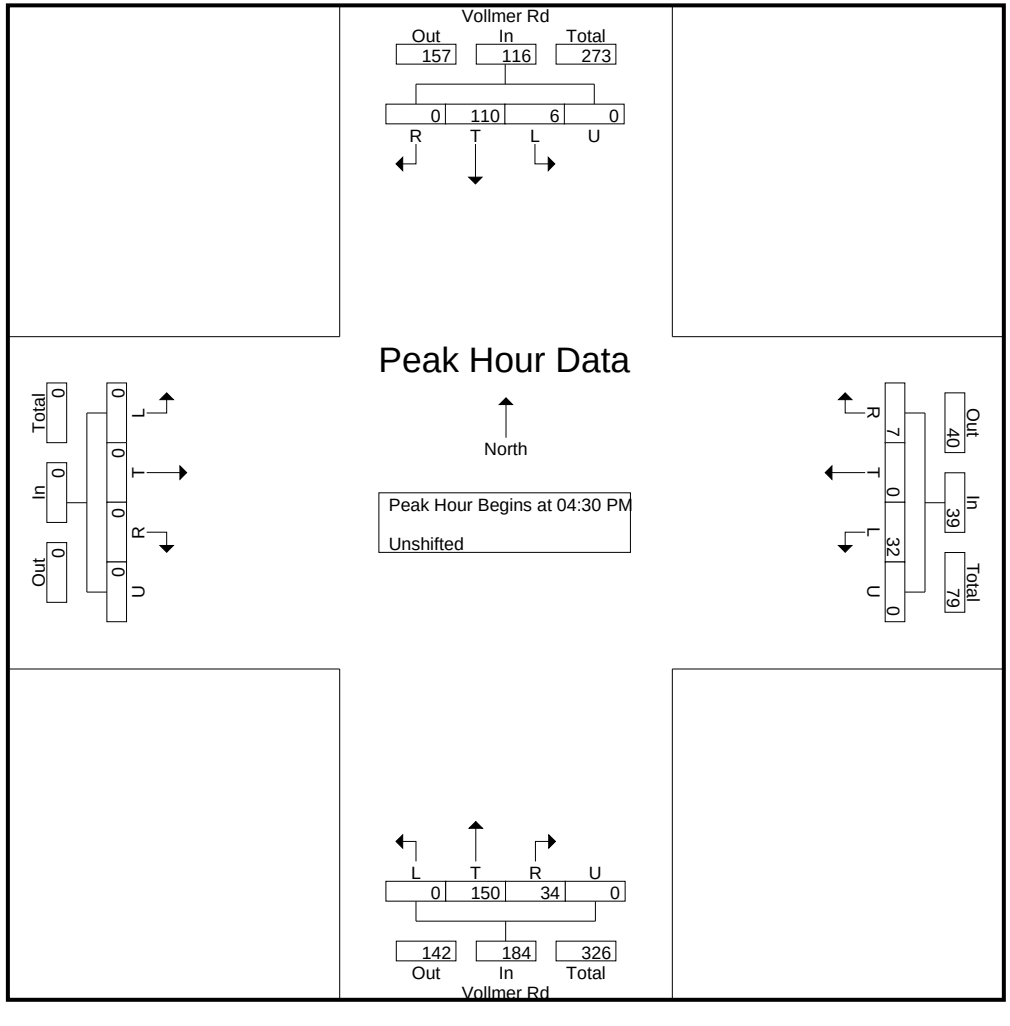
File Name : Vollmer Rd - Dines Blvd PM
Site Code : 00204380
Start Date : 5/27/2020
Page No : 1

Groups Printed- Unshifted

	Vollmer Rd Southbound					Westbound					Vollmer Rd Northbound					Eastbound					
Start Time	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**Int. Total**
04:00 PM	0	21	0	0	21	6	0	0	0	6	0	39	8	0	47	0	0	0	0	0	74
04:15 PM	1	29	0	0	30	9	0	1	1	11	0	30	9	0	39	0	0	0	0	0	80
04:30 PM	3	28	0	0	31	8	0	3	0	11	0	50	11	0	61	0	0	0	0	0	103
04:45 PM	0	23	0	0	23	4	0	0	0	4	0	35	12	0	47	0	0	0	0	0	74
Total	4	101	0	0	105	27	0	4	1	32	0	154	40	0	194	0	0	0	0	0	331
05:00 PM	2	26	0	0	28	13	0	0	0	13	0	31	4	0	35	0	0	0	0	0	76
05:15 PM	1	33	0	0	34	7	0	4	0	11	0	34	7	0	41	0	0	0	0	0	86
05:30 PM	1	20	0	0	21	7	0	2	0	9	0	43	13	0	56	0	0	0	0	0	86
05:45 PM	0	13	0	0	13	2	0	2	0	4	0	33	8	0	41	0	0	0	0	0	58
Total	4	92	0	0	96	29	0	8	0	37	0	141	32	0	173	0	0	0	0	0	306
Grand Total	8	193	0	0	201	56	0	12	1	69	0	295	72	0	367	0	0	0	0	0	637
Apprch %	4	96	0	0		81.2	0	17.4	1.4		0	80.4	19.6	0		0	0	0	0		
Total %	1.3	30.3	0	0	31.6	8.8	0	1.9	0.2	10.8	0	46.3	11.3	0	57.6	0	0	0	0	0	

LSC Transportation Consultants, Inc.
545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Vollmer Rd - Dines Blvd PM
Site Code : 00204380
Start Date : 5/27/2020
Page No : 3



LSC Transportation Consultants, Inc.
516 N. Tejon St.
Colorado Springs, CO
(719) 633-2868

LSC Transportation Consultants, Inc.

File Name : Vollmer Rd-Lochwinnoch Ln AM
Site Code : 00000000
Start Date : 01/09/2014

Groups Printed- Unshifted

	Vollmer RD From North				Bills Tool Rental Access From East				Vollmer Rd From South				LochwinnochLn From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	28	0	0	0	0	0	0	5	6	0	0	1	0	0	0	40
06:45 AM	0	34	0	0	0	0	0	0	10	2	0	0	3	1	0	0	50
Total	0	62	0	0	0	0	0	0	15	8	0	0	4	1	0	0	90
07:00 AM	1	47	0	0	6	0	1	0	3	5	0	0	8	0	0	0	71
07:15 AM	4	37	1	0	2	0	3	0	0	14	1	0	7	0	0	0	69
07:30 AM	0	34	0	0	3	0	1	0	2	10	2	0	5	0	0	0	57
07:45 AM	0	32	0	0	1	1	0	0	4	19	2	0	1	0	0	0	60
Total	5	150	1	0	12	1	5	0	9	48	5	0	21	0	0	0	257
08:00 AM	1	23	0	0	1	0	2	0	1	9	1	0	6	0	1	0	45
08:15 AM	1	43	0	0	0	0	1	0	1	20	1	0	7	0	1	0	75
Grand Total	7	278	1	0	13	1	8	0	26	85	7	0	38	1	2	0	467
Apprch %	2.4	97.2	0.3	0.0	59.1	4.5	36.4	0.0	22.0	72.0	5.9	0.0	92.7	2.4	4.9	0.0	
Total %	1.5	59.5	0.2	0.0	2.8	0.2	1.7	0.0	5.6	18.2	1.5	0.0	8.1	0.2	0.4	0.0	

