Traffic Impact Study

RidgeGate Senior Affordable

Lone Tree, Colorado

Prepared for:

Ridgegate Parkway Affordable LLC

Kimley»Horn

T R A F F I C I M P A C T S T U D Y

RidgeGate Senior Affordable

Lone Tree, Colorado

Prepared for
Ridgegate Parkway Affordable LLC
5291 E. Yale Avenue
Denver, CO 80222

Prepared by
Kimley-Horn and Associates, Inc.
6200 South Syracuse Way
Suite 300
Greenwood Village, Colorado 80111
(303) 228-2300

July 2023

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1.0 EXECUTIVE SUMMARY

RidgeGate Senior Affordable is proposed to be located within the eastern portion in between the eastbound (EB) and westbound (WB) travel lanes of the one-way couplet portion of RidgeGate Parkway, east of future Rhapsody Road in Lone Tree, Colorado. The project is proposed to include 165 senior multifamily affordable housing units. It is expected that full buildout of the project will be completed in two phases with full buildout expected in about five years, approximately 2028. Therefore, analysis was conducted for the 2028 short-term buildout horizon as well as the 2045 long-term twenty-year planning horizon.

The purpose of this traffic study is to identify project traffic generation characteristics to determine potential project traffic related impacts on the local street system and to develop the necessary mitigation measures required for the identified traffic impacts. The following intersections were incorporated into this traffic study in accordance with the City of Lone Tree standards and requirements:

- RidgeGate Parkway WB & Rhapsody Road (Intersection #1)
- RidgeGate Parkway WB & North-South Road (#2)
- RidgeGate Parkway EB & Rhapsody Road (#3)
- RidgeGate Parkway EB & North-South Road (#4)

In addition, the proposed full movement access (Intersection #5) along the north-south road on the east side of the roadway to serve the site was evaluated.

Regional access to the project will be provided by Interstate 25 (I-25), RidgeGate Parkway, and Chambers Road. Primary access will be provided by RidgeGate Parkway while direct access will be provided by a proposed full movement access (#5) along the proposed north-south road on the east side of this roadway.

RidgeGate Senior Affordable is expected to generate approximately 536 daily weekday trips, with 33 of these trips occurring during the morning peak hour and 41 trips occurring during the afternoon peak hour.

Based on the analysis presented in this report, Kimley-Horn believes RidgeGate Senior Affordable will be successfully incorporated into the existing and future roadway network. The only traffic related project related recommendation is to construct the access along the North-South Road and to provide stop-control with a R1-1 “STOP” sign installed for the westbound driveway approach. To serve pedestrians, sidewalk should be constructed along the site’s project frontage of RidgeGate Parkway and North-South Road. To provide a complete set of recommendations accounting for and recording what is being constructed by other projects, analysis of the expected traffic volumes resulted in the following recommendations:

2028 Recommendations

- Bicycle lanes and sidewalk are anticipated to be provided along each side of Rhapsody Road. Sidewalk is anticipated to be provided traveling north-south along the perimeter of the project site along the North-South Road. Crosswalks are also anticipated to be provided in each direction at the RidgeGate Parkway WB and EB & Rhapsody Road intersections (#1 & #3). Crosswalks are also anticipated to be provided at the North-South Road intersections (#2 & #4) to cross east-west across East Road and West Road. Sidewalk will also be provided onsite as appropriate to provide safe access to the apartment units from the parking and to and from other amenities anticipated to be provided by the apartment complex to residents.
- Rhapsody Road is proposed to be constructed as part of the RidgeGate King Soopers development with one through lane in each direction with on-street bicycle lanes and on-street parallel parking along both sides of the roadway. The RidgeGate Parkway WB & Rhapsody Road (#1) and the RidgeGate Parkway EB & Rhapsody Road (#3) intersections are anticipated to be signalized intersections operating with full turning movements as appropriate on the one-way couplet, with RidgeGate Parkway WB & Rhapsody Road (#1) anticipated to be a ‘T’-intersection in the 2028 horizon while the RidgeGate Parkway EB & Rhapsody Road (#3) intersection is anticipated to be a four-leg intersection. At these intersections, R3-1 No Right Turn signs should be installed at the approaches to RidgeGate Parkway and R6-1 “ONE WAY” signs should be posted along RidgeGate Parkway as appropriate to prevent vehicles from turning right and entering oncoming traffic.
- The RidgeGate Parkway WB & Rhapsody Road (#1) intersection, it is understood that the RidgeGate King Soopers development will provide a westbound left turn lane with 190 feet in length and a 110-foot taper. A northbound left turn lane is also being provided with 120 feet

in length and a 50-foot taper by King Soopers, with a separate northbound through lane. The southbound approach should operate well with a shared through/right turn lane.

- The RidgeGate Parkway EB & Rhapsody Road (#3) intersection will provide an eastbound left turn lane 101 feet in length with a 75-foot taper and a right turn lane 190 feet in length with a 120-foot taper when the south leg is constructed as part of the RidgeGate King Soopers project. King Soopers is also providing a southbound left turn lane with 120 feet in length and a 50-foot taper and a southbound through lane at this intersection. The northbound approach to this intersection should operate well with a shared through/right turn lane.
- The improvements to the Rhapsody Road intersections (#1 and #3) will be provided by construction of the RidgeGate King Soopers development and Southwest Village development. Of note, as Rhapsody Road is anticipated to also provide a north leg to the north of RidgeGate Parkway before 2045, it is recommended that sufficient pavement width be provided, and chevron striping be placed where the future northbound through lane will be placed at the RidgeGate Parkway WB & Rhapsody Road (#3) intersection.
- The City of Lone Tree is anticipated to improve RidgeGate Parkway to use the existing available pavement width to restripe the roadway to provide three through lanes in each direction within the study area during this horizon. It is understood that the existing striped-out inside lane along RidgeGate Parkway in both directions will be striped as the third through lane.
- RidgeGate Parkway WB & North-South Road (#2) is anticipated to be constructed as a 'T'-intersection by RidgeGate Couplet Apartments development prior to the 2028 horizon. This intersection should operate well with stop control during this horizon with an R1-1 "STOP" sign posted on the northbound approach to this intersection. A westbound left turn lane 190 feet in length with a 120-foot taper should be provided at this intersection, while the northbound approach during this horizon would have only a northbound left turning movement. Of note, the North-South Road is anticipated to also provide a north leg to the north of RidgeGate Parkway before 2045.
- RidgeGate Parkway EB & North-South Road (#4) is anticipated to be constructed as a 'T'-intersection by RidgeGate Couplet Apartments development prior to this project's 2028 horizon. This intersection should operate well with stop control during this horizon with an R1-1 "STOP" sign posted on the southbound approach to this intersection. An eastbound left turn lane 190 feet in length with a 75-foot taper should be provided at this intersection, while the southbound approach during this horizon would have only a southbound left turning

movement. Of note, the North-South Road is anticipated to also provide a south leg to the south of RidgeGate Parkway before 2045.

- Access to RidgeGate Senior Affordable is proposed along North-South Road (#5) approximately 200 feet to the north of the RidgeGate Parkway EB & North-South Road (#4) intersection. It is recommended this intersection operate with full turning movements and an R1-1 “STOP” sign posted on the westbound approach for vehicles exiting the development. Each approach to the intersection is anticipated to operate well through 2045 with one lane in each direction for shared turning movements.

2045 Recommendations

- A north leg at the RidgeGate Parkway WB & Rhapsody Road (#1) intersection is anticipated to be constructed by others prior to the 2045 horizon, making this a four-leg signalized intersection. When this construction occurs, a westbound right turn lane 190 feet in length with a 120-foot taper should be provided. The northbound approach to this intersection should use the aforementioned chevron striping provided in the 2028 horizon to be restriped as the northbound through lane, while the southbound approach should operate well with one lane for shared through/right turning movements.
- The RidgeGate Parkway WB & North-South Road (#2) intersection is also anticipated to have a north leg prior to the 2045 horizon, constructed by others. Both the northbound and southbound approaches to this intersection should each operate well with one lane for shared turning movements, while a westbound right turn lane 190 feet in length with a 120-foot taper should be provided at this intersection when the north leg is constructed.
- A south leg at the RidgeGate Parkway EB & North-South Road (#4) intersection is expected to be constructed by the proposed medical development prior to 2045. The eastbound right turning movements are anticipated to operate well from within the outer eastbound through lane, while the northbound and southbound approaches to the intersection are expected to operate well with one lane in each direction for shared turning movements.

General Recommendations

- Any onsite or offsite improvements should be incorporated into the Civil Drawings and conform to standards of the City of Lone Tree and the Manual on Uniform Traffic Control Devices (MUTCD) – 2009 Edition.

2.0 INTRODUCTION

Kimley-Horn and Associates, Inc. has prepared this report to document the results of a Traffic Impact Study for RidgeGate Senior Affordable proposed to be located within the eastern portion in between the eastbound (EB) and westbound (WB) travel lanes of the one-way couplet portion of RidgeGate Parkway, east of future Rhapsody Road in Lone Tree, Colorado. A vicinity map illustrating the RidgeGate Senior Affordable development location is shown in **Figure 1**. RidgeGate Senior Affordable is proposed to include 165 senior multifamily affordable housing units. A conceptual site plan is attached in **Appendix F**. It is expected that full buildout of the project will be completed in two phases with full buildout expected in about five years, approximately 2028; therefore, analysis was conducted for the 2028 short-term buildout horizon as well as the 2045 long-term twenty-year planning horizon.

The purpose of this traffic study is to identify project traffic generation characteristics to determine potential project traffic related impacts on the local street system and to develop the necessary mitigation measures required for the identified traffic impacts. The following intersections were incorporated into this traffic study in accordance with the City of Lone Tree standards and requirements:

- RidgeGate Parkway WB & Rhapsody Road (Intersection #1)
- RidgeGate Parkway WB & North-South Road (#2)
- RidgeGate Parkway EB & Rhapsody Road (#3)
- RidgeGate Parkway EB & North-South Road (#4)

In addition, the proposed full movement access (Intersection #5) along the north-south road on the east side of the roadway to serve the site was evaluated.

Regional access to the project will be provided by Interstate 25 (I-25), RidgeGate Parkway, and Chambers Road. Primary access will be provided by RidgeGate Parkway while direct access will be provided by a proposed full movement access (#5) along the proposed north-south road on the east side of this roadway.

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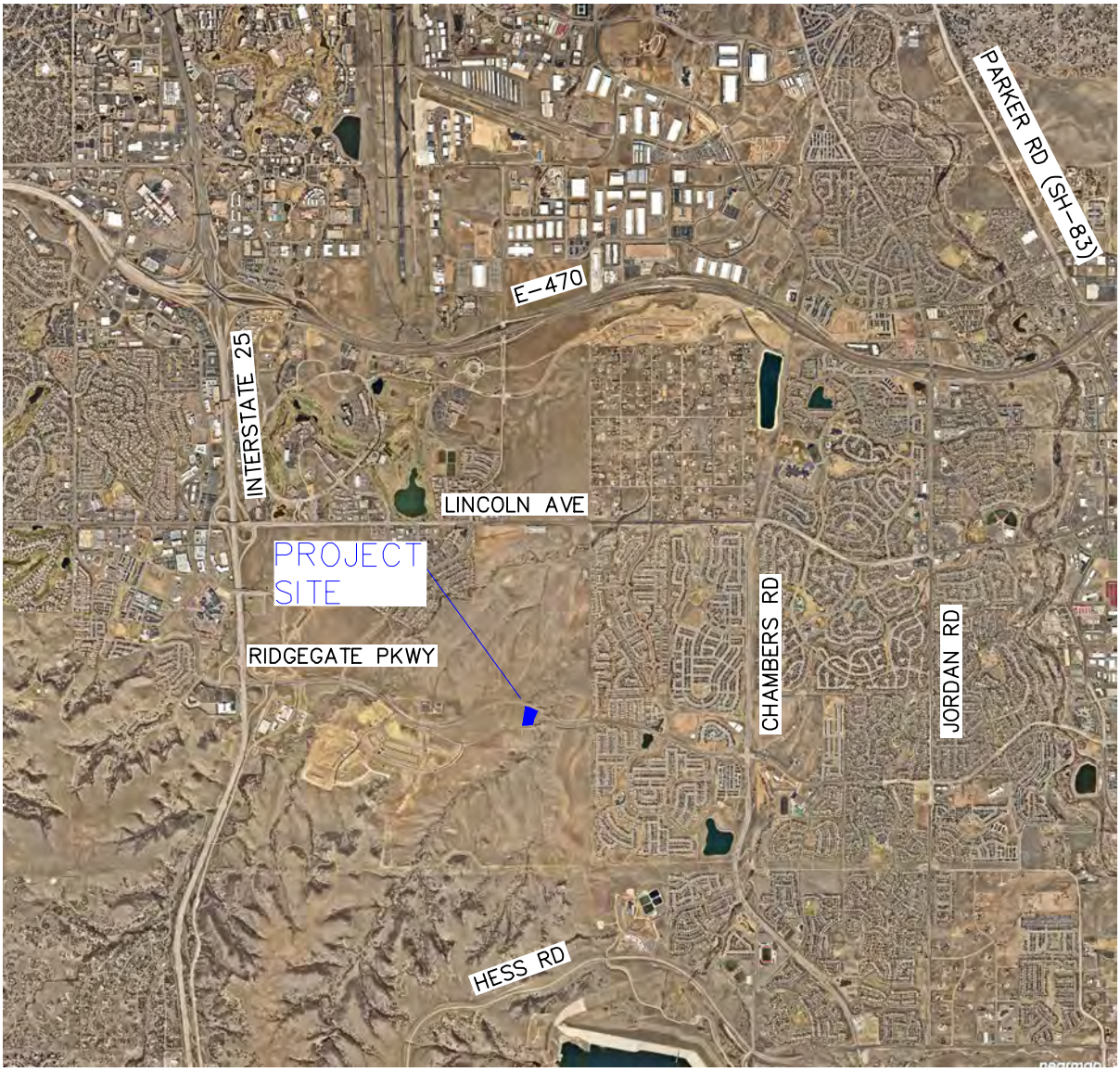

FIGURE 1
RIDGEGATE SENIOR AFFORDABLE
LONE TREE, COLORADO
VICINITY MAP

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3.0 EXISTING AND FUTURE CONDITIONS

3.1 Existing Study Area

The existing site is comprised of vacant land. The site is bounded to the north and south by the westbound and eastbound travel lanes of RidgeGate Parkway, respectively. Otherwise, surrounding the site is primarily vacant land. The City of Lone Tree Zoning Map refers to the area surrounding the site as “Planned Development District”, specifically the “RidgeGate Planned Development.”

3.2 Existing and Future Roadway Network

RidgeGate Parkway extends east-west with two through lanes in each direction within the study area, although each direction is planned to use the existing pavement width to provide three through lanes in the study area in the next few years. In the study area, RidgeGate Parkway separates the eastbound and westbound travel lanes by as much as approximately 750 feet in some areas. The RidgeGate Senior Affordable project is proposed to be located within the eastern portion of this one-way couplet separation between the two directions of travel on RidgeGate Parkway. The posted speed limit is 45 miles per hour.

Rhapsody Road is a proposed future roadway approximately 900 feet to the west of the project area. It is anticipated this roadway will provide on-street bicycle lanes and on-street parallel parking along both sides of the roadway within the one-way couplet. This roadway will travel in the north-south direction between the two directions of travel of RidgeGate Parkway and is anticipated to provide one through lane in each direction with construction of the RidgeGate King Soopers project. As development continues to occur, this roadway is anticipated to provide north and south legs on either side of RidgeGate Parkway, with the south leg anticipated to be completed as part of Southwest Village development by approximately 2026. Rhapsody Road is identified in the City of Lone Tree 2040 Transportation Plan as “Collector A” and according to the Transportation Plan it is anticipated to primarily provide one through lane in each direction. In the future, Rhapsody Road is anticipated to connect to Lincoln Avenue to the north and “Collector D” to the south.

The North-South Road is proposed to be constructed along the west side of the project site with construction of the RidgeGate Couplet Apartments study to the west of this project between the

two directions of travel along RidgeGate Parkway with one through lane in each direction. As development progresses in the area, a north leg of this road is anticipated to be constructed before the 2045 horizon that is anticipated to primarily serve residential uses, while a south leg to the south of RidgeGate Parkway is anticipated to be constructed as direct access into a medical/hospital land use. The existing intersection lane configuration within the study area is shown in **Figure 2**.

3.3 Existing Traffic Volumes

To provide a basis of eastbound and westbound through movement counts adjacent to the project site, existing turning movement counts were conducted at the intersection of RidgeGate Parkway and Peoria Street on Thursday, July 7, 2022, during the weekday morning and afternoon peak hours. The counts were conducted during the morning and afternoon peak hours of adjacent street traffic in 15-minute intervals from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM on this count date. The existing intersection traffic volumes are shown in **Figure 3** with count sheets provided in **Appendix A**.

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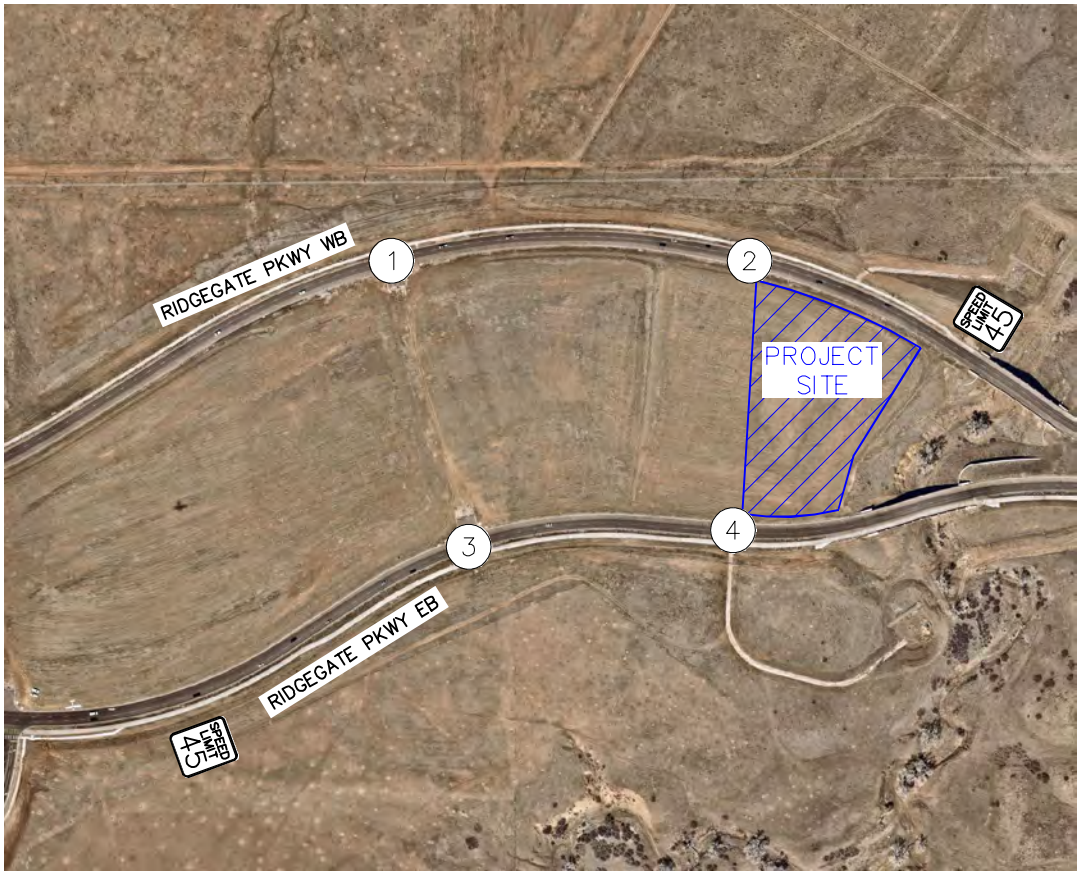

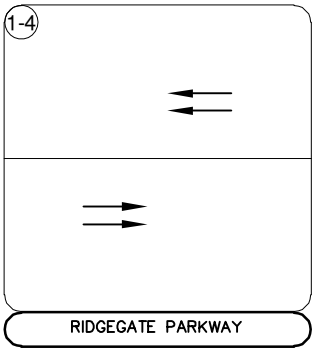

FIGURE 2
RIDGEGATE SENIOR AFFORDABLE
LONE TREE, COLORADO
EXISTING GEOMETRY

LEGEND
X Study Area Key Intersection
SPEED LIMIT XX Roadway Speed Limit

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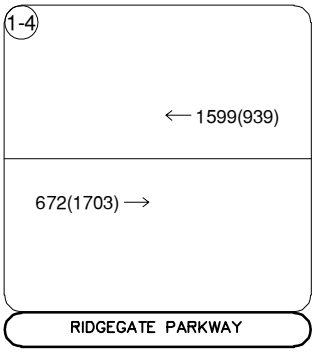

LEGEND

(X)	Study Area Key Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

FIGURE 3
RIDGEGATE SENIOR AFFORDABLE
LONE TREE, COLORADO
2022 EXISTING TRAFFIC VOLUME

3.4 Unspecified Development Traffic Growth

According to traffic projections from the Denver Regional Council of Governments (DRCOG) traffic model, the area surrounding the site is expected to have an average 30-year growth factor of 1.87 based on a 2020 volume of 23,000 vehicles per day (vpd) and future 2050 projection of 43,000 vpd. This growth factor equates to an annual growth rate of 2.11 percent. Future traffic volume projections and growth rate calculations are provided in **Appendix B**. This annual growth rate was used to estimate short-term 2025 and long-term 2045 traffic volume projections in the RidgeGate Couplet Apartments Traffic Impact Study completed by Kimley-Horn in April 2023.

As the RidgeGate Couplet Apartments is assumed to be completed prior to construction of this project, the background plus project traffic volumes from the RidgeGate Couplet Apartments development were used as the background traffic volumes for this project. The RidgeGate Couplet Apartments study includes the traffic anticipated to be generated by the following developments within the vicinity of this project:

- Southwest Village
- RidgeGate King Soopers—this traffic study also included the traffic assumed to be induced by the future construction of the north and south legs of Rhapsody Road as well as High Note Avenue, which is a future proposed north-south roadway approximately 1,200 feet to the west of Rhapsody Road. RidgeGate King Soopers is assumed to be completed by approximately 2025.
- 200,000 square-foot property to just to the east of Rhapsody Road—between the proposed Rhapsody Road and the RidgeGate Couplet Apartments development—is anticipated to be developed as general retail uses. It is assumed to be completed after buildout of this project, but before the 2045 horizon.
- RidgeGate Couplet Apartments, assumed to be completed in approximately 2025.
- Anticipated land uses to the north of the project site as well as the medical/hospital land use to the south of the project site. It is assumed to be completed after buildout of this study, but before the 2045 horizon.

This study used the 2025 background plus project traffic volumes from the RidgeGate Couplet Apartments study and applied the 2.11 percent annual growth rate to generate the 2028 background traffic volumes used for this project. The 2045 background plus project traffic volumes

from the RidgeGate Couplet study—after subtracting out the traffic included as part of this RidgeGate Senior Affordable project—were used as the 2045 background traffic volumes in this study. The 2028 background traffic volumes are illustrated in **Figure 4** while the 2045 background traffic volumes are shown in **Figure 5**.

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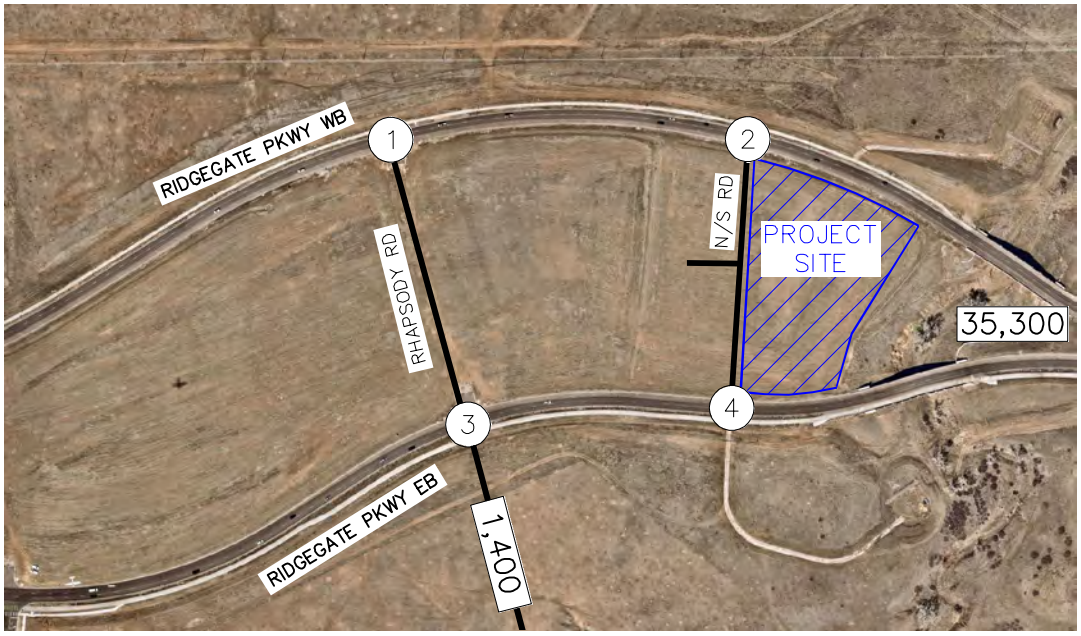

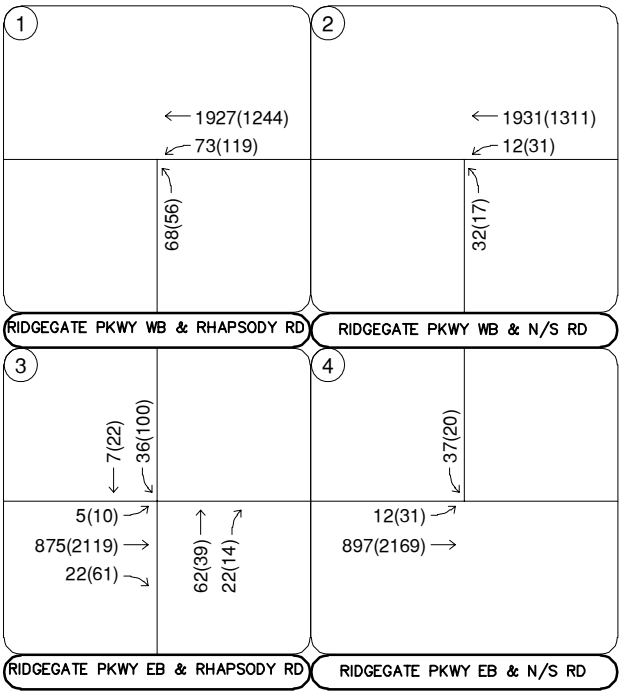

LEGEND

(X) Study Area Key Intersection

XXX(XXX) Weekday AM(PM) Peak Hour Traffic Volumes

XX,X00 Estimated Daily Traffic Volume

FIGURE 4
RIDGEGATE SENIOR AFFORDABLE
LONE TREE, COLORADO
2028 BACKGROUND TRAFFIC VOLUME

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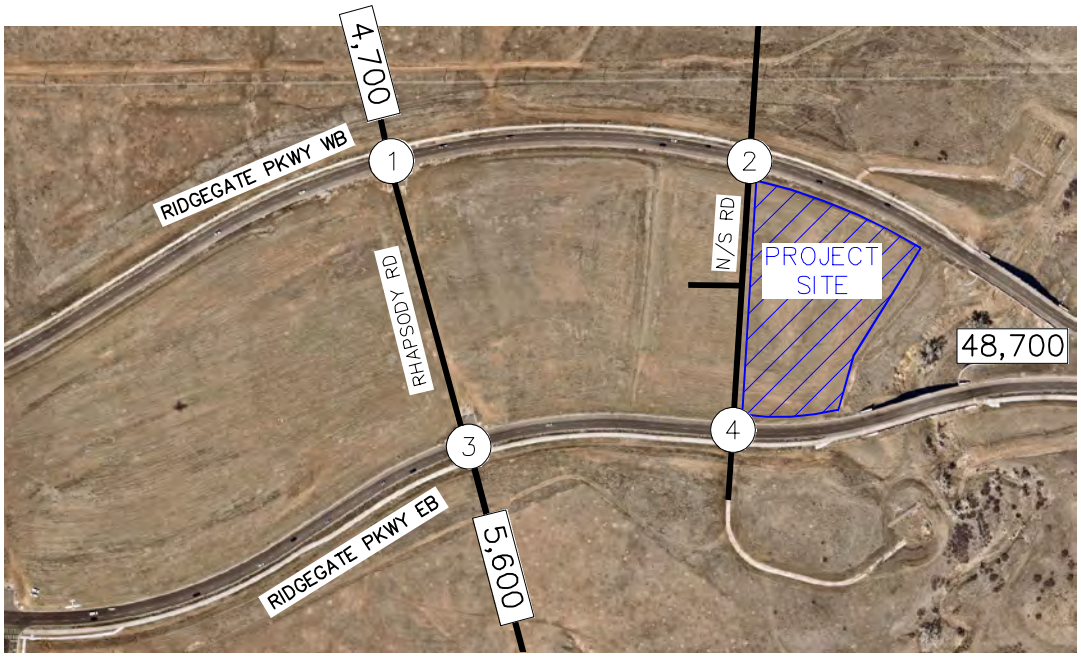

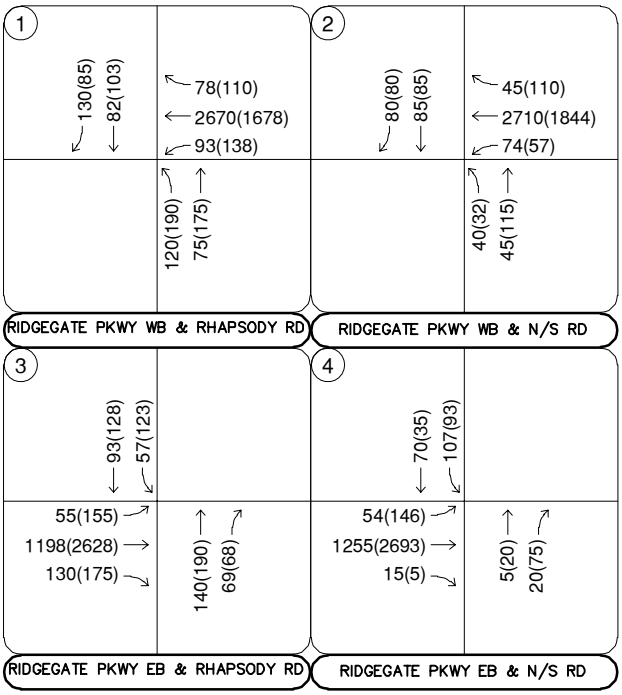

LEGEND

(X) Study Area Key Intersection

XXX(XXX) Weekday AM(PM) Peak Hour Traffic Volumes

XX,X00 Estimated Daily Traffic Volume

FIGURE 5
RIDGEGATE SENIOR AFFORDABLE
LONE TREE, COLORADO
2045 BACKGROUND TRAFFIC VOLUME

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4.1 Trip Generation

Site-generated traffic estimates are determined through a process known as trip generation. Rates and equations are applied to the proposed land use to estimate traffic generated by the development during a specific time interval. The acknowledged source for trip generation rates is the *Trip Generation Manual*[1] published by the Institute of Transportation Engineers (ITE). ITE has established trip rates in nationwide studies of similar land uses. For this study, Kimley-Horn used the ITE Trip Generation Report average rates that apply to Senior Adult Multifamily Housing (ITE Land Use Code 252) for traffic associated with the development.

RidgeGate Senior Affordable is expected to generate approximately 536 daily weekday trips, with 33 of these trips occurring during the morning peak hour and 41 trips occurring during the afternoon peak hour. Calculations were based on the procedure and information provided in the ITE *Trip Generation Manual, 11th Edition – Volume 1: User's Guide and Handbook*, 2021. **Table 1** summarizes the estimated trip generation for the RidgeGate Senior Affordable. The trip generation worksheets are included in **Appendix C**.

Table 1 – RidgeGate Senior Affordable Traffic Generation

Land Use and Size	Weekday Vehicle Trips						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Senior Adult Multifamily Housing (ITE 252) – 165 Dwelling Units	536	11	22	33	23	18	41

[1] Institute of Transportation Engineers, *Trip Generation Manual*, Eleventh Edition, Washington DC, 2021.

4.2 Trip Distribution

Distribution of site traffic on the street system was based on the area street system characteristics, existing traffic patterns, existing and anticipated surrounding demographic information, and the proposed access system for the project. The directional distribution of traffic is a means to quantify the percentage of site-generated traffic that approaches the site from a given direction and departs the site back to the original source. Following construction of this development but prior to 2045, it is anticipated that the area surrounding the project site will be developed with additional roadway connections in place. As such, unique trip distributions were used for the 2028 and 2045 horizon years to account for this change. **Figure 6** shows the 2028 project trip distribution while **Figure 7** shows the 2045 trip distribution.

4.3 Traffic Assignment

RidgeGate Senior Affordable traffic assignment was obtained by applying the project trip distribution to the estimated traffic generation of the development shown in **Table 1**. Project traffic assignment for the 2028 horizon is shown in **Figure 8** while the traffic assignment in the 2045 horizon is shown in **Figure 9**.

4.4 Total (Background Plus Project) Traffic

Site traffic volumes were added to the background volumes to represent estimated traffic conditions for the short-term 2028 buildout horizon and long-term 2045 twenty-year planning horizon. These total traffic volumes for the study area are illustrated for the 2028 and 2045 horizon years in **Figures 10** and **11**, respectively.

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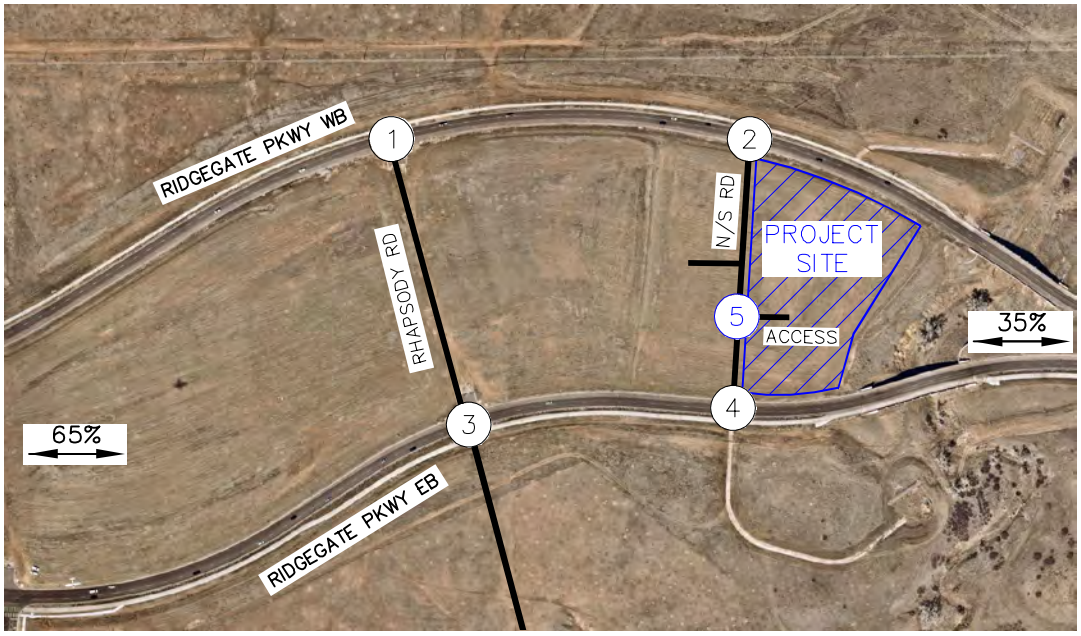

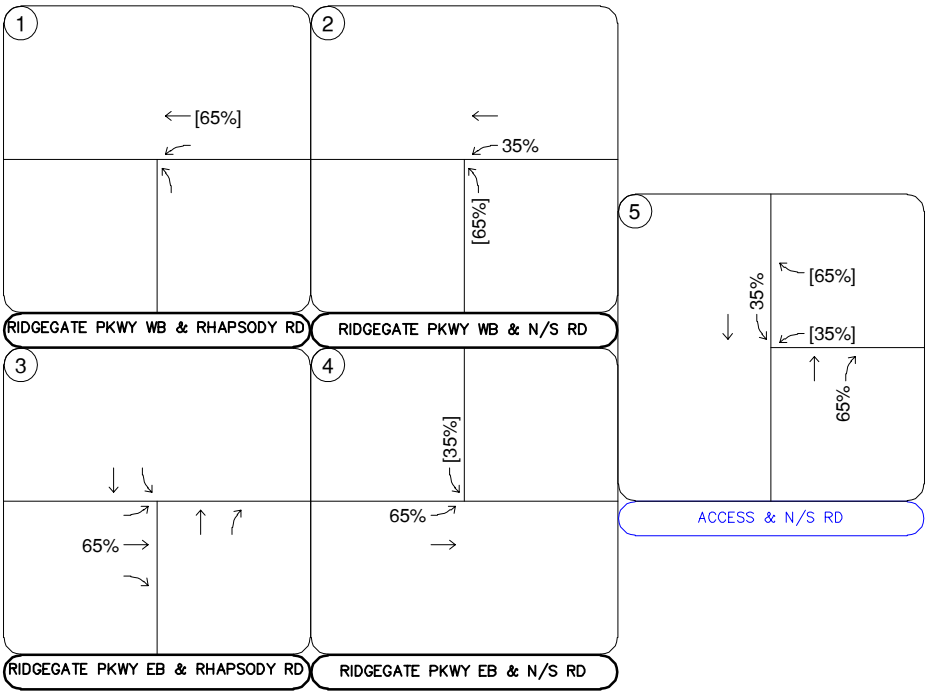

LEGEND

(X)	Study Area Key Intersection
(X)	Project Access Intersection
XX%	External Trip Distribution Percentage
XX%[XX%]	Entering[Exiting] Trip Distribution Percentage

FIGURE 6
RIDGEGATE SENIOR AFFORDABLE
LONE TREE, COLORADO
2028 PROJECT TRIP DISTRIBUTION

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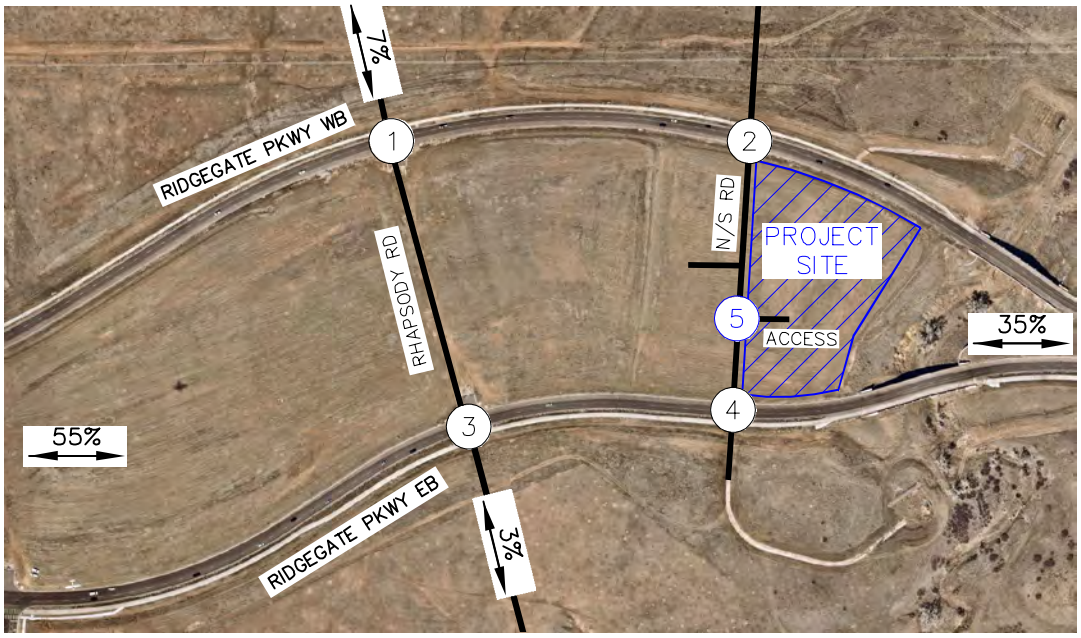