N:\Counts\Intersec3\Vollmer Rd-Lochwinnoch Ln PM.pwf

Start Date: 01/09/2014 Site Code: 00000000 Number of Intervals: 8
Start Time: 04:15 PM Displayed Group: 1 - Unshifted Interval Length: 15 Minutes

	Vollmer Rd From North				Bills Tool Rental Access From East				Vollmer Rd From South				Lochwinnoch Ln From West			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
04:15 PM	0	24	0	0	0	0	1	0	1	35	4	0	1	0	0	0
04:30 PM	1	12	2	0	0	0	0	0	0	48	5	0	1	0	0	0
04:45 PM	1	19	0	0	2	0	0	0	2	43	2	0	1	1	0	0
05:00 PM	0	16	0	0	1	0	4	0	0	38	5	0	1	0	0	0
05:15 PM	0	21	0	0	0	0	0	0	0	44	6	0	4	0	0	0
05:30 PM	1	21	0	0	0	0	0	0	1	40	4	0	3	0	0	0
05:45 PM	0	23	1	0	0	1	0	0	0	42	4	0	2	0	0	0
06:00 PM	0	17	0	0	0	0	0	0	0	36	5	0	3	0	1	0

COUNTER MEASURES INC.

1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

Location: VOLLMER RD S/O POCO RD
City:
County: EL PASO
Direction: SOUTHBOUND-NORTHBOUND

Site Code: 092712
Station ID: 092712

Start	28-Sep-17	SB		NB		Combined		29-Sep	SB		NB		Combined	
Time	Thu	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Fri	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00		0	25	1	16	1	41		*	*	*	*	*	*
12:15		0	12	0	25	0	37		*	*	*	*	*	*
12:30		1	12	1	26	2	38		*	*	*	*	*	*
12:45		0	18	0	18	0	36		*	*	*	*	*	*
01:00		0	24	0	16	0	40		*	*	*	*	*	*
01:15		0	16	0	23	0	39		*	*	*	*	*	*
01:30		0	25	2	29	2	54		*	*	*	*	*	*
01:45		0	17	0	20	0	37		*	*	*	*	*	*
02:00		1	21	0	34	1	55		*	*	*	*	*	*
02:15		0	22	2	23	2	45		*	*	*	*	*	*
02:30		0	21	1	28	1	49		*	*	*	*	*	*
02:45		0	14	0	37	0	51		*	*	*	*	*	*
03:00		0	40	0	28	0	68		*	*	*	*	*	*
03:15		0	15	1	27	1	42		*	*	*	*	*	*
03:30		0	24	2	30	2	54		*	*	*	*	*	*
03:45		3	18	0	31	3	49		*	*	*	*	*	*
04:00		1	19	1	25	2	44		*	*	*	*	*	*
04:15		3	18	1	30	4	48		*	*	*	*	*	*
04:30		0	30	0	25	0	55		*	*	*	*	*	*
04:45		6	18	0	30	6	48		*	*	*	*	*	*
05:00		7	19	4	32	11	51		*	*	*	*	*	*
05:15		4	13	0	28	4	41		*	*	*	*	*	*
05:30		19	15	3	30	22	45		*	*	*	*	*	*
05:45		5	16	2	30	7	46		*	*	*	*	*	*
06:00		20	12	6	37	26	49		*	*	*	*	*	*
06:15		16	14	6	18	22	32		*	*	*	*	*	*
06:30		27	16	9	33	36	49		*	*	*	*	*	*
06:45		18	20	4	12	22	32		*	*	*	*	*	*
07:00		14	4	16	15	30	19		*	*	*	*	*	*
07:15		27	2	14	16	41	18		*	*	*	*	*	*
07:30		22	6	12	19	34	25		*	*	*	*	*	*
07:45		16	4	21	16	37	20		*	*	*	*	*	*
08:00		20	4	12	21	32	25		*	*	*	*	*	*
08:15		26	3	16	14	42	17		*	*	*	*	*	*
08:30		23	5	14	15	37	20		*	*	*	*	*	*
08:45		16	5	18	14	34	19		*	*	*	*	*	*
09:00		34	4	27	17	61	21		*	*	*	*	*	*
09:15		19	7	11	4	30	11		*	*	*	*	*	*
09:30		16	6	12	13	28	19		*	*	*	*	*	*
09:45		18	4	12	6	30	10		*	*	*	*	*	*
10:00		21	3	10	7	31	10		*	*	*	*	*	*
10:15		18	4	28	1	46	5		*	*	*	*	*	*
10:30		28	0	15	2	43	2		*	*	*	*	*	*
10:45		28	1	16	1	44	2		*	*	*	*	*	*
11:00		21	1	13	1	34	2		*	*	*	*	*	*
11:15		13	0	18	1	31	1		*	*	*	*	*	*
11:30		15	1	14	3	29	4		*	*	*	*	*	*
11:45		14	0	20	3	34	3		*	*	*	*	*	*
Total		540	598	365	930	905	1528		0	0	0	0	0	0
Day Total		1138		1295		2433			0		0		0	
% Total		22.2%	24.6%	15.0%	38.2%				0.0%	0.0%	0.0%	0.0%		
Peak	-	08:15	02:15	08:15	05:15	08:15	02:45	-	-	-	-	-	-	-
Vol.	-	99	97	75	125	174	215	-	-	-	-	-	-	-
P.H.F.		0.728	0.606	0.694	0.845	0.713	0.790							

ADT	ADT 2,433	AADT 2,433

Levels of Service

TRANSPORTATION
CONSULTANTS, INC.

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↗		↕	
Traffic Vol, veh/h	0	0	21	5	1	12	5	129	9	1	194	5
Future Vol, veh/h	0	0	21	5	1	12	5	129	9	1	194	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	235	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	64	64	64	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	32	8	2	19	6	152	11	1	228	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	413	408	231	413	400	152	234	0	0	163	0	0
Stage 1	233	233	-	164	164	-	-	-	-	-	-	-
Stage 2	180	175	-	249	236	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	549	533	808	549	538	894	1333	-	-	1416	-	-
Stage 1	770	712	-	838	762	-	-	-	-	-	-	-
Stage 2	822	754	-	755	710	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	534	530	808	525	535	894	1333	-	-	1416	-	-
Mov Cap-2 Maneuver	534	530	-	525	535	-	-	-	-	-	-	-
Stage 1	766	711	-	834	758	-	-	-	-	-	-	-
Stage 2	799	750	-	724	709	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.6	10.2	0.3	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1333	-	-	808	725	1416	-	-
HCM Lane V/C Ratio	0.004	-	-	0.04	0.039	0.001	-	-
HCM Control Delay (s)	7.7	0	-	9.6	10.2	7.5	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	36	4	88	30	4	109
Future Vol, veh/h	36	4	88	30	4	109
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	285	-
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	42	5	104	35	5	128

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	242	104	0	0	139	0
Stage 1	104	-	-	-	-	-
Stage 2	138	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	746	951	-	-	1445	-
Stage 1	920	-	-	-	-	-
Stage 2	889	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	744	951	-	-	1445	-
Mov Cap-2 Maneuver	744	-	-	-	-	-
Stage 1	917	-	-	-	-	-
Stage 2	889	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	744	951	1445	-
HCM Lane V/C Ratio	-	-	0.057	0.005	0.003	-
HCM Control Delay (s)	-	-	10.1	8.8	7.5	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↗		↕	
Traffic Vol, veh/h	0	1	9	4	0	3	7	239	3	2	154	2
Future Vol, veh/h	0	1	9	4	0	3	7	239	3	2	154	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	235	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	63	63	63	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2	14	6	0	5	8	281	4	2	181	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	488	487	182	491	484	281	183	0	0	285	0	0
Stage 1	186	186	-	297	297	-	-	-	-	-	-	-
Stage 2	302	301	-	194	187	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	490	481	861	488	483	758	1392	-	-	1277	-	-
Stage 1	816	746	-	712	668	-	-	-	-	-	-	-
Stage 2	707	665	-	808	745	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	484	477	861	475	479	758	1392	-	-	1277	-	-
Mov Cap-2 Maneuver	484	477	-	475	479	-	-	-	-	-	-	-
Stage 1	810	745	-	707	663	-	-	-	-	-	-	-
Stage 2	698	660	-	791	744	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.6	11.5	0.2	0.1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1392	-	-	797	565	1277	-	-
HCM Lane V/C Ratio	0.006	-	-	0.02	0.02	0.002	-	-
HCM Control Delay (s)	7.6	0	-	9.6	11.5	7.8	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	32	7	150	34	6	110
Future Vol, veh/h	32	7	150	34	6	110
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	285	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	75	75	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	8	200	45	7	133

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	347	200	0	0	245	0
Stage 1	200	-	-	-	-	-
Stage 2	147	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	650	841	-	-	1321	-
Stage 1	834	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	647	841	-	-	1321	-
Mov Cap-2 Maneuver	647	-	-	-	-	-
Stage 1	830	-	-	-	-	-
Stage 2	880	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	647	841	1321	-
HCM Lane V/C Ratio	-	-	0.056	0.009	0.005	-
HCM Control Delay (s)	-	-	10.9	9.3	7.7	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	0	-

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	77	0	181	21	0	357
Future Vol, veh/h	77	0	181	21	0	357
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	500	0	-	235	235	-
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	91	0	213	25	0	420

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	633	213	0	0	238	0
Stage 1	213	-	-	-	-	-
Stage 2	420	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	444	827	-	-	1329	-
Stage 1	823	-	-	-	-	-
Stage 2	663	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	444	827	-	-	1329	-
Mov Cap-2 Maneuver	444	-	-	-	-	-
Stage 1	823	-	-	-	-	-
Stage 2	663	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	444	-	1329	-
HCM Lane V/C Ratio	-	-	0.204	-	-	-
HCM Control Delay (s)	-	-	15.2	0	0	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	0.8	-	0	-

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	50	22	134	22	7	232
Future Vol, veh/h	50	22	134	22	7	232
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	285	-
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	59	26	158	26	8	273

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	447	158	0	0	184	0
Stage 1	158	-	-	-	-	-
Stage 2	289	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	569	887	-	-	1391	-
Stage 1	871	-	-	-	-	-
Stage 2	760	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	566	887	-	-	1391	-
Mov Cap-2 Maneuver	566	-	-	-	-	-
Stage 1	866	-	-	-	-	-
Stage 2	760	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.2	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	566	887	1391	-
HCM Lane V/C Ratio	-	-	0.104	0.029	0.006	-
HCM Control Delay (s)	-	-	12.1	9.2	7.6	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	16	3	151	5	2	223
Future Vol, veh/h	16	3	151	5	2	223
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	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	19	4	178	6	2	262

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	444	178	0	0	184	0
Stage 1	178	-	-	-	-	-
Stage 2	266	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	571	865	-	-	1391	-
Stage 1	853	-	-	-	-	-
Stage 2	779	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	570	865	-	-	1391	-
Mov Cap-2 Maneuver	570	-	-	-	-	-
Stage 1	852	-	-	-	-	-
Stage 2	779	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.1	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	570	865	1391	-
HCM Lane V/C Ratio	-	-	0.033	0.004	0.002	-
HCM Control Delay (s)	-	-	11.5	9.2	7.6	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	51	0	443	65	0	255
Future Vol, veh/h	51	0	443	65	0	255
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	500	0	-	235	235	-
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	60	0	521	76	0	300

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	821	521	0	0	597	0
Stage 1	521	-	-	-	-	-
Stage 2	300	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	344	555	-	-	980	-
Stage 1	596	-	-	-	-	-
Stage 2	752	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	344	555	-	-	980	-
Mov Cap-2 Maneuver	344	-	-	-	-	-
Stage 1	596	-	-	-	-	-
Stage 2	752	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	344	-	980	-
HCM Lane V/C Ratio	-	-	0.174	-	-	-
HCM Control Delay (s)	-	-	17.7	0	0	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	0.6	-	0	-

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	34	14	292	76	21	196
Future Vol, veh/h	34	14	292	76	21	196
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	285	-
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	40	16	344	89	25	231

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	625	344	0	0	433	0
Stage 1	344	-	-	-	-	-
Stage 2	281	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	449	699	-	-	1127	-
Stage 1	718	-	-	-	-	-
Stage 2	767	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	439	699	-	-	1127	-
Mov Cap-2 Maneuver	439	-	-	-	-	-
Stage 1	702	-	-	-	-	-
Stage 2	767	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	0.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	439	699	1127	-
HCM Lane V/C Ratio	-	-	0.091	0.024	0.022	-
HCM Control Delay (s)	-	-	14	10.3	8.3	-
HCM Lane LOS	-	-	B	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	0.1	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	2	288	18	7	207
Future Vol, veh/h	10	2	288	18	7	207
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	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	12	2	339	21	8	244

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	599	339	0	0	360	0
Stage 1	339	-	-	-	-	-
Stage 2	260	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	465	703	-	-	1199	-
Stage 1	722	-	-	-	-	-
Stage 2	783	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	462	703	-	-	1199	-
Mov Cap-2 Maneuver	462	-	-	-	-	-
Stage 1	717	-	-	-	-	-
Stage 2	783	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.5	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	462	703	1199	-
HCM Lane V/C Ratio	-	-	0.025	0.003	0.007	-
HCM Control Delay (s)	-	-	13	10.1	8	-
HCM Lane LOS	-	-	B	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	0	-

Intersection	
Int Delay, s/veh	4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	107	75	178	79	60	347
Future Vol, veh/h	107	75	178	79	60	347
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	500	0	-	235	235	-
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	126	88	209	93	71	408

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	759	209	0	0	302	0
Stage 1	209	-	-	-	-	-
Stage 2	550	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	374	831	-	-	1259	-
Stage 1	826	-	-	-	-	-
Stage 2	578	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	353	831	-	-	1259	-
Mov Cap-2 Maneuver	353	-	-	-	-	-
Stage 1	780	-	-	-	-	-
Stage 2	578	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.2	0	1.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	353	831	1259	-
HCM Lane V/C Ratio	-	-	0.357	0.106	0.056	-
HCM Control Delay (s)	-	-	20.7	9.8	8	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	1.6	0.4	0.2	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	11	246	7	4	394
Future Vol, veh/h	13	11	246	7	4	394
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	235	235	-
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	15	13	289	8	5	464