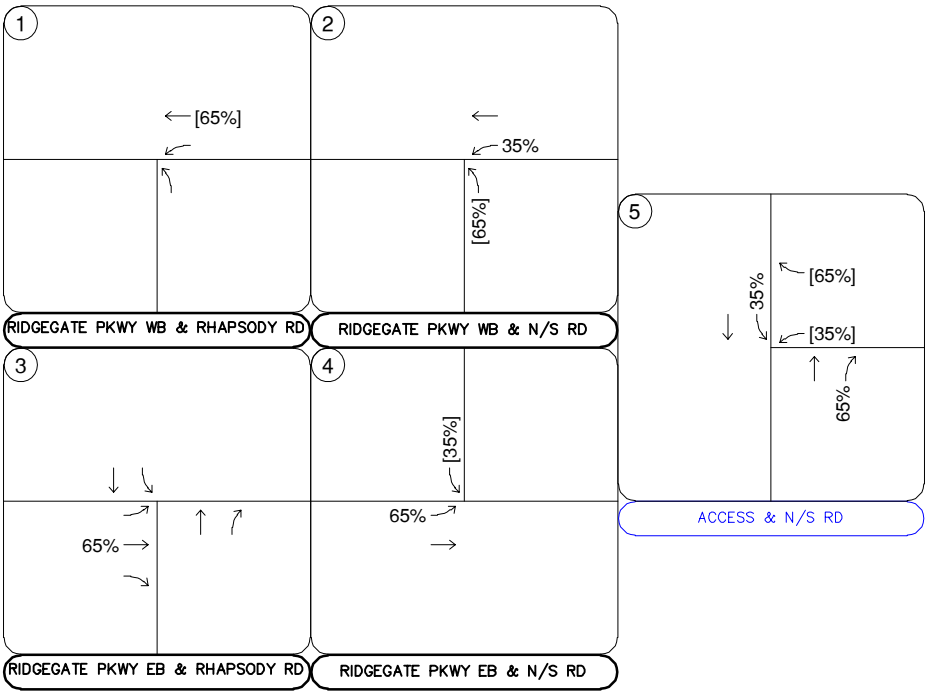

LEGEND

(X)	Study Area Key Intersection
(X)	Project Access Intersection
XX%	External Trip Distribution Percentage
XX%[XX%]	Entering[Exiting] Trip Distribution Percentage

FIGURE 7
RIDGEGATE SENIOR AFFORDABLE
LONE TREE, COLORADO
2045 PROJECT TRIP DISTRIBUTION

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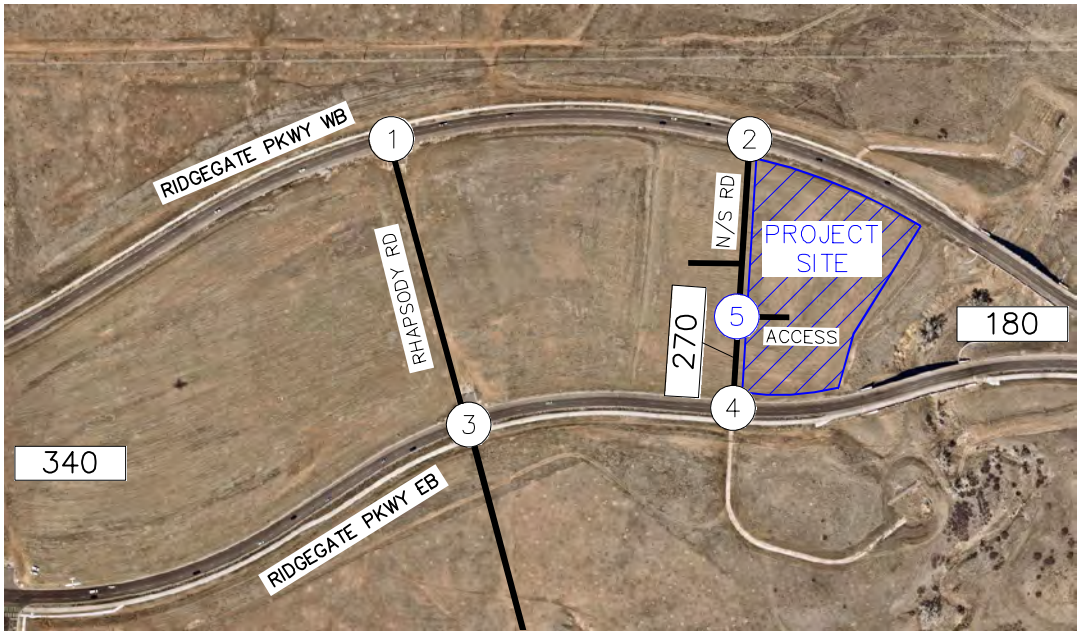

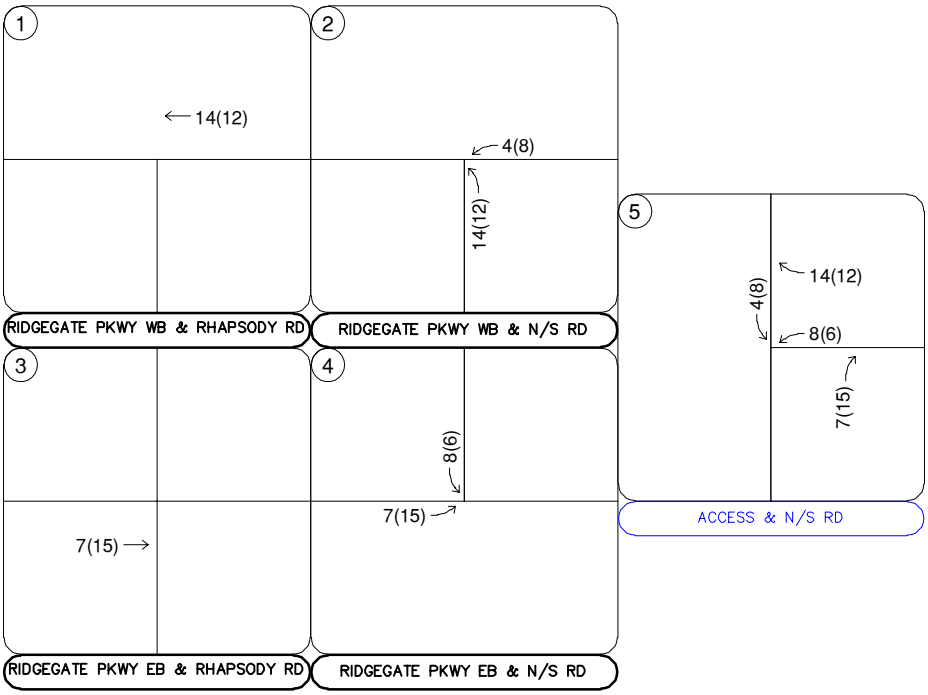

LEGEND

(X)	Study Area Key Intersection
(X)	Project Access Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

FIGURE 8
RIDGEGATE SENIOR AFFORDABLE
LONE TREE, COLORADO
2028 PROJECT TRAFFIC ASSIGNMENT

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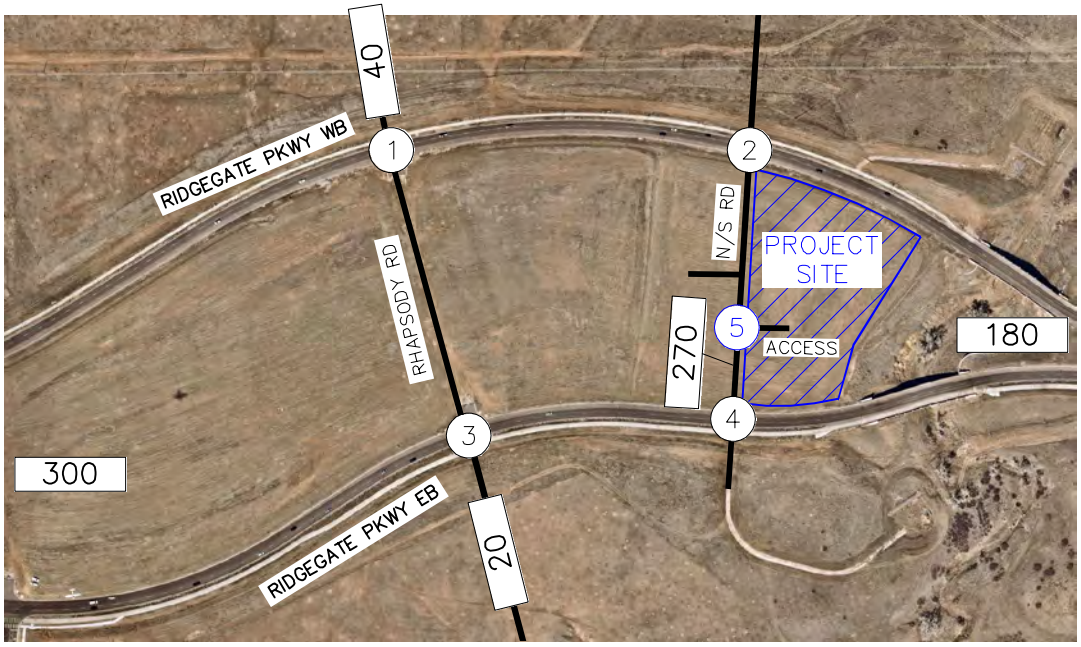

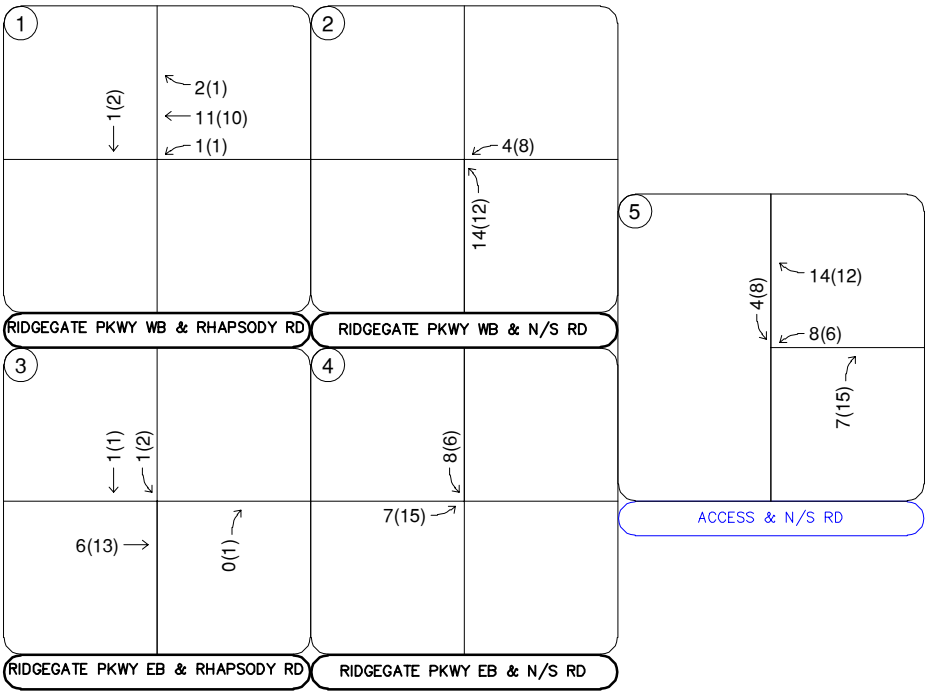

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(X)	Study Area Key Intersection
(X)	Project Access Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

FIGURE 9
RIDGEGATE SENIOR AFFORDABLE
LONE TREE, COLORADO
2045 PROJECT TRAFFIC ASSIGNMENT

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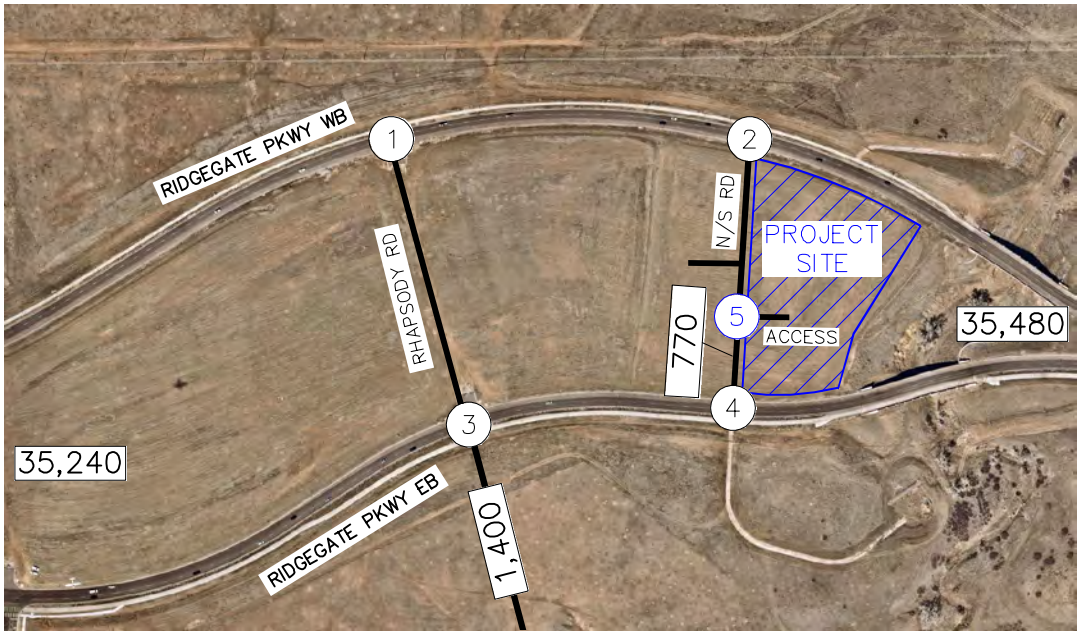

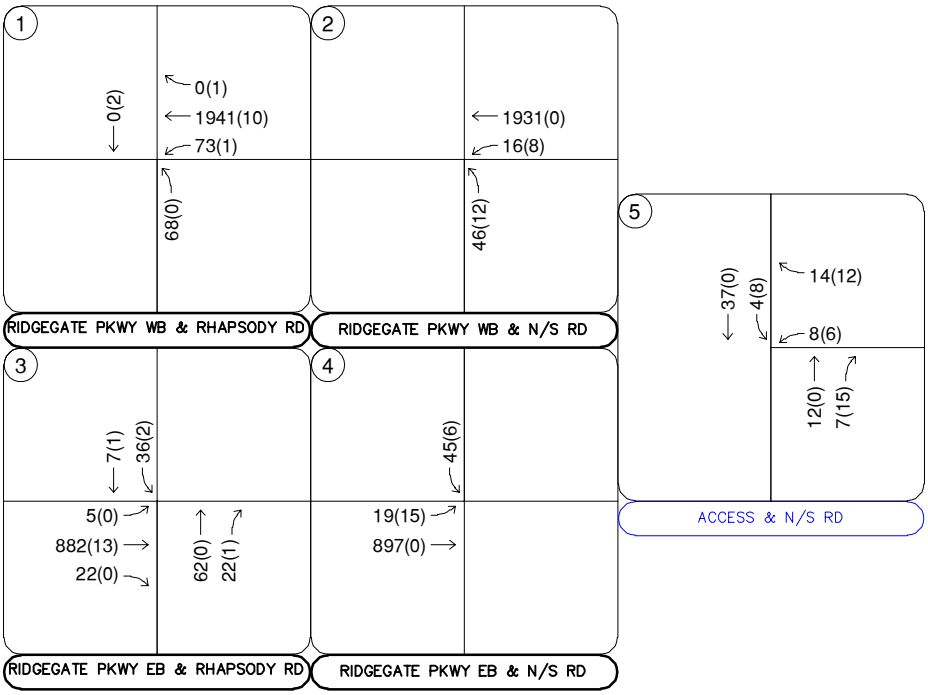

LEGEND

(X)	Study Area Key Intersection
(X)	Project Access Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

FIGURE 10
RIDGEGATE SENIOR AFFORDABLE
LONE TREE, COLORADO
2028 TOTAL TRAFFIC VOLUMES

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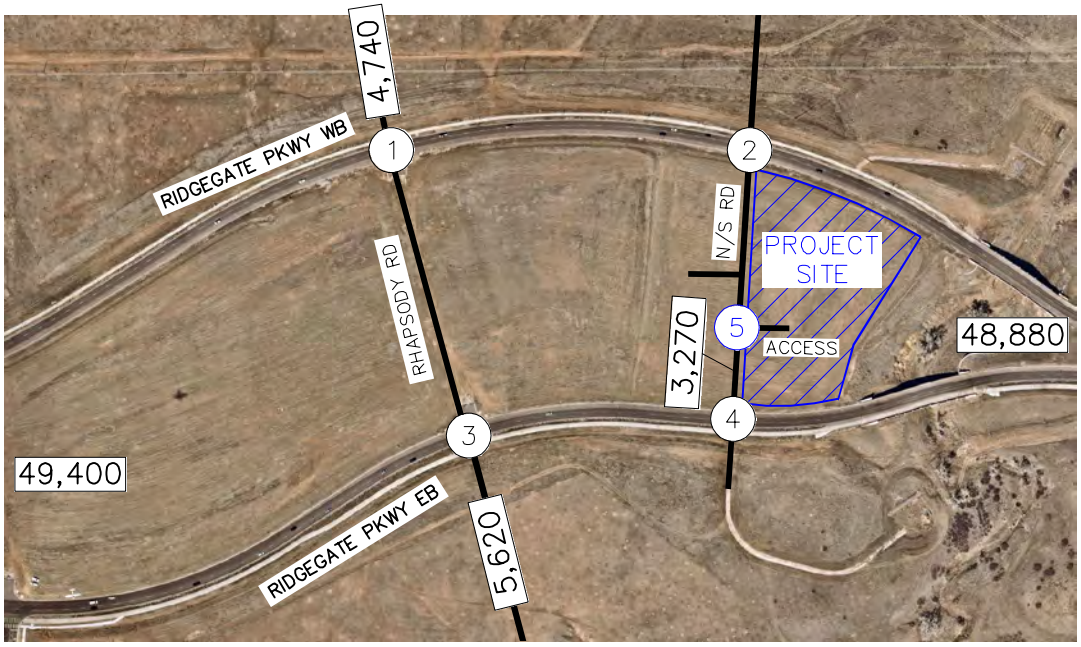
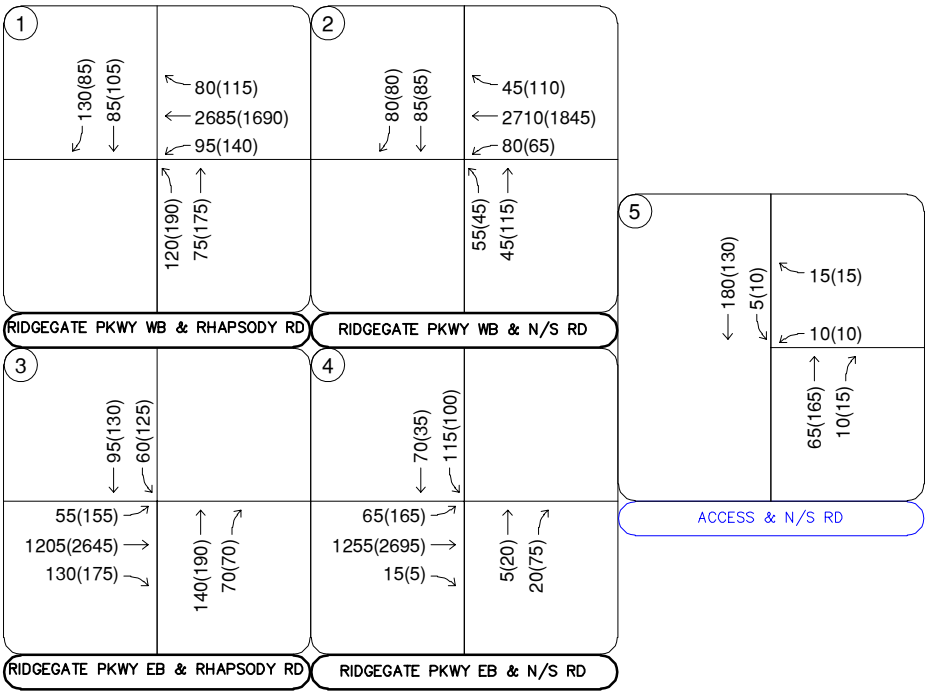
NORTH
NTS 196804000





LEGEND

(X)	Study Area Key Intersection
(X)	Project Access Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

FIGURE 11
RIDGEGATE SENIOR AFFORDABLE
LONE TREE, COLORADO
2045 TOTAL TRAFFIC VOLUMES

Kimley»Horn

Kimley-Horn's analysis of traffic operations in the site vicinity was conducted to determine potential capacity deficiencies in the 2028 and 2045 development horizons at the identified key intersections. The acknowledged source for determining overall capacity is the *Highway Capacity Manual (HCM)*[2].

5.1 Analysis Methodology

Capacity analysis results are listed in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a particular street or highway during a specific time interval. It ranges from A (very little delay) to F (long delays and congestion). For intersections and roadways in this study area, standard traffic engineering practice recommends overall intersection LOS D and movement/approach LOS E as the minimum desirable thresholds for acceptable operations. **Table 2** shows the definition of level of service for signalized and unsignalized intersections.

Table 2 – Level of Service Definitions

Level of Service	Signalized Intersection Average Total Delay (sec/veh)	Unsignalized Intersection Average Total Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

Definitions provided from the Highway Capacity Manual, Sixth Edition, Transportation Research Board, 2016.

Study area intersections were analyzed based on average total delay analysis for signalized and unsignalized intersections. Under the unsignalized analysis, the LOS for a two-way stop-controlled intersection is determined by the computed or measured control delay and is defined for each minor movement. LOS for a two-way stop-controlled intersection is not defined for the intersection as a whole. LOS for signalized, roundabout, and all-way stop controlled intersections are defined for each approach and for the overall intersection.

[2] Transportation Research Board, *Highway Capacity Manual*, Sixth Edition, Washington DC, 2016.

5.2 Key Intersection Operational Analysis

Calculations for the operational level of service at the key intersections for the study area are provided in **Appendix D**. Existing peak hour factors were utilized in the 2028 and 2045 horizon analysis years. Synchro traffic analysis software was used to analyze the signalized and unsignalized key intersections for HCM level of service.

RidgeGate Parkway WB & Rhapsody Road (#1)

The intersection of RidgeGate Parkway WB & Rhapsody Road (#1) is a proposed future signalized intersection to the west of the project site. This intersection does not exist today but for purposes of this study it is assumed to be constructed as a 'T'-intersection in the 2028 horizon as part of the RidgeGate King Soopers project, with the north leg of the intersection to be constructed by others as development occurs to the north of RidgeGate Parkway prior to the 2045 horizon. Prior to the 2028 horizon, this intersection is anticipated to be signalized to provide safer travel for pedestrians and bicyclists. With signalization, a westbound left turn lane is anticipated to be provided as well as a northbound left turn lane. As recommended in the RidgeGate King Soopers study, an R3-1 No Right Turn sign should be installed on the northbound approach to the intersection and R6-1 "ONE WAY" signs should be posted along RidgeGate Parkway as appropriate to prevent vehicles from turning right and entering oncoming traffic. A northbound through lane will eventually be necessary as the north leg of Rhapsody Road is constructed. As such, it is recommended that sufficient pavement width be provided, and chevron striping be placed where the future northbound through lane will be placed. With project traffic and the recommended geometry and control, this intersection is anticipated to operate at an acceptable level of service during both the 2028 and 2045 horizon years based on the addition of project traffic and this operational level of service analysis. **Table 3** provides the results of the LOS analysis conducted at this intersection.

Table 3 – RidgeGate Parkway WB & Rhapsody Road (#1) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2028 Background – *Signal*	9.5	A	9.4	A
2028 Background Plus Project - *Signal*	9.3	A	9.4	A
2045 Background – *Signal*	32.7	C	26.6	C
2045 Background Plus Project - *Signal*	33.0	C	26.8	C

RidgeGate Parkway WB & North-South Road (#2)

The intersection of RidgeGate Parkway WB & North-South Road (#2) is proposed to be constructed along the west side of the project site as an unsignalized 'T'-intersection with development of the RidgeGate Couplet Apartments project with stop control on the northbound North-South Road approach to the intersection prior to and in the 2028 horizon. North-South Road is anticipated to provide one through lane in each direction between the two travel directions of RidgeGate Parkway. A westbound left turn lane is recommended to be provided at this intersection with RidgeGate Couplet Apartments construction. During the 2028 horizon, the northbound approach to this intersection will be for northbound left turning movements only and should provide an R1-1 "STOP" sign with an R3-1 No Right Turn sign posted underneath the "STOP" sign and an R6-1 "ONE WAY" sign posted along RidgeGate Parkway directly to the north of the northbound North-South Road approach to prevent vehicles from turning right into oncoming traffic.

By the 2045 horizon, it is anticipated that there will be a north leg constructed at this intersection to access additional planned development to the north of RidgeGate Parkway. When this development to the north of RidgeGate Parkway occurs, this intersection is anticipated to require signalization to continue operating at an acceptable level of service. A signal warrant analysis was conducted at this intersection in the 2028 background plus project and 2045 background horizons. A signal is not anticipated to be warranted or needed at this intersection solely with project traffic in the 2028 or 2045 horizons; the signal is anticipated to be needed because of the development to the north of this project and construction of this north leg. The signal warrant analysis worksheets are provided in **Appendix E**. The intersection is recommended to provide a westbound right turn lane when development to the north of the project occurs, while the northbound approach should operate well through the 2045 horizon with a shared left/through lane and the southbound approach is anticipated to operate well with one lane for shared through/right turning movements.

With project traffic and these recommended improvements in the 2028 and 2045 horizons, the intersection is anticipated to operate at an acceptable level of service through the 2045 horizon with the addition of project traffic. **Table 4** provides the results of the LOS analysis conducted at this intersection.

Table 4 – RidgeGate Parkway WB & North-South Road (#2) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2028 Background *Stop Control* Northbound Left	16.0	C	13.0	B
2028 Background Plus Project *Stop Control* Northbound Left	16.2	C	13.3	B
2045 Background *Signalized*	12.3	B	13.1	B
2045 Background Plus Project *Signalized*	13.2	B	13.4	B

RidgeGate Parkway EB & Rhapsody Road (#3)

The intersection of RidgeGate Parkway EB & Rhapsody Road (#3) is a proposed future signalized intersection to the west of the project site. This intersection does not exist today but for purposes of this study it is assumed to be constructed as a 'T'-intersection by approximately 2025 as part of the RidgeGate King Soopers project, with the south leg of the intersection to be constructed as part of Southwest Village development shortly thereafter, prior to the 2028 horizon studied in this project.

By the 2028 horizon, this intersection is anticipated to be signalized. The eastbound approach is anticipated to provide a left turn lane, three through lanes, and a right turn lane, while the southbound approach should provide a left turn lane and separate through lane, and the northbound approach should operate well with a shared through/right turn lane. As recommended in the RidgeGate King Soopers study, an R3-1 No Right Turn sign should be installed on the southbound approach to the intersection and R6-1 "ONE WAY" signs should be posted along RidgeGate Parkway as appropriate to prevent vehicles from turning right and entering oncoming traffic. This configuration is anticipated to operate well through the 2045 horizon.

With project traffic, this intersection is anticipated to operate at an acceptable level of service during both the 2028 and 2045 horizon years based on the addition of project traffic and this operational level of service analysis. **Table 5** provides the results of the LOS analysis conducted at this intersection.

Table 5 – RidgeGate Parkway EB & Rhapsody Road (#3) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2028 Background – *Signal*	11.8	B	11.3	B
2028 Background Plus Project - *Signal*	11.8	B	11.3	B
2045 Background – *Signal*	14.8	B	20.4	C
2045 Background Plus Project - *Signal*	15.0	B	21.0	C

RidgeGate Parkway EB & North-South Road (#4)

The intersection of RidgeGate Parkway EB & North-South Road (#4) is proposed to be constructed along the west side of the project site as an unsignalized 'T'-intersection with development of this project with stop control on the southbound North-South Road approach to the intersection with RidgeGate Couplet Apartments development in approximately 2025. North-South Road is anticipated to provide one through lane in each direction between the two travel directions of RidgeGate Parkway. An eastbound left turn lane is recommended to be provided at this intersection with RidgeGate Couplet Apartments construction in 2025. The southbound approach to this intersection will be for southbound left turning movements only during the 2028 horizon and should provide an R1-1 "STOP" sign with an R6-1 No Right Turn sign posted underneath the "STOP" sign and an R6-1 "ONE WAY" sign posted along RidgeGate Parkway directly to the south of the southbound North-South Road approach to prevent vehicles from turning right into oncoming traffic.

By the 2045 horizon, it is anticipated that there will be a south leg constructed at this intersection to access a planned medical/hospital land use to the south of RidgeGate Parkway. When this development to the south of RidgeGate Parkway occurs, this intersection is anticipated to require signalization to continue operating at an acceptable level of service. A signal warrant analysis was conducted at this intersection in the 2028 background plus project and 2045 background horizons. A signal is not anticipated to be warranted or needed at this intersection solely with project traffic in the 2028 or 2045 horizons; the signal is anticipated to needed because of the development to the north and south of the RidgeGate Parkway couplet and the traffic from those developments that would use this roadway in between the one-way couplet of RidgeGate Parkway. The signal warrant analysis worksheets are provided in **Appendix E**. The northbound approach should operate well through the 2045 horizon with a shared through/right turn lane and the southbound approach is anticipated to operate well with one lane for shared left/through

turning movements, while the eastbound approach should operate well with a left turn lane, two through lanes, and a shared through/right turn lane.

With project traffic, this intersection is anticipated to operate at an acceptable level of service during both the 2028 and 2045 horizon years based on the addition of project traffic and this operational level of service analysis. **Table 6** provides the results of the LOS analysis conducted at this intersection.

Table 6 – RidgeGate Parkway EB & North-South Road (#4) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2028 Background *Stop Control* Southbound Left	11.4	B	17.6	C
2028 Background Plus Project *Stop Control* Southbound Left	11.5	B	18.2	C
2045 Background *Signalized*	24.5	C	29.7	C
2045 Background Plus Project *Signalized*	24.5	C	29.7	C

Project Access

With completion of the RidgeGate Senior Affordable project, access to the site is proposed with one full movement 'T'-intersection approximately 200 feet to the north of the RidgeGate Parkway EB & North-South Road (#4) intersection. An R1-1 "STOP" sign should be posted on the westbound approach to this intersection. Each approach at this intersection is anticipated to operate well through 2045 with one lane in each direction for shared turning movements. **Table 7** provides the results of the LOS analysis conducted at this access.

Table 7 – Project Access Level of Service Results

Intersection	2028 Total				2045 Total			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
North-South Road Access (#5)								
Westbound Approach	8.6	A	8.7	A	9.0	A	9.4	A
Southbound Left	7.3	A	7.3	A	7.4	A	7.6	A

5.3 Vehicle Queuing Analysis

A vehicle queuing analysis was conducted for the study area intersections. The queuing analysis was performed using Synchro presenting the results of the 95th percentile queue lengths. Results are shown in the following **Table 8** with calculations provided within the level of service operational sheets of **Appendix E** for unsignalized intersections and **Appendix F** for signalized intersections.

Table 8 – Turn Lane Queuing Analysis Results

Intersection Turn Lane	2028 Calculated Queue (feet)	2028 Recommended Length (feet)	2045 Calculated Queue (feet)	2045 Recommended Length (feet)
RidgeGate WB & Rhapsody (#1)				
Westbound Left	48’	**190’+110’T**	30’	190’+110’T
Westbound Right	DNE	DNE	4’	**190’+120’T**
Northbound Left	22’	**120’+50’T**	120’	120’+50’T
RidgeGate WB & N/S Rd (#2)				
Westbound Left	0’	**190’+120’T**	28’	190’+120’T
Westbound Right	DNE	DNE	18’	**190’+120’T**
Northbound Approach	25’	**C**	132’	C
Southbound Approach	DNE	DNE	154’	**C**
RidgeGate EB & Rhapsody (#3)				
Eastbound Left	7’	**101’+75’T**	66’	101’+75’T
Eastbound Right	12’	DNE	39’	**190’+120’T**
Southbound Left	100’	**120’+50’S**	114’	120’+50’S
RidgeGate EB & N/S Rd (#4)				
Eastbound Left	0’	**190’+75’T**	11’	190’+75’T
Northbound Approach	DNE	DNE	95’	**C**
Southbound Approach	25’	**C**	94’	C

DNE = Does Not Exist; C = Continuous; **Blue** Text = Recommendation

All queues are anticipated to remain within the recommended turn lane lengths through 2045. The storage and taper lengths along RidgeGate Parkway provided in **Table 8** are based on a standard turn lane length of 190 feet with a 120-foot taper. Where these turn lane and taper lengths are not feasible, the recommended turn lane length provided is the maximum feasible length based on constraints, with the minimum recommended turn lane length set as 100 feet and the minimum taper length set as 75 feet.

Of note, it is not advisable to provide a continuous deceleration/acceleration lane along either direction of RidgeGate Parkway as this would be likely to cause unsafe weaving maneuvers for vehicles entering and exiting the development within the one-way couplet. For this reason, separate left turn lanes have been recommended at each study area intersection on RidgeGate

Parkway. The turn lanes along Rhapsody Road were assigned a minimum storage length of 120 feet, which is anticipated to accommodate expected queues through the 2045 horizon. The turn lane exhibit used for the provided turn lane and taper lengths is provided in **Appendix G**.

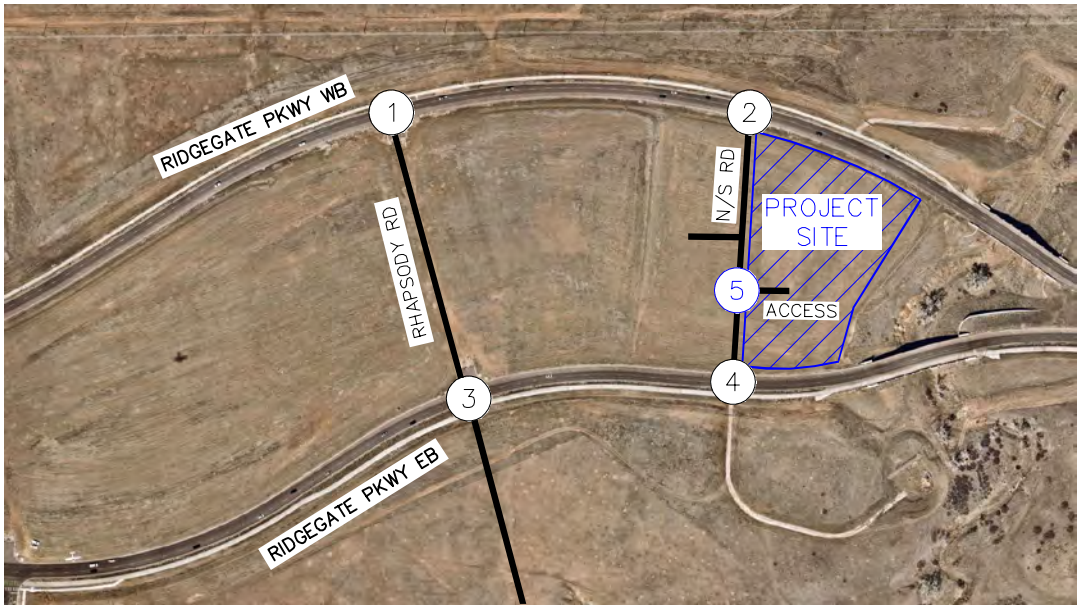
5.4 Pedestrian and Bicycle Evaluation

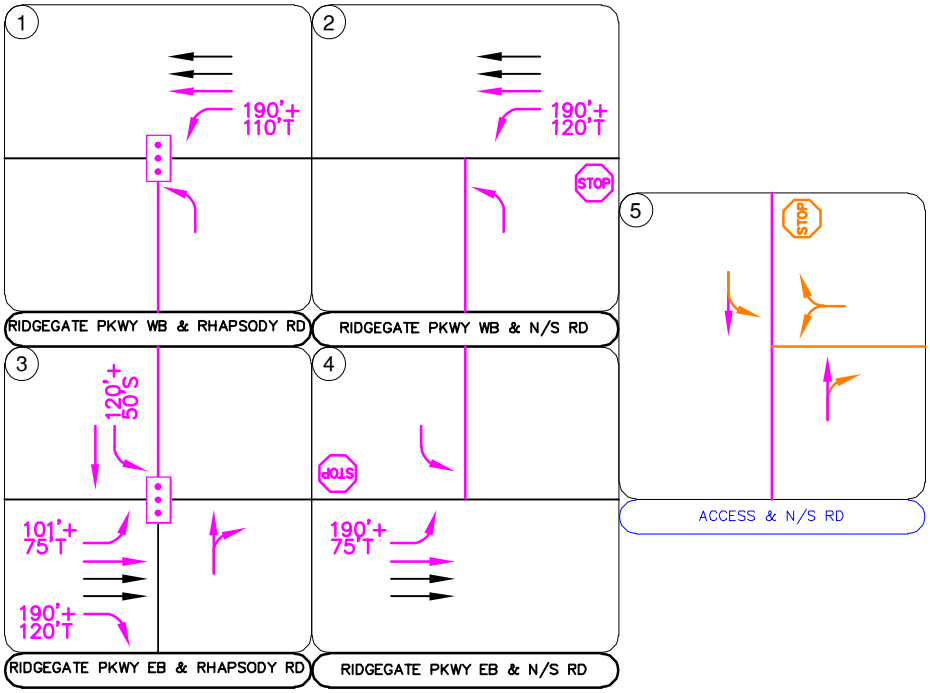
To address components of a multimodal traffic study, pedestrian and bicycle infrastructure evaluations were conducted. Sidewalk exists along both the eastbound and westbound RidgeGate Parkway couplets within the study area, with the sidewalk south of the eastbound direction able to be utilized as cycle track as it provides approximately a 12-foot width. Bicycle lanes and sidewalk are also anticipated to be provided along each side of Rhapsody Road. Sidewalk is anticipated to be provided traveling north-south along the perimeter of the project site along North-South Road. Crosswalks are also anticipated to be provided in each direction at the RidgeGate Parkway WB and EB & Rhapsody Road intersections (#1 & #3). Crosswalks are also anticipated to be provided at the North-South Road intersections (#2 & #4) to cross east-west across the North-South Road. Sidewalk will also be provided onsite as appropriate to provide safe access to the apartment units from the parking lot and any other amenities. As the surrounding area continues to develop as part of the overall RidgeGate East Planned Development, these pedestrian and bicycle facilities will serve the larger community and provide safer access to the development.

5.5 Improvement Summary

Based on the results of the intersection operational and vehicle queuing analysis, the key intersection recommended improvements and control are shown in **Figure 12** for the 2028 horizon and in **Figure 13** for the 2045 long-term planning horizon.