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	763	289	0	0	297	0
Stage 1	289	-	-	-	-	-
Stage 2	474	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	372	750	-	-	1264	-
Stage 1	760	-	-	-	-	-
Stage 2	626	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	371	750	-	-	1264	-
Mov Cap-2 Maneuver	371	-	-	-	-	-
Stage 1	757	-	-	-	-	-
Stage 2	626	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	483	1264	-
HCM Lane V/C Ratio	-	-	0.058	0.004	-
HCM Control Delay (s)	-	-	12.9	7.9	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	32	41	218	15	52	290
Future Vol, veh/h	32	41	218	15	52	290
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	285	-
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	38	48	256	18	61	341

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	719	256	0	0	274	0
Stage 1	256	-	-	-	-	-
Stage 2	463	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	395	783	-	-	1289	-
Stage 1	787	-	-	-	-	-
Stage 2	634	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	376	783	-	-	1289	-
Mov Cap-2 Maneuver	376	-	-	-	-	-
Stage 1	750	-	-	-	-	-
Stage 2	634	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.4	0	1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	376	783	1289	-
HCM Lane V/C Ratio	-	-	0.1	0.062	0.047	-
HCM Control Delay (s)	-	-	15.6	9.9	7.9	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.2	0.1	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	3	255	3	2	332
Future Vol, veh/h	10	3	255	3	2	332
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	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	12	4	300	4	2	391

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	695	300	0	0	304	0
Stage 1	300	-	-	-	-	-
Stage 2	395	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	408	740	-	-	1257	-
Stage 1	752	-	-	-	-	-
Stage 2	681	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	407	740	-	-	1257	-
Mov Cap-2 Maneuver	407	-	-	-	-	-
Stage 1	750	-	-	-	-	-
Stage 2	681	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	407	740	1257	-
HCM Lane V/C Ratio	-	-	0.029	0.005	0.002	-
HCM Control Delay (s)	-	-	14.1	9.9	7.9	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	0	-

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	79	60	55	102	160	126
Future Vol, veh/h	79	60	55	102	160	126
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	235	-	-	0	235	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	93	71	65	120	188	148

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	185	0	-	0	322	65
Stage 1	-	-	-	-	65	-
Stage 2	-	-	-	-	257	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1390	-	-	-	672	999
Stage 1	-	-	-	-	958	-
Stage 2	-	-	-	-	786	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1390	-	-	-	627	999
Mov Cap-2 Maneuver	-	-	-	-	627	-
Stage 1	-	-	-	-	894	-
Stage 2	-	-	-	-	786	-

Approach	EB	WB	SB
HCM Control Delay, s	4.4	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1390	-	-	-	627	999
HCM Lane V/C Ratio	0.067	-	-	-	0.3	0.148
HCM Control Delay (s)	7.8	-	-	-	13.2	9.2
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.2	-	-	-	1.3	0.5

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	166	235	0	0	50
Future Vol, veh/h	15	166	235	0	0	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	-	-	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	18	195	276	0	0	59

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	276	0	-	0	507	276
Stage 1	-	-	-	-	276	-
Stage 2	-	-	-	-	231	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1287	-	-	-	525	763
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	807	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1287	-	-	-	518	763
Mov Cap-2 Maneuver	-	-	-	-	518	-
Stage 1	-	-	-	-	760	-
Stage 2	-	-	-	-	807	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1287	-	-	-	763
HCM Lane V/C Ratio	0.014	-	-	-	0.077
HCM Control Delay (s)	7.8	-	-	-	10.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	136	30	101	45	19	135
Future Vol, veh/h	136	30	101	45	19	135
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	-	-	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	160	35	119	53	22	159

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	172	0	-	0	501	146
Stage 1	-	-	-	-	146	-
Stage 2	-	-	-	-	355	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1405	-	-	-	530	901
Stage 1	-	-	-	-	881	-
Stage 2	-	-	-	-	710	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1405	-	-	-	470	901
Mov Cap-2 Maneuver	-	-	-	-	470	-
Stage 1	-	-	-	-	781	-
Stage 2	-	-	-	-	710	-

Approach	EB	WB	SB
HCM Control Delay, s	6.5	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1405	-	-	-	809
HCM Lane V/C Ratio	0.114	-	-	-	0.224
HCM Control Delay (s)	7.9	-	-	-	10.7
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.4	-	-	-	0.9

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	49	102	432	50	60	248
Future Vol, veh/h	49	102	432	50	60	248
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	500	0	-	235	235	-
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	58	120	508	59	71	292

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	942	508	0	0	567	0
Stage 1	508	-	-	-	-	-
Stage 2	434	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	292	565	-	-	1005	-
Stage 1	604	-	-	-	-	-
Stage 2	653	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	271	565	-	-	1005	-
Mov Cap-2 Maneuver	271	-	-	-	-	-
Stage 1	561	-	-	-	-	-
Stage 2	653	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.9	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	271	565	1005	-
HCM Lane V/C Ratio	-	-	0.213	0.212	0.07	-
HCM Control Delay (s)	-	-	21.8	13.1	8.9	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.8	0.8	0.2	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	7	511	22	13	299
Future Vol, veh/h	9	7	511	22	13	299
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	235	235	-
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	11	8	601	26	15	352

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	983	601	0	0	627	0
Stage 1	601	-	-	-	-	-
Stage 2	382	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	276	500	-	-	955	-
Stage 1	547	-	-	-	-	-
Stage 2	690	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	272	500	-	-	955	-
Mov Cap-2 Maneuver	272	-	-	-	-	-
Stage 1	538	-	-	-	-	-
Stage 2	690	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.2	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	340	955	-
HCM Lane V/C Ratio	-	-	0.055	0.016	-
HCM Control Delay (s)	-	-	16.2	8.8	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	20	393	50	31	265
Future Vol, veh/h	22	20	393	50	31	265
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	285	-
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	26	24	462	59	36	312

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	846	462	0	0	521	0
Stage 1	462	-	-	-	-	-
Stage 2	384	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	333	600	-	-	1045	-
Stage 1	634	-	-	-	-	-
Stage 2	688	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	322	600	-	-	1045	-
Mov Cap-2 Maneuver	322	-	-	-	-	-
Stage 1	612	-	-	-	-	-
Stage 2	688	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.3	0	0.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	322	600	1045	-
HCM Lane V/C Ratio	-	-	0.08	0.039	0.035	-
HCM Control Delay (s)	-	-	17.2	11.2	8.6	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	0.1	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	2	402	12	7	290
Future Vol, veh/h	7	2	402	12	7	290
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	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	8	2	473	14	8	341