Kimley»Horn NORTH
NTS 196804000





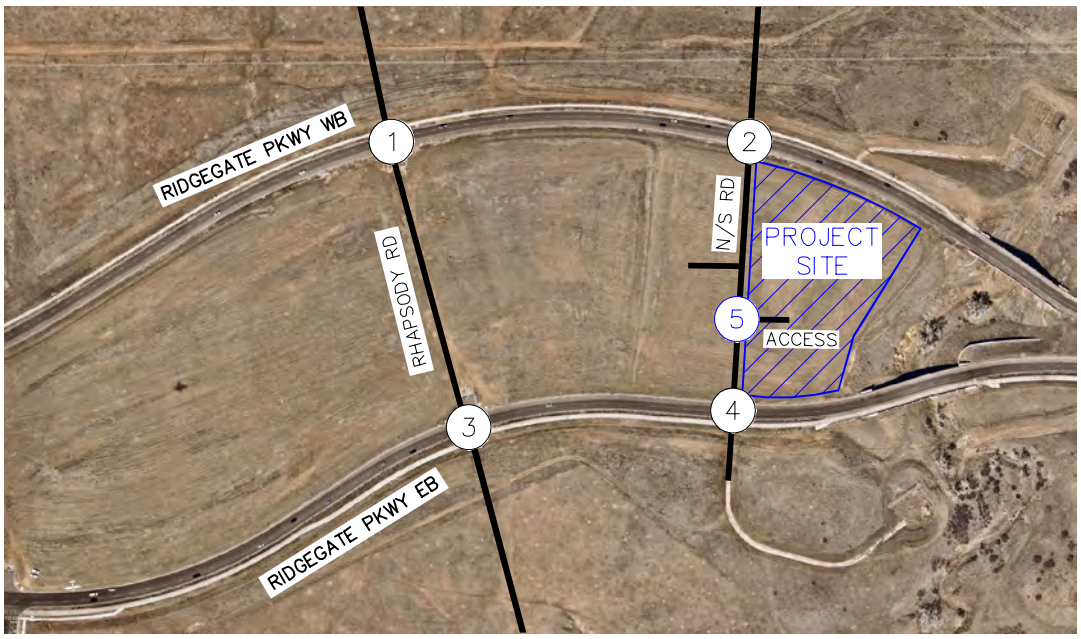
LEGEND

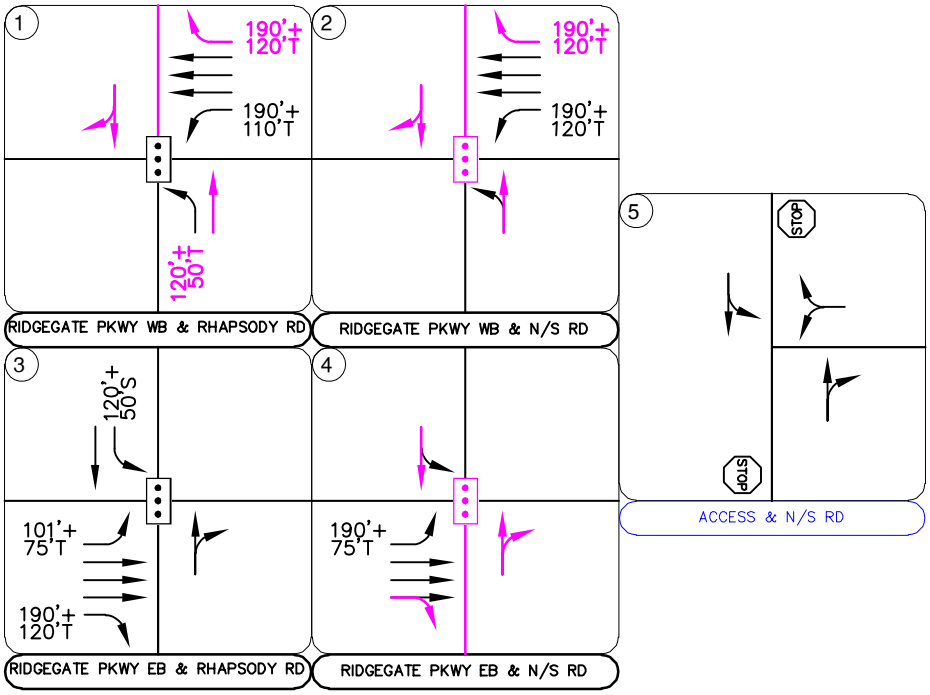
- (X) Study Area Key Intersection
- (X) Project Access Intersection
- Signalized Intersection
- STOP Stop Controlled Approach
- Improvement By Others
- Recommended Improvement
- 100'+ Turn Lane Length (feet)
  100'T Taper Length (feet)
  100'S Shared Taper Length (feet)

FIGURE 12
RIDGEGATE SENIOR AFFORDABLE
LONE TREE, COLORADO
2028 RECOMMENDED GEOMETRY
AND CONTROL

Kimley»Horn

Kimley»Horn
NORTH
NTS 196804000





LEGEND

- (X) Study Area Key Intersection
- (X) Project Access Intersection
- Signalized Intersection
- STOP Stop Controlled Approach
- Improvement By Others
- 100'+ Turn Lane Length (feet)
  100'T Taper Length (feet)
  100'S Shared Taper Length (feet)

FIGURE 13
RIDGEGATE SENIOR AFFORDABLE
LONE TREE, COLORADO
2045 RECOMMENDED GEOMETRY
AND CONTROL

Kimley»Horn

Based on the analysis presented in this report, Kimley-Horn believes RidgeGate Senior Affordable will be successfully incorporated into the existing and future roadway network. The only traffic related project related recommendation is to construct the access along the North-South Road and to provide stop-control with a R1-1 “STOP” sign installed for the westbound driveway approach. To serve pedestrians, sidewalk should be constructed along the site’s project frontage of RidgeGate Parkway and North-South Road. To provide a complete set of recommendations accounting for and recording what is being constructed by other projects, analysis of the expected traffic volumes resulted in the following recommendations:

2028 Recommendations

- Bicycle lanes and sidewalk are anticipated to be provided along each side of Rhapsody Road. Sidewalk is anticipated to be provided traveling north-south along the perimeter of the project site along the North-South Road. Crosswalks are also anticipated to be provided in each direction at the RidgeGate Parkway WB and EB & Rhapsody Road intersections (#1 & #3). Crosswalks are also anticipated to be provided at the North-South Road intersections (#2 & #4) to cross east-west across East Road and West Road. Sidewalk will also be provided onsite as appropriate to provide safe access to the apartment units from the parking and to and from other amenities anticipated to be provided by the apartment complex to residents.
- Rhapsody Road is proposed to be constructed as part of the RidgeGate King Soopers development with one through lane in each direction with on-street bicycle lanes and on-street parallel parking along both sides of the roadway. The RidgeGate Parkway WB & Rhapsody Road (#1) and the RidgeGate Parkway EB & Rhapsody Road (#3) intersections are anticipated to be signalized intersections operating with full turning movements as appropriate on the one-way couplet, with RidgeGate Parkway WB & Rhapsody Road (#1) anticipated to be a ‘T’-intersection in the 2028 horizon while the RidgeGate Parkway EB & Rhapsody Road (#3) intersection is anticipated to be a four-leg intersection. At these intersections, R3-1 No Right Turn signs should be installed at the approaches to RidgeGate Parkway and R6-1 “ONE WAY” signs should be posted along RidgeGate Parkway as appropriate to prevent vehicles from turning right and entering oncoming traffic.
- The RidgeGate Parkway WB & Rhapsody Road (#1) intersection, it is understood that the RidgeGate King Soopers development will provide a westbound left turn lane with 190 feet in

length and a 110-foot taper. A northbound left turn lane is also being provided with 120 feet in length and a 50-foot taper by King Soopers, with a separate northbound through lane. The southbound approach should operate well with a shared through/right turn lane.

- The RidgeGate Parkway EB & Rhapsody Road (#3) intersection will provide an eastbound left turn lane 101 feet in length with a 75-foot taper and a right turn lane 190 feet in length with a 120-foot taper when the south leg is constructed as part of the RidgeGate King Soopers project. King Soopers is also providing a southbound left turn lane with 120 feet in length and a 50-foot taper and a southbound through lane at this intersection. The northbound approach to this intersection should operate well with a shared through/right turn lane.
- The improvements to the Rhapsody Road intersections (#1 and #3) will be provided by construction of the RidgeGate King Soopers development and Southwest Village development. Of note, as Rhapsody Road is anticipated to also provide a north leg to the north of RidgeGate Parkway before 2045, it is recommended that sufficient pavement width be provided, and chevron striping be placed where the future northbound through lane will be placed at the RidgeGate Parkway WB & Rhapsody Road (#3) intersection.
- The City of Lone Tree is anticipated to improve RidgeGate Parkway to use the existing available pavement width to restripe the roadway to provide three through lanes in each direction within the study area during this horizon. It is understood that the existing striped-out inside lane along RidgeGate Parkway in both directions will be striped as the third through lane.
- RidgeGate Parkway WB & North-South Road (#2) is anticipated to be constructed as a 'T'-intersection by RidgeGate Couplet Apartments development prior to the 2028 horizon. This intersection should operate well with stop control during this horizon with an R1-1 "STOP" sign posted on the northbound approach to this intersection. A westbound left turn lane 190 feet in length with a 120-foot taper should be provided at this intersection, while the northbound approach during this horizon would have only a northbound left turning movement. Of note, the North-South Road is anticipated to also provide a north leg to the north of RidgeGate Parkway before 2045.
- RidgeGate Parkway EB & North-South Road (#4) is anticipated to be constructed as a 'T'-intersection by RidgeGate Couplet Apartments development prior to this project's 2028 horizon. This intersection should operate well with stop control during this horizon with an R1-1 "STOP" sign posted on the southbound approach to this intersection. An eastbound left turn lane 190 feet in length with a 75-foot taper should be provided at this intersection, while the

southbound approach during this horizon would have only a southbound left turning movement. Of note, the North-South Road is anticipated to also provide a south leg to the south of RidgeGate Parkway before 2045.

- Access to RidgeGate Senior Affordable is proposed along North-South Road (#5) approximately 200 feet to the north of the RidgeGate Parkway EB & North-South Road (#4) intersection. It is recommended this intersection operate with full turning movements and an R1-1 “STOP” sign posted on the westbound approach for vehicles exiting the development. Each approach to the intersection is anticipated to operate well through 2045 with one lane in each direction for shared turning movements.

2045 Recommendations

- A north leg at the RidgeGate Parkway WB & Rhapsody Road (#1) intersection is anticipated to be constructed by others prior to the 2045 horizon, making this a four-leg signalized intersection. When this construction occurs, a westbound right turn lane 190 feet in length with a 120-foot taper should be provided. The northbound approach to this intersection should use the aforementioned chevron striping provided in the 2028 horizon to be restriped as the northbound through lane, while the southbound approach should operate well with one lane for shared through/right turning movements.
- The RidgeGate Parkway WB & North-South Road (#2) intersection is also anticipated to have a north leg prior to the 2045 horizon, constructed by others. Both the northbound and southbound approaches to this intersection should each operate well with one lane for shared turning movements, while a westbound right turn lane 190 feet in length with a 120-foot taper should be provided at this intersection when the north leg is constructed.
- A south leg at the RidgeGate Parkway EB & North-South Road (#4) intersection is expected to be constructed by the proposed medical development prior to 2045. The eastbound right turning movements are anticipated to operate well from within the outer eastbound through lane, while the northbound and southbound approaches to the intersection are expected to operate well with one lane in each direction for shared turning movements.

General Recommendations

- Any onsite or offsite improvements should be incorporated into the Civil Drawings and conform to standards of the City of Lone Tree and the Manual on Uniform Traffic Control Devices (MUTCD) – 2009 Edition.

APPENDICES

APPENDIX A

Intersection Count Sheets

Ridgeview Data Collection

Lone Tree, CO
Ridgegate King Soopers
AM Peak
Ridgegate Pkwy and Peoria St

File Name : Ridgegate and Peoria AM
Site Code : IPO 609
Start Date : 7/7/2022
Page No : 1

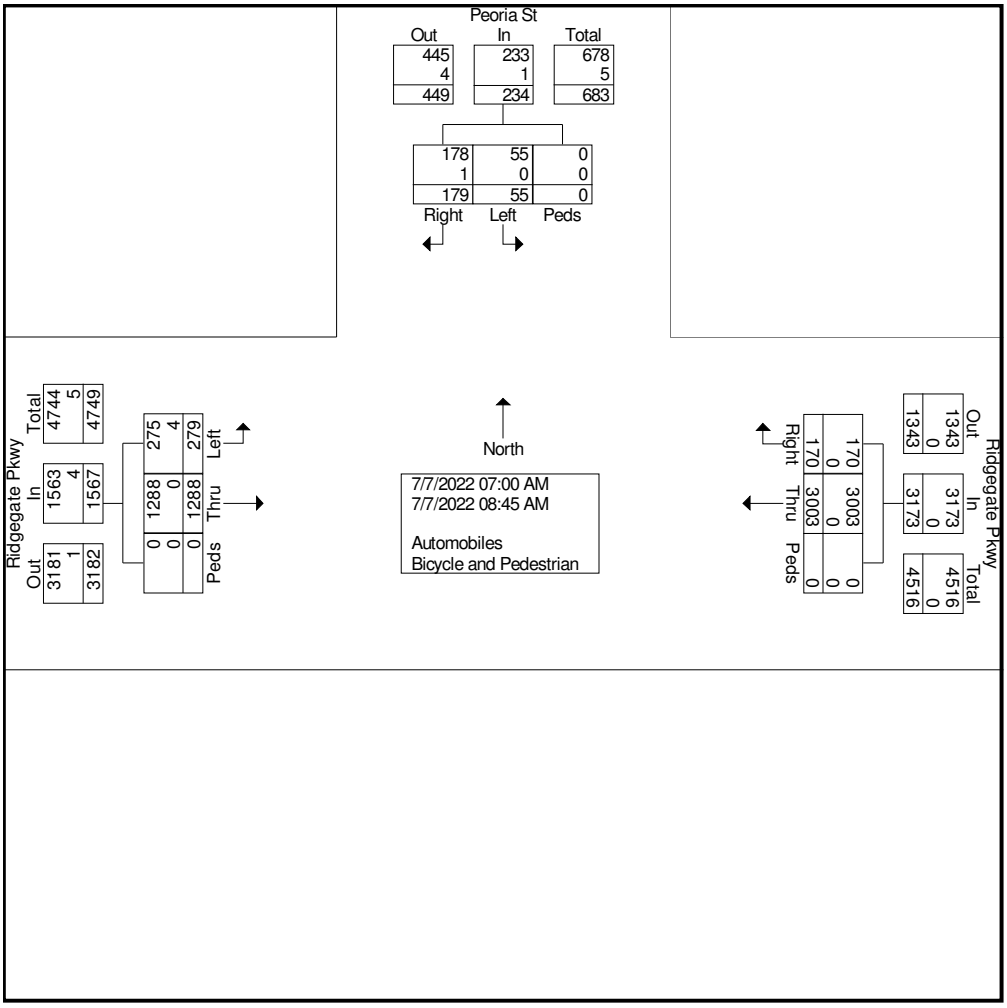
Groups Printed- Automobiles - Bicycle and Pedestrian

	Ridgegate Pkwy Eastbound				Ridgegate Pkwy Westbound				Peoria St Southbound				
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
07:00 AM	34	130	0	164	343	15	0	358	3	21	0	24	546
07:15 AM	30	169	0	199	397	21	0	418	6	22	0	28	645
07:30 AM	37	145	0	182	418	29	0	447	7	24	0	31	660
07:45 AM	41	173	0	214	421	20	0	441	11	19	0	30	685
Total	142	617	0	759	1579	85	0	1664	27	86	0	113	2536
08:00 AM	34	155	0	189	363	24	0	387	6	20	0	26	602
08:15 AM	38	168	0	206	349	18	0	367	10	25	0	35	608
08:30 AM	40	179	0	219	334	17	0	351	7	28	0	35	605
08:45 AM	25	169	0	194	378	26	0	404	5	20	0	25	623
Total	137	671	0	808	1424	85	0	1509	28	93	0	121	2438
Grand Total	279	1288	0	1567	3003	170	0	3173	55	179	0	234	4974
Apprch %	17.8	82.2	0		94.6	5.4	0		23.5	76.5	0		
Total %	5.6	25.9	0	31.5	60.4	3.4	0	63.8	1.1	3.6	0	4.7	
Automobiles	275	1288	0	1563	3003	170	0	3173	55	178	0	233	4969
% Automobiles	98.6	100	0	99.7	100	100	0	100	100	99.4	0	99.6	99.9
Bicycle and Pedestrian	4	0	0	4	0	0	0	0	0	1	0	1	5
% Bicycle and Pedestrian	1.4	0	0	0.3	0	0	0	0	0	0.6	0	0.4	0.1

Ridgeview Data Collection

Lone Tree, CO
Ridgegate King Soopers
AM Peak
Ridgegate Pkwy and Peoria St

File Name : Ridgegate and Peoria AM
Site Code : IPO 609
Start Date : 7/7/2022
Page No : 2

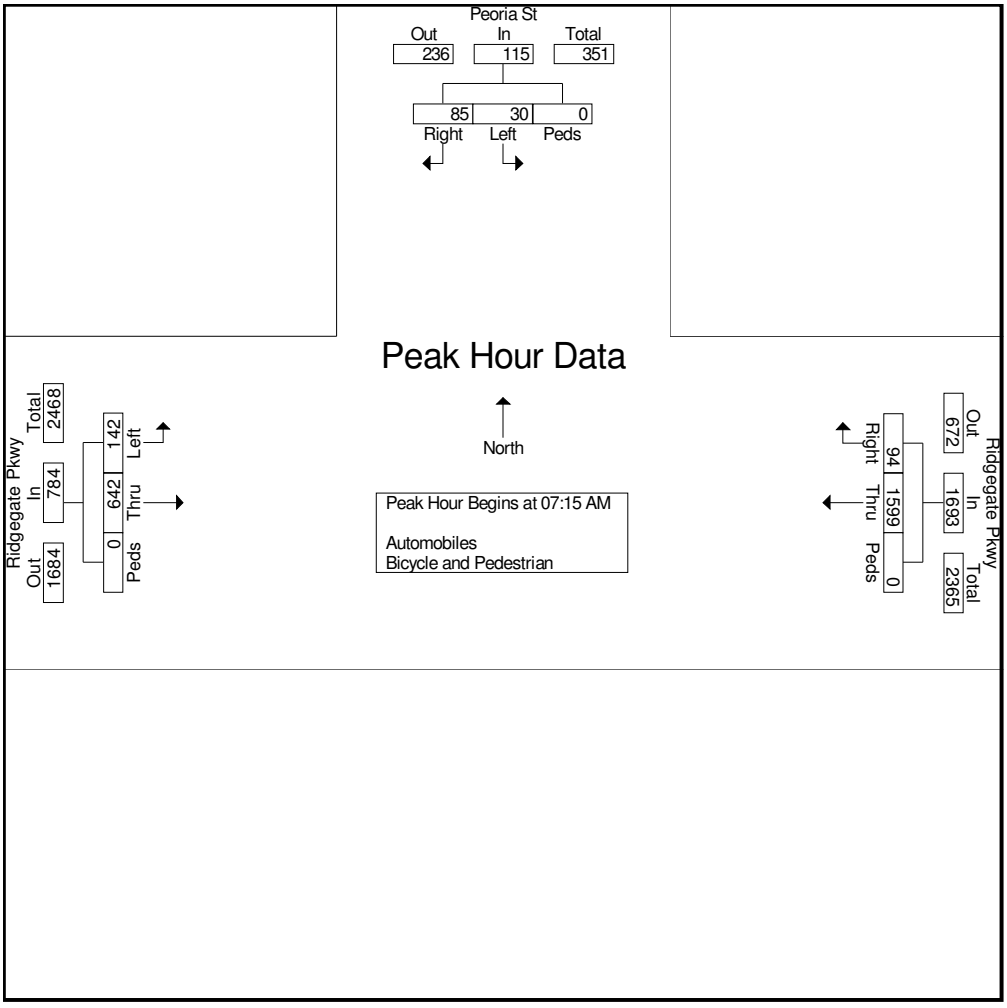


Ridgeview Data Collection

Lone Tree, CO
Ridgegate King Soopers
AM Peak
Ridgegate Pkwy and Peoria St

File Name : Ridgegate and Peoria AM
Site Code : IPO 609
Start Date : 7/7/2022
Page No : 3

	Ridgegate Pkwy Eastbound				Ridgegate Pkwy Westbound				Peoria St Southbound				
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	30	169	0	199	397	21	0	418	6	22	0	28	645
07:30 AM	37	145	0	182	418	**29**	0	**447**	7	**24**	0	**31**	660
07:45 AM	**41**	**173**	0	**214**	**421**	20	0	441	**11**	19	0	30	**685**
08:00 AM	34	155	0	189	363	24	0	387	6	20	0	26	602
Total Volume	142	642	0	784	1599	94	0	1693	30	85	0	115	2592
% App. Total	18.1	81.9	0		94.4	5.6	0		26.1	73.9	0		
PHF	.866	.928	.000	.916	.950	.810	.000	.947	.682	.885	.000	.927	.946



Ridgeview Data Collection

Lone Tree, CO
Ridgegate King Soopers
PM Peak
Ridgegate Pkwy and Peoria St

File Name : Ridgegate and Peoria PM
Site Code : IPO 609
Start Date : 7/7/2022
Page No : 1

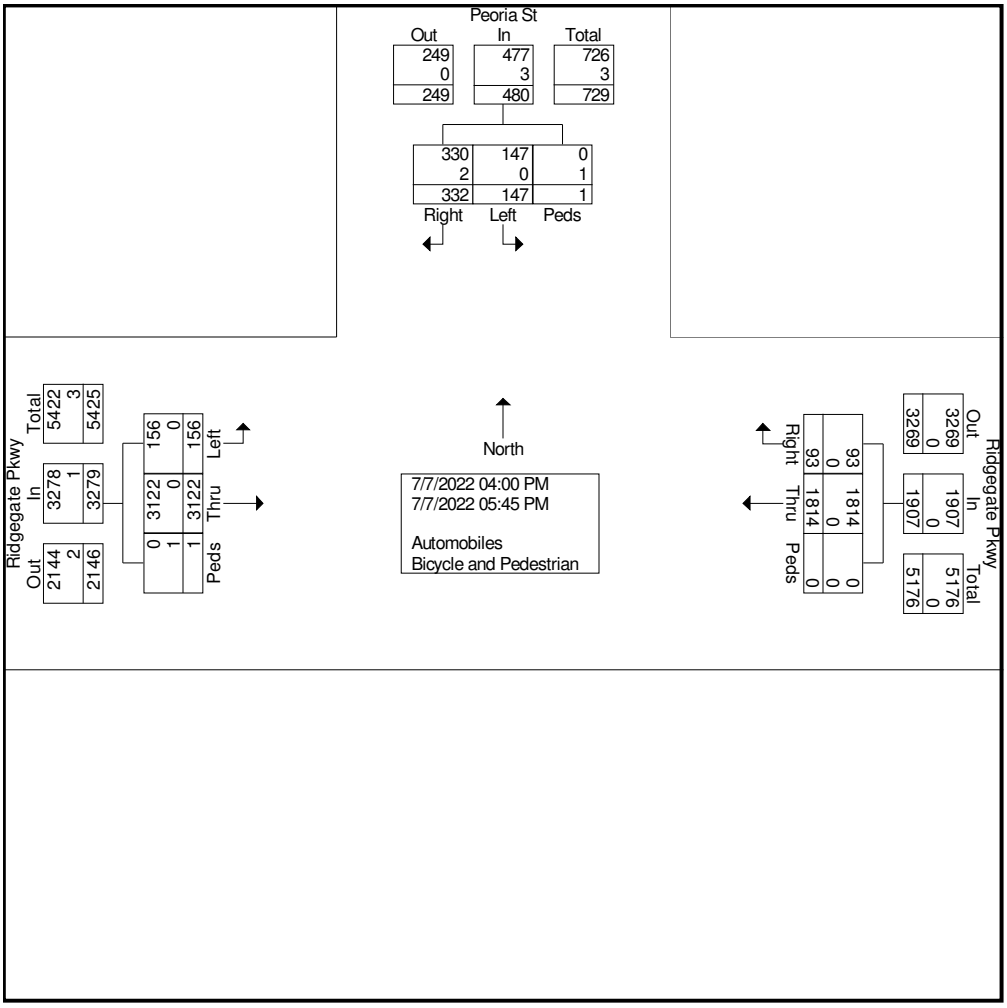
Groups Printed- Automobiles - Bicycle and Pedestrian

	Ridgegate Pkwy Eastbound				Ridgegate Pkwy Westbound				Peoria St Southbound				
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
04:00 PM	14	354	0	368	217	11	0	228	17	40	0	57	653
04:15 PM	15	375	0	390	247	12	0	259	16	43	0	59	708
04:30 PM	27	387	0	414	227	10	0	237	11	44	0	55	706
04:45 PM	18	406	1	425	201	12	0	213	16	38	1	55	693
Total	74	1522	1	1597	892	45	0	937	60	165	1	226	2760
05:00 PM	29	411	0	440	209	11	0	220	30	42	0	72	732
05:15 PM	19	420	0	439	256	13	0	269	22	50	0	72	780
05:30 PM	20	381	0	401	212	14	0	226	18	43	0	61	688
05:45 PM	14	388	0	402	245	10	0	255	17	32	0	49	706
Total	82	1600	0	1682	922	48	0	970	87	167	0	254	2906
Grand Total	156	3122	1	3279	1814	93	0	1907	147	332	1	480	5666
Apprch %	4.8	95.2	0		95.1	4.9	0		30.6	69.2	0.2		
Total %	2.8	55.1	0	57.9	32	1.6	0	33.7	2.6	5.9	0	8.5	
Automobiles	156	3122	0	3278	1814	93	0	1907	147	330	0	477	5662
% Automobiles	100	100	0	100	100	100	0	100	100	99.4	0	99.4	99.9
Bicycle and Pedestrian	0	0	1	1	0	0	0	0	0	2	1	3	4
% Bicycle and Pedestrian	0	0	100	0	0	0	0	0	0	0.6	100	0.6	0.1

Ridgeview Data Collection

Lone Tree, CO
Ridgegate King Soopers
PM Peak
Ridgegate Pkwy and Peoria St

File Name : Ridgegate and Peoria PM
Site Code : IPO 609
Start Date : 7/7/2022
Page No : 2

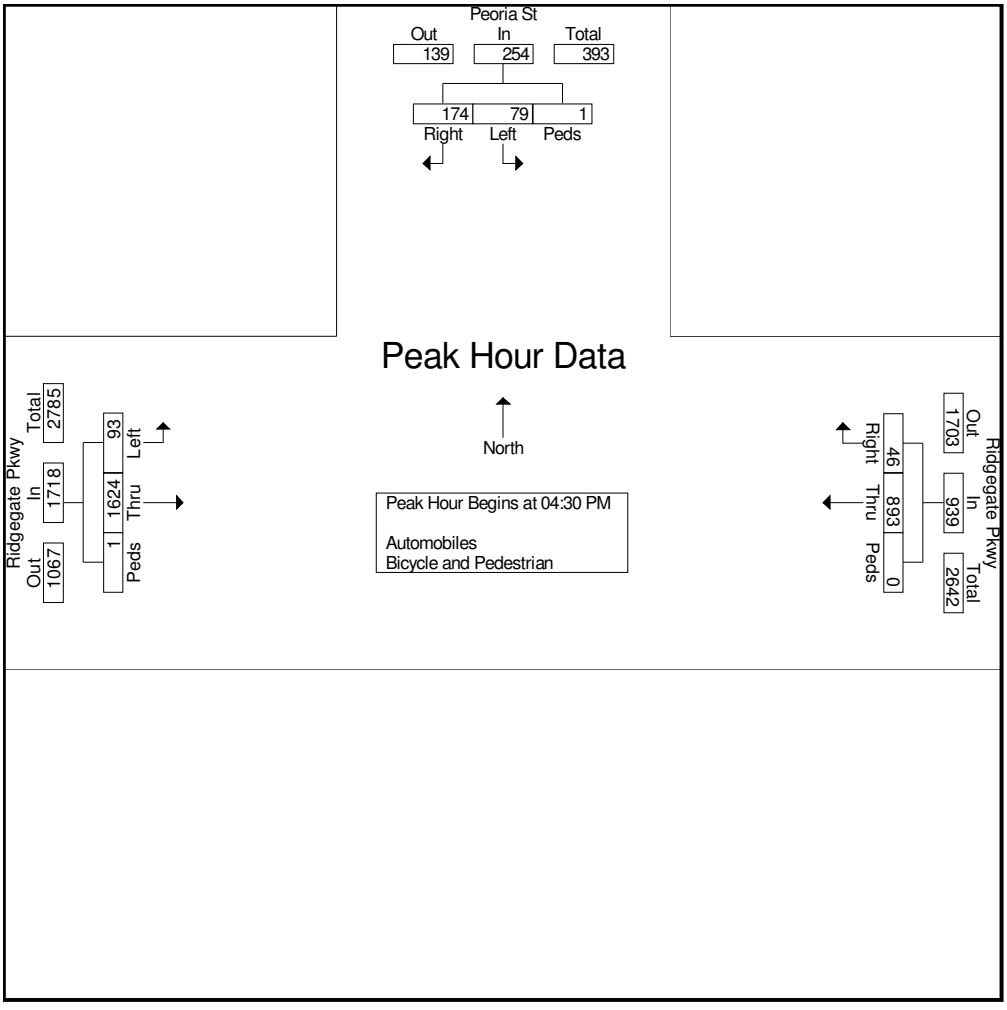


Ridgeview Data Collection

Lone Tree, CO
Ridgegate King Soopers
PM Peak
Ridgegate Pkwy and Peoria St

File Name : Ridgegate and Peoria PM
Site Code : IPO 609
Start Date : 7/7/2022
Page No : 3

	Ridgegate Pkwy Eastbound				Ridgegate Pkwy Westbound				Peoria St Southbound				
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	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 04:30 PM													
04:30 PM	27	387	0	414	227	10	0	237	11	44	0	55	706
04:45 PM	18	406	**1**	425	201	12	0	213	16	38	**1**	55	693
05:00 PM	**29**	411	0	**440**	209	11	0	220	**30**	42	0	**72**	732
05:15 PM	19	**420**	0	439	**256**	**13**	0	**269**	22	**50**	0	72	**780**
Total Volume	93	1624	1	1718	893	46	0	939	79	174	1	254	2911
% App. Total	5.4	94.5	0.1		95.1	4.9	0		31.1	68.5	0.4		
PHF	.802	.967	.250	.976	.872	.885	.000	.873	.658	.870	.250	.882	.933



APPENDIX B

Future Traffic Projections and Adjacent Traffic Studies

DRCOG Traffic Projections: Ridgegate King Soopers

Location	2020	2050	Growth Factor	Annual Growth
Ridgegate Parkway E/O Peoria St	23,000	43,000	1.87	**2.11%**

Traffic Impact Study

RidgeGate Couplet Apartments

Lone Tree, Colorado

Prepared for:

Century Communities

Kimley»Horn

T R A F F I C I M P A C T S T U D Y

RidgeGate Couplet Apartments

Lone Tree, Colorado

Prepared for
Century Communities
8390 E. Crescent Parkway
Suite 650
Greenwood Village, Colorado 80111

Prepared by
Kimley-Horn and Associates, Inc.
4582 South Ulster Street
Suite 1500
Denver, Colorado 80237
(303) 228-2300

April 2023

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

1.0 EXECUTIVE SUMMARY

RidgeGate Couplet Apartments is proposed to be located within the eastern portion in between the eastbound (EB) and westbound (WB) travel lanes of RidgeGate Parkway, east of future Rhapsody Road, in Lone Tree, Colorado. The project is proposed to include 349 multifamily dwelling units. It is expected that RidgeGate Couplet Apartments will be completed in the next several years. Therefore, analysis was conducted for the 2025 short-term buildout horizon as well as the 2045 long-term twenty-year planning horizon.

The purpose of this traffic study is to identify project traffic generation characteristics to determine potential project traffic related impacts on the local street system and to develop the necessary mitigation measures required for the identified traffic impacts. The following intersections were incorporated into this traffic study in accordance with the City of Lone Tree standards and requirements:

- RidgeGate Parkway WB & Rhapsody Road (#1)
- RidgeGate Parkway WB & West Road (#2)
- RidgeGate Parkway WB & East Road (#3)
- RidgeGate Parkway EB & Rhapsody Road (#4)
- RidgeGate Parkway EB & West Road (#5)
- RidgeGate Parkway EB & East Road (#6)

In addition, the proposed full movement West Access (#7) on the West Road and the proposed full movement East Access (#8) on the East Road were evaluated.

Regional access to the project will be provided by Interstate 25 (I-25), RidgeGate Parkway, and Chambers Road. Primary access will be provided by RidgeGate Parkway while direct access will be provided by a proposed full movement West Access (#7) along the proposed private north-south road to the west of the site—identified as West Road within this study—and a proposed full movement East Access (#8) along the proposed north-south road to the east of the site, identified as East Road herein.

RidgeGate Couplet Apartments is expected to generate approximately 1,586 weekday daily trips, with 129 of these trips occurring during the morning peak hour and 136 of these trips occurring during the afternoon peak hour.

Based on the analysis presented in this report, Kimley-Horn believes RidgeGate Couplet Apartments will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following recommendations:

2025 Recommendations

- Bicycle lanes and sidewalk are anticipated to be provided along each side of Rhapsody Road. Sidewalk is anticipated to be provided traveling north-south along the perimeter of the project site along West Road and East Road, in addition to sidewalk anticipated to be provided along the north and south ends of the project to connect West Road to East Road. Crosswalks are also anticipated to be provided in each direction at the RidgeGate Parkway WB and EB & Rhapsody Road intersections (#1 & #4). Crosswalks are also anticipated to be provided at the West Road and East Road intersections (#2, #3, #5, #6) to cross east-west across East Road and West Road. Sidewalk will also be provided onsite as appropriate to provide safe access to the apartment units from the parking and to and from other amenities anticipated to be provided by the apartment complex to residents.
- Rhapsody Road is proposed to be constructed as part of the RidgeGate King Soopers development with one through lane in each direction with on-street bicycle lanes and on-street parallel parking along both sides of the roadway. The RidgeGate Parkway WB & Rhapsody Road (#1) and the RidgeGate Parkway EB & Rhapsody Road (#4) intersections are anticipated to be signalized 'T'-intersections operating with full turning movements as appropriate on the one-way couplet. At these T-intersections, R3-1 No Right Turn signs should be installed at the approaches to RidgeGate Parkway and R6-1 "ONE WAY" signs should be posted along RidgeGate Parkway as appropriate to prevent vehicles from turning right and entering oncoming traffic. The RidgeGate Parkway WB & Rhapsody Road (#1) intersection should provide a westbound left turn lane with 190 feet in length and a 110-foot taper. A northbound left turn lane should also be provided with 120 feet in length and a 50-foot taper. The RidgeGate Parkway EB & Rhapsody Road (#4) intersection should provide an eastbound left turn lane 101 feet in length with a 75-foot taper. This intersection should also provide a

southbound left turn lane with 120 feet in length and a 50-foot taper. Any improvements to the Rhapsody Road intersections (#1 and #4) should be provided in construction of the RidgeGate King Soopers development. Of note, as Rhapsody Road is anticipated to provide north and south legs on either side of RidgeGate Parkway before 2045, it is recommended that sufficient pavement width be provided, and chevron striping be placed where the future southbound through and northbound through lanes will be placed.

- RidgeGate Parkway is anticipated to use the existing available pavement width to restripe the roadway to provide three through lanes in each direction within the study area during this horizon. It is recommended that the existing striped-out inside lane along RidgeGate Parkway in both directions be striped as the third through lane.
- Along RidgeGate Parkway WB, westbound left turn lanes should be provided at the West Road (#2) and East Road (#3) intersections. At the West Road (#2) intersection, a westbound left turn lane 190 feet in length with a 120-foot taper should be provided. The East Road (#3) intersection should also provide a westbound left turn lane 190 feet in length with a 120-foot taper. The northbound approach to each of these intersections are anticipated to be for northbound left turning movements and should be stop-controlled with R1-1 “STOP” signs placed at each northbound approach to these intersections. R3-1 No Right Turn signs should be placed underneath the “STOP” signs while R6-1 “ONE WAY” signs should be placed along RidgeGate Parkway WB as appropriate to prevent vehicles from turning right and entering oncoming traffic.
- Along RidgeGate Parkway EB, eastbound left turn lanes should be provided at the West Road (#5) and East Road (#6) intersections. Due to intersection spacing, the East Road (#5) intersection should provide an eastbound left turn lane 175 feet in length with a 75-foot taper. At the East Road (#6) intersection, an eastbound left turn lane with 190 feet in length and a 75-foot taper should be provided. The southbound approach to each of these intersections are anticipated to be for southbound left turning movements and should be stop-controlled with R1-1 “STOP” signs placed at each southbound approach to these intersections. R3-1 No Right Turn signs should be placed underneath the “STOP” signs while R6-1 “ONE WAY” signs should be placed along RidgeGate Parkway EB as appropriate to prevent vehicles from turning right and entering oncoming traffic.
- The East Road and West Road are both anticipated to operate well with one through lane in each direction with turning movements occurring from within the proposed through lanes.

- Two full movement accesses are proposed to be constructed with this project, with the West Access (#7) located along the West Road and the East Access (#8) located along the East Road. Each approach exiting the development should operate well with a shared left/right turn lane and should be stop-controlled with an R1-1 “STOP” sign.

2045 Recommendations

- The north and south legs of Rhapsody Road on either side of RidgeGate Parkway are anticipated to be constructed before the 2045 long-term horizon. When these legs are constructed, the two Rhapsody Road intersections (#1 and #4) will become four-leg signalized intersections. When this construction occurs, a westbound right turn lane 190 feet in length with a 120-foot taper should be provided at the RidgeGate Parkway WB & Rhapsody Road (#1) intersection while an eastbound right turn lane 190 feet in length with a 120-foot taper should be provided at the RidgeGate Parkway EB & Rhapsody Road (#4) intersection.
- The north and south legs of East Road on either side of RidgeGate Parkway are anticipated to be constructed before the 2045 long-term horizon. When these legs are constructed, the two East Road intersections (#3 and #6) will become four-leg signalized intersections. When this construction occurs, a westbound right turn lane 190 feet in length with a 120-foot taper should be provided at the RidgeGate Parkway WB & East Road (#3) intersection while the RidgeGate Parkway EB & East Road (#6) intersection is anticipated to operate well with eastbound right turning movements occurring from within the third eastbound through lane. The northbound and southbound approaches to each of these intersections along East Road are anticipated to operate well through the 2045 horizon with a shared lane for left/through or through/right turn lanes where appropriate.
- When the parcel to the west of the project site is developed, access along West Road should align with the West Access (#7) proposed in this project if an access to that development is anticipated along West Road. In like manner, when the parcel to the east of the project site is developed, access along East Road should align with the East Access (#8) constructed in this project if an access to that development is anticipated along East Road.

General Recommendations

- Any onsite or offsite improvements should be incorporated into the Civil Drawings and conform to standards of the City of Lone Tree and the Manual on Uniform Traffic Control Devices (MUTCD) – 2009 Edition.

4.0 PROJECT TRAFFIC CHARACTERISTICS

4.1 Trip Generation

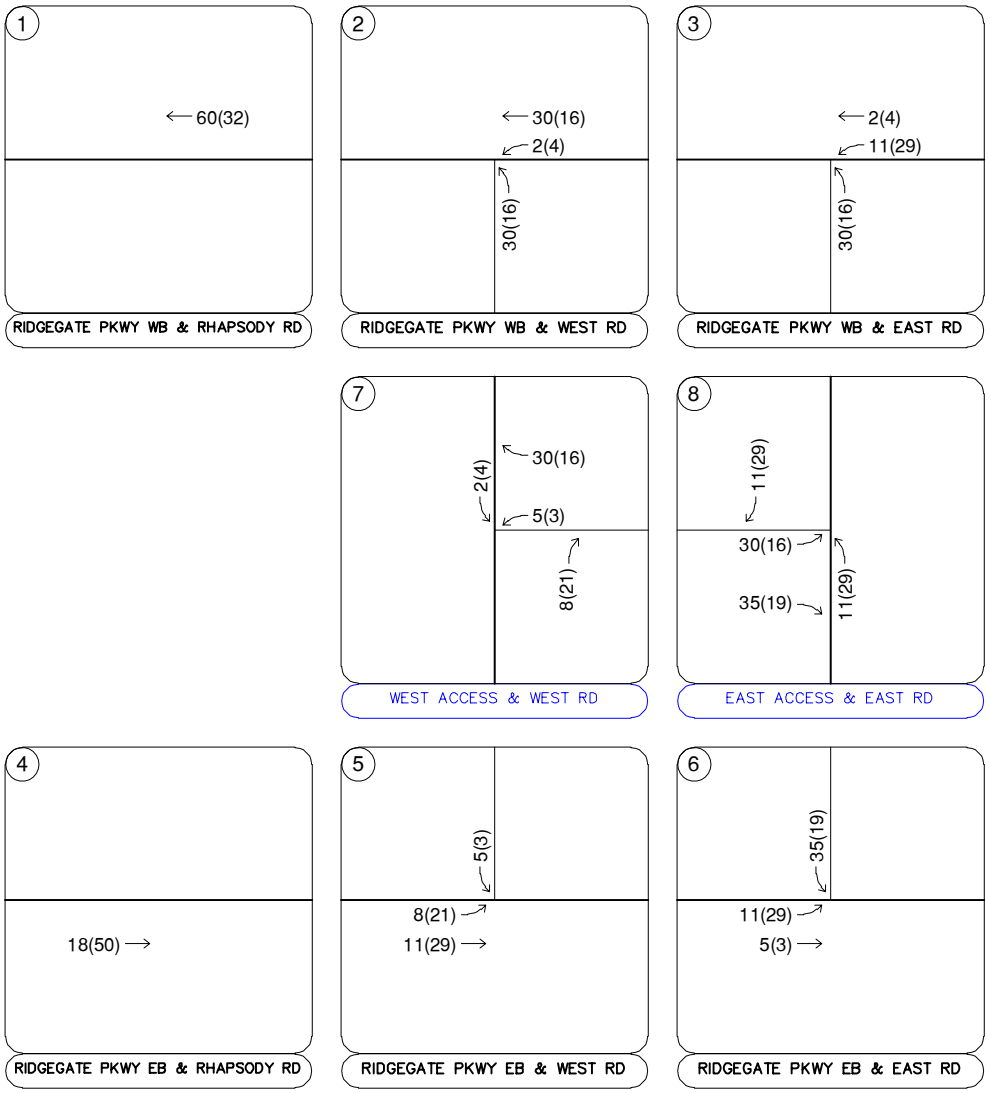
Site-generated traffic estimates are determined through a process known as trip generation. Rates and equations are applied to the proposed land use to estimate traffic generated by the development during a specific time interval. The acknowledged source for trip generation rates is the *Trip Generation Manual*[1] published by the Institute of Transportation Engineers (ITE). ITE has established trip rates in nationwide studies of similar land uses. For this study, Kimley-Horn used the ITE Trip Generation Report average rate equations that apply to Multifamily Mid-Rise Housing (ITE Land Use Code 221) for traffic associated with the development.

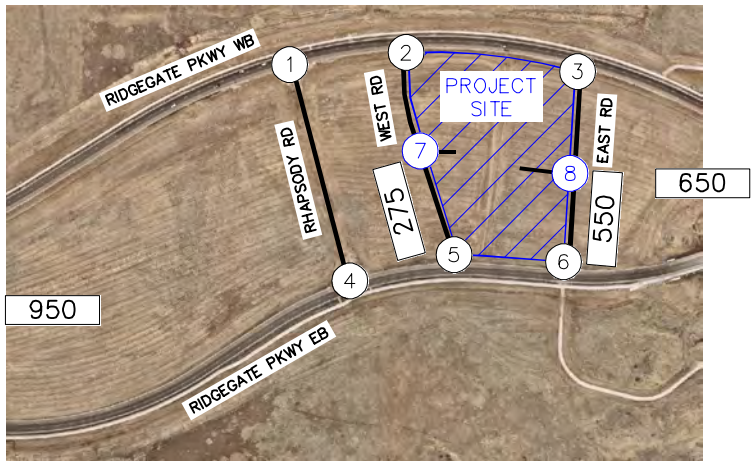
RidgeGate Couplet Apartments is expected to generate approximately 1,586 weekday daily trips, with 129 of these trips occurring during the morning peak hour and 136 of these trips occurring during the afternoon peak hour. Calculations were based on the procedure and information provided in the ITE *Trip Generation Manual, 11th Edition – Volume 1: User's Guide and Handbook*, 2021. **Table 1** summarizes the estimated trip generation for the RidgeGate Couplet Apartments. The trip generation worksheets for RidgeGate Couplet Apartments as well as the adjacent proposed future retail and affordable housing developments are included in **Appendix C**.

Table 1 – RidgeGate Couplet Apartments Traffic Generation

Land Use and Size	Weekday Vehicle Trips						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Multifamily Mid-Rise Housing (ITE 221) – 349 Dwelling Units	1,586	30	99	129	83	53	136

[1] Institute of Transportation Engineers, *Trip Generation Manual*, Eleventh Edition, Washington DC, 2021.

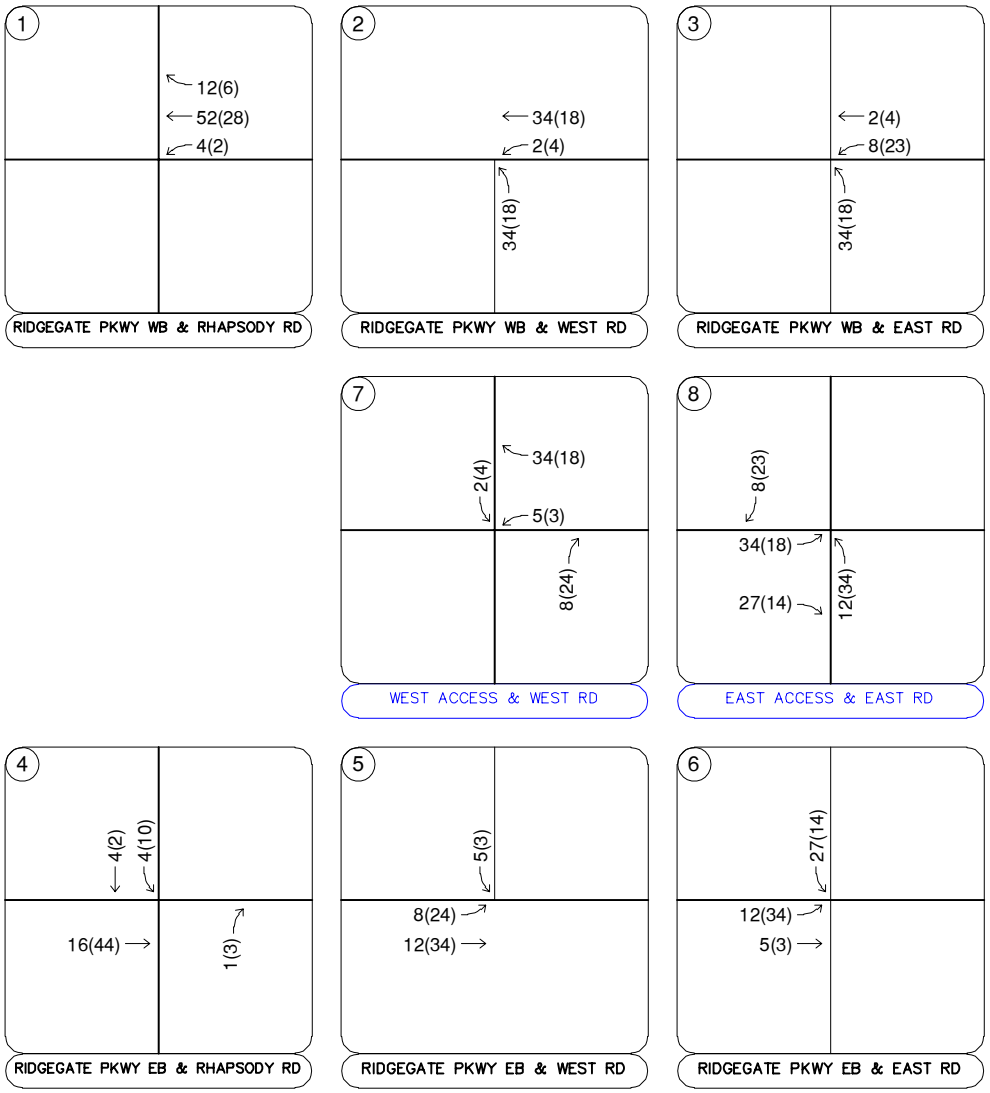


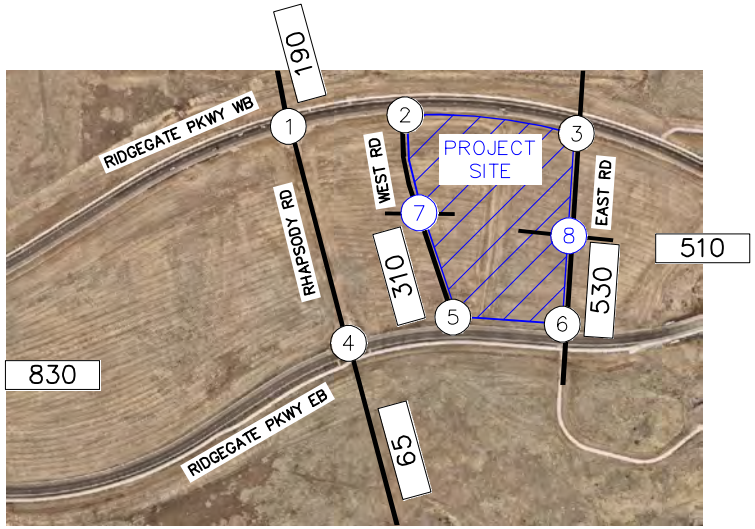


LEGEND

(X)	Study Area Key Intersection
(X)	Project Access Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

FIGURE 8
RIDGEGATE COUPLET APARTMENTS
LONE TREE, COLORADO
2025 PROJECT TRAFFIC ASSIGNMENT

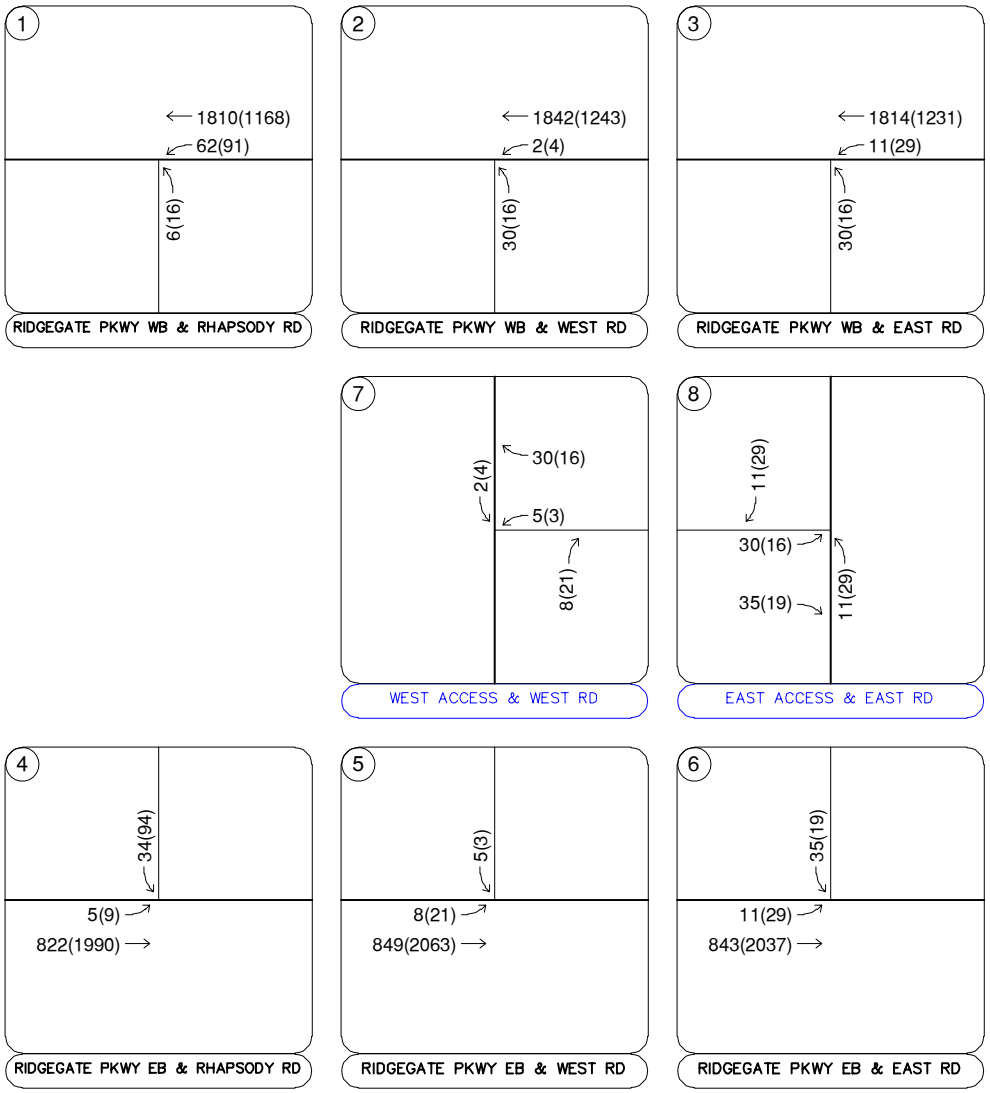


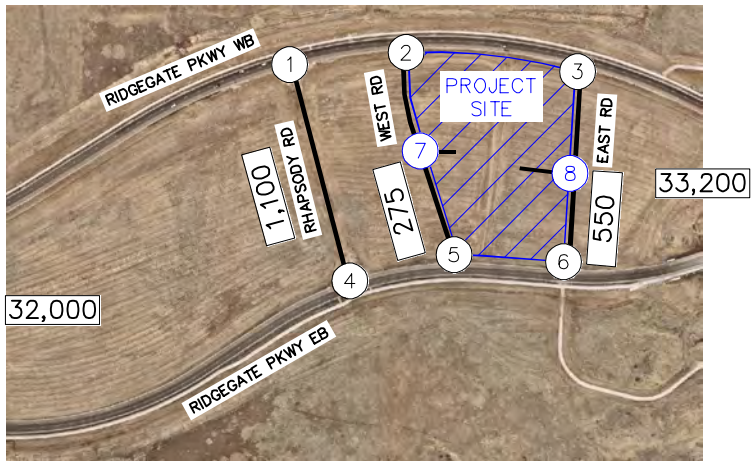


LEGEND

(X)	Study Area Key Intersection
(X)	Project Access Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

FIGURE 9
RIDGEGATE COUPLET APARTMENTS
LONE TREE, COLORADO
2045 PROJECT TRAFFIC ASSIGNMENT





LEGEND

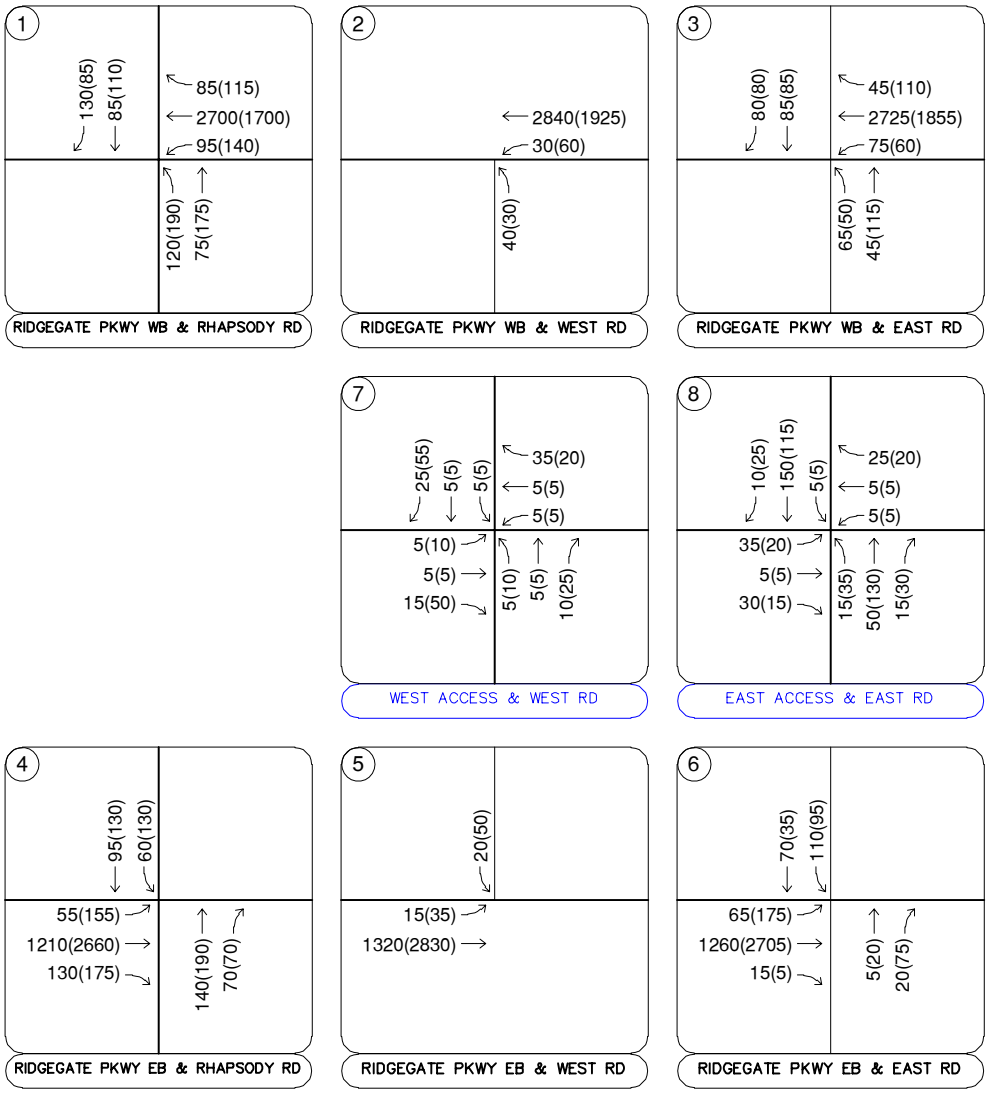
(X) Study Area Key Intersection

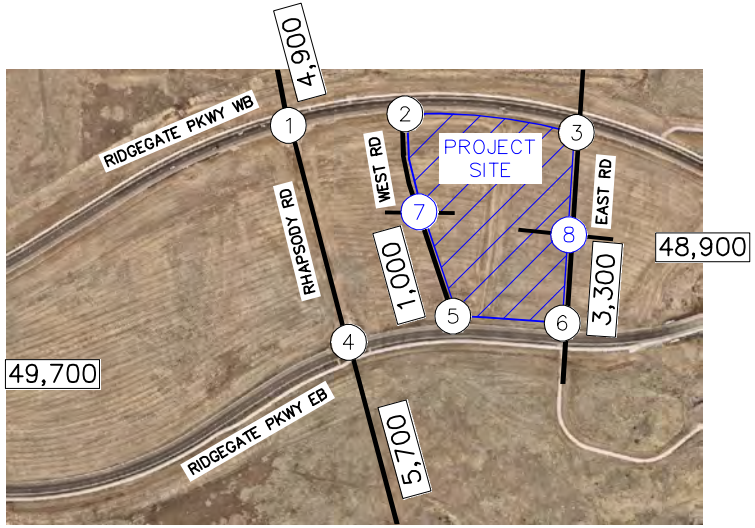
(X) Project Access Intersection

XXX(XXX) Weekday AM(PM) Peak Hour Traffic Volumes

XX,X00 Estimated Daily Traffic Volume

FIGURE 10
RIDGEGATE COUPLET APARTMENTS
LONE TREE, COLORADO
2025 TOTAL TRAFFIC VOLUMES





LEGEND

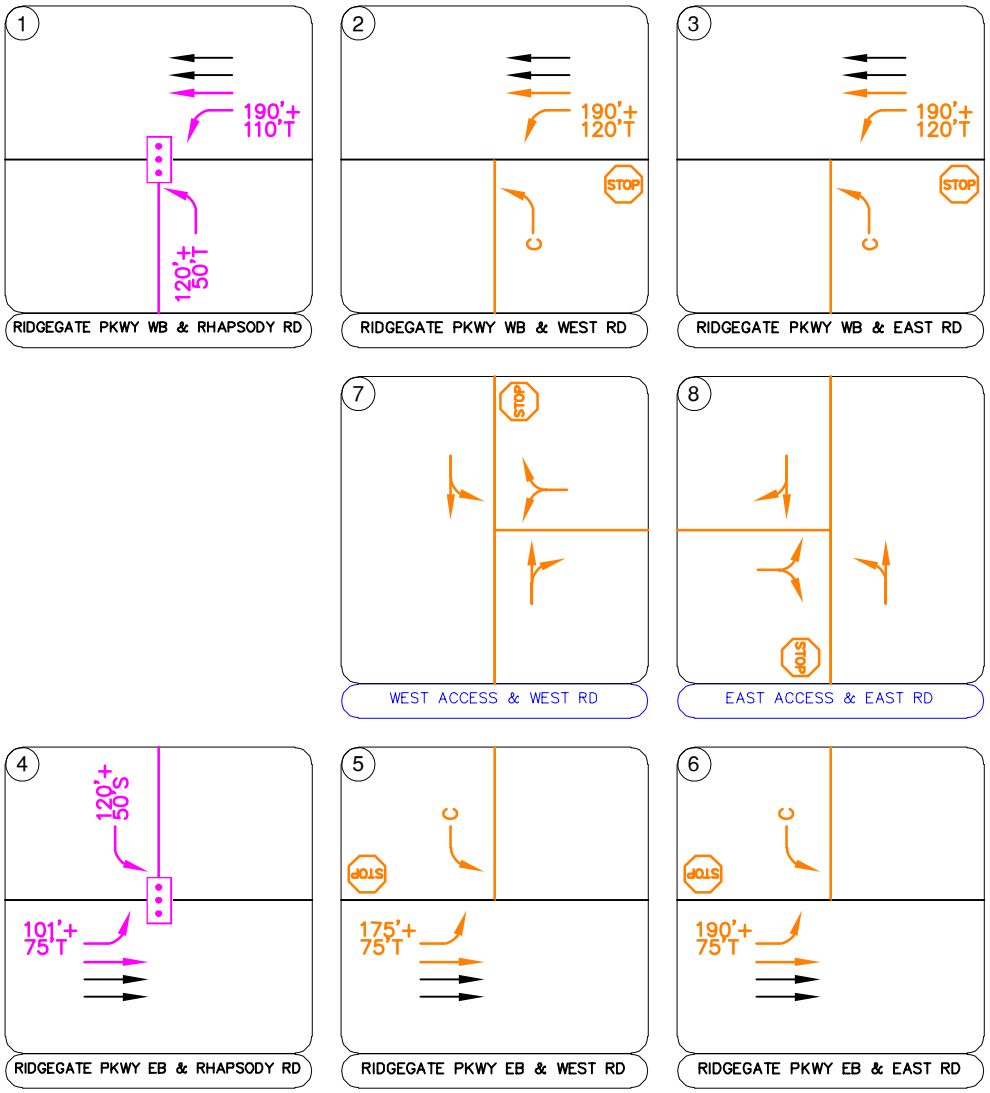
(X) Study Area Key Intersection

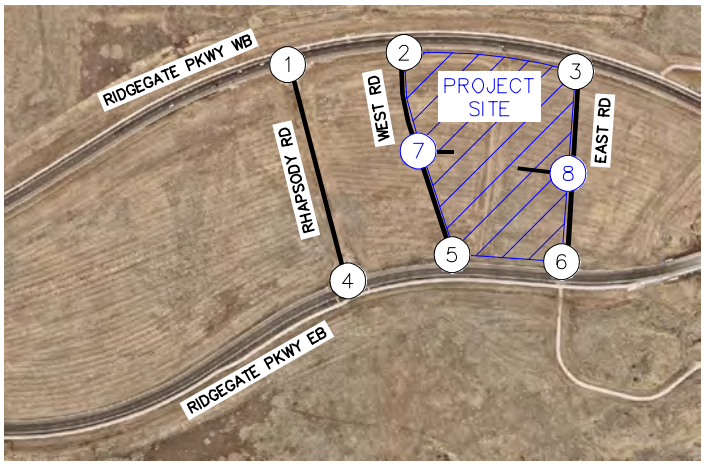
(X) Project Access Intersection

XXX(XXX) Weekday AM(PM) Peak Hour Traffic Volumes

XX,X00 Estimated Daily Traffic Volume

FIGURE 11
RIDGEGATE COUPLET APARTMENTS
LONE TREE, COLORADO
2045 TOTAL TRAFFIC VOLUMES

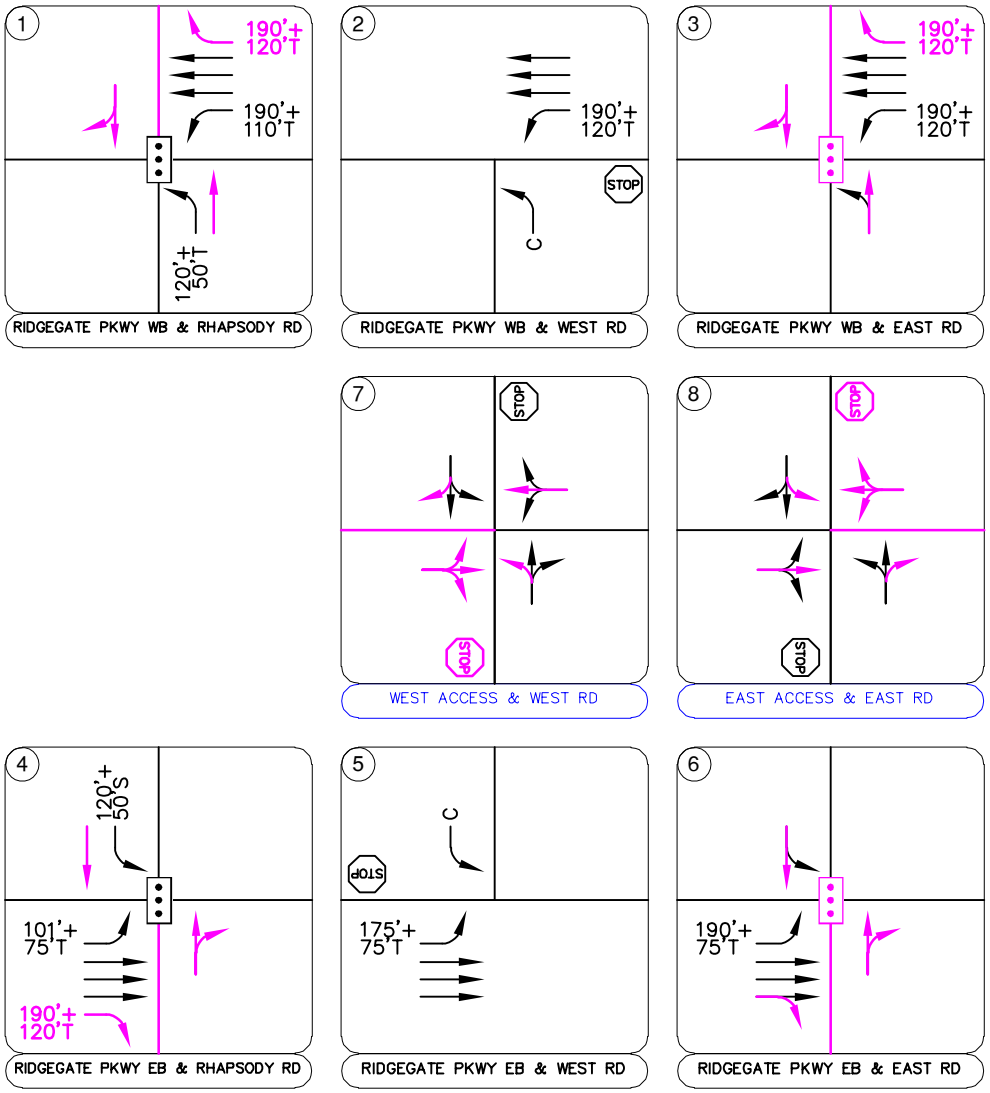


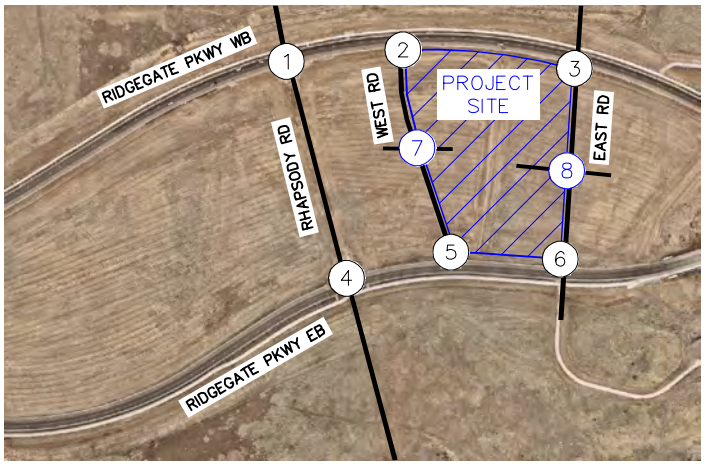


LEGEND

- (X) Study Area Key Intersection
- (X) Project Access Intersection
- Signalized Intersection
- STOP Stop Controlled Approach
- Improvement By Others
- Recommended Improvement
- 100'+ Turn Lane Length (feet)
  100'T Taper Length (feet)
  100'S Shared Taper Length (feet)

FIGURE 12
RIDGEGATE COUPLET APARTMENTS
LONE TREE, COLORADO
2025 RECOMMENDED GEOMETRY AND CONTROL

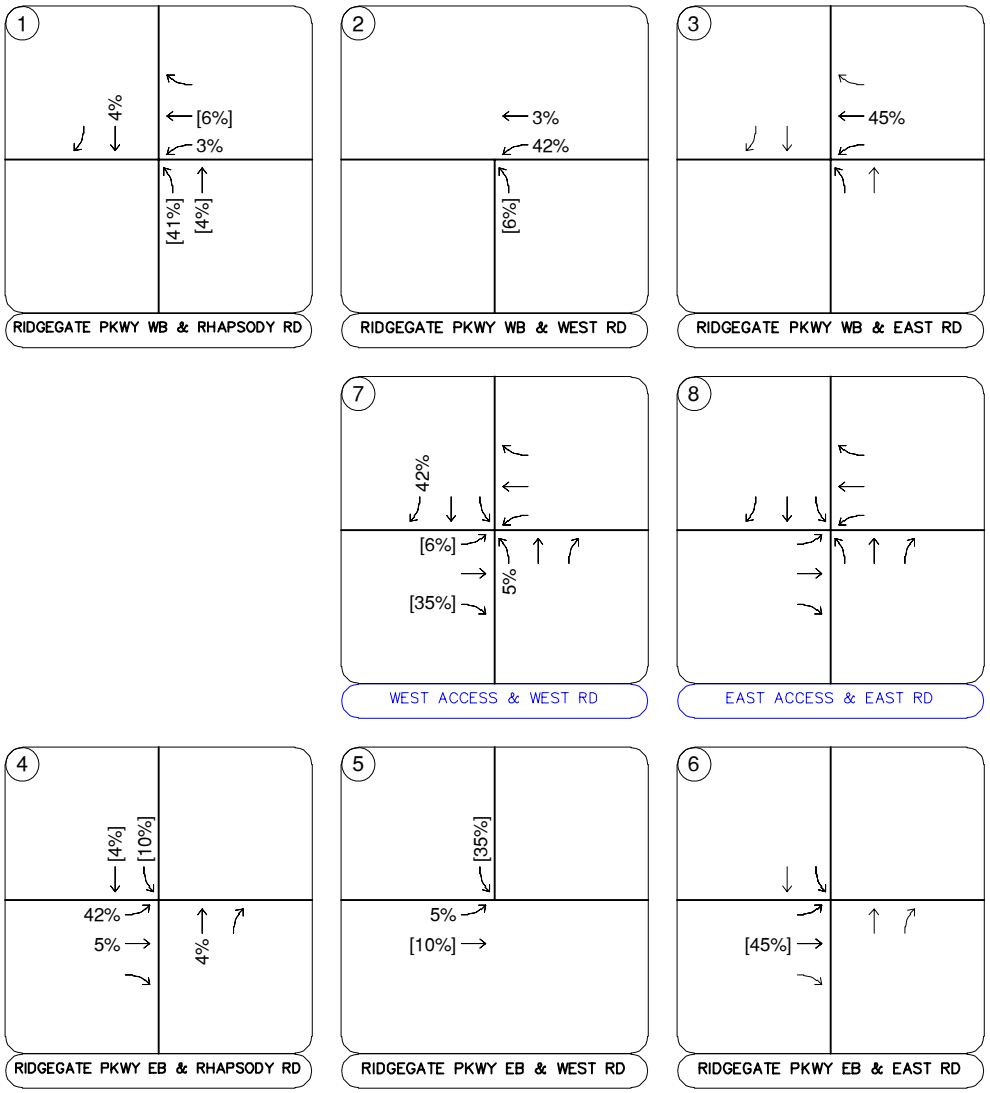


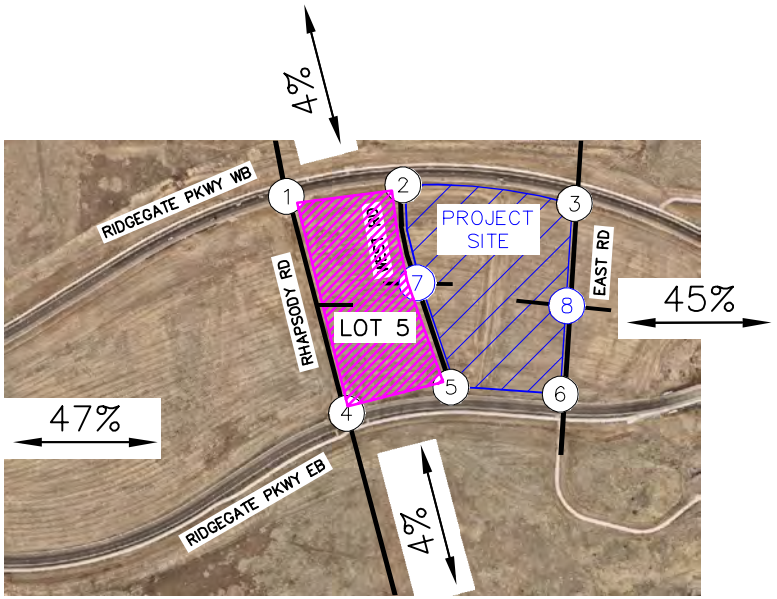


LEGEND

- Study Area Key Intersection
- Project Access Intersection
- Signalized Intersection
- Stop Controlled Approach
- Improvement By Others
- 100'+ Turn Lane Length (feet)
- 100'T Taper Length (feet)
- 100'S Shared Taper Length (feet)

FIGURE 13
RIDGEGATE COUPLET APARTMENTS
LONE TREE, COLORADO
2045 RECOMMENDED GEOMETRY AND CONTROL





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NTS 196382001

LEGEND

X — Study Area Key Intersection

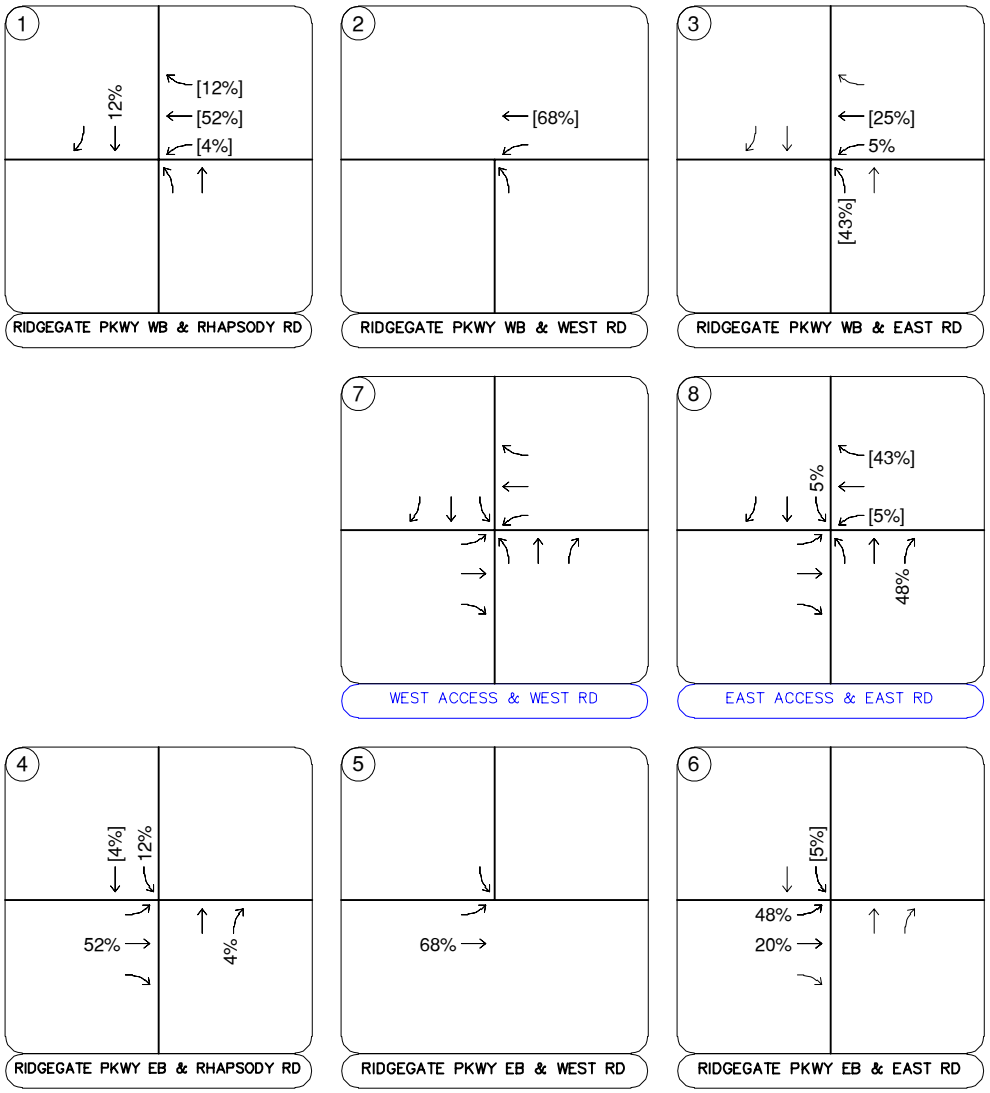
X — Project Access Intersection

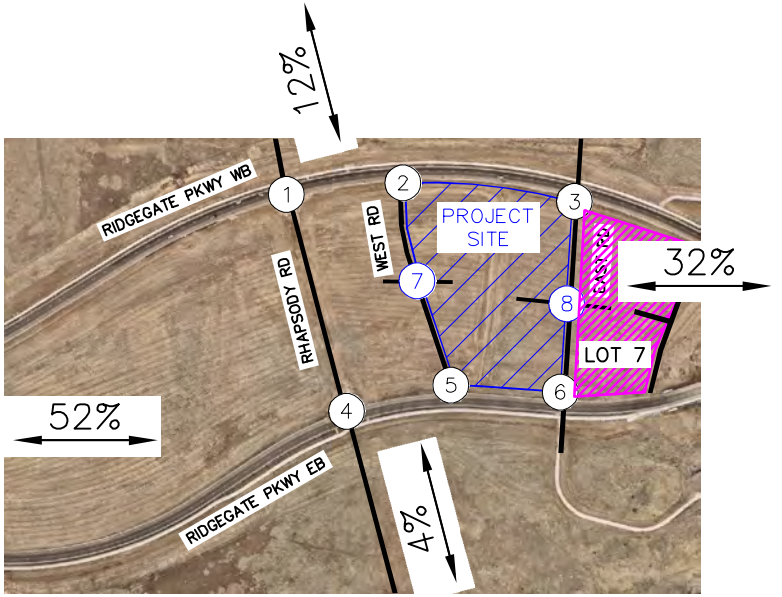
XX% — External Trip Distribution Percentage