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	830	473	0	0	487	0
Stage 1	473	-	-	-	-	-
Stage 2	357	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	340	591	-	-	1076	-
Stage 1	627	-	-	-	-	-
Stage 2	708	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	338	591	-	-	1076	-
Mov Cap-2 Maneuver	338	-	-	-	-	-
Stage 1	623	-	-	-	-	-
Stage 2	708	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.8	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	338	591	1076	-
HCM Lane V/C Ratio	-	-	0.024	0.004	0.008	-
HCM Control Delay (s)	-	-	15.9	11.1	8.4	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	0	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	50	60	96	128	84	54
Future Vol, veh/h	50	60	96	128	84	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	235	-	-	0	235	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	59	71	113	151	99	64

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	264	0	-	0	302	113
Stage 1	-	-	-	-	113	-
Stage 2	-	-	-	-	189	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1300	-	-	-	690	940
Stage 1	-	-	-	-	912	-
Stage 2	-	-	-	-	843	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1300	-	-	-	659	940
Mov Cap-2 Maneuver	-	-	-	-	659	-
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	843	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1300	-	-	-	659	940
HCM Lane V/C Ratio	0.045	-	-	-	0.15	0.068
HCM Control Delay (s)	7.9	-	-	-	11.4	9.1
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5	0.2

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	49	128	105	0	0	33
Future Vol, veh/h	49	128	105	0	0	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	-	-	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	58	151	124	0	0	39

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	124	0	-	0	391	124
Stage 1	-	-	-	-	124	-
Stage 2	-	-	-	-	267	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1463	-	-	-	613	927
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	778	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1463	-	-	-	588	927
Mov Cap-2 Maneuver	-	-	-	-	588	-
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	778	-

Approach	EB	WB	SB
HCM Control Delay, s	2.1	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1463	-	-	-	927
HCM Lane V/C Ratio	0.039	-	-	-	0.042
HCM Control Delay (s)	7.6	-	-	-	9.1
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	31	97	66	10	6	39
Future Vol, veh/h	31	97	66	10	6	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	-	-	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	36	114	78	12	7	46

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	90	0	-	0	270	84
Stage 1	-	-	-	-	84	-
Stage 2	-	-	-	-	186	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1505	-	-	-	719	975
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	846	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1505	-	-	-	702	975
Mov Cap-2 Maneuver	-	-	-	-	702	-
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	846	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1505	-	-	-	927
HCM Lane V/C Ratio	0.024	-	-	-	0.057
HCM Control Delay (s)	7.5	-	-	-	9.1
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Intersection	
Int Delay, s/veh	5.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	186	0	188	55	0	372
Future Vol, veh/h	186	0	188	55	0	372
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	500	0	-	235	235	-
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	219	0	221	65	0	438

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	659	221	0	0	286	0
Stage 1	221	-	-	-	-	-
Stage 2	438	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	429	819	-	-	1276	-
Stage 1	816	-	-	-	-	-
Stage 2	651	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	429	819	-	-	1276	-
Mov Cap-2 Maneuver	429	-	-	-	-	-
Stage 1	816	-	-	-	-	-
Stage 2	651	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	429	-	1276	-
HCM Lane V/C Ratio	-	-	0.51	-	-	-
HCM Control Delay (s)	-	-	21.8	0	0	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	2.8	-	0	-

delete

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	8	181	7	2	357
Future Vol, veh/h	15	8	181	7	2	357
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	235	235	-
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	18	9	213	8	2	420

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	637	213	0	0	221	0
Stage 1	213	-	-	-	-	-
Stage 2	424	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	441	827	-	-	1348	-
Stage 1	823	-	-	-	-	-
Stage 2	660	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	441	827	-	-	1348	-
Mov Cap-2 Maneuver	441	-	-	-	-	-
Stage 1	822	-	-	-	-	-
Stage 2	660	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	526	1348	-
HCM Lane V/C Ratio	-	-	0.051	0.002	-
HCM Control Delay (s)	-	-	12.2	7.7	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	50	35	142	22	12	234
Future Vol, veh/h	50	35	142	22	12	234
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	285	-
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	59	41	167	26	14	275

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	470	167	0	0	193	0
Stage 1	167	-	-	-	-	-
Stage 2	303	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	552	877	-	-	1380	-
Stage 1	863	-	-	-	-	-
Stage 2	749	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	546	877	-	-	1380	-
Mov Cap-2 Maneuver	546	-	-	-	-	-
Stage 1	854	-	-	-	-	-
Stage 2	749	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.1	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	546	877	1380	-
HCM Lane V/C Ratio	-	-	0.108	0.047	0.01	-
HCM Control Delay (s)	-	-	12.4	9.3	7.6	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.1	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	16	3	173	5	2	230
Future Vol, veh/h	16	3	173	5	2	230
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	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	19	4	204	6	2	271

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	479	204	0	0	210	0
Stage 1	204	-	-	-	-	-
Stage 2	275	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	545	837	-	-	1361	-
Stage 1	830	-	-	-	-	-
Stage 2	771	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	544	837	-	-	1361	-
Mov Cap-2 Maneuver	544	-	-	-	-	-
Stage 1	829	-	-	-	-	-
Stage 2	771	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	544	837	1361	-
HCM Lane V/C Ratio	-	-	0.035	0.004	0.002	-
HCM Control Delay (s)	-	-	11.9	9.3	7.7	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	52	171	0	0	15
Future Vol, veh/h	3	52	171	0	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	-	-	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	4	61	201	0	0	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	201	0	-	0	270	201
Stage 1	-	-	-	-	201	-
Stage 2	-	-	-	-	69	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1371	-	-	-	719	840
Stage 1	-	-	-	-	833	-
Stage 2	-	-	-	-	954	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1371	-	-	-	717	840
Mov Cap-2 Maneuver	-	-	-	-	717	-
Stage 1	-	-	-	-	831	-
Stage 2	-	-	-	-	954	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1371	-	-	-	840
HCM Lane V/C Ratio	0.003	-	-	-	0.021
HCM Control Delay (s)	7.6	-	-	-	9.4
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	26	21	3	91	1	63	0	9	0	0	17
Future Vol, veh/h	5	26	21	3	91	1	63	0	9	0	0	17
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	205	-	155	205	-	-	-	-	-	-	-	-
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	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	31	25	4	107	1	74	0	11	0	0	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	108	0	0	56	0	0	169	159	31	177	184	108
Stage 1	-	-	-	-	-	-	43	43	-	116	116	-
Stage 2	-	-	-	-	-	-	126	116	-	61	68	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1483	-	-	1549	-	-	795	733	1043	785	710	946
Stage 1	-	-	-	-	-	-	971	859	-	889	800	-
Stage 2	-	-	-	-	-	-	878	800	-	950	838	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1483	-	-	1549	-	-	774	728	1043	773	705	946
Mov Cap-2 Maneuver	-	-	-	-	-	-	774	728	-	773	705	-
Stage 1	-	-	-	-	-	-	967	856	-	885	798	-
Stage 2	-	-	-	-	-	-	857	798	-	937	835	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.2	10	8.9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	800	1483	-	-	1549	-	-	946
HCM Lane V/C Ratio	0.106	0.004	-	-	0.002	-	-	0.021
HCM Control Delay (s)	10	7.4	-	-	7.3	-	-	8.9
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	8.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	0	5	0	0	0	14	5	0	0	2	81
Future Vol, veh/h	30	0	5	0	0	0	14	5	0	0	2	81
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	-	-	-	0	-	-	-	-	-	-	-	155
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	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	0	6	0	0	0	16	6	0	0	2	95