XX%[XX%] — Entering[Exiting] Trip Distribution Percentage

FIGURE B1
RIDGEGATE COUPLET APARTMENTS
LONE TREE, COLORADO
2045 ADJACENT LOT 5 RETAIL TRIP DISTRIBUTION

Kimley»Horn

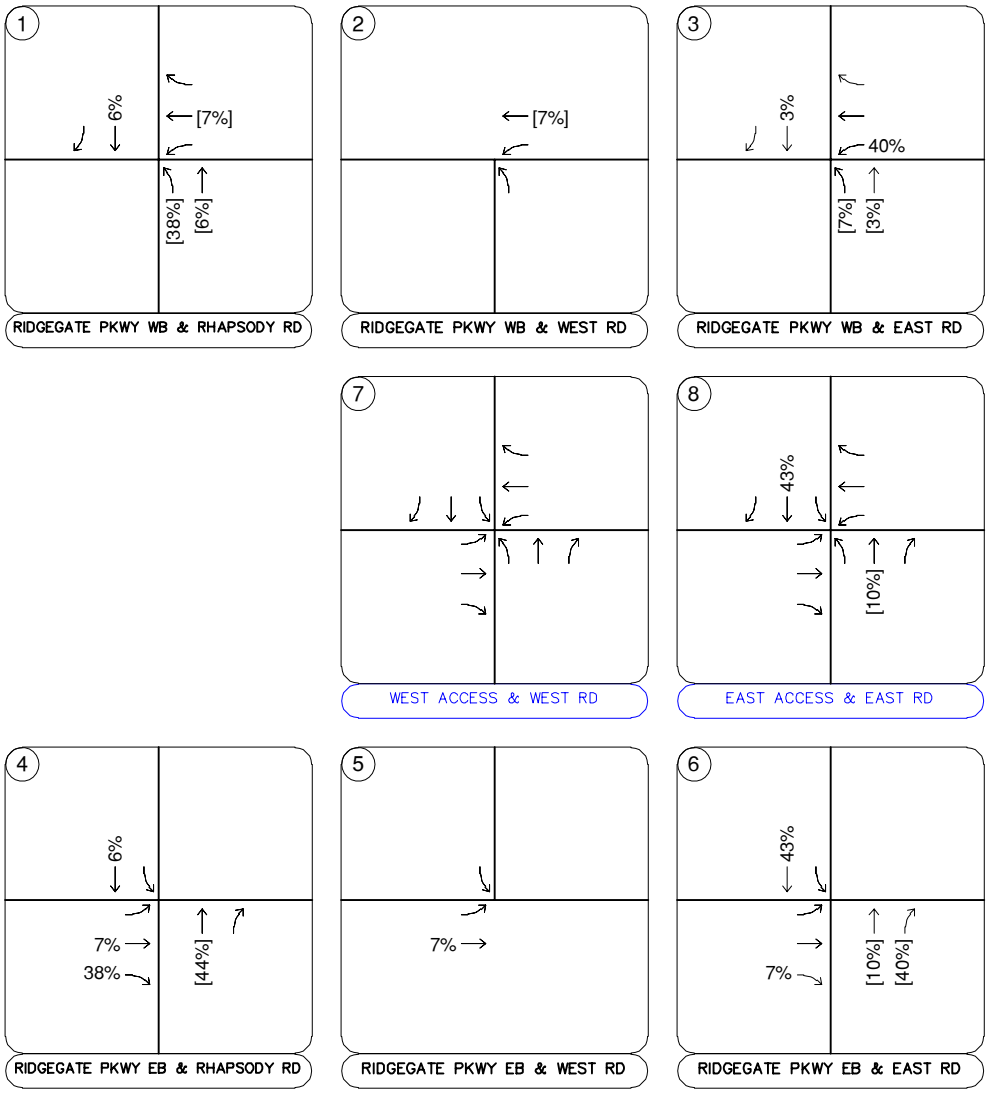


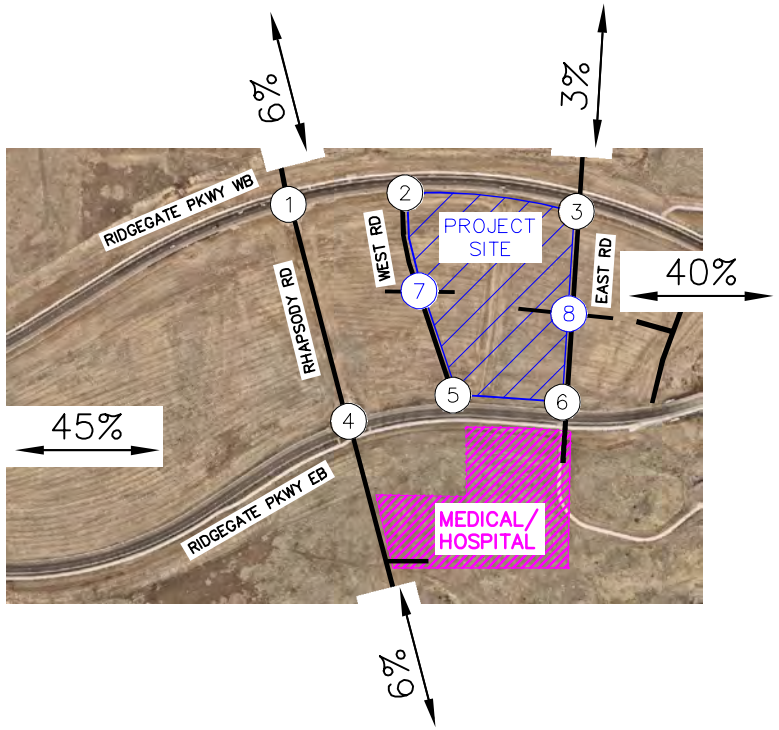


LEGEND

- (X) Study Area Key Intersection
- (X) Project Access Intersection
- XX% External Trip Distribution Percentage
- XX%[XX%] Entering[Exiting] Trip Distribution Percentage

FIGURE B2
RIDGEGATE COUPLET APARTMENTS
LONE TREE, COLORADO
2045 ADJACENT LOT 7 RESIDENTIAL TRIP DISTRIBUTION





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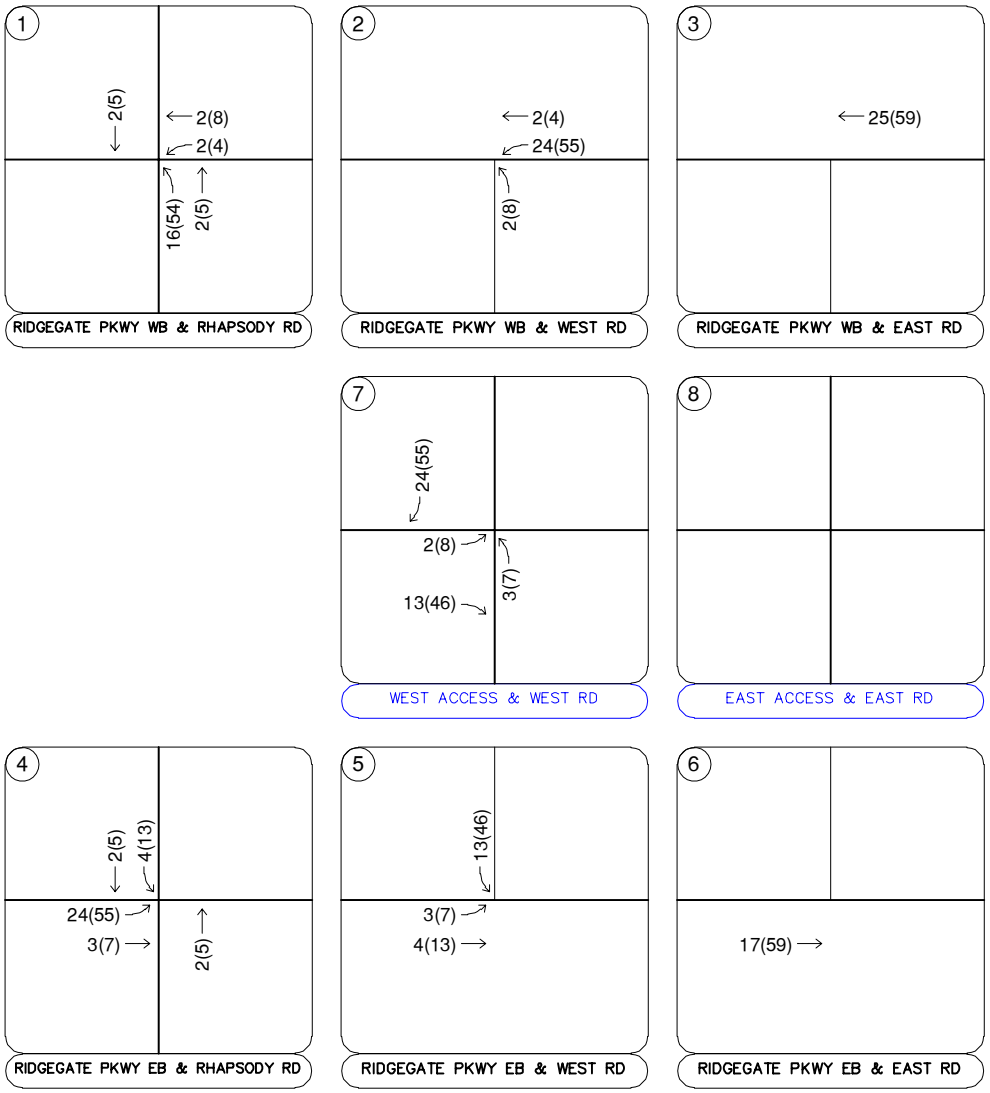
NTS 196382001

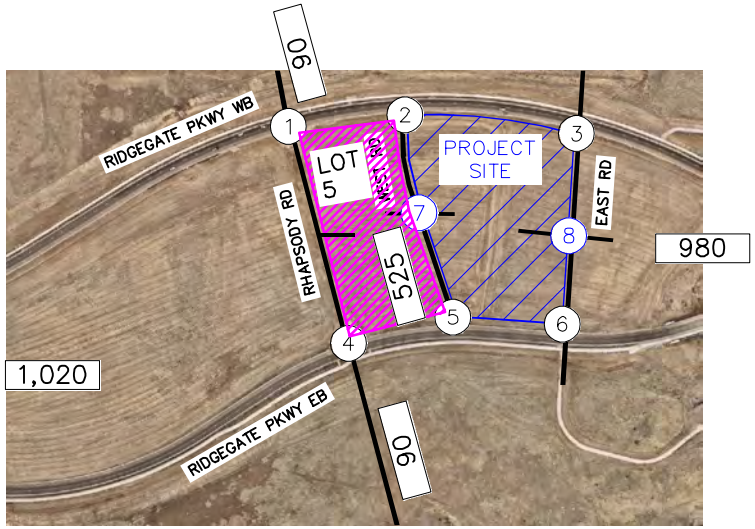
LEGEND

- (X) Study Area Key Intersection
- (X) Project Access Intersection
- XX% External Trip Distribution Percentage
- XX%[XX%] Entering[Exiting] Trip Distribution Percentage

FIGURE B3
RIDGEGATE COUPLET APARTMENTS
LONE TREE, COLORADO
2045 MEDICAL/HOSPITAL TRIP DISTRIBUTION

Kimley»Horn

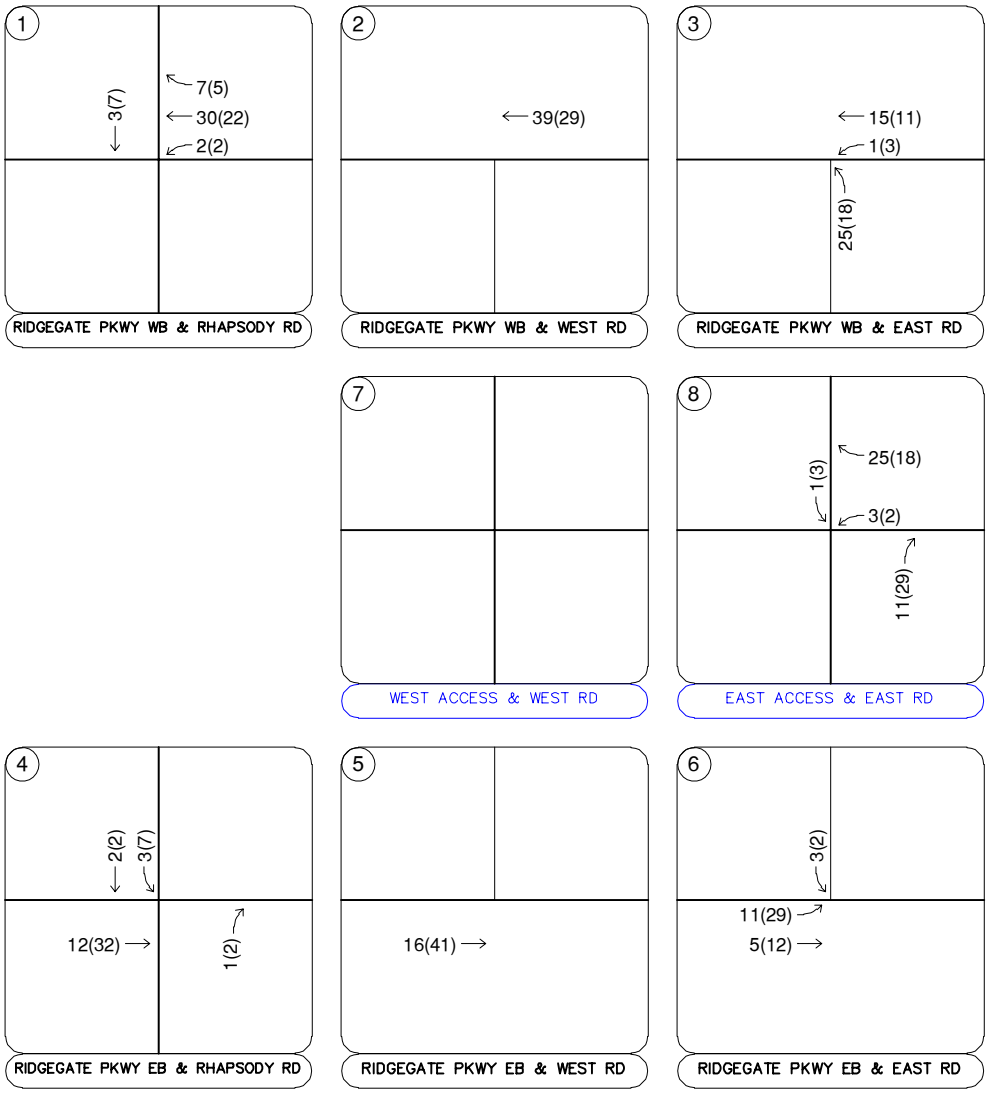


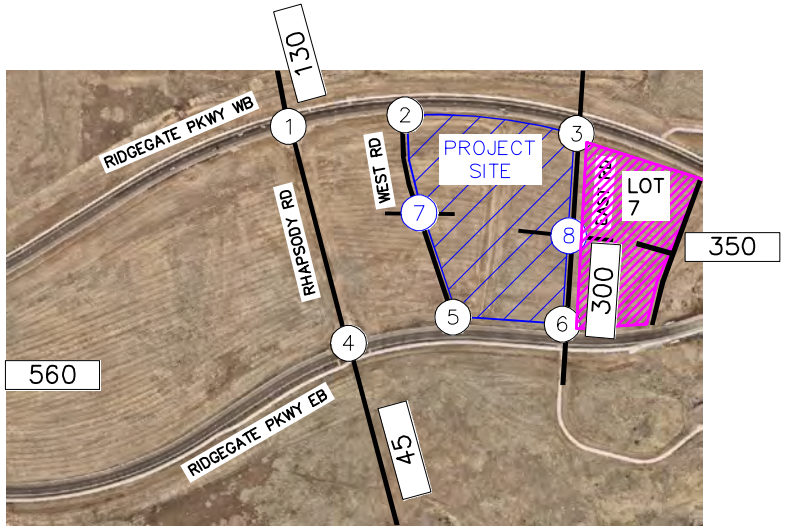


LEGEND

(X)	Study Area Key Intersection
(X)	Project Access Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

FIGURE B4
RIDGEGATE COUPLET APARTMENTS
LONE TREE, COLORADO
2045 ADJACENT LOT 5 RETAIL TRAFFIC ASSIGNMENT

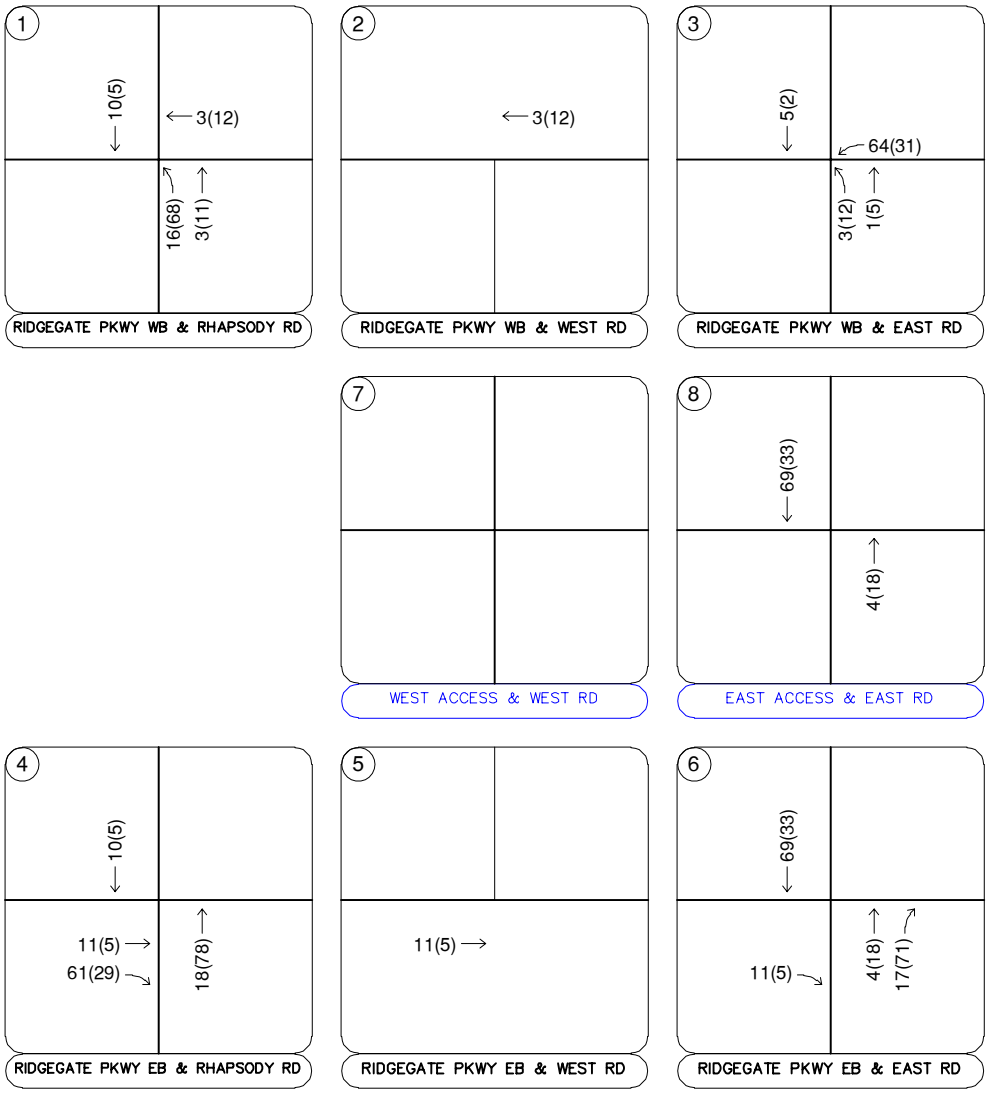


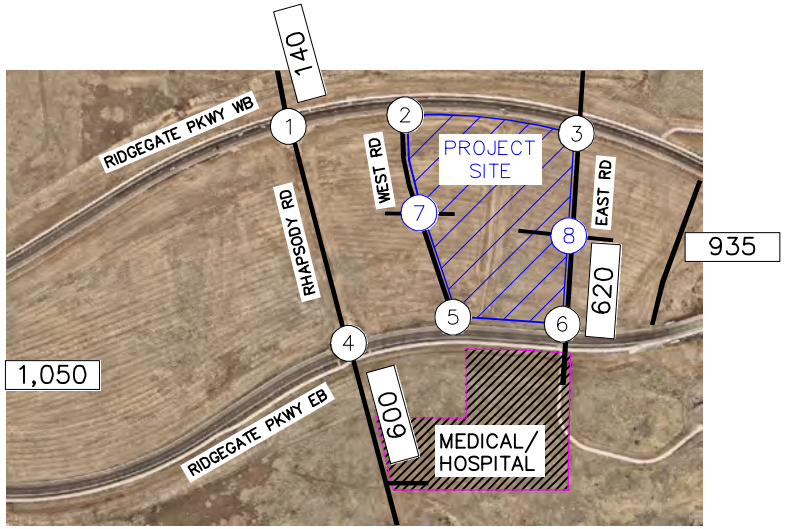


LEGEND

(X)	Study Area Key Intersection
(X)	Project Access Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

FIGURE B5
RIDGEGATE COUPLET APARTMENTS
LONE TREE, COLORADO
2045 ADJACENT LOT 7 RESIDENTIAL TRAFFIC ASSIGNMENT





LEGEND

(X) Study Area Key Intersection

(X) Project Access Intersection

XXX(XXX) Weekday AM(PM) Peak Hour Traffic Volumes

XX,X00 Estimated Daily Traffic Volume

FIGURE B6
RIDGEGATE COUPLET APARTMENTS
LONE TREE, COLORADO
2045 MEDICAL/HOSPITAL TRAFFIC ASSIGNMENT

RidgeGate Couplet

LONE TREE, CO

SITE PLAN NOTES

1. THE PROPERTY DESCRIBED HEREIN IS SUBJECT TO ALL APPLICABLE REQUIREMENTS OF THE LONE TREE ZONING CODE AND DESIGN STANDARDS, INCLUDING BUT NOT LIMITED TO, PROPERTY MAINTENANCE, LIGHTING, PARKING, SIGNAGE, LANDSCAPING AND OUTDOOR STORAGE, EXCEPT AS MAY OTHERWISE BE ADDRESSED IN AN APPROVED PLANNED DEVELOPMENT PLAN, SUB-AREA PLAN, OR OTHER APPLICABLE PLAN OR AGREEMENT APPROVED BY THE CITY.

2. THE APPLICANT ASSUMES RESPONSIBILITY TO ENSURE THE PROJECT IS COMPLETED IN ACCORDANCE WITH THE APPROVED SIP AND ANY ASSOCIATED MATERIALS SAMPLE BOARDS AND FURTHER ASSUMES THE RISK ASSOCIATED WITH ANY CHANGES OR OMISSIONS MADE WITHOUT PRIOR CITY APPROVAL. MODIFICATIONS TO STRUCTURES OR SITES MAY REQUIRE AN AMENDMENT TO THE SIP AS DETERMINED BY THE CITY'S COMMUNITY DEVELOPMENT DIRECTOR, PER SEC. 16-27-180. UNAUTHORIZED CHANGES OR OMISSIONS MADE WITHOUT PRIOR CITY APPROVAL CORRECTIVE ACTIONS, DELAY OF PERMITS OR CITATIONS FOR ZONING VIOLATIONS WITH ASSOCIATED FINES AND LEGAL MEASURES. BUILDING PLANS SHALL CONFORM TO THE APPROVED SIP.

3. WITHIN SITE TRIANGLES, AS SHOWN, LIMITED LANDSCAPING SHALL BE ALLOWED WITH NO SOLID STRUCTURES PERMITTED AS STATED IN THE CITY OF LONE TREE'S LANDSCAPE DESIGN GUIDELINES AND STANDARDS FOR LANDSCAPING. LANDSCAPING WITHIN THE SIGHT TRIANGLE SHALL BE MAINTAINED BY THE PROPERTY OWNER OR APPROPRIATE ASSOCIATION OR DISTRICT, AS MAY BE IDENTIFIED IN MAINTENANCE AGREEMENTS RECORDED WITH THE DOUGLAS COUNTY CLERK AND RECORDER'S OFFICE.

4. THE OWNER IS RESPONSIBLE FOR THE INSTALLATION OF ALL ROADWAY SIGNAGE, INCLUDING "NO PARKING/FIRE LANE" SIGNAGE, AS REQUIRED BY THE CITY PUBLIC WORKS DEPARTMENT AND/OR THE FIRE DISTRICT. SUCH SIGNAGE SHALL BE MAINTAINED BY THE PROPERTY OWNER OR APPROPRIATE ASSOCIATION OR DISTRICT, AS MAY BE IDENTIFIED IN MAINTENANCE AGREEMENTS RECORDED WITH THE DOUGLAS COUNTY CLERK AND RECORDER'S OFFICE.

5. SITE LANDSCAPING, SITE AMENITIES AND FURNISHINGS, AND ALL SITE IMPROVEMENTS INCLUDING, BUT NOT LIMITED TO, SIDEWALKS AND PARKING AREAS SHALL BE MAINTAINED IN A STATE OF GOOD REPAIR CONSISTENT WITH THE APPROVED SIP AND THE LONE TREE MUNICIPAL CODE AND DESIGN GUIDELINES AND STANDARDS. SUCH MAINTENANCE SHALL INCLUDE THE REGULAR MAINTENANCE OF PET WASTE STATIONS (WHEN PRESENT), TO INCLUDE WASTE COLLECTION AND WASTE BAG REPLACEMENT. LANDSCAPE PLANTINGS MUST BE ALIVE AND ALL IRRIGATION MUST BE FUNCTIONAL. ALL MAINTENANCE OBLIGATIONS SHALL BE COMPLETED BY THE PROPERTY OWNER OR APPROPRIATE ASSOCIATION OR DISTRICT, AS MAY BE IDENTIFIED IN MAINTENANCE AGREEMENTS RECORDED WITH THE DOUGLAS COUNTY CLERK AND RECORDER'S OFFICE.

6. THE CITY OF LONE TREE REQUIRES THAT MAINTENANCE ACCESS BE PROVIDED TO ALL STORM DRAINAGE FACILITIES TO ASSURE CONTINUOUS OPERATIONAL CAPABILITY OF THE SYSTEM. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL DRAINAGE FACILITIES,INCLUDING INLETS, PIPES, CULVERTS, CHANNELS, DITCHES, HYDRAULIC STRUCTURES AND DETENTION BASINS LOCATED ON THEIR LAND UNLESS MODIFIED BY THE SITE IMPROVEMENT PLAN IMPROVEMENTS AGREEMENT. SHOULD THE OWNER FAIL TO ADEQUATELY MAINTAIN SAID FACILITIES, THE CITY OF LONE TREE SHALL HAVE THE RIGHT TO ENTER SAID LAND FOR THE PURPOSES OF OPERATIONS AND MAINTENANCE. ALL SUCH MAINTENANCE COSTS WILL BE ASSESSED TO THE PROPERTY OWNER OR THE RESPONSIBLE MAINTENANCE AUTHORITY.

LAND USE CHART

GROSS DENSITY	
GROSS AREA	280,927 SF (6.449 AC)
TOTAL DWELLING UNITS	349
GROSS DENSITY	54.12 DU/AC

DWELLING UNIT BREAKDOWN			
UNIT TYPE:	DWELLING UNITS	TOTAL BEDROOMS	% (DU)
ONE BEDROOM	223	223	63.90
TWO BEDROOM	103	206	29.51
THREE BEDROOM	23	69	6.59
TOTAL	**349**	**498**	**100.00**

PROJECT PARKING		
	PROVIDED	*REQUIRED
OFF-STREET PARKING GARAGE	569	611
OFF-STREET STANDARD	4	
ON-STREET DIAGONAL	14	
ON-STREET PARALLEL	23	
STANDARD DELIVERY AND LOADING	3	
RESIDENTIAL LOADING	2	
TOTAL	**615**	**611**

* REQUIRED SPACES ARE CALCULATED AS FOLLOWED:
1.5 SPACES PER DWELLING = 524 SPACES
.25 SPACE PER DWELLING FOR GUESTS = 87 SPACES

PROJECT BIKE PARKING		
	PROVIDED	*REQUIRED
SURFACE MOUNTED BIKE PARKING	18	12
TOTAL	**18**	**12**

* REQUIRED SPACES ARE CALCULATED AS FOLLOWED:
- "MINIMUM NUMBER OF BICYCLE PARKING SPACES SHALL BE PROVIDED EQUAL IN NUMBER TO PERCENT (2%) OF THE TOTAL NUMBER OF AUTOMOBILE PARKING SPACES PROVIDED"
-AUTOMOBILE PARKING SPACES PROVIDED = 615
- .02 X 615 = 12 REQUIRED BIKE PARKING SPACES

SHEET INDEX

RIDGEGATE COUPLET

DESIGN DEVELOPMENT

LONE TREE, CO

PREPARED BY:

ripley design
LANDSCAPE ARCHITECTURE, LAND PLANNING
419 Canyon Ave. Suite 200 Fort Collins, CO 80521
phone 970.224.5828 | fax 970.225.6657 | www.ripleydesigninc.com

LANDSCAPE ARCHITECT
RIPLEY DESIGN INC.
Sam Coutts
419 Canyon Ave. Suite 200
Fort Collins, CO 80521
p. 970.224.5828
f. 970.225.6657

DEVELOPER
CENTURY LIVING, LLC
8390 E Crescent Pkwy #650
Greenwood Village, CO 80111
p. 303.770.8300

ARCHITECT
ktgy
Sarah Hunter
3660 Blake St. Suite 500
Denver, CO 80205
p. 303-389-6004

ENGINEER
MERRICK & COMPANY
Kristofer Wiest
5970 Greenwood Plaza Blvd
Greenwood Village, CO 80111
p. 303.353.3695

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
01	DRC SD SUBMITTAL	10/20/2022
02	DRC DD SUBMITTAL	12/12/2022
03	DRC DD 2 SUBMITTAL	02/22/2023

REVISIONS

No.	DESCRIPTION	DATE

COVER

SEAL:

ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R22-035
DRAWN BY:	EC/AG
REVIEWED BY:	SC

DRAWING NUMBER:

1 OF 46

Plotted By: Sam Coutts **Layout:** 1 Cover **Printed On:** 2/23/2023 10:01 AM **File Name:** 1 Cover.dwg

RIDGEGATE COUPLET

DESIGN DEVELOPMENT

LONE TREE, CO

PREPARED BY:

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p. 303-389-6004

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Kristofer Wiest
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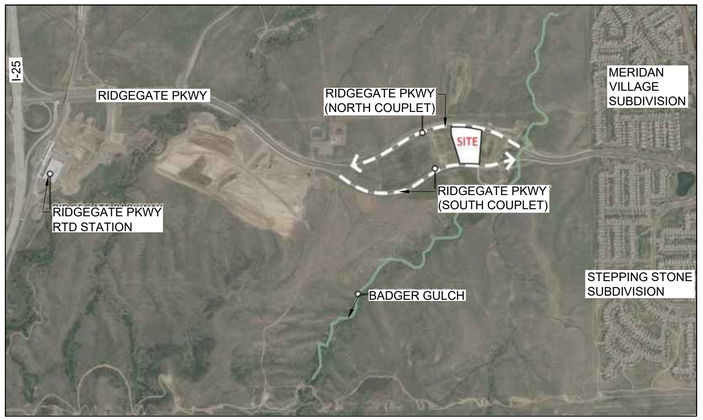
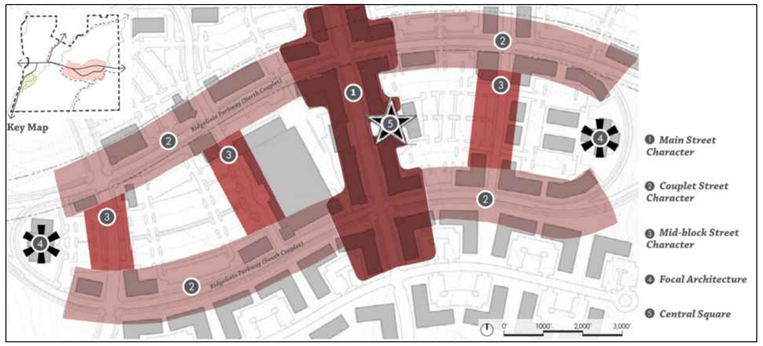
Greenwood Village, CO 80111
p. 303.353.3695

PROJECT CONTEXT



FRAMEWORK PLAN

BLOCKFACE DIAGRAM



NORTH
0 75 150 300
SCALE: 1"=150'-0"
ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
01	DRC SD SUBMITTAL	10/20/2022
02	DRC DD SUBMITTAL	12/12/2022
03	DRC DD 2 SUBMITTAL	02/22/2023

REVISIONS

No.	DESCRIPTION	DATE

URBAN CONTEXT PLAN

SEAL:

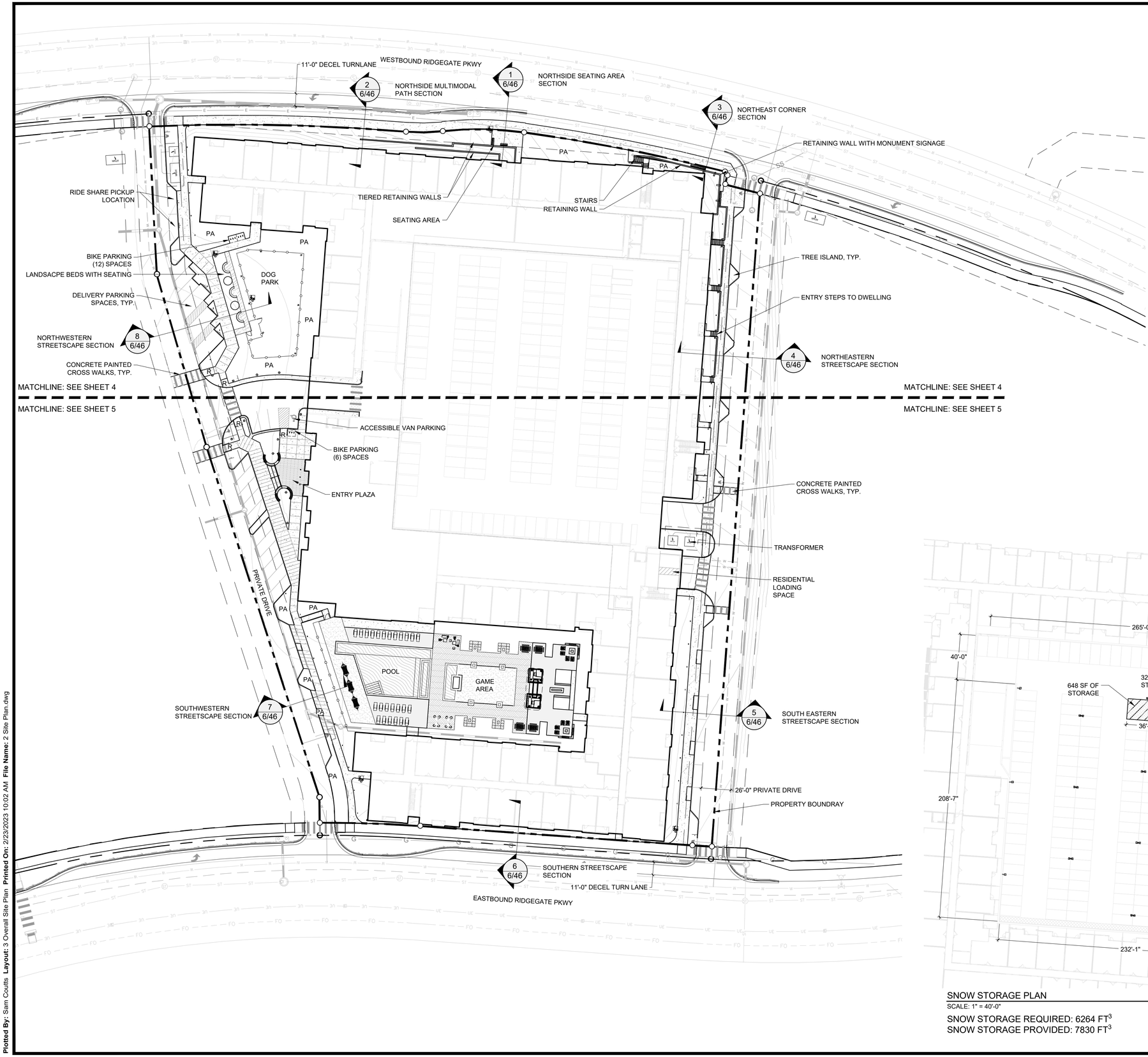
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R22-035
DRAWN BY:	EC/AG
REVIEWED BY:	SC

DRAWING NUMBER:

2 OF 46

Plotted By: Sam Coutts **Layout:** Urban Context Plan **Printed On:** 2/23/2023 10:01 AM **File Name:** Urban Context Plan.dwg



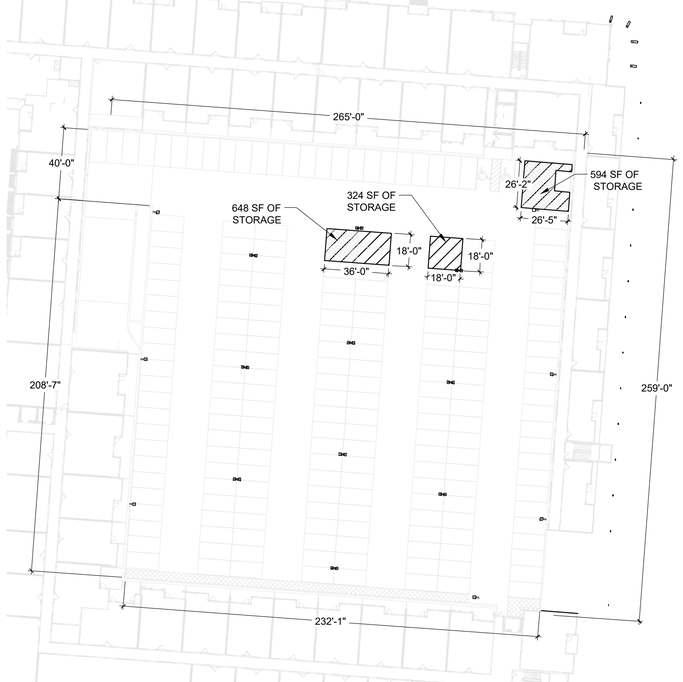
LEGEND

	CONCRETE
	ACKERSTONE 3X24 RB RUNNING BOND PATTERN.
	COLORED CONCRETE
	ACKERSTONE 3X18 HB HERRINGBONE PATTERN.

SYMBOL	02 LANDSCAPE MATERIAL DESCRIPTION
	ARTIFICAL TURF
	POOL
	CRUSHED FINES

FURNISHINGS LEGEND

	CHAISE LOUNGE CHAIR
	HAMMOCK
	SEATING WITH COFFEE TABLE
	CAFE STYLE SEATING
	BAR SEATING
	PICNIC TABLE
	MOVABLE SEATING
	FIRE PIT
PA	PLANTING AREA
R	CURB RAMP
	PEDESTRIAN POLE LIGHTS
	LIT BOLLARDS



SNOW STORAGE PLAN

SCALE: 1" = 40'-0"

SNOW STORAGE REQUIRED: 6264 FT^3

SNOW STORAGE PROVIDED: 7830 FT^3

RIDGEGATE COUPLET

DESIGN DEVELOPMENT

LONE TREE, CO

PREPARED BY:

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MERRICK & COMPANY
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5970 Greenwood Plaza Blvd
Greenwood Village, CO 80111
p. 303.353.3695

NORTH SCALE: 1"=40'-0" (0 20 40 80)

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
01	DRC SD SUBMITTAL	10/20/2022
02	DRC DD SUBMITTAL	12/12/2022
03	DRC DD 2 SUBMITTAL	02/22/2023

REVISIONS

No.	DESCRIPTION	DATE

OVERALL SITE PLAN

SEAL:

ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

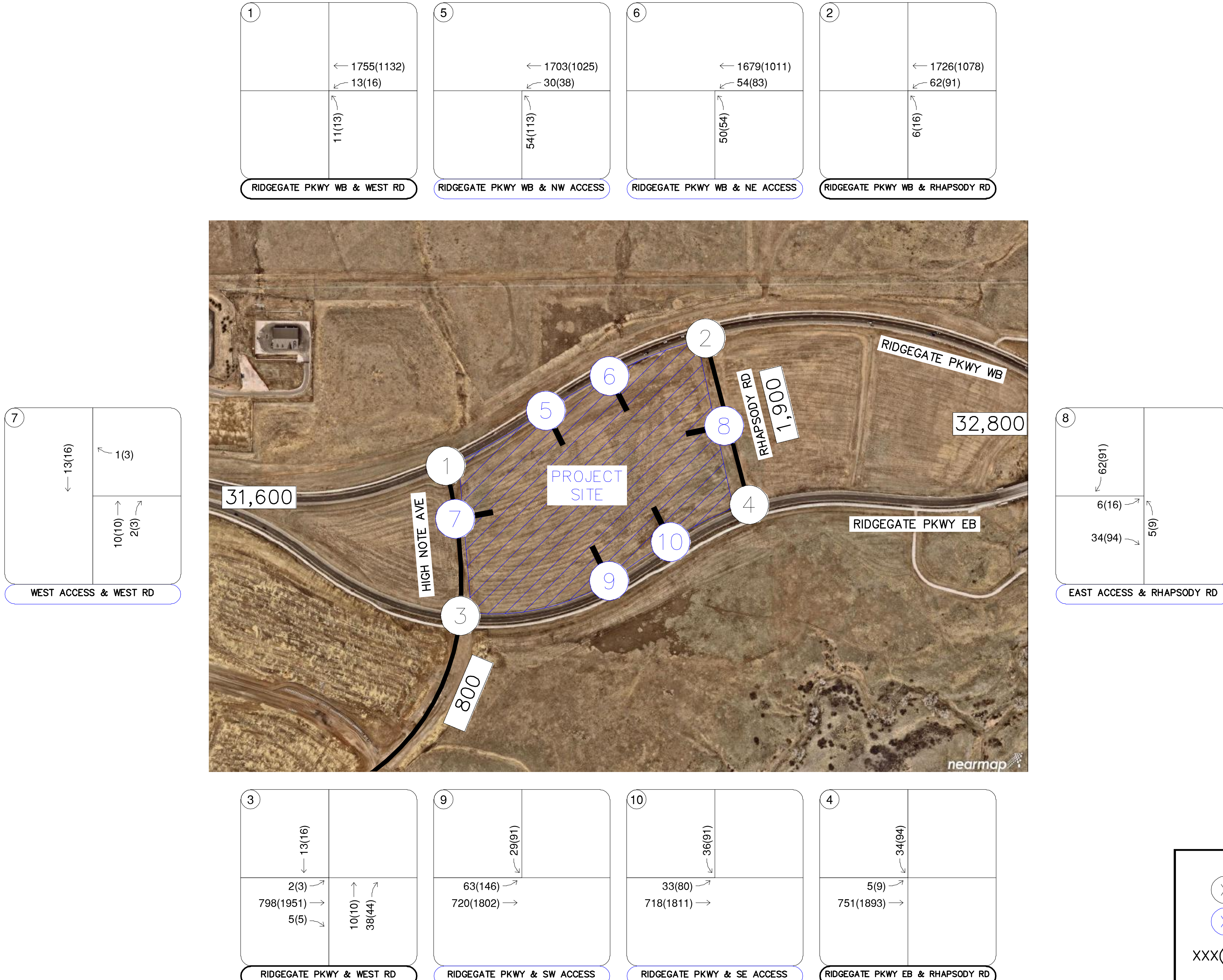
PROJECT No.:	R22-035
DRAWN BY:	EC/AG
REVIEWED BY:	SC

DRAWING NUMBER:

3 OF 46

Plotted By: Sam Coutts **Layout:** 3 Overall Site Plan **Printed On:** 2/23/2023 10:02 AM **File Name:** 2 Site Plan.dwg

NORTH
NTS 096083130



1
1755(1132)
13(16)
11(13)
RIDGEGATE PKWY WB & WEST RD
5
1703(1025)
30(38)
54(113)
RIDGEGATE PKWY WB & NW ACCESS
6
1679(1011)
54(83)
50(54)
RIDGEGATE PKWY WB & NE ACCESS
2
1726(1078)
62(91)
6(16)
RIDGEGATE PKWY WB & RHAPSODY RD
7
13(16)
1(3)
10(10)
2(3)
WEST ACCESS & WEST RD
RIDGEGATE PKWY WB
32,800
RHAPSODY RD
1,900
PROJECT SITE
31,600
HIGH NOTE AVE
RIDGEGATE PKWY EB
800
nearmap
8
62(91)
6(16)
34(94)
5(9)
EAST ACCESS & RHAPSODY RD
3
13(16)
2(3)
798(1951)
5(5)
10(10)
38(44)
RIDGEGATE PKWY & WEST RD
9
29(91)
63(146)
720(1802)
RIDGEGATE PKWY & SW ACCESS
10
36(91)
33(80)
718(1811)
RIDGEGATE PKWY & SE ACCESS
4
34(94)
5(9)
751(1893)
RIDGEGATE PKWY EB & RHAPSODY RD

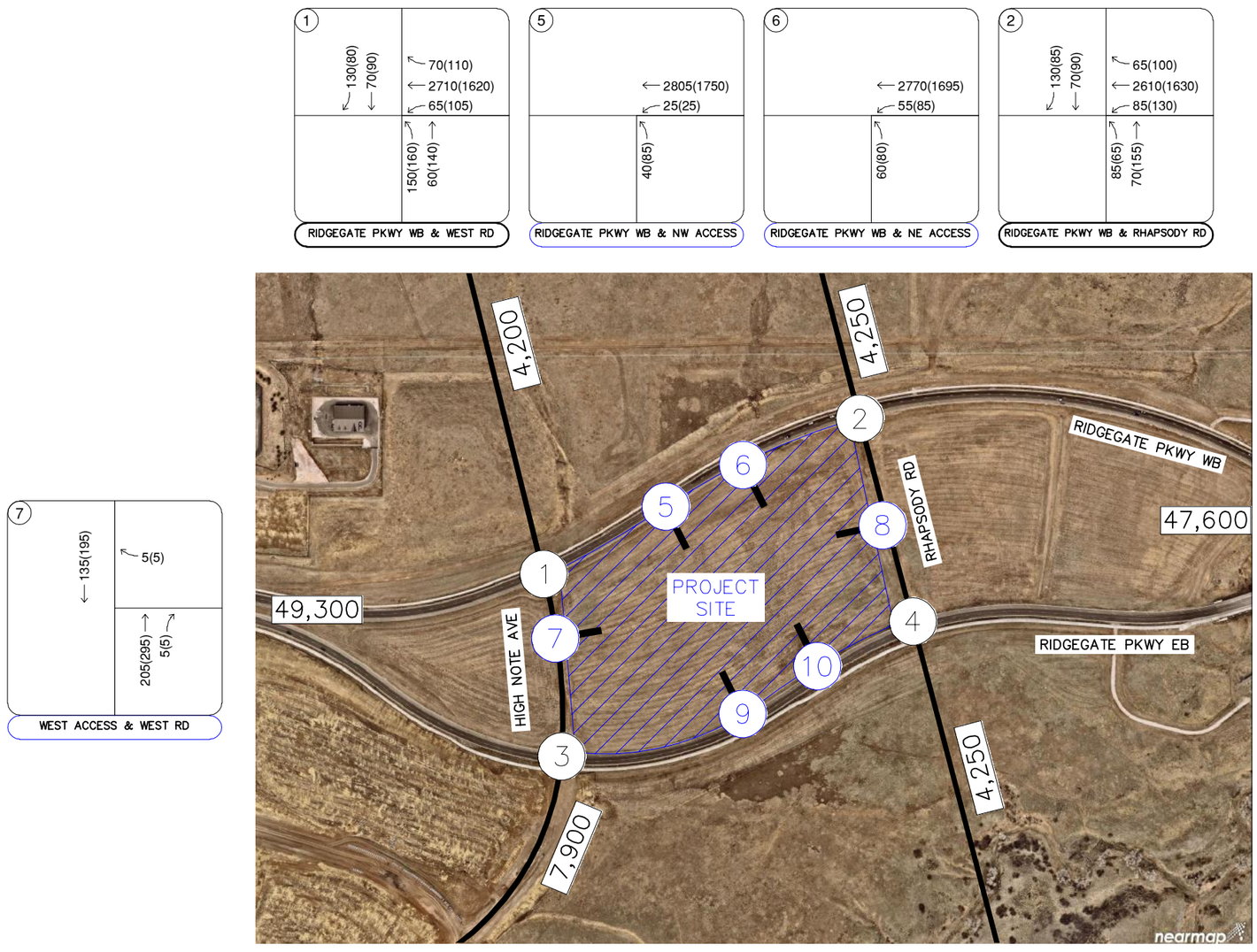
LEGEND

- X — Study Area Key Intersection
- X — Project Access Intersection
- XXX(XXX) — Weekday AM(PM) Peak Hour Traffic Volumes
- XX,X00 — Estimated Daily Traffic Volume

RIDGEGATE KING SOOPERS
LONE TREE, COLORADO
2025 TOTAL TRAFFIC VOLUMES

FIGURE 13

Kimley»Horn
NORTH
NTS 096083130



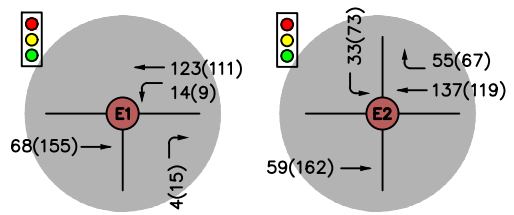
LEGEND

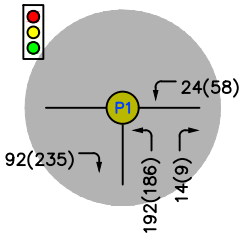
- (X) Study Area Key Intersection
- (X) Project Access Intersection
- XXX(XXX) Weekday AM(PM) Peak Hour Traffic Volumes
- XX,X00 Estimated Daily Traffic Volume

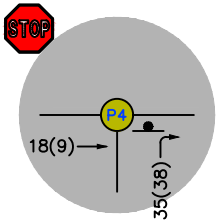
RIDGEGATE KING SOOPERS
LONE TREE, COLORADO
2045 TOTAL TRAFFIC VOLUMES

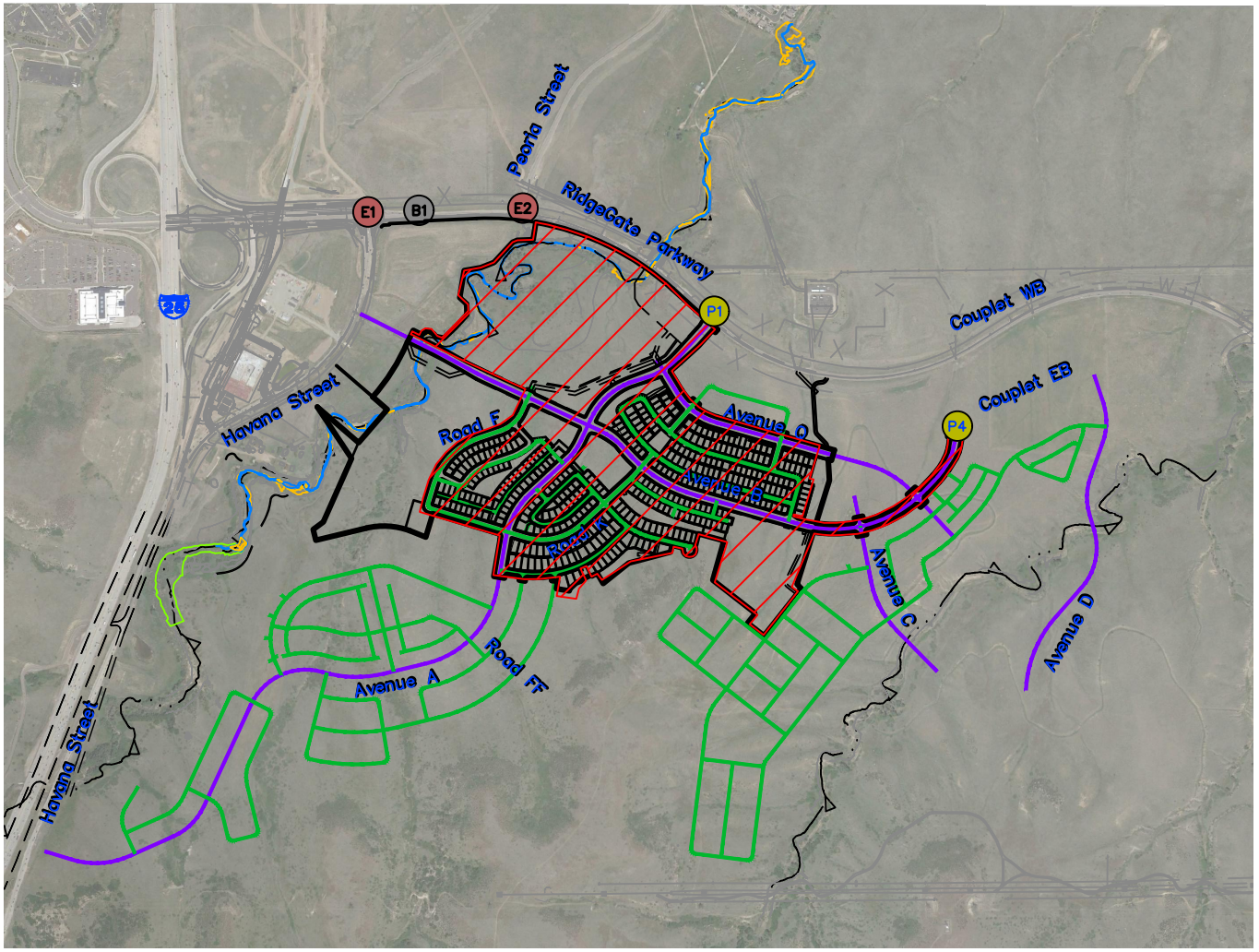
FIGURE 14

Kimley»Horn









LEGEND

- EXISTING INTERSECTION
- PROPOSED INTERSECTION – EXTERNAL
- PROPOSED INTERSECTION – INTERNAL
- AVERAGE DAILY TRAFFIC (ADT)
- XX (XX) AM (PM) PEAK HOUR TRIP DISTRIBUTION
- COLLECTOR ROAD
- LOCAL ROAD
- PROJECT SITE
- STOP SIGN CONTROL
- SIGNAL CONTROL

SITE GENERATED ADT

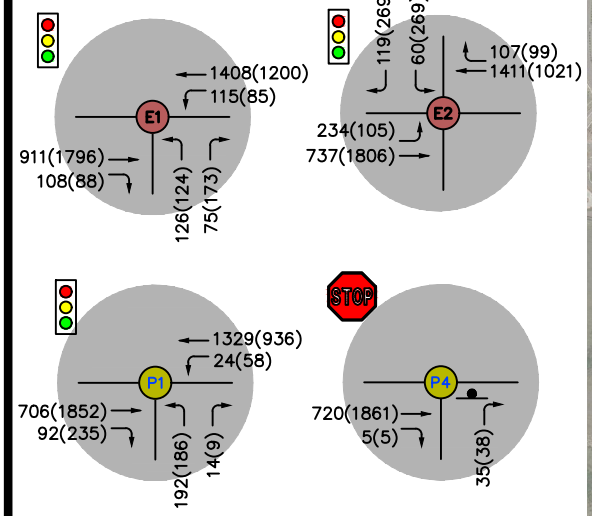
B1 3,100

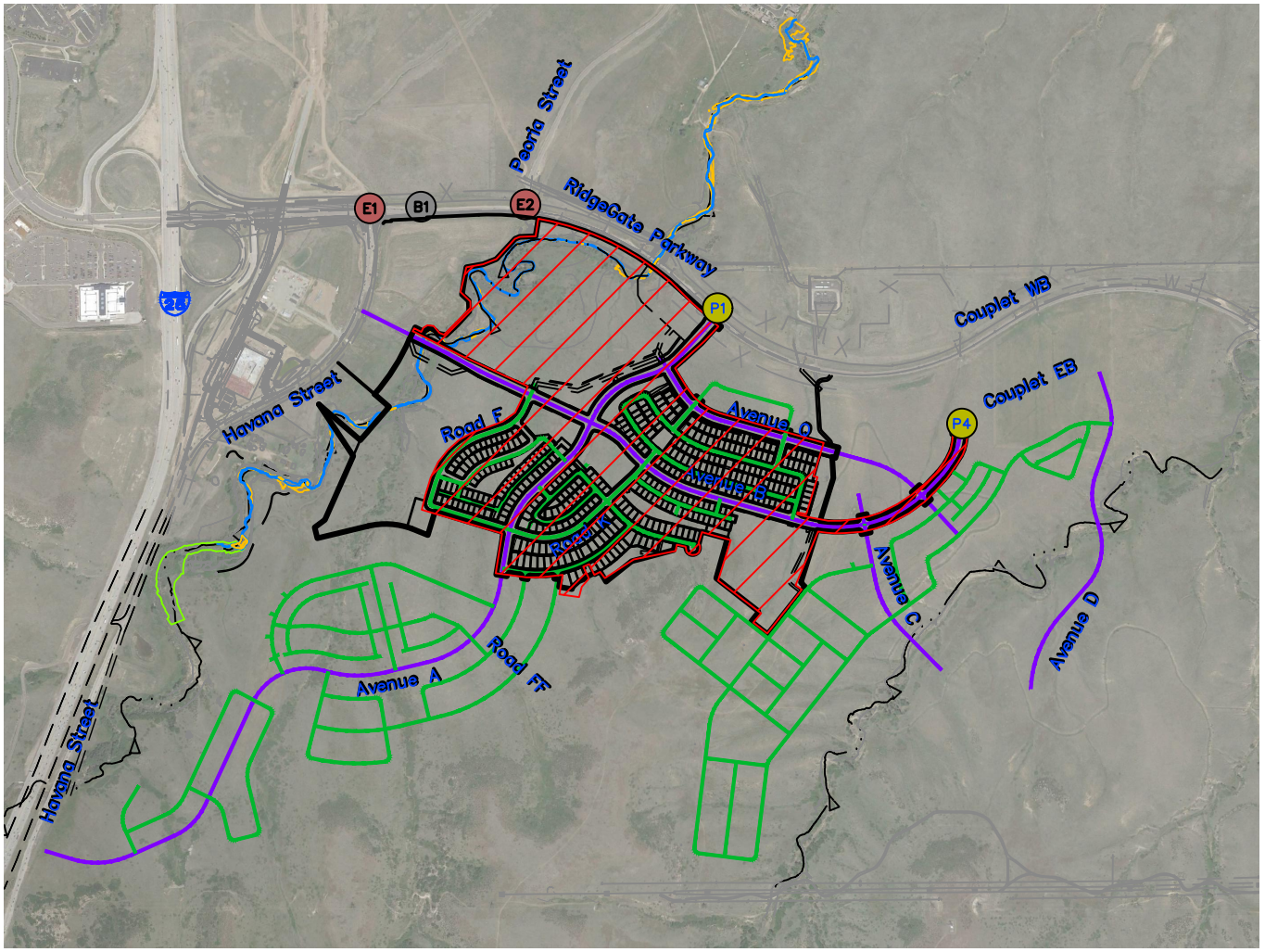
1500 750 0 1500

ORIGINAL SCALE: 1" = 1500'

FIGURE 7 – YEAR 2022 SITE GENERATED TRAFFIC – EXTERNAL
RIDGEGATE SOUTHWEST VILLAGE FILING 1
PROJ. NO. 15950.01

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com





LEGEND

- EXISTING INTERSECTION
- PROPOSED INTERSECTION – EXTERNAL
- PROPOSED INTERSECTION – INTERNAL
- AVERAGE DAILY TRAFFIC (ADT)
- XX (XX) AM (PM) PEAK HOUR TRIP DISTRIBUTION
- COLLECTOR ROAD
- LOCAL ROAD
- PROJECT SITE
- STOP SIGN CONTROL
- SIGNAL CONTROL

2022 TOTAL ADT

- B1 34,350

1500 750 0 1500

ORIGINAL SCALE: 1" = 1500'

FIGURE 8 – YEAR 2022
TOTAL TRAFFIC – EXTERNAL
RIDGEGATE SOUTHWEST VILLAGE
FILING 1
PROJ. NO. 15950.01

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

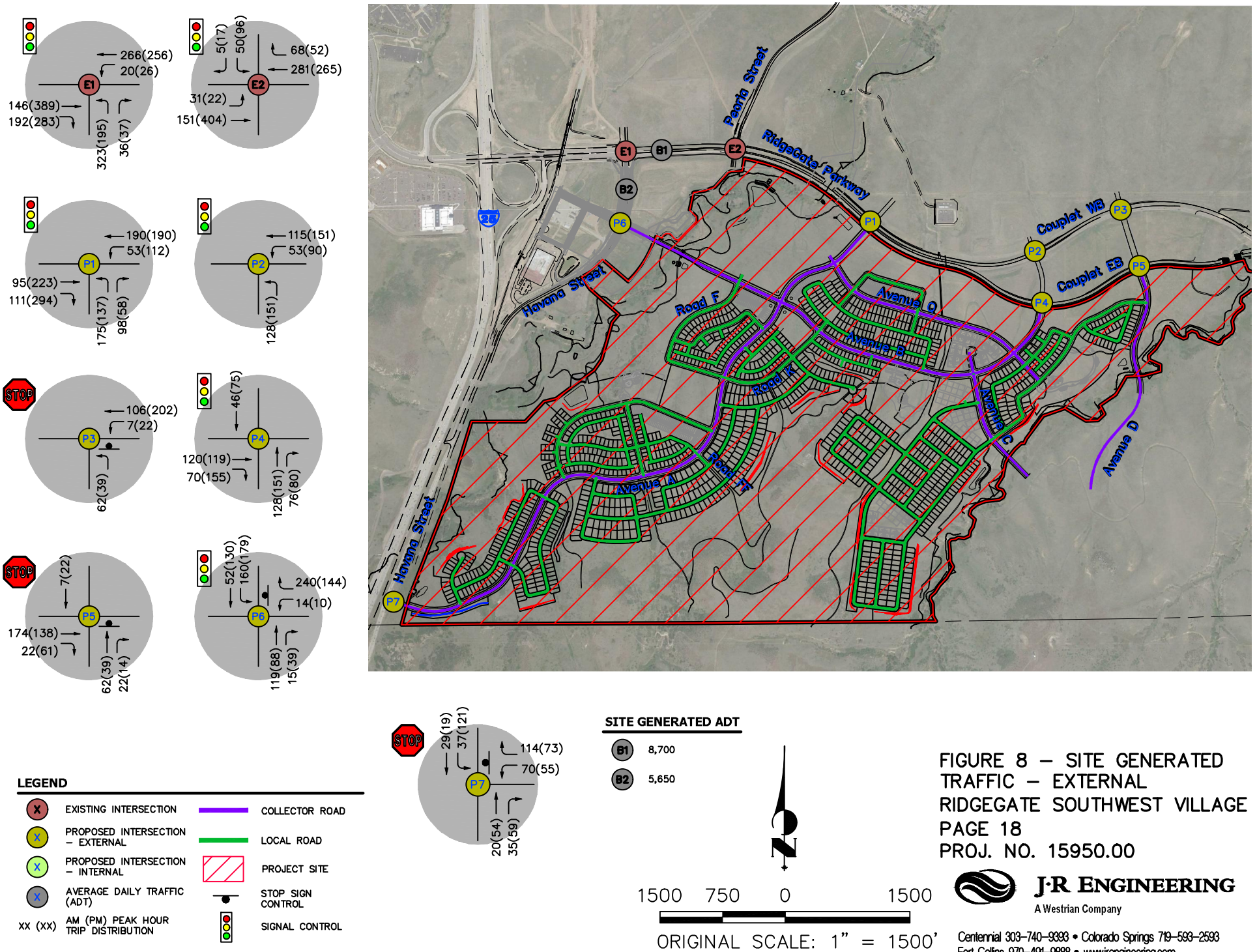


FIGURE 8 – SITE GENERATED TRAFFIC – EXTERNAL
RIDGEGATE SOUTHWEST VILLAGE
PAGE 18
PROJ. NO. 15950.00

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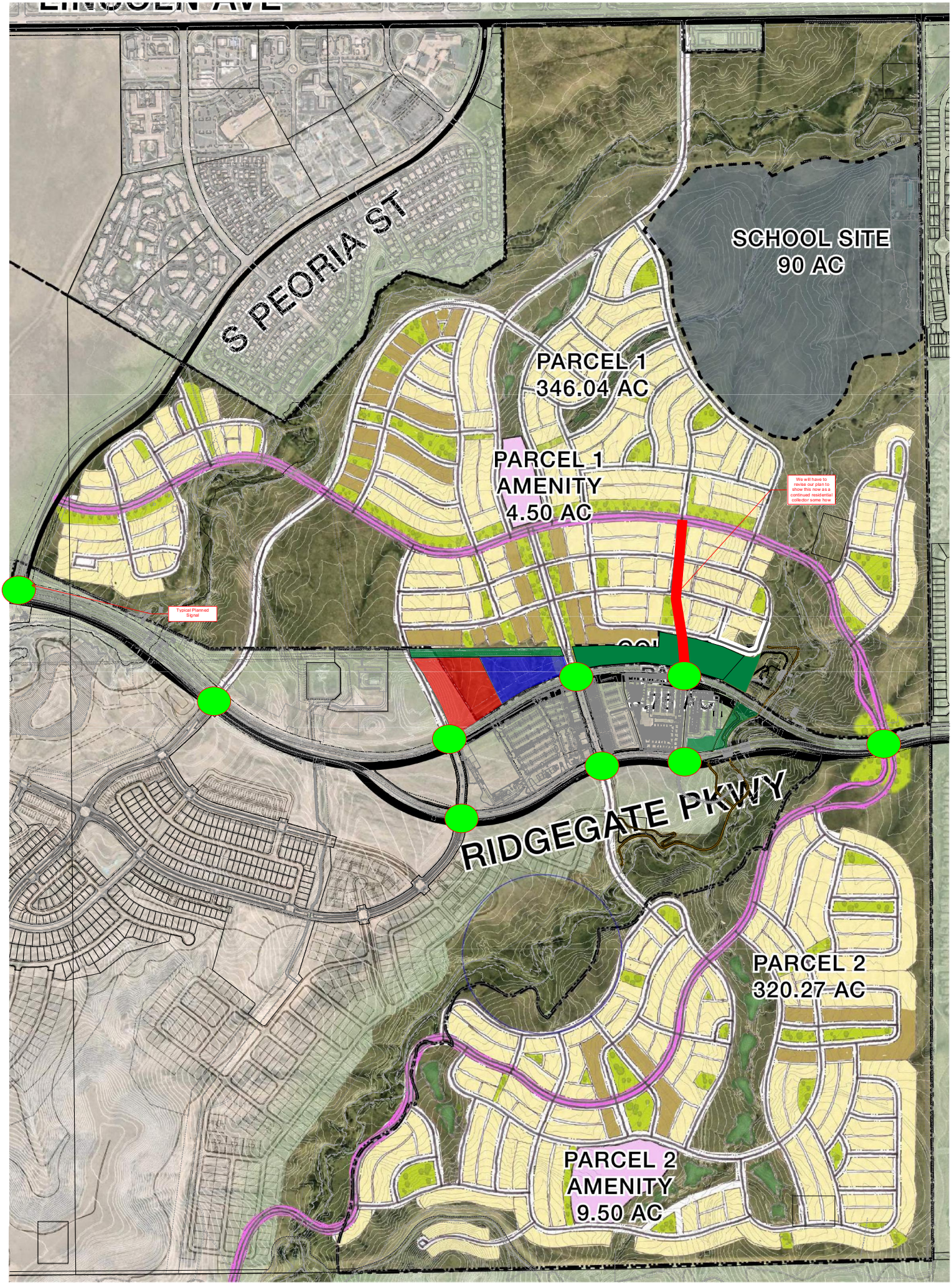
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com


LINCOLN AVE
S PEORIA ST
SCHOOL SITE
90 AC
PARCEL 1
346.04 AC
PARCEL 1
AMENITY
4.50 AC
We will have to revise our plan to show this now as a continued residential collector some how
Typical Planned Signal
RIDGEGATE PKWY
PARCEL 2
320.27 AC
PARCEL 2
AMENITY
9.50 AC

RIDGEGATE EAST

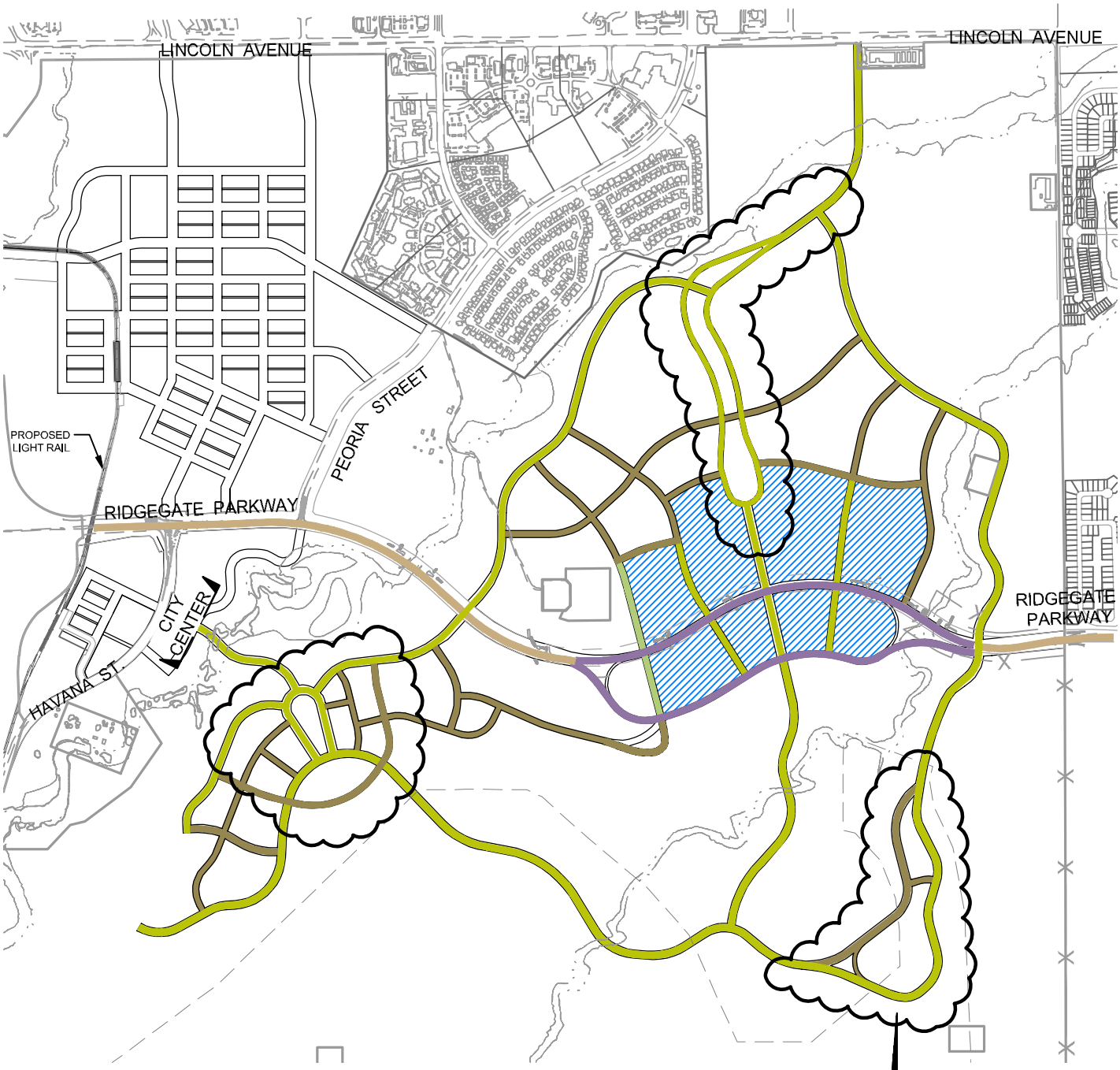
TECHNICAL SUPPLEMENT

February 2018

Amended July 2022

Ridge Gate EAST

FINAL



LEGEND:

- COUPLET DISTRICT
- RESIDENTIAL LOCAL STREET
- RESIDENTIAL COLLECTOR
- COUPLET NORTH / SOUTH
- MAJOR ARTERIAL

NOTE:

1. STREET ALIGNMENTS AND CLASSIFICATIONS ARE CONCEPTUAL AND SUBJECT TO REFINEMENTS.
2. CLOUDED AREAS - TYPICAL SECTION DETAILS TO BE DETERMINED IN CONJUNCTION WITH THE VILLAGE PARK DESIGN.