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	6	0	0	123	74	-	-	77	1
Stage 1	-	-	-	-	-	-	73	73	-	-	1	-
Stage 2	-	-	-	-	-	-	50	1	-	-	76	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	-	-	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	-	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	-	-	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	1615	-	-	852	816	0	0	813	1084
Stage 1	-	-	-	-	-	-	937	834	0	0	895	-
Stage 2	-	-	-	-	-	-	963	895	0	0	832	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1615	-	-	763	798	-	-	795	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	763	798	-	-	795	-
Stage 1	-	-	-	-	-	-	916	816	-	-	895	-
Stage 2	-	-	-	-	-	-	876	895	-	-	814	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	6.2	0	9.8	8.6
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	772	1622	-	-	1615	-	-	795	1084
HCM Lane V/C Ratio	0.029	0.022	-	-	-	-	-	0.003	0.088
HCM Control Delay (s)	9.8	7.3	-	-	0	-	-	9.5	8.6
HCM Lane LOS	A	A	-	-	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0	0.3

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	121	0	466	180	0	265
Future Vol, veh/h	121	0	466	180	0	265
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	500	0	-	235	235	-
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	142	0	548	212	0	312

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	860	548	0	0	760	0
Stage 1	548	-	-	-	-	-
Stage 2	312	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	326	536	-	-	852	-
Stage 1	579	-	-	-	-	-
Stage 2	742	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	326	536	-	-	852	-
Mov Cap-2 Maneuver	326	-	-	-	-	-
Stage 1	579	-	-	-	-	-
Stage 2	742	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	326	-	852	-
HCM Lane V/C Ratio	-	-	0.437	-	-	-
HCM Control Delay (s)	-	-	24.3	0	0	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	2.1	-	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	5	443	24	7	255
Future Vol, veh/h	10	5	443	24	7	255
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	235	235	-
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	12	6	521	28	8	300

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	837	521	0	0	549	0
Stage 1	521	-	-	-	-	-
Stage 2	316	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	337	555	-	-	1021	-
Stage 1	596	-	-	-	-	-
Stage 2	739	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	334	555	-	-	1021	-
Mov Cap-2 Maneuver	334	-	-	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	739	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.8	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	385	1021	-
HCM Lane V/C Ratio	-	-	0.046	0.008	-
HCM Control Delay (s)	-	-	14.8	8.6	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	34	23	297	76	38	203
Future Vol, veh/h	34	23	297	76	38	203
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	285	-
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	40	27	349	89	45	239

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	678	349	0	0	438	0
Stage 1	349	-	-	-	-	-
Stage 2	329	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	418	694	-	-	1122	-
Stage 1	714	-	-	-	-	-
Stage 2	729	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	401	694	-	-	1122	-
Mov Cap-2 Maneuver	401	-	-	-	-	-
Stage 1	685	-	-	-	-	-
Stage 2	729	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.1	0	1.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	401	694	1122	-
HCM Lane V/C Ratio	-	-	0.1	0.039	0.04	-
HCM Control Delay (s)	-	-	15	10.4	8.3	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	0.1	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	2	303	18	7	231
Future Vol, veh/h	10	2	303	18	7	231
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	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	12	2	356	21	8	272

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	644	356	0	0	377	0
Stage 1	356	-	-	-	-	-
Stage 2	288	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	437	688	-	-	1181	-
Stage 1	709	-	-	-	-	-
Stage 2	761	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	434	688	-	-	1181	-
Mov Cap-2 Maneuver	434	-	-	-	-	-
Stage 1	704	-	-	-	-	-
Stage 2	761	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	434	688	1181	-
HCM Lane V/C Ratio	-	-	0.027	0.003	0.007	-
HCM Control Delay (s)	-	-	13.5	10.3	8.1	-
HCM Lane LOS	-	-	B	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	170	111	0	0	10
Future Vol, veh/h	11	170	111	0	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	-	-	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	13	200	131	0	0	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	131	0	-	0	357	131
Stage 1	-	-	-	-	131	-
Stage 2	-	-	-	-	226	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1454	-	-	-	641	919
Stage 1	-	-	-	-	895	-
Stage 2	-	-	-	-	812	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1454	-	-	-	635	919
Mov Cap-2 Maneuver	-	-	-	-	635	-
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	812	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1454	-	-	-	919
HCM Lane V/C Ratio	0.009	-	-	-	0.013
HCM Control Delay (s)	7.5	-	-	-	9
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	81	71	10	59	2	41	0	6	0	0	11
Future Vol, veh/h	18	81	71	10	59	2	41	0	6	0	0	11
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	205	-	155	205	-	-	-	-	-	-	-	-
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	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	95	84	12	69	2	48	0	7	0	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	71	0	0	179	0	0	238	232	95	277	315	70
Stage 1	-	-	-	-	-	-	137	137	-	94	94	-
Stage 2	-	-	-	-	-	-	101	95	-	183	221	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1529	-	-	1397	-	-	716	668	962	675	601	993
Stage 1	-	-	-	-	-	-	866	783	-	913	817	-
Stage 2	-	-	-	-	-	-	905	816	-	819	720	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1529	-	-	1397	-	-	695	653	962	659	587	993
Mov Cap-2 Maneuver	-	-	-	-	-	-	695	653	-	659	587	-
Stage 1	-	-	-	-	-	-	854	772	-	900	810	-
Stage 2	-	-	-	-	-	-	886	809	-	802	710	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	1.1	10.4	8.7
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	721	1529	-	-	1397	-	-	993
HCM Lane V/C Ratio	0.077	0.014	-	-	0.008	-	-	0.013
HCM Control Delay (s)	10.4	7.4	-	-	7.6	-	-	8.7
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	71	0	15	0	0	0	9	3	0	0	5	63
Future Vol, veh/h	71	0	15	0	0	0	9	3	0	0	5	63
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	-	-	-	0	-	-	-	-	-	-	-	155
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	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	84	0	18	0	0	0	11	4	0	0	6	74

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	18	0	0	218	178	-	-	187	1
Stage 1	-	-	-	-	-	-	177	177	-	-	1	-
Stage 2	-	-	-	-	-	-	41	1	-	-	186	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	-	-	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	-	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	-	-	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	1599	-	-	738	716	0	0	708	1084
Stage 1	-	-	-	-	-	-	825	753	0	0	895	-
Stage 2	-	-	-	-	-	-	974	895	0	0	746	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1599	-	-	656	679	-	-	671	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	656	679	-	-	671	-
Stage 1	-	-	-	-	-	-	782	714	-	-	895	-
Stage 2	-	-	-	-	-	-	901	895	-	-	707	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	6.1	0	10.6	8.7
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	662	1622	-	-	1599	-	-	671	1084
HCM Lane V/C Ratio	0.021	0.051	-	-	-	-	-	0.009	0.068
HCM Control Delay (s)	10.6	7.3	-	-	0	-	-	10.4	8.6
HCM Lane LOS	B	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	0	0.2