1500' 0 750' 1500' 3000'

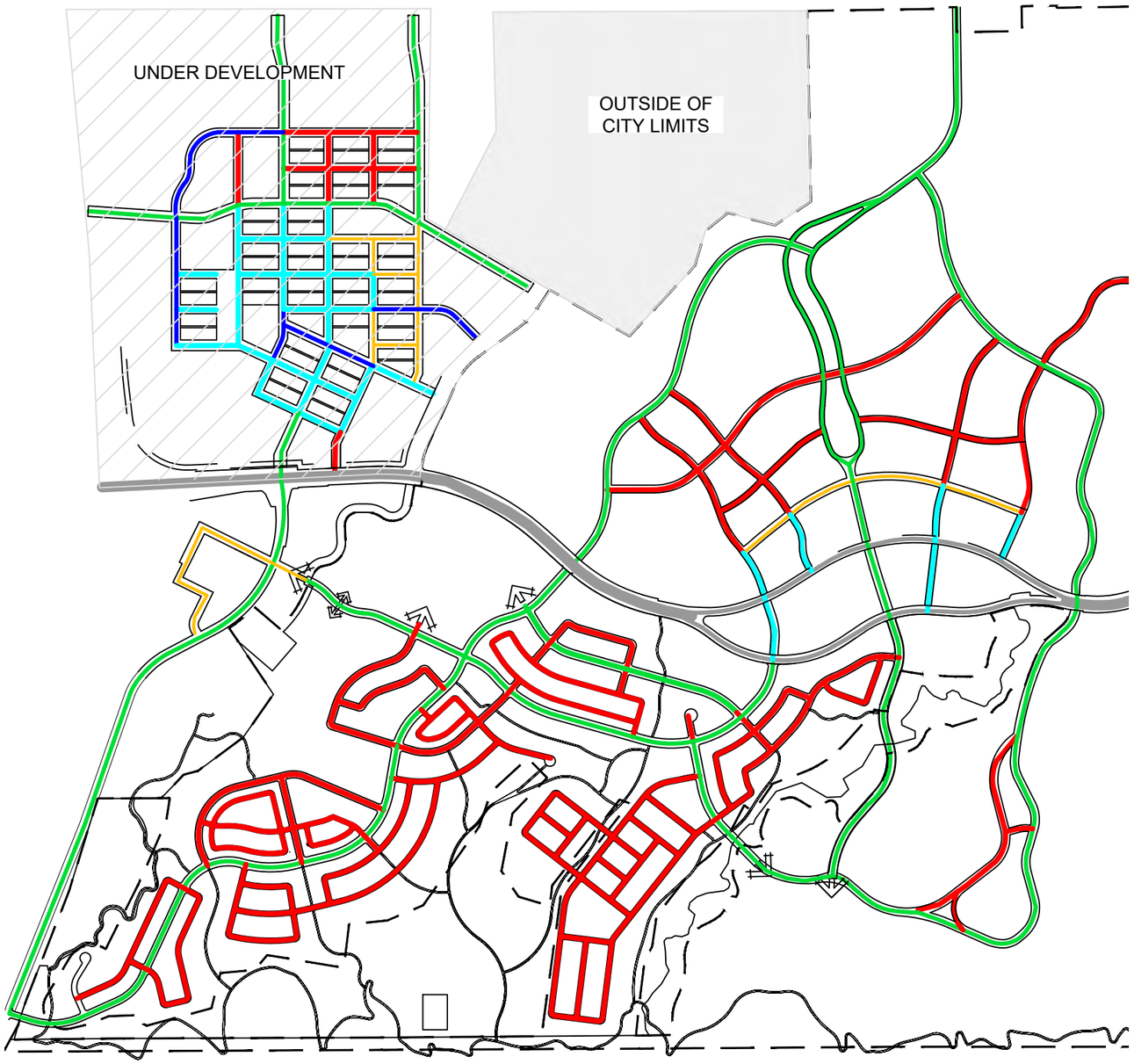
GRAPHIC SCALE

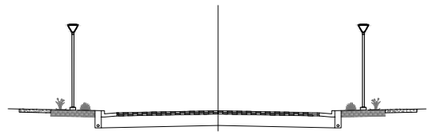
MERRICK®

RIDGEGATE - EAST VILLAGE
ROADWAY SECTION
KEY MAP

DATE: 1/26/2018

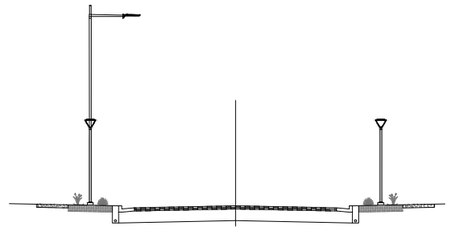
FIGURE 2-1



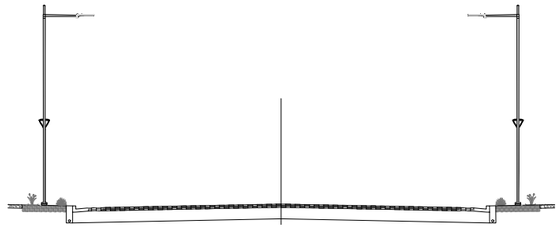


STRATEGY 1: PEDESTRIAN LIGHTING

*STREET LIGHTING AT INTERSECTIONS AND CUL-DE-SACS

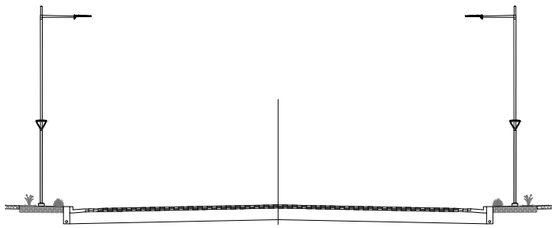


STRATEGY 2: CONTINUOUS PEDESTRIAN LIGHTING WITH STREET LIGHTS AT INTERSECTIONS

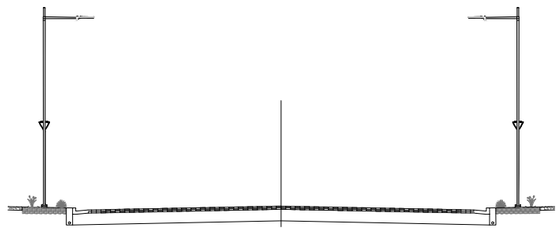


STRATEGY 3: STREET LIGHTING AT INTERSECTIONS WITH NON-CONTINUOUS PEDESTRIAN LIGHTING

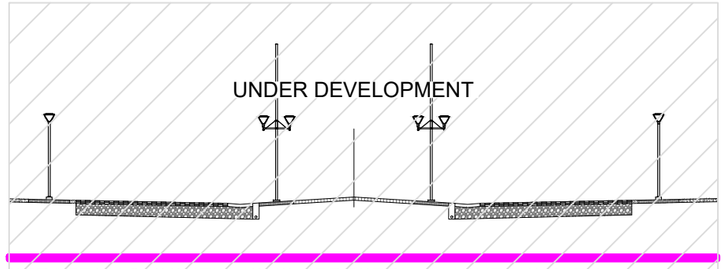
*STREET LIGHTING ALTERNATING 300' SPACING



STRATEGY 4: STREET LIGHTING AT INTERSECTIONS WITH CONTINUOUS PEDESTRIAN LIGHTING



LIGHTING STRATEGY 5: ALTERNATING STREET AND PEDESTRIAN LIGHTING



STRATEGY 6: CONTINUOUS PEDESTRIAN LIGHTING WITH PEDESTRIAN PATHWAY LIGHTING

*CITY MODIFICATIONS JULY 2022

CLANTON & ASSOCIATES

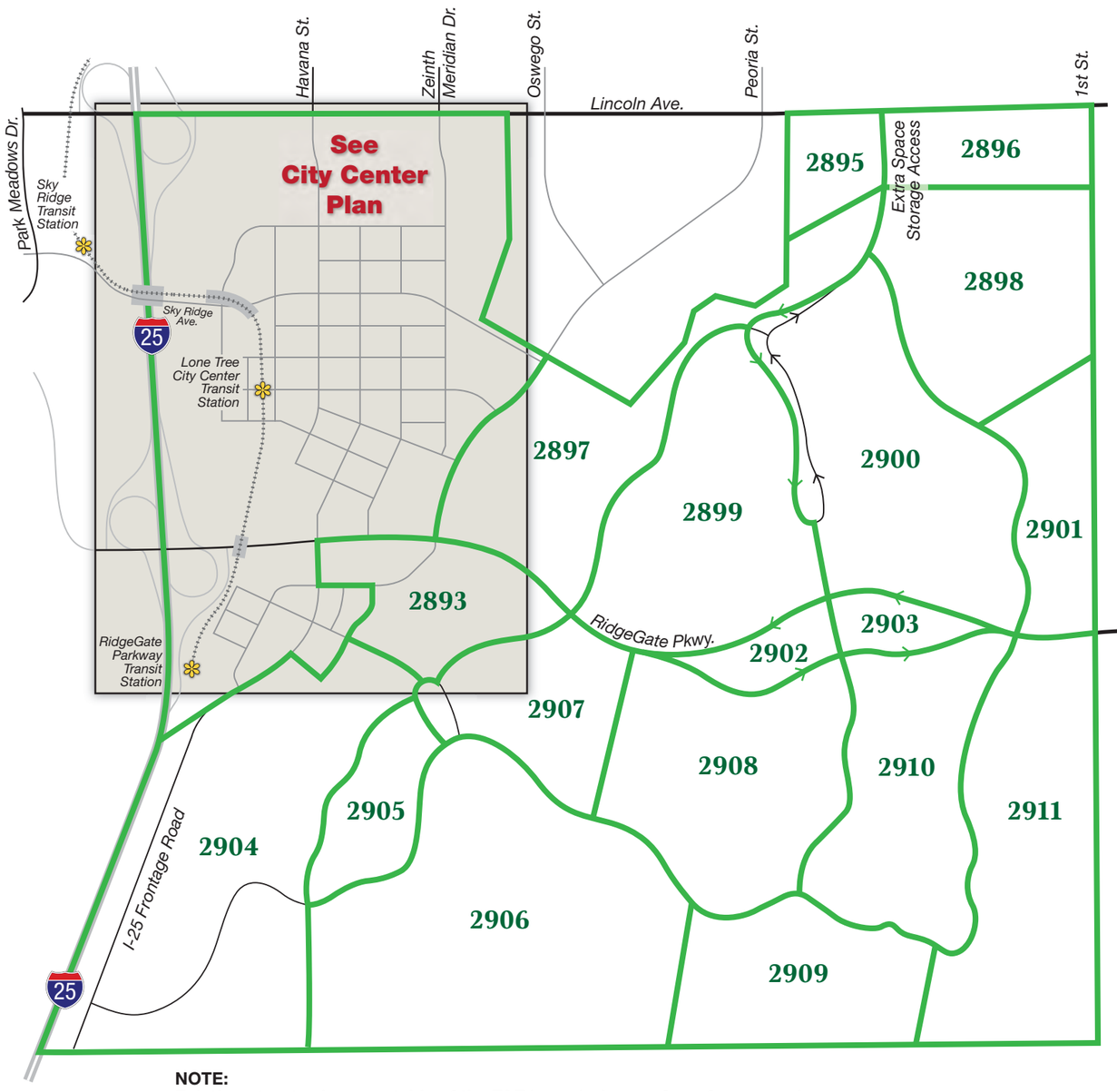
LIGHTING DESIGN AND ENGINEERING

LIGHTING STRATEGY MAP

Drawn: BL
Checked: DS
Date: 2022-04-05
Scale: N.T.S.

RidgeGate Development
Lighting Strategy Map

SK.01



NOTE:
Existing streets shown outside of the TAZ boundaries are for reference only.

LEGEND

XXXX = Traffic Analysis Zones

City Center Plan

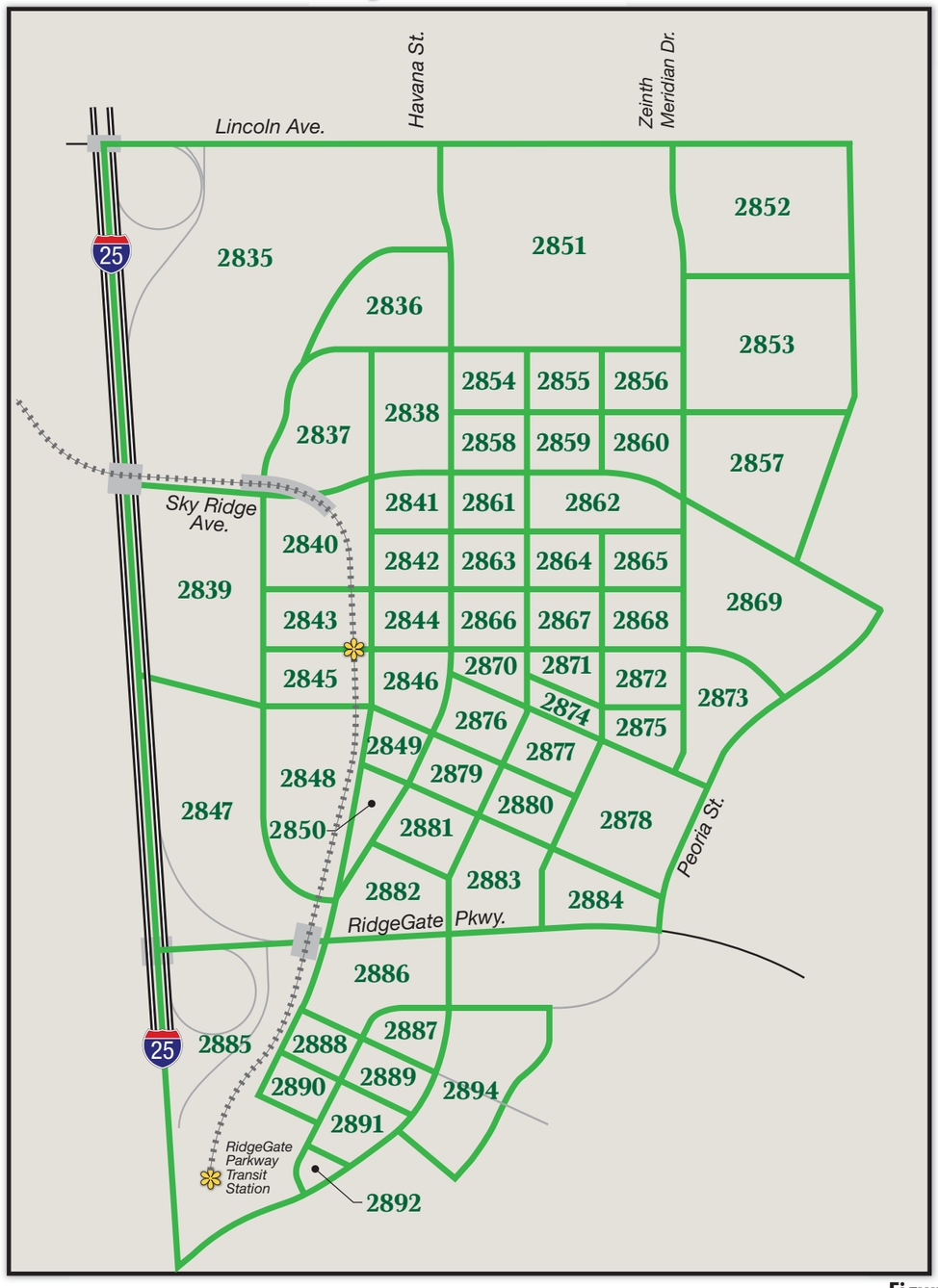


Figure 1
Traffic Analysis Zones

Traffic Analysis Zone (TAZ)	Residential Dwelling Units	Retail (Sq Ft)	Office (Sq Ft)
2874	270	0	213,186
2875	64	0	0
2876	150	5,670	118,466
2877	238	0	188,004
2878	341	0	0
2879	127	16,536	99,925
2880	214	0	168,377
2881	238	0	187,925
2882	0	69,688	0
2883	0	75,776	0
2884	0	70,196	0
2885	0	0	0
2886	0	102,219	0
2887	0	25,012	0
2888	83	5,490	65,371
2889	119	2,745	93,246
2890	65	4,848	51,018
2891	119	2,745	93,246
2892	87	0	0
2893	84	106,709	0
2894	65	0	0
2895	610	209,183	99,611
2896	467	159,992	76,186
2897	391	0	0
2898	0	0	0
2899	1,519	143,800	68,476
2900	1,380	97,216	46,293
2901	709	0	0
2902	320	109,634	52,207
2903	283	96,942	46,163
2904	750	0	0
2905	189	3,087	1,470
2906	463	0	0
2907	839	91,179	43,418
2908	1,435	81,505	38,812
2909	381	0	0
2910	1,076	0	0
2911	1,311	0	0
Total	**18,174**	**2,181,674**	**7,864,164**

II. GENERAL THROUGH LANEAGE REQUIREMENTS

The updated travel demand model was used to evaluate build-out through laneage requirements on roadways internal to the RidgeGate East project. The travel demand model is a tool designed to produce daily volume forecasts on roadways and to incorporate a transit component that allows the transit network to be refined to capture the impacts of the planned Lone Tree City Center and RidgeGate Parkway light rail stations.

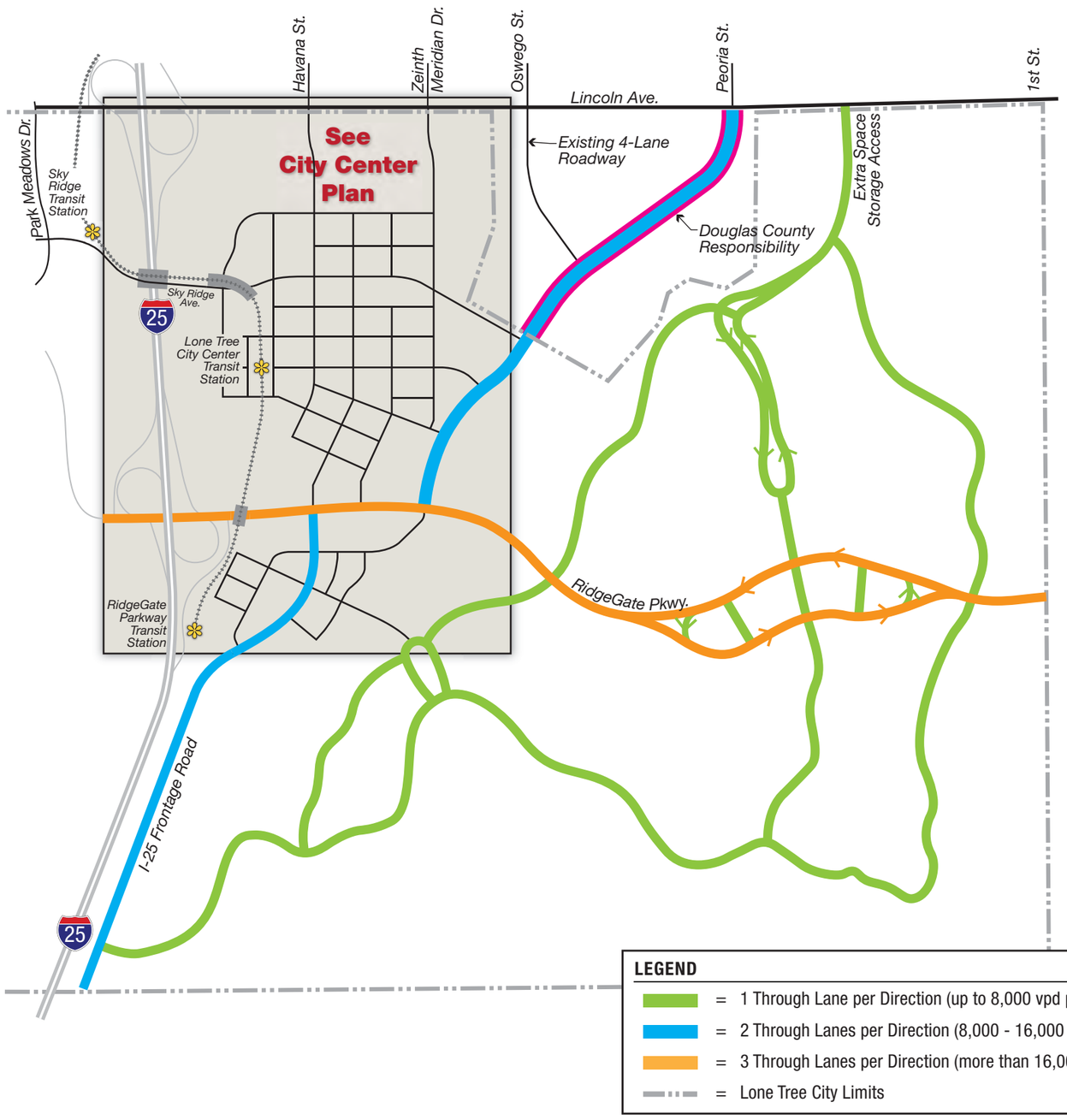
Figure 2 depicts the build-out through laneage requirements on roadways within the project area. The following summarizes the major findings of this analysis:

- RidgeGate Parkway within the project boundaries will need to have six through lanes given its east-west connectivity and regional access to the Town of Parker.
- Four-lane roadway segments are primarily located along those streets that are considered critical access routes into the City Center and that provide access to the roadway network outside the RidgeGate East boundary. Portions of Sky Ridge Avenue, Peoria Street, Zenith Meridian Drive, and Havana Street will each require four through travel lanes. Also, an unnamed east-west roadway in the southern portion of the City Center was identified as a four-lane roadway as it is anticipated to serve significant vehicular volumes destined for the Corporate Office zoning identified in the southwest corner of the City Center planning area.
- Other streets within RidgeGate East have traffic volume projections that will allow them to have a two-lane roadway cross-section.

Figure 2 only represents the number of through lanes needed within RidgeGate East; it does not identify intersection geometry and auxiliary lane requirements. **Section III** of this memorandum details the intersection geometry and auxiliary lane needs. Additionally, intersections that are constructed in-between the major intersections that are included in this report may require auxiliary lanes, specifically left turn lanes.

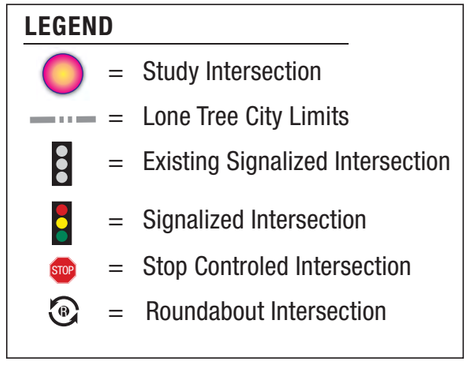
III. INTERSECTION TRAFFIC CONTROL AND GEOMETRY

An evaluation was conducted to understand the likely traffic control needs for RidgeGate East and to understand the laneage requirements on intersection approaches. **Figure 3** identifies the intersections that were included in this analysis. This evaluation does not make any judgment or recommendation about other intersections throughout the development or provide any details about requirements outside the project boundaries due to the high-level planning nature of this study. As future development occurs within the site, ongoing analysis and refinement of the network traffic control and laneage requirements will need to occur to determine the appropriate intersection characteristics.



City Center Plan

Figure 2
Through Laneage Requirements



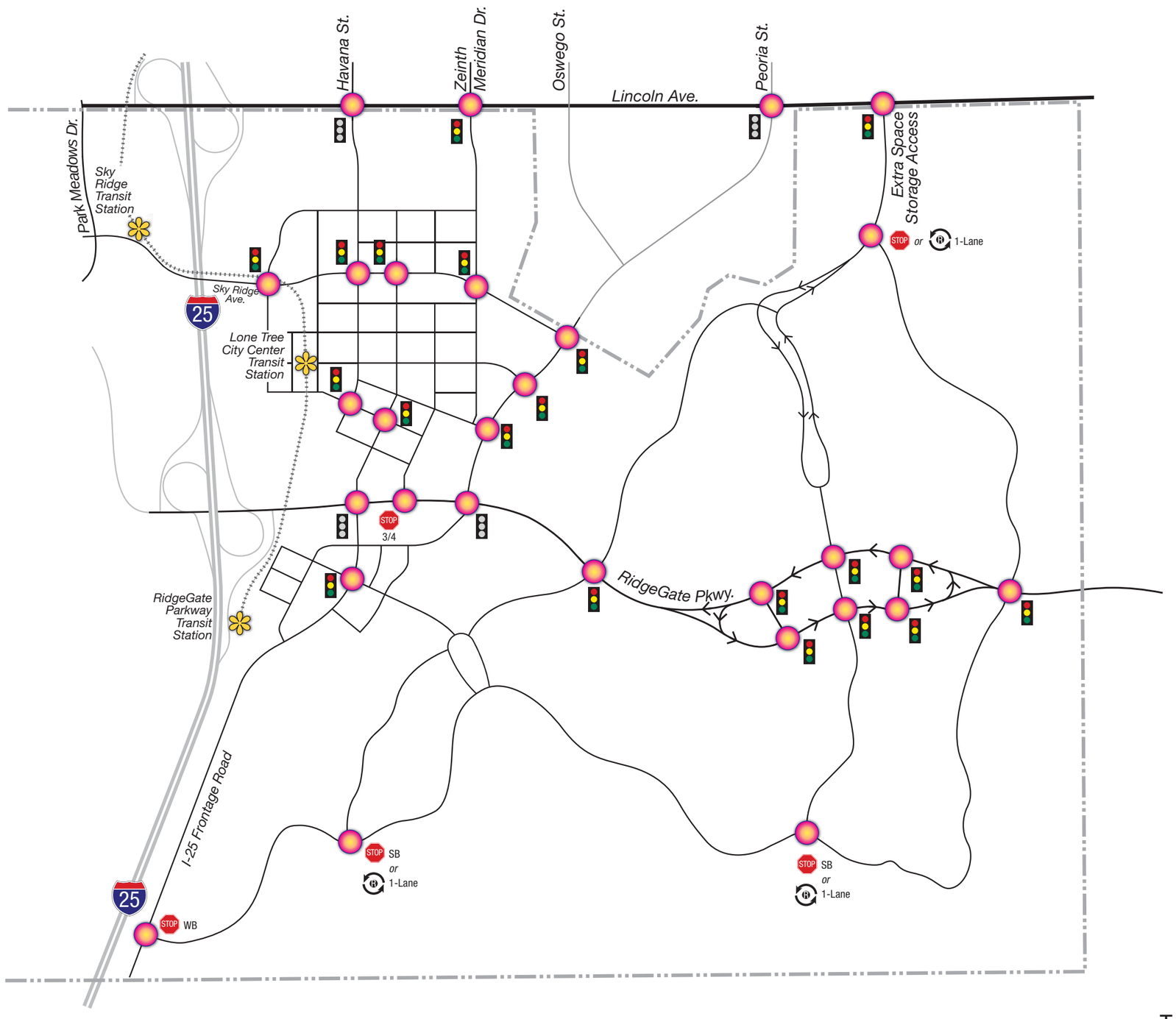
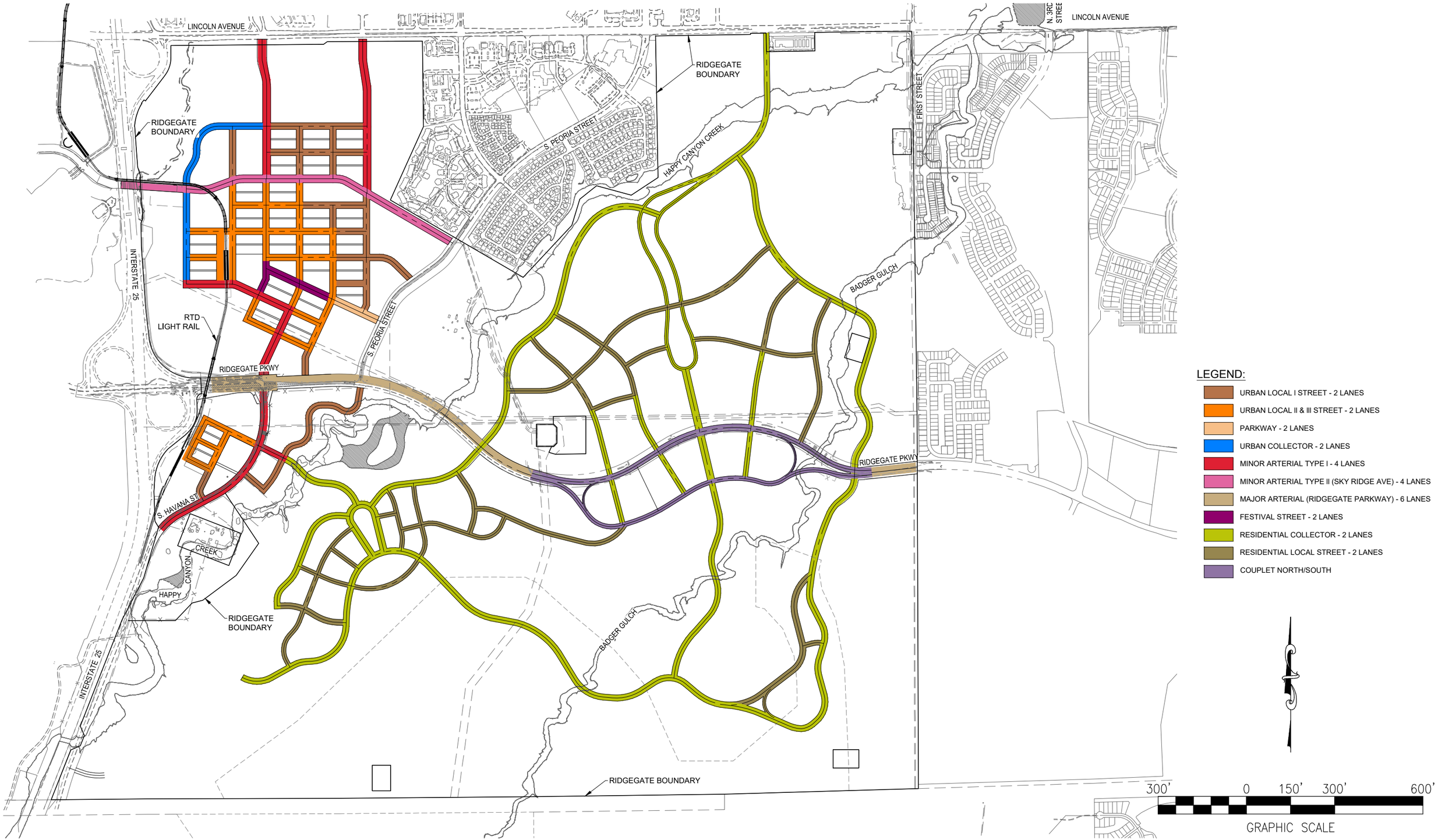


Figure 5
Traffic Control



MERRICK & COMPANY

RIDGEGATE EAST
FRAMEWORK INFRASTRUCTURE EXHIBIT
OVERALL STREETS

DATE: 01/26/18

SHEET: 1 OF 1

APPENDIX C

Trip Generation Worksheets

Kimley»Horn

Project	RidgeGate Senior Affordable				
Subject	Trip Generation for Senior Adult Housing - Multifamily				
Designed by	TJD	*Date*	July 07, 2023	*Job No.*	196804000
Checked by		*Date*		*Sheet No.*	of

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rate Equations

Land Use Code - Senior Adult Housing - Multifamily (252)

Independent Variable - Dwelling Units (X)

X = 165
T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (200 Series Page 416)

Average Weekday
(T) = 0.20 (X)
(T) = 0.20 * (165.0)

Directional Distribution: 34% ent. 66% exit.
T = 33 Average Vehicle Trip Ends
11 entering 22 exiting

11 + 22 = 33

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (200 Series Page 417)

Average Weekday
(T) = 0.25 (X)
(T) = 0.25 * (165.0)

Directional Distribution: 56% ent. 44% exit.
T = 41 Average Vehicle Trip Ends
23 entering 18 exiting

23 + 18 = 41

Weekday (200 Series Page 415)

Average Weekday
(T) = 3.24 (X)
(T) = 3.24 * (165.0)

Directional Distribution: 50% ent. 50% exit.
T = 536 Average Vehicle Trip Ends
268 entering 268 exiting

268 + 268 = 536

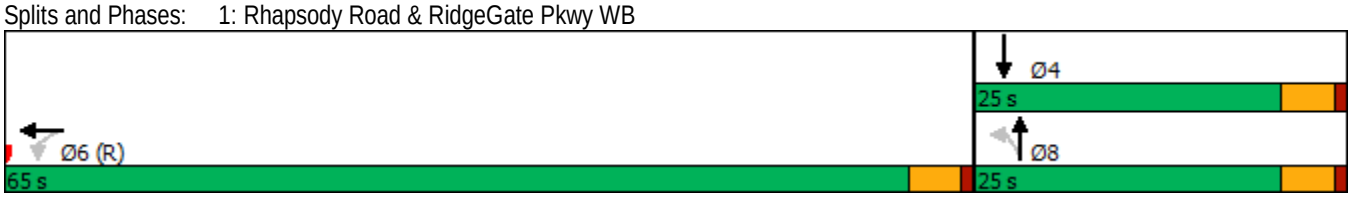
APPENDIX D

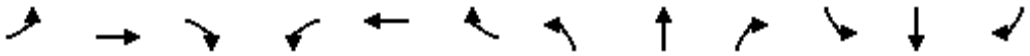
Intersection Analysis Worksheets

Lane Group	WBL	WBT	NBL	Ø4
Lane Configurations				
Traffic Volume (vph)	73	1927	68	
Future Volume (vph)	73	1927	68	
Turn Type	Perm	NA	Perm	
Protected Phases		6		4
Permitted Phases	6		8	
Detector Phase	6	6	8	
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	65.0	65.0	25.0	25.0
Total Split (%)	72.2%	72.2%	27.8%	28%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	C-Max	Max	Max
Act Effct Green (s)	60.5	60.5	20.5	
Actuated g/C Ratio	0.67	0.67	0.23	
v/c Ratio	0.07	0.61	0.23	
Control Delay	5.3	9.2	16.2	
Queue Delay	0.0	0.0	0.0	
Total Delay	5.3	9.2	16.2	
LOS	A	A	B	
Approach Delay		9.0		
Approach LOS		A		

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 9 (10%), Referenced to phase 6:WBTL, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 9.3	Intersection LOS: A
Intersection Capacity Utilization 56.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Rhapsody Road & RidgeGate Pkwy WB





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	73	1927	0	68	0	0	0	0	0
Future Volume (veh/h)	0	0	0	73	1927	0	68	0	0	0	0	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				79	2095	0	74	0	0	0	0	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1197	3432	0	486	426	0	0	426	0
Arrive On Green				0.67	0.67	0.00	0.23	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h				1781	5274	0	1781	1870	0	0	1870	0
Grp Volume(v), veh/h				79	2095	0	74	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln				1781	1702	0	1781	1870	0	0	1870	0
Q Serve(g_s), s				1.4	20.5	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s				1.4	20.5	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane				1.00		0.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				1197	3432	0	486	426	0	0	426	0
V/C Ratio(X)				0.07	0.61	0.00	0.15	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h				1197	3432	0	486	426	0	0	426	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	0.00	0.99	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh				5.1	8.2	0.0	28.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh				0.1	0.8	0.0	0.7	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.4	5.7	0.0	1.4	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				5.2	9.0	0.0	28.7	0.0	0.0	0.0	0.0	0.0
LnGrp LOS				A	A	A	C	A	A	A	A	A
Approach Vol, veh/h					2174			74			0	
Approach Delay, s/veh					8.9			28.7			0.0	
Approach LOS					A			C				

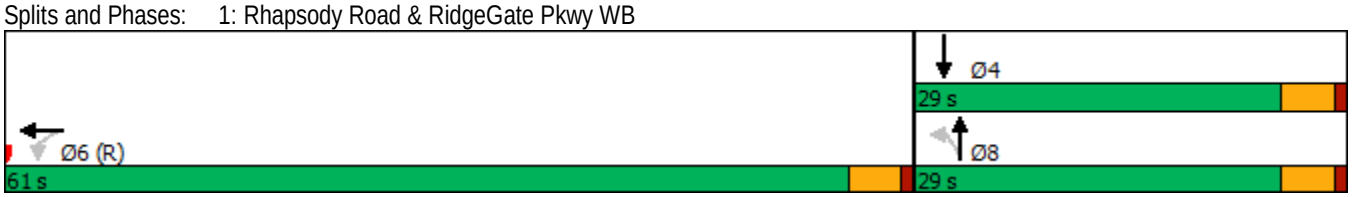
Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	25.0	65.0	25.0
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	20.5	60.5	20.5
Max Q Clear Time (g_c+I1), s	0.0	22.5	5.0
Green Ext Time (p_c), s	0.0	22.6	0.1

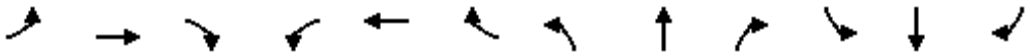
Intersection Summary	
HCM 6th Ctrl Delay	9.5
HCM 6th LOS	A

Lane Group	WBL	WBT	NBL	Ø4
Lane Configurations				
Traffic Volume (vph)	119	1244	56	
Future Volume (vph)	119	1244	56	
Turn Type	Perm	NA	Perm	
Protected Phases		6		4
Permitted Phases	6		8	
Detector Phase	6	6	8	
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	61.0	61.0	29.0	29.0
Total Split (%)	67.8%	67.8%	32.2%	32%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	C-Max	Max	Max
Act Effct Green (s)	56.5	56.5	24.5	
Actuated g/C Ratio	0.63	0.63	0.27	
v/c Ratio	0.12	0.42	0.16	
Control Delay	7.1	9.0	12.5	
Queue Delay	0.0	0.0	0.0	
Total Delay	7.1	9.0	12.5	
LOS	A	A	B	
Approach Delay		8.8		
Approach LOS		A		

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 22 (24%), Referenced to phase 6:WBTL, Start of Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.42	
Intersection Signal Delay: 9.0	Intersection LOS: A
Intersection Capacity Utilization 63.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Rhapsody Road & RidgeGate Pkwy WB





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	119	1244	0	56	0	0	0	0	0
Future Volume (veh/h)	0	0	0	119	1244	0	56	0	0	0	0	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				129	1352	0	61	0	0	0	0	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1118	3205	0	565	509	0	0	509	0
Arrive On Green				0.63	0.63	0.00	0.27	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h				1781	5274	0	1781	1870	0	0	1870	0
Grp Volume(v), veh/h				129	1352	0	61	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln				1781	1702	0	1781	1870	0	0	1870	0
Q Serve(g_s), s				2.6	12.1	0.0	2.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s				2.6	12.1	0.0	2.3	0.0	0.0	0.0	0.0	0.0
Prop In Lane				1.00		0.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				1118	3205	0	565	509	0	0	509	0
V/C Ratio(X)				0.12	0.42	0.00	0.11	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h				1118	3205	0	565	509	0	0	509	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh				6.7	8.5	0.0	24.7	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh				0.2	0.4	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.9	3.6	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				6.9	8.9	0.0	25.1	0.0	0.0	0.0	0.0	0.0
LnGrp LOS				A	A	A	C	A	A	A	A	A
Approach Vol, veh/h					1481			61			0	
Approach Delay, s/veh					8.7			25.1			0.0	
Approach LOS					A			C				

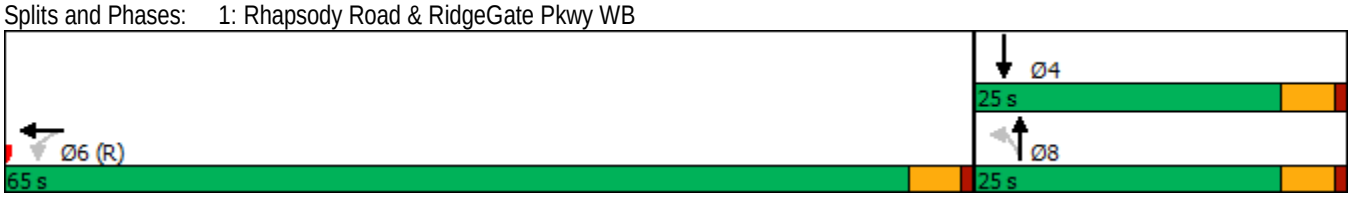
Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	29.0	61.0	29.0
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	24.5	56.5	24.5
Max Q Clear Time (g_c+I1), s	0.0	14.1	4.3
Green Ext Time (p_c), s	0.0	12.6	0.1

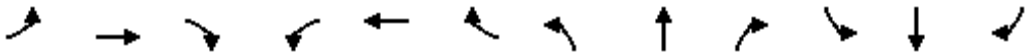
Intersection Summary	
HCM 6th Ctrl Delay	9.4
HCM 6th LOS	A

Lane Group	WBL	WBT	NBL	Ø4
Lane Configurations				
Traffic Volume (vph)	73	1941	68	
Future Volume (vph)	73	1941	68	
Turn Type	Perm	NA	Perm	
Protected Phases		6		4
Permitted Phases	6		8	
Detector Phase	6	6	8	
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	65.0	65.0	25.0	25.0
Total Split (%)	72.2%	72.2%	27.8%	28%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	C-Max	Max	Max
Act Effct Green (s)	60.5	60.5	20.5	
Actuated g/C Ratio	0.67	0.67	0.23	
v/c Ratio	0.06	0.60	0.22	
Control Delay	5.2	9.0	16.3	
Queue Delay	0.0	0.0	0.0	
Total Delay	5.2	9.0	16.3	
LOS	A	A	B	
Approach Delay		8.9		
Approach LOS		A		

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 9 (10%), Referenced to phase 6:WBTL, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 9.1	Intersection LOS: A
Intersection Capacity Utilization 57.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Rhapsody Road & RidgeGate Pkwy WB





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	73	1941	0	68	0	0	0	0	0
Future Volume (veh/h)	0	0	0	73	1941	0	68	0	0	0	0	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				77	2043	0	72	0	0	0	0	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1197	3432	0	486	426	0	0	426	0
Arrive On Green				0.67	0.67	0.00	0.23	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h				1781	5274	0	1781	1870	0	0	1870	0
Grp Volume(v), veh/h				77	2043	0	72	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln				1781	1702	0	1781	1870	0	0	1870	0
Q Serve(g_s), s				1.3	19.7	0.0	2.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s				1.3	19.7	0.0	2.9	0.0	0.0	0.0	0.0	0.0
Prop In Lane				1.00		0.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				1197	3432	0	486	426	0	0	426	0
V/C Ratio(X)				0.06	0.60	0.00	0.15	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h				1197	3432	0	486	426	0	0	426	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh				5.1	8.1	0.0	28.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh				0.1	0.8	0.0	0.6	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.4	5.5	0.0	1.3	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				5.2	8.8	0.0	28.6	0.0	0.0	0.0	0.0	0.0
LnGrp LOS				A	A	A	C	A	A	A	A	A
Approach Vol, veh/h					2120			72			0	
Approach Delay, s/veh					8.7			28.6			0.0	
Approach LOS					A			C				

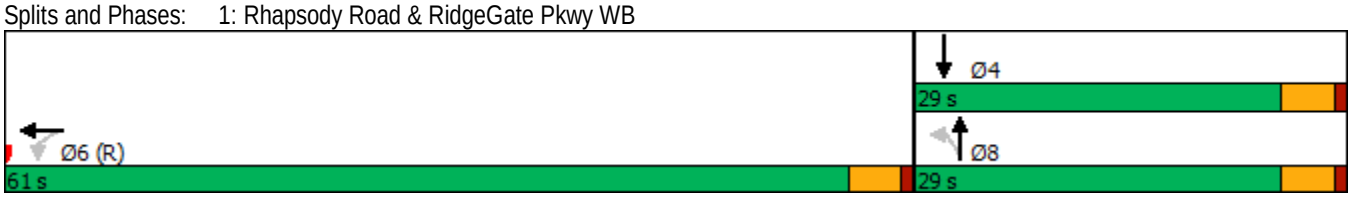
Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	25.0	65.0	25.0
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	20.5	60.5	20.5
Max Q Clear Time (g_c+I1), s	0.0	21.7	4.9
Green Ext Time (p_c), s	0.0	22.1	0.1