Intersection	
Int Delay, s/veh	5.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	151	75	181	93	60	353
Future Vol, veh/h	151	75	181	93	60	353
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	500	0	-	235	235	-
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	178	88	213	109	71	415

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	770	213	0	0	322	0
Stage 1	213	-	-	-	-	-
Stage 2	557	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	369	827	-	-	1238	-
Stage 1	823	-	-	-	-	-
Stage 2	574	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	348	827	-	-	1238	-
Mov Cap-2 Maneuver	348	-	-	-	-	-
Stage 1	776	-	-	-	-	-
Stage 2	574	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.5	0	1.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	348	827	1238	-
HCM Lane V/C Ratio	-	-	0.51	0.107	0.057	-
HCM Control Delay (s)	-	-	25.7	9.9	8.1	-
HCM Lane LOS	-	-	D	A	A	-
HCM 95th %tile Q(veh)	-	-	2.8	0.4	0.2	-

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	19	246	9	6	394
Future Vol, veh/h	19	19	246	9	6	394
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	235	235	-
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	22	22	289	11	7	464

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	767	289	0	0	300	0
Stage 1	289	-	-	-	-	-
Stage 2	478	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	370	750	-	-	1261	-
Stage 1	760	-	-	-	-	-
Stage 2	624	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	368	750	-	-	1261	-
Mov Cap-2 Maneuver	368	-	-	-	-	-
Stage 1	755	-	-	-	-	-
Stage 2	624	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	494	1261	-
HCM Lane V/C Ratio	-	-	0.09	0.006	-
HCM Control Delay (s)	-	-	13	7.9	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	32	55	226	15	57	292
Future Vol, veh/h	32	55	226	15	57	292
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	285	-
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	38	65	266	18	67	344

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	744	266	0	0	284	0
Stage 1	266	-	-	-	-	-
Stage 2	478	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	382	773	-	-	1278	-
Stage 1	779	-	-	-	-	-
Stage 2	624	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	362	773	-	-	1278	-
Mov Cap-2 Maneuver	362	-	-	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	624	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.3	0	1.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	362	773	1278	-
HCM Lane V/C Ratio	-	-	0.104	0.084	0.052	-
HCM Control Delay (s)	-	-	16.1	10.1	8	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.3	0.2	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	3	277	3	2	339
Future Vol, veh/h	10	3	277	3	2	339
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	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	12	4	326	4	2	399

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	729	326	0	0	330	0
Stage 1	326	-	-	-	-	-
Stage 2	403	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	390	715	-	-	1229	-
Stage 1	731	-	-	-	-	-
Stage 2	675	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	389	715	-	-	1229	-
Mov Cap-2 Maneuver	389	-	-	-	-	-
Stage 1	730	-	-	-	-	-
Stage 2	675	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	389	715	1229	-
HCM Lane V/C Ratio	-	-	0.03	0.005	0.002	-
HCM Control Delay (s)	-	-	14.5	10.1	7.9	-
HCM Lane LOS	-	-	B	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	0	-

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	93	60	55	126	232	170
Future Vol, veh/h	93	60	55	126	232	170
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	235	-	-	0	235	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	109	71	65	148	273	200

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	213	0	-	0	354	65
Stage 1	-	-	-	-	65	-
Stage 2	-	-	-	-	289	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1357	-	-	-	644	999
Stage 1	-	-	-	-	958	-
Stage 2	-	-	-	-	760	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1357	-	-	-	592	999
Mov Cap-2 Maneuver	-	-	-	-	592	-
Stage 1	-	-	-	-	881	-
Stage 2	-	-	-	-	760	-

Approach	EB	WB	SB
HCM Control Delay, s	4.8	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1357	-	-	-	592	999
HCM Lane V/C Ratio	0.081	-	-	-	0.461	0.2
HCM Control Delay (s)	7.9	-	-	-	16.2	9.5
HCM Lane LOS	A	-	-	-	C	A
HCM 95th %tile Q(veh)	0.3	-	-	-	2.4	0.7

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	22	197	329	0	0	73
Future Vol, veh/h	22	197	329	0	0	73
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	-	-	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	26	232	387	0	0	86

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	387	0	-	0	671	387
Stage 1	-	-	-	-	387	-
Stage 2	-	-	-	-	284	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1171	-	-	-	422	661
Stage 1	-	-	-	-	686	-
Stage 2	-	-	-	-	764	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1171	-	-	-	413	661
Mov Cap-2 Maneuver	-	-	-	-	413	-
Stage 1	-	-	-	-	671	-
Stage 2	-	-	-	-	764	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1171	-	-	-	661
HCM Lane V/C Ratio	0.022	-	-	-	0.13
HCM Control Delay (s)	8.1	-	-	-	11.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	141	35	21	3	114	46	63	0	9	19	0	152
Future Vol, veh/h	141	35	21	3	114	46	63	0	9	19	0	152
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	205	-	155	205	-	-	-	-	-	-	-	-
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	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	166	41	25	4	134	54	74	0	11	22	0	179

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	188	0	0	66	0	0	632	569	41	560	567	161
Stage 1	-	-	-	-	-	-	373	373	-	169	169	-
Stage 2	-	-	-	-	-	-	259	196	-	391	398	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1386	-	-	1536	-	-	393	432	1030	439	433	884
Stage 1	-	-	-	-	-	-	648	618	-	833	759	-
Stage 2	-	-	-	-	-	-	746	739	-	633	603	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1386	-	-	1536	-	-	284	379	1030	394	380	884
Mov Cap-2 Maneuver	-	-	-	-	-	-	284	379	-	394	380	-
Stage 1	-	-	-	-	-	-	570	544	-	733	757	-
Stage 2	-	-	-	-	-	-	594	737	-	551	531	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	5.7	0.1	20.8	11.2
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	312	1386	-	-	1536	-	-	777
HCM Lane V/C Ratio	0.271	0.12	-	-	0.002	-	-	0.259
HCM Control Delay (s)	20.8	8	-	-	7.3	-	-	11.2
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.1	0.4	-	-	0	-	-	1

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	58	0	5	0	0	0	14	5	0	0	2	150
Future Vol, veh/h	58	0	5	0	0	0	14	5	0	0	2	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	-	-	-	0	-	-	-	-	-	-	-	155
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	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	68	0	6	0	0	0	16	6	0	0	2	176

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	6	0	0	229	140	-	-	143	1
Stage 1	-	-	-	-	-	-	139	139	-	-	1	-
Stage 2	-	-	-	-	-	-	90	1	-	-	142	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	-	-	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	-	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	-	-	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	1615	-	-	726	751	0	0	748	1084
Stage 1	-	-	-	-	-	-	864	782	0	0	895	-
Stage 2	-	-	-	-	-	-	917	895	0	0	779	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1615	-	-	587	719	-	-	717	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	587	719	-	-	717	-
Stage 1	-	-	-	-	-	-	828	749	-	-	895	-
Stage 2	-	-	-	-	-	-	766	895	-	-	746	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	6.7	0	11.1	9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	617	1622	-	-	1615	-	-	717	1084
HCM Lane V/C Ratio	0.036	0.042	-	-	-	-	-	0.003	0.163
HCM Control Delay (s)	11.1	7.3	-	-	0	-	-	10	9
HCM Lane LOS	B	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0	0.6

Intersection	
Int Delay, s/veh	3.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	78	102	441	97	60	252
Future Vol, veh/h	78	102	441	97	60	252
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	500	0	-	235	235	-
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	92	120	519	114	71	296

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	957	519	0	0	633	0
Stage 1	519	-	-	-	-	-
Stage 2	438	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	286	557	-	-	950	-
Stage 1	597	-	-	-	-	-
Stage 2	651	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	265	557	-	-	950	-
Mov Cap-2 Maneuver	265	-	-	-	-	-
Stage 1	552	-	-	-	-	-
Stage 2	651	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.6	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	265	557	950	-
HCM Lane V/C Ratio	-	-	0.346	0.215	0.074	-
HCM Control Delay (s)	-	-	25.6	13.2	9.1	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	1.5	0.8	0.2	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	13	511	32	20	299
Future Vol, veh/h	13	13	511	32	20	299
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	235	235	-
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	15	15	601	38	24	352

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1001	601	0	0	639	0
Stage 1	601	-	-	-	-	-
Stage 2	400	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	269	500	-	-	945	-
Stage 1	547	-	-	-	-	-
Stage 2	677	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	262	500	-	-	945	-
Mov Cap-2 Maneuver	262	-	-	-	-	-
Stage 1	533	-	-	-	-	-
Stage 2	677	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.5	0	0.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	344	945	-
HCM Lane V/C Ratio	-	-	0.089	0.025	-
HCM Control Delay (s)	-	-	16.5	8.9	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	29	399	50	49	272
Future Vol, veh/h	22	29	399	50	49	272
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	285	-
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	26	34	469	59	58	320

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	905	469	0	0	528	0
Stage 1	469	-	-	-	-	-
Stage 2	436	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	307	594	-	-	1039	-
Stage 1	630	-	-	-	-	-
Stage 2	652	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	290	594	-	-	1039	-
Mov Cap-2 Maneuver	290	-	-	-	-	-
Stage 1	595	-	-	-	-	-
Stage 2	652	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.5	0	1.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	290	594	1039	-
HCM Lane V/C Ratio	-	-	0.089	0.057	0.055	-
HCM Control Delay (s)	-	-	18.6	11.4	8.7	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.2	0.2	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	2	416	12	7	314
Future Vol, veh/h	7	2	416	12	7	314
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	205	0	-	235	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	8	2	489	14	8	369

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	874	489	0	0	503	0
Stage 1	489	-	-	-	-	-
Stage 2	385	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	320	579	-	-	1061	-
Stage 1	616	-	-	-	-	-
Stage 2	688	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	317	579	-	-	1061	-
Mov Cap-2 Maneuver	317	-	-	-	-	-
Stage 1	611	-	-	-	-	-
Stage 2	688	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.5	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	317	579	1061	-
HCM Lane V/C Ratio	-	-	0.026	0.004	0.008	-
HCM Control Delay (s)	-	-	16.7	11.2	8.4	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	0	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	97	60	96	209	131	83
Future Vol, veh/h	97	60	96	209	131	83
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	235	-	-	0	235	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	114	71	113	246	154	98

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	359	0	-	0	412	113
Stage 1	-	-	-	-	113	-
Stage 2	-	-	-	-	299	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1200	-	-	-	596	940
Stage 1	-	-	-	-	912	-
Stage 2	-	-	-	-	752	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1200	-	-	-	539	940
Mov Cap-2 Maneuver	-	-	-	-	539	-
Stage 1	-	-	-	-	825	-
Stage 2	-	-	-	-	752	-

Approach	EB	WB	SB
HCM Control Delay, s	5.1	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1200	-	-	-	539	940
HCM Lane V/C Ratio	0.095	-	-	-	0.286	0.104
HCM Control Delay (s)	8.3	-	-	-	14.3	9.3
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.3	-	-	-	1.2	0.3

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	73	233	166	0	0	48
Future Vol, veh/h	73	233	166	0	0	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	205	-	-	-	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	86	274	195	0	0	56

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	195	0	-	0	641	195
Stage 1	-	-	-	-	195	-
Stage 2	-	-	-	-	446	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1378	-	-	-	439	846
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	645	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1378	-	-	-	412	846
Mov Cap-2 Maneuver	-	-	-	-	412	-
Stage 1	-	-	-	-	786	-
Stage 2	-	-	-	-	645	-

Approach	EB	WB	SB
HCM Control Delay, s	1.9	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1378	-	-	-	846
HCM Lane V/C Ratio	0.062	-	-	-	0.067
HCM Control Delay (s)	7.8	-	-	-	9.6
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	113	71	10	75	13	41	0	6	6	0	50
Future Vol, veh/h	50	113	71	10	75	13	41	0	6	6	0	50
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	205	-	155	205	-	-	-	-	-	-	-	-
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	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	59	133	84	12	88	15	48	0	7	7	0	59

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	103	0	0	217	0	0	400	378	133	417	455	96
Stage 1	-	-	-	-	-	-	251	251	-	120	120	-
Stage 2	-	-	-	-	-	-	149	127	-	297	335	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1489	-	-	1353	-	-	560	554	916	546	501	960
Stage 1	-	-	-	-	-	-	753	699	-	884	796	-
Stage 2	-	-	-	-	-	-	854	791	-	712	643	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1489	-	-	1353	-	-	506	527	916	522	476	960
Mov Cap-2 Maneuver	-	-	-	-	-	-	506	527	-	522	476	-
Stage 1	-	-	-	-	-	-	723	671	-	849	789	-
Stage 2	-	-	-	-	-	-	795	784	-	679	617	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.6	0.8	12.5	9.4
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	537	1489	-	-	1353	-	-	881
HCM Lane V/C Ratio	0.103	0.04	-	-	0.009	-	-	0.075
HCM Control Delay (s)	12.5	7.5	-	-	7.7	-	-	9.4
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	108	0	15	0	0	0	9	3	0	0	5	88
Future Vol, veh/h	108	0	15	0	0	0	9	3	0	0	5	88
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	-	-	-	0	-	-	-	-	-	-	-	155
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	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	127	0	18	0	0	0	11	4	0	0	6	104

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	18	0	0	319	264	-	-	273	1
Stage 1	-	-	-	-	-	-	263	263	-	-	1	-
Stage 2	-	-	-	-	-	-	56	1	-	-	272	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	-	-	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	-	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	-	-	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	1599	-	-	634	641	0	0	634	1084
Stage 1	-	-	-	-	-	-	742	691	0	0	895	-
Stage 2	-	-	-	-	-	-	956	895	0	0	685	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1599	-	-	535	591	-	-	585	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	535	591	-	-	585	-
Stage 1	-	-	-	-	-	-	684	637	-	-	895	-
Stage 2	-	-	-	-	-	-	859	895	-	-	632	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	6.5	0	11.7	8.8
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	548	1622	-	-	1599	-	-	585	1084
HCM Lane V/C Ratio	0.026	0.078	-	-	-	-	-	0.01	0.096
HCM Control Delay (s)	11.7	7.4	-	-	0	-	-	11.2	8.7
HCM Lane LOS	B	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	0.3	-	-	0	-	-	0	0.3