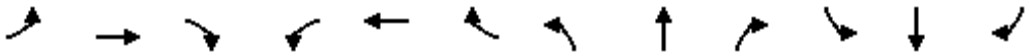
Intersection Summary	
HCM 6th Ctrl Delay	9.3
HCM 6th LOS	A

Lane Group	WBL	WBT	NBL	Ø4
Lane Configurations				
Traffic Volume (vph)	119	1256	56	
Future Volume (vph)	119	1256	56	
Turn Type	Perm	NA	Perm	
Protected Phases		6		4
Permitted Phases	6		8	
Detector Phase	6	6	8	
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	61.0	61.0	29.0	29.0
Total Split (%)	67.8%	67.8%	32.2%	32%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	C-Max	Max	Max
Act Effct Green (s)	56.5	56.5	24.5	
Actuated g/C Ratio	0.63	0.63	0.27	
v/c Ratio	0.12	0.42	0.16	
Control Delay	7.1	9.0	12.2	
Queue Delay	0.0	0.0	0.0	
Total Delay	7.1	9.0	12.2	
LOS	A	A	B	
Approach Delay		8.8		
Approach LOS		A		

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 22 (24%), Referenced to phase 6:WBTL, Start of Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.42	
Intersection Signal Delay: 9.0	Intersection LOS: A
Intersection Capacity Utilization 63.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Rhapsody Road & RidgeGate Pkwy WB





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	119	1256	0	56	0	0	0	0	0
Future Volume (veh/h)	0	0	0	119	1256	0	56	0	0	0	0	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				128	1351	0	60	0	0	0	0	0
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1118	3205	0	565	509	0	0	509	0
Arrive On Green				0.63	0.63	0.00	0.27	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h				1781	5274	0	1781	1870	0	0	1870	0
Grp Volume(v), veh/h				128	1351	0	60	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln				1781	1702	0	1781	1870	0	0	1870	0
Q Serve(g_s), s				2.6	12.1	0.0	2.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s				2.6	12.1	0.0	2.3	0.0	0.0	0.0	0.0	0.0
Prop In Lane				1.00		0.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				1118	3205	0	565	509	0	0	509	0
V/C Ratio(X)				0.11	0.42	0.00	0.11	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h				1118	3205	0	565	509	0	0	509	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh				6.7	8.5	0.0	24.7	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh				0.2	0.4	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.9	3.6	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				6.9	8.9	0.0	25.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS				A	A	A	C	A	A	A	A	A
Approach Vol, veh/h					1479			60			0	
Approach Delay, s/veh					8.7			25.0			0.0	
Approach LOS					A			C				

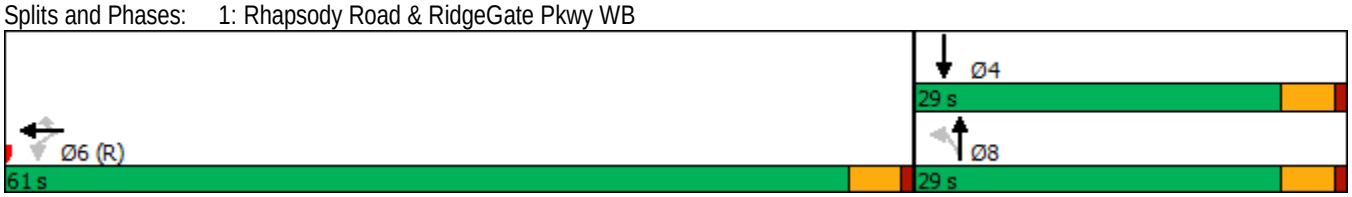
Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	29.0	61.0	29.0
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	24.5	56.5	24.5
Max Q Clear Time (g_c+I1), s	0.0	14.1	4.3
Green Ext Time (p_c), s	0.0	12.5	0.1

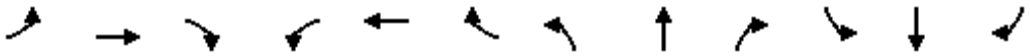
Intersection Summary	
HCM 6th Ctrl Delay	9.4
HCM 6th LOS	A

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Configurations						
Traffic Volume (vph)	93	2670	78	120	75	82
Future Volume (vph)	93	2670	78	120	75	82
Turn Type	Perm	NA	Perm	Perm	NA	NA
Protected Phases		6			8	4
Permitted Phases	6		6	8		
Detector Phase	6	6	6	8	8	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	61.0	61.0	61.0	29.0	29.0	29.0
Total Split (%)	67.8%	67.8%	67.8%	32.2%	32.2%	32.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	56.5	56.5	56.5	24.5	24.5	24.5
Actuated g/C Ratio	0.63	0.63	0.63	0.27	0.27	0.27
v/c Ratio	0.09	0.88	0.08	0.51	0.16	0.49
Control Delay	2.2	9.1	0.2	24.7	14.7	31.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.2	9.1	0.2	24.7	14.7	31.6
LOS	A	A	A	C	B	C
Approach Delay		8.6			20.8	31.6
Approach LOS		A			C	C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 14 (16%), Referenced to phase 6:WBTL, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 10.9	Intersection LOS: B
Intersection Capacity Utilization 81.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Rhapsody Road & RidgeGate Pkwy WB





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	93	2670	78	120	75	0	0	82	130
Future Volume (veh/h)	0	0	0	93	2670	78	120	75	0	0	82	130
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				98	2811	85	126	82	0	0	89	141
Peak Hour Factor				0.95	0.95	0.92	0.95	0.92	0.95	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1118	3205	995	261	509	0	0	177	281
Arrive On Green				0.21	0.21	0.21	0.45	0.45	0.00	0.00	0.27	0.27
Sat Flow, veh/h				1781	5106	1585	1151	1870	0	0	652	1033
Grp Volume(v), veh/h				98	2811	85	126	82	0	0	0	230
Grp Sat Flow(s),veh/h/ln				1781	1702	1585	1151	1870	0	0	0	1684
Q Serve(g_s), s				4.0	48.0	3.9	8.9	2.3	0.0	0.0	0.0	10.4
Cycle Q Clear(g_c), s				4.0	48.0	3.9	19.3	2.3	0.0	0.0	0.0	10.4
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.61
Lane Grp Cap(c), veh/h				1118	3205	995	261	509	0	0	0	459
V/C Ratio(X)				0.09	0.88	0.09	0.48	0.16	0.00	0.00	0.00	0.50
Avail Cap(c_a), veh/h				1118	3205	995	261	509	0	0	0	459
HCM Platoon Ratio				0.33	0.33	0.33	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)				0.50	0.50	0.50	0.96	0.96	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				14.9	32.3	14.8	27.8	18.5	0.0	0.0	0.0	27.6
Incr Delay (d2), s/veh				0.1	1.9	0.1	6.0	0.7	0.0	0.0	0.0	3.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.4	21.9	1.2	2.5	1.1	0.0	0.0	0.0	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				14.9	34.2	14.9	33.8	19.1	0.0	0.0	0.0	31.5
LnGrp LOS				B	C	B	C	B	A	A	A	C
Approach Vol, veh/h					2994			208			230	
Approach Delay, s/veh					33.1			28.0			31.5	
Approach LOS					C			C			C	

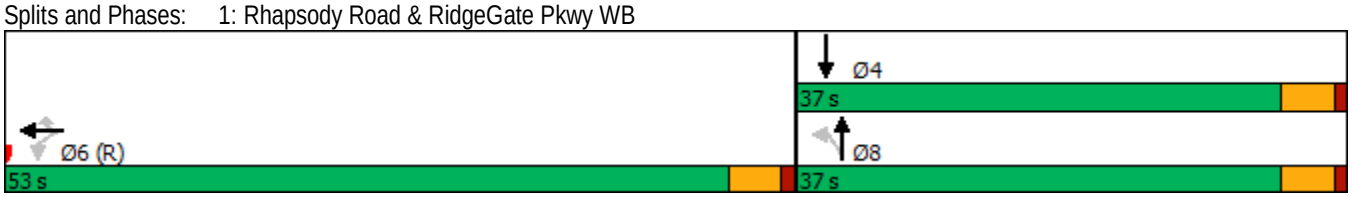
Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	29.0	61.0	29.0
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	24.5	56.5	24.5
Max Q Clear Time (g_c+I1), s	12.4	50.0	21.3
Green Ext Time (p_c), s	1.0	6.2	0.3

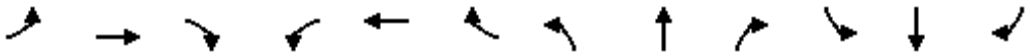
Intersection Summary	
HCM 6th Ctrl Delay	32.7
HCM 6th LOS	C

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Configurations						
Traffic Volume (vph)	138	1678	110	190	175	103
Future Volume (vph)	138	1678	110	190	175	103
Turn Type	Perm	NA	Perm	Perm	NA	NA
Protected Phases		6			8	4
Permitted Phases	6		6	8		
Detector Phase	6	6	6	8	8	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	53.0	53.0	53.0	37.0	37.0	37.0
Total Split (%)	58.9%	58.9%	58.9%	41.1%	41.1%	41.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	Max	Max	None
Act Effct Green (s)	48.5	48.5	48.5	32.5	32.5	32.5
Actuated g/C Ratio	0.54	0.54	0.54	0.36	0.36	0.36
v/c Ratio	0.16	0.66	0.13	0.53	0.28	0.32
Control Delay	3.8	8.4	0.6	16.9	11.2	21.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.8	8.4	0.6	16.9	11.2	21.3
LOS	A	A	A	B	B	C
Approach Delay		7.6			14.1	21.3
Approach LOS		A			B	C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 21 (23%), Referenced to phase 6:WBTL, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 9.6	Intersection LOS: A
Intersection Capacity Utilization 83.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Rhapsody Road & RidgeGate Pkwy WB





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	138	1678	110	190	175	0	0	103	85
Future Volume (veh/h)	0	0	0	138	1678	110	190	175	0	0	103	85
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				148	1804	120	204	190	0	0	112	92
Peak Hour Factor				0.93	0.93	0.92	0.93	0.92	0.93	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				960	2752	854	405	675	0	0	343	282
Arrive On Green				0.18	0.18	0.18	0.60	0.60	0.00	0.00	0.36	0.36
Sat Flow, veh/h				1781	5106	1585	1178	1870	0	0	950	780
Grp Volume(v), veh/h				148	1804	120	204	190	0	0	0	204
Grp Sat Flow(s),veh/h/ln				1781	1702	1585	1178	1870	0	0	0	1730
Q Serve(g_s), s				6.3	29.6	5.7	11.8	4.4	0.0	0.0	0.0	7.7
Cycle Q Clear(g_c), s				6.3	29.6	5.7	19.5	4.4	0.0	0.0	0.0	7.7
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.45
Lane Grp Cap(c), veh/h				960	2752	854	405	675	0	0	0	625
V/C Ratio(X)				0.15	0.66	0.14	0.50	0.28	0.00	0.00	0.00	0.33
Avail Cap(c_a), veh/h				960	2752	854	405	675	0	0	0	625
HCM Platoon Ratio				0.33	0.33	0.33	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)				0.76	0.76	0.76	0.91	0.91	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				19.7	29.2	19.4	18.2	12.3	0.0	0.0	0.0	20.8
Incr Delay (d2), s/veh				0.3	0.9	0.3	4.0	0.9	0.0	0.0	0.0	0.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.5	13.4	2.0	2.9	1.8	0.0	0.0	0.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				19.9	30.2	19.7	22.2	13.2	0.0	0.0	0.0	21.1
LnGrp LOS				B	C	B	C	B	A	A	A	C
Approach Vol, veh/h					2072			394			204	
Approach Delay, s/veh					28.8			17.9			21.1	
Approach LOS					C			B			C	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	37.0	53.0	37.0
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	32.5	48.5	32.5
Max Q Clear Time (g_c+I1), s	9.7	31.6	21.5
Green Ext Time (p_c), s	1.2	11.7	1.4

Intersection Summary	
HCM 6th Ctrl Delay	26.6
HCM 6th LOS	C

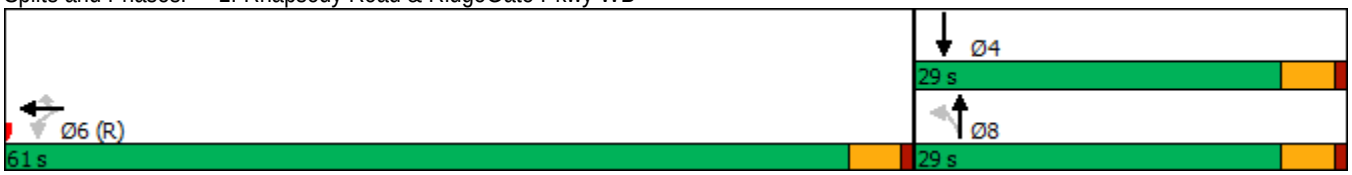
Notes

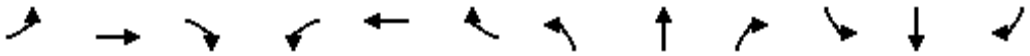
User approved pedestrian interval to be less than phase max green.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Configurations						
Traffic Volume (vph)	95	2685	80	120	75	85
Future Volume (vph)	95	2685	80	120	75	85
Turn Type	Perm	NA	Perm	Perm	NA	NA
Protected Phases		6			8	4
Permitted Phases	6		6	8		
Detector Phase	6	6	6	8	8	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	61.0	61.0	61.0	29.0	29.0	29.0
Total Split (%)	67.8%	67.8%	67.8%	32.2%	32.2%	32.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	56.5	56.5	56.5	24.5	24.5	24.5
Actuated g/C Ratio	0.63	0.63	0.63	0.27	0.27	0.27
v/c Ratio	0.09	0.89	0.08	0.50	0.16	0.48
Control Delay	3.7	9.2	0.6	26.3	17.4	31.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.7	9.2	0.6	26.3	17.4	31.4
LOS	A	A	A	C	B	C
Approach Delay		8.8			22.9	31.4
Approach LOS		A			C	C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 3 (3%), Referenced to phase 6:WBTL, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 11.1	Intersection LOS: B
Intersection Capacity Utilization 82.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Rhapsody Road & RidgeGate Pkwy WB





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	95	2685	80	120	75	0	0	85	130
Future Volume (veh/h)	0	0	0	95	2685	80	120	75	0	0	85	130
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				100	2826	84	126	79	0	0	89	137
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1118	3205	995	264	509	0	0	181	278
Arrive On Green				0.21	0.21	0.21	0.36	0.36	0.00	0.00	0.27	0.27
Sat Flow, veh/h				1781	5106	1585	1155	1870	0	0	664	1022
Grp Volume(v), veh/h				100	2826	84	126	79	0	0	0	226
Grp Sat Flow(s),veh/h/ln				1781	1702	1585	1155	1870	0	0	0	1686
Q Serve(g_s), s				4.1	48.3	3.8	9.0	2.6	0.0	0.0	0.0	10.1
Cycle Q Clear(g_c), s				4.1	48.3	3.8	19.2	2.6	0.0	0.0	0.0	10.1
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.61
Lane Grp Cap(c), veh/h				1118	3205	995	264	509	0	0	0	459
V/C Ratio(X)				0.09	0.88	0.08	0.48	0.16	0.00	0.00	0.00	0.49
Avail Cap(c_a), veh/h				1118	3205	995	264	509	0	0	0	459
HCM Platoon Ratio				0.33	0.33	0.33	1.33	1.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				0.50	0.50	0.50	0.97	0.97	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				14.9	32.4	14.8	31.7	21.7	0.0	0.0	0.0	27.5
Incr Delay (d2), s/veh				0.1	2.0	0.1	5.9	0.6	0.0	0.0	0.0	3.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.4	22.0	1.2	2.8	1.2	0.0	0.0	0.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				15.0	34.4	14.9	37.6	22.3	0.0	0.0	0.0	31.3
LnGrp LOS				B	C	B	D	C	A	A	A	C
Approach Vol, veh/h					3010			205			226	
Approach Delay, s/veh					33.3			31.7			31.3	
Approach LOS					C			C			C	

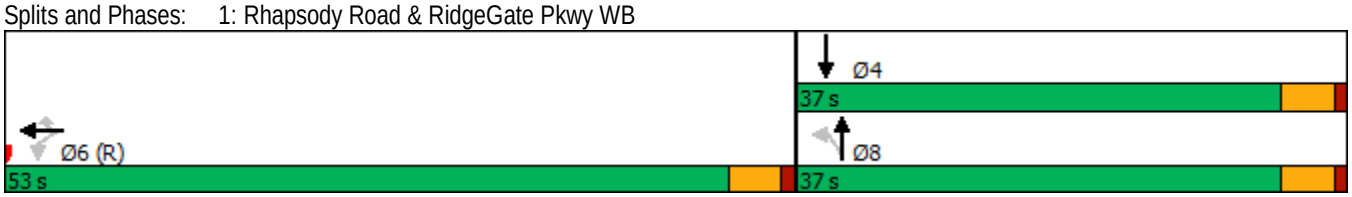
Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				29.0		61.0		29.0				
Change Period (Y+Rc), s				4.5		4.5		4.5				
Max Green Setting (Gmax), s				24.5		56.5		24.5				
Max Q Clear Time (g_c+I1), s				12.1		50.3		21.2				
Green Ext Time (p_c), s				1.0		5.9		0.3				

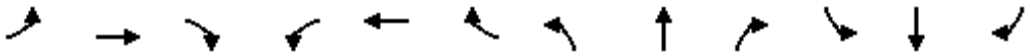
Intersection Summary		
HCM 6th Ctrl Delay		33.0
HCM 6th LOS		C

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Configurations						
Traffic Volume (vph)	140	1690	115	190	175	105
Future Volume (vph)	140	1690	115	190	175	105
Turn Type	Perm	NA	Perm	Perm	NA	NA
Protected Phases		6			8	4
Permitted Phases	6		6	8		
Detector Phase	6	6	6	8	8	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	53.0	53.0	53.0	37.0	37.0	37.0
Total Split (%)	58.9%	58.9%	58.9%	41.1%	41.1%	41.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	48.5	48.5	48.5	32.5	32.5	32.5
Actuated g/C Ratio	0.54	0.54	0.54	0.36	0.36	0.36
v/c Ratio	0.16	0.66	0.14	0.53	0.28	0.32
Control Delay	6.2	8.1	0.6	24.3	19.1	21.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.2	8.1	0.6	24.3	19.1	21.3
LOS	A	A	A	C	B	C
Approach Delay		7.5			21.8	21.3
Approach LOS		A			C	C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 3 (3%), Referenced to phase 6:WBTL, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 10.7	Intersection LOS: B
Intersection Capacity Utilization 83.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Rhapsody Road & RidgeGate Pkwy WB





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	140	1690	115	190	175	0	0	105	85
Future Volume (veh/h)	0	0	0	140	1690	115	190	175	0	0	105	85
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				151	1817	124	204	188	0	0	113	91
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				960	2752	854	405	675	0	0	346	279
Arrive On Green				0.18	0.18	0.18	0.60	0.60	0.00	0.00	0.36	0.36
Sat Flow, veh/h				1781	5106	1585	1178	1870	0	0	959	772
Grp Volume(v), veh/h				151	1817	124	204	188	0	0	0	204
Grp Sat Flow(s),veh/h/ln				1781	1702	1585	1178	1870	0	0	0	1731
Q Serve(g_s), s				6.5	29.8	5.9	11.8	4.3	0.0	0.0	0.0	7.7
Cycle Q Clear(g_c), s				6.5	29.8	5.9	19.5	4.3	0.0	0.0	0.0	7.7
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.45
Lane Grp Cap(c), veh/h				960	2752	854	405	675	0	0	0	625
V/C Ratio(X)				0.16	0.66	0.15	0.50	0.28	0.00	0.00	0.00	0.33
Avail Cap(c_a), veh/h				960	2752	854	405	675	0	0	0	625
HCM Platoon Ratio				0.33	0.33	0.33	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)				0.76	0.76	0.76	0.91	0.91	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				19.7	29.3	19.5	18.2	12.3	0.0	0.0	0.0	20.8
Incr Delay (d2), s/veh				0.3	1.0	0.3	4.0	0.9	0.0	0.0	0.0	1.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.6	13.5	2.1	2.9	1.8	0.0	0.0	0.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				20.0	30.3	19.8	22.2	13.2	0.0	0.0	0.0	22.2
LnGrp LOS				B	C	B	C	B	A	A	A	C
Approach Vol, veh/h					2092			392			204	
Approach Delay, s/veh					28.9			17.9			22.2	
Approach LOS					C			B			C	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	37.0	53.0	37.0
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	32.5	48.5	32.5
Max Q Clear Time (g_c+I1), s	9.7	31.8	21.5
Green Ext Time (p_c), s	1.2	11.7	1.4

Intersection Summary	
HCM 6th Ctrl Delay	26.8
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	12	1931	32	0
Future Vol, veh/h	0	0	12	1931	32	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	13	2099	35	0

Major/Minor	Major2		Minor1	
Conflicting Flow All	0	0	866	-
Stage 1	-	-	0	-
Stage 2	-	-	866	-
Critical Hdwy	5.34	-	5.74	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	6.04	-
Follow-up Hdwy	3.12	-	3.82	-
Pot Cap-1 Maneuver	-	-	362	0
Stage 1	-	-	-	0
Stage 2	-	-	337	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	362	-
Mov Cap-2 Maneuver	-	-	362	-
Stage 1	-	-	-	-
Stage 2	-	-	337	-

Approach	WB	NB
HCM Control Delay, s		16
HCM LOS		C

Minor Lane/Major Mvmt	NBLn1	WBL	WBT
Capacity (veh/h)	362	-	-
HCM Lane V/C Ratio	0.096	-	-
HCM Control Delay (s)	16	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.3	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	31	1311	17	0
Future Vol, veh/h	0	0	31	1311	17	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	34	1425	18	0

Major/Minor	Major2		Minor1	
Conflicting Flow All	0	0	638	-
Stage 1	-	-	0	-
Stage 2	-	-	638	-
Critical Hdwy	5.34	-	5.74	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	6.04	-
Follow-up Hdwy	3.12	-	3.82	-
Pot Cap-1 Maneuver	-	-	469	0
Stage 1	-	-	-	0
Stage 2	-	-	445	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	469	-
Mov Cap-2 Maneuver	-	-	469	-
Stage 1	-	-	-	-
Stage 2	-	-	445	-

Approach	WB	NB
HCM Control Delay, s		13
HCM LOS		B

Minor Lane/Major Mvmt	NBLn1	WBL	WBT
Capacity (veh/h)	469	-	-
HCM Lane V/C Ratio	0.039	-	-
HCM Control Delay (s)	13	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	16	1931	46	0
Future Vol, veh/h	0	0	16	1931	46	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	17	2033	48	0

Major/Minor	Major2		Minor1	
Conflicting Flow All	0	0	847	-
Stage 1	-	-	0	-
Stage 2	-	-	847	-
Critical Hdwy	5.34	-	5.74	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	6.04	-
Follow-up Hdwy	3.12	-	3.82	-
Pot Cap-1 Maneuver	-	-	370	0
Stage 1	-	-	-	0
Stage 2	-	-	345	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	370	-
Mov Cap-2 Maneuver	-	-	370	-
Stage 1	-	-	-	-
Stage 2	-	-	345	-

Approach	WB	NB
HCM Control Delay, s		16.2
HCM LOS		C

Minor Lane/Major Mvmt	NBLn1	WBL	WBT
Capacity (veh/h)	370	-	-
HCM Lane V/C Ratio	0.131	-	-
HCM Control Delay (s)	16.2	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	39	1311	29	0
Future Vol, veh/h	0	0	39	1311	29	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	42	1410	31	0

Major/Minor	Major2		Minor1	
Conflicting Flow All	0	0	648	-
Stage 1	-	-	0	-
Stage 2	-	-	648	-
Critical Hdwy	5.34	-	5.74	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	6.04	-
Follow-up Hdwy	3.12	-	3.82	-
Pot Cap-1 Maneuver	-	-	464	0
Stage 1	-	-	-	0
Stage 2	-	-	439	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	464	-
Mov Cap-2 Maneuver	-	-	464	-
Stage 1	-	-	-	-
Stage 2	-	-	439	-

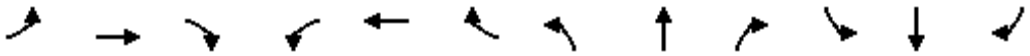
Approach	WB	NB
HCM Control Delay, s		13.3
HCM LOS		B

Minor Lane/Major Mvmt	NBLn1	WBL	WBT
Capacity (veh/h)	464	-	-
HCM Lane V/C Ratio	0.067	-	-
HCM Control Delay (s)	13.3	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Configurations						
Traffic Volume (vph)	74	2710	45	40	45	85
Future Volume (vph)	74	2710	45	40	45	85
Turn Type	Perm	NA	Perm	Perm	NA	NA
Protected Phases		6			8	4
Permitted Phases	6		6	8		
Detector Phase	6	6	6	8	8	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	67.5	67.5	67.5	22.5	22.5	22.5
Total Split (%)	75.0%	75.0%	75.0%	25.0%	25.0%	25.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	63.0	63.0	63.0		18.0	18.0
Actuated g/C Ratio	0.70	0.70	0.70		0.20	0.20
v/c Ratio	0.06	0.80	0.04		0.30	0.49
Control Delay	4.4	11.5	1.7		37.0	36.7
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	4.4	11.5	1.7		37.0	36.7
LOS	A	B	A		D	D
Approach Delay		11.2			37.0	36.7
Approach LOS		B			D	D

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 87 (97%), Referenced to phase 6:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 13.3	Intersection LOS: B
Intersection Capacity Utilization 77.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: N/S Road & RidgeGate Pkwy WB



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	74	2710	45	40	45	0	0	85	80
Future Volume (veh/h)	0	0	0	74	2710	45	40	45	0	0	85	80
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				78	2853	47	42	47	0	0	89	31
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1247	3574	1110	162	161	0	0	265	92
Arrive On Green				0.70	0.70	0.70	0.20	0.20	0.00	0.00	0.20	0.20
Sat Flow, veh/h				1781	5106	1585	514	807	0	0	1326	462
Grp Volume(v), veh/h				78	2853	47	89	0	0	0	0	120
Grp Sat Flow(s),veh/h/ln				1781	1702	1585	1322	0	0	0	0	1787
Q Serve(g_s), s				1.2	34.2	0.8	1.9	0.0	0.0	0.0	0.0	5.2
Cycle Q Clear(g_c), s				1.2	34.2	0.8	7.1	0.0	0.0	0.0	0.0	5.2
Prop In Lane				1.00		1.00	0.47		0.00	0.00		0.26
Lane Grp Cap(c), veh/h				1247	3574	1110	323	0	0	0	0	357
V/C Ratio(X)				0.06	0.80	0.04	0.28	0.00	0.00	0.00	0.00	0.34
Avail Cap(c_a), veh/h				1247	3574	1110	323	0	0	0	0	357
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				4.2	9.2	4.2	31.3	0.0	0.0	0.0	0.0	30.9
Incr Delay (d2), s/veh				0.1	2.0	0.1	2.1	0.0	0.0	0.0	0.0	2.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.4	9.1	0.2	1.9	0.0	0.0	0.0	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				4.3	11.1	4.2	33.4	0.0	0.0	0.0	0.0	33.4
LnGrp LOS				A	B	A	C	A	A	A	A	C
Approach Vol, veh/h					2978			89			120	
Approach Delay, s/veh					10.8			33.4			33.4	
Approach LOS					B			C			C	

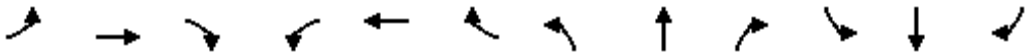
Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	22.5	67.5	22.5
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.0	63.0	18.0
Max Q Clear Time (g_c+I1), s	7.2	36.2	9.1
Green Ext Time (p_c), s	0.4	23.8	0.2

Intersection Summary	
HCM 6th Ctrl Delay	12.3
HCM 6th LOS	B

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Configurations						
Traffic Volume (vph)	57	1844	110	32	115	85
Future Volume (vph)	57	1844	110	32	115	85
Turn Type	Perm	NA	Perm	Perm	NA	NA
Protected Phases		6			8	4
Permitted Phases	6		6	8		
Detector Phase	6	6	6	8	8	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	62.0	62.0	62.0	28.0	28.0	28.0
Total Split (%)	68.9%	68.9%	68.9%	31.1%	31.1%	31.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	57.5	57.5	57.5		23.5	23.5
Actuated g/C Ratio	0.64	0.64	0.64		0.26	0.26
v/c Ratio	0.05	0.61	0.11		0.36	0.38
Control Delay	6.3	10.6	1.5		25.6	27.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	6.3	10.6	1.5		25.6	27.6
LOS	A	B	A		C	C
Approach Delay		10.0			25.6	27.6
Approach LOS		B			C	C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 1 (1%), Referenced to phase 6:WBTL, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 12.2	Intersection LOS: B
Intersection Capacity Utilization 64.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 2: N/S Road & RidgeGate Pkwy WB



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	57	1844	110	32	115	0	0	85	80
Future Volume (veh/h)	0	0	0	57	1844	110	32	115	0	0	85	80
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				61	1983	118	34	124	0	0	91	86
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1138	3262	1013	112	374	0	0	231	218
Arrive On Green				0.64	0.64	0.64	0.09	0.09	0.00	0.00	0.26	0.26
Sat Flow, veh/h				1781	5106	1585	243	1433	0	0	884	836
Grp Volume(v), veh/h				61	1983	118	158	0	0	0	0	177
Grp Sat Flow(s),veh/h/ln				1781	1702	1585	1677	0	0	0	0	1720
Q Serve(g_s), s				1.2	20.6	2.6	0.3	0.0	0.0	0.0	0.0	7.6
Cycle Q Clear(g_c), s				1.2	20.6	2.6	8.0	0.0	0.0	0.0	0.0	7.6
Prop In Lane				1.00		1.00	0.22		0.00	0.00		0.49
Lane Grp Cap(c), veh/h				1138	3262	1013	486	0	0	0	0	449
V/C Ratio(X)				0.05	0.61	0.12	0.32	0.00	0.00	0.00	0.00	0.39
Avail Cap(c_a), veh/h				1138	3262	1013	486	0	0	0	0	449
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.99	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				6.1	9.6	6.3	33.7	0.0	0.0	0.0	0.0	27.4
Incr Delay (d2), s/veh				0.1	0.9	0.2	1.8	0.0	0.0	0.0	0.0	2.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.4	6.2	0.8	3.6	0.0	0.0	0.0	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				6.2	10.4	6.6	35.4	0.0	0.0	0.0	0.0	30.0
LnGrp LOS				A	B	A	D	A	A	A	A	C
Approach Vol, veh/h					2162			158			177	
Approach Delay, s/veh					10.1			35.4			30.0	
Approach LOS					B			D			C	

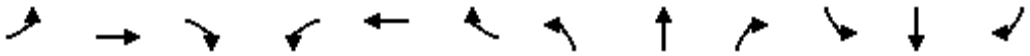
Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	28.0	62.0	28.0
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	23.5	57.5	23.5
Max Q Clear Time (g_c+I1), s	9.6	22.6	10.0
Green Ext Time (p_c), s	0.8	20.6	0.6

Intersection Summary	
HCM 6th Ctrl Delay	13.1
HCM 6th LOS	B

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Configurations						
Traffic Volume (vph)	80	2710	45	55	45	85
Future Volume (vph)	80	2710	45	55	45	85
Turn Type	Perm	NA	Perm	Perm	NA	NA
Protected Phases		6			8	4
Permitted Phases	6		6	8		
Detector Phase	6	6	6	8	8	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	67.5	67.5	67.5	22.5	22.5	22.5
Total Split (%)	75.0%	75.0%	75.0%	25.0%	25.0%	25.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	63.0	63.0	63.0		18.0	18.0
Actuated g/C Ratio	0.70	0.70	0.70		0.20	0.20
v/c Ratio	0.07	0.80	0.04		0.42	0.51
Control Delay	4.4	11.5	1.6		36.4	37.2
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	4.4	11.5	1.6		36.4	37.2
LOS	A	B	A		D	D
Approach Delay		11.2			36.4	37.2
Approach LOS		B			D	D

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 82 (91%), Referenced to phase 6:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 13.4	Intersection LOS: B
Intersection Capacity Utilization 78.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: N/S Road & RidgeGate Pkwy WB



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	80	2710	45	55	45	0	0	85	80
Future Volume (veh/h)	0	0	0	80	2710	45	55	45	0	0	85	80
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				84	2853	49	58	49	0	0	92	87
Peak Hour Factor				0.95	0.95	0.92	0.95	0.92	0.95	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1247	3574	1110	145	106	0	0	177	167
Arrive On Green				0.70	0.70	0.70	0.20	0.20	0.00	0.00	0.20	0.20
Sat Flow, veh/h				1781	5106	1585	418	528	0	0	884	836
Grp Volume(v), veh/h				84	2853	49	107	0	0	0	0	179
Grp Sat Flow(s),veh/h/ln				1781	1702	1585	946	0	0	0	0	1720
Q Serve(g_s), s				1.3	34.2	0.9	4.1	0.0	0.0	0.0	0.0	8.4
Cycle Q Clear(g_c), s				1.3	34.2	0.9	12.4	0.0	0.0	0.0	0.0	8.4
Prop In Lane				1.00		1.00	0.54		0.00	0.00		0.49
Lane Grp Cap(c), veh/h				1247	3574	1110	251	0	0	0	0	344
V/C Ratio(X)				0.07	0.80	0.04	0.43	0.00	0.00	0.00	0.00	0.52
Avail Cap(c_a), veh/h				1247	3574	1110	251	0	0	0	0	344
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				4.3	9.2	4.2	34.6	0.0	0.0	0.0	0.0	32.1
Incr Delay (d2), s/veh				0.1	2.0	0.1	5.2	0.0	0.0	0.0	0.0	5.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.4	9.1	0.2	2.5	0.0	0.0	0.0	0.0	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				4.4	11.1	4.3	39.8	0.0	0.0	0.0	0.0	37.7
LnGrp LOS				A	B	A	D	A	A	A	A	D
Approach Vol, veh/h					2986			107			179	
Approach Delay, s/veh					10.8			39.8			37.7	
Approach LOS					B			D			D	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	22.5	67.5	22.5
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.0	63.0	18.0
Max Q Clear Time (g_c+I1), s	10.4	36.2	14.4
Green Ext Time (p_c), s	0.5	23.8	0.1

Intersection Summary	
HCM 6th Ctrl Delay	13.2
HCM 6th LOS	B

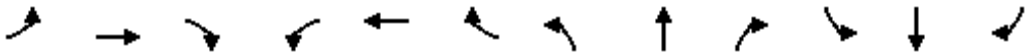
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Configurations						
Traffic Volume (vph)	65	1845	110	45	115	85
Future Volume (vph)	65	1845	110	45	115	85
Turn Type	Perm	NA	Perm	Perm	NA	NA
Protected Phases		6			8	4
Permitted Phases	6		6	8		
Detector Phase	6	6	6	8	8	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	62.0	62.0	62.0	28.0	28.0	28.0
Total Split (%)	68.9%	68.9%	68.9%	31.1%	31.1%	31.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	57.5	57.5	57.5		23.5	23.5
Actuated g/C Ratio	0.64	0.64	0.64		0.26	0.26
v/c Ratio	0.06	0.61	0.11		0.41	0.38
Control Delay	6.3	10.6	1.5		25.1	27.7
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	6.3	10.6	1.5		25.1	27.7
LOS	A	B	A		C	C
Approach Delay		10.0			25.1	27.7
Approach LOS		A			C	C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 83 (92%), Referenced to phase 6:WBTL, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 12.3	Intersection LOS: B
Intersection Capacity Utilization 64.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 2: N/S Road & RidgeGate Pkwy WB



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	65	1845	110	45	115	0	0	85	80
Future Volume (veh/h)	0	0	0	65	1845	110	45	115	0	0	85	80
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				70	1984	120	48	125	0	0	92	87
Peak Hour Factor				0.93	0.93	0.92	0.93	0.92	0.93	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1138	3262	1013	130	311	0	0	231	218
Arrive On Green				0.64	0.64	0.64	0.09	0.09	0.00	0.00	0.26	0.26
Sat Flow, veh/h				1781	5106	1585	302	1192	0	0	884	836
Grp Volume(v), veh/h				70	1984	120	173	0	0	0	0	179
Grp Sat Flow(s),veh/h/ln				1781	1702	1585	1494	0	0	0	0	1720
Q Serve(g_s), s				1.3	20.7	2.7	3.3	0.0	0.0	0.0	0.0	7.7
Cycle Q Clear(g_c), s				1.3	20.7	2.7	11.0	0.0	0.0	0.0	0.0	7.7
Prop In Lane				1.00		1.00	0.28		0.00	0.00		0.49
Lane Grp Cap(c), veh/h				1138	3262	1013	441	0	0	0	0	449
V/C Ratio(X)				0.06	0.61	0.12	0.39	0.00	0.00	0.00	0.00	0.40
Avail Cap(c_a), veh/h				1138	3262	1013	441	0	0	0	0	449
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				6.1	9.6	6.3	34.9	0.0	0.0	0.0	0.0	27.4
Incr Delay (d2), s/veh				0.1	0.9	0.2	2.6	0.0	0.0	0.0	0.0	2.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.4	6.2	0.8	4.3	0.0	0.0	0.0	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				6.2	10.4	6.6	37.5	0.0	0.0	0.0	0.0	30.1
LnGrp LOS				A	B	A	D	A	A	A	A	C
Approach Vol, veh/h					2174			173			179	
Approach Delay, s/veh					10.1			37.5			30.1	
Approach LOS					B			D			C	

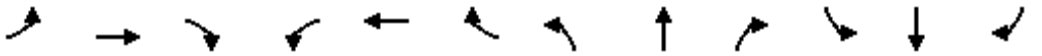
Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	28.0	62.0	28.0
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	23.5	57.5	23.5
Max Q Clear Time (g_c+I1), s	9.7	22.7	13.0
Green Ext Time (p_c), s	0.8	20.6	0.6

Intersection Summary	
HCM 6th Ctrl Delay	13.4
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	5	875	22	62	36	7
Future Volume (vph)	5	875	22	62	36	7
Turn Type	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		8		4
Permitted Phases	2		2		4	
Detector Phase	2	2	2	8	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	56.0	56.0	56.0	34.0	34.0	34.0
Total Split (%)	62.2%	62.2%	62.2%	37.8%	37.8%	37.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	51.5	51.5	51.5	29.5	29.5	29.5
Actuated g/C Ratio	0.57	0.57	0.57	0.33	0.33	0.33
v/c Ratio	0.00	0.33	0.03	0.15	0.09	0.01
Control Delay	8.4	10.5	3.5	17.5	16.7	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.4	10.5	3.5	17.5	16.7	16.1
LOS	A	B	A	B	B	B
Approach Delay		10.3		17.5		16.6
Approach LOS		B		B		B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.33	
Intersection Signal Delay: 11.2	Intersection LOS: B
Intersection Capacity Utilization 56.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Rhapsody Road & RidgeGate Pkwy EB



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	875	22	0	0	0	0	62	22	36	7	0
Future Volume (veh/h)	5	875	22	0	0	0	0	62	22	36	7	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	5	951	24				0	67	24	39	8	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	1019	2922	907				0	431	154	461	613	0
Arrive On Green	0.57	0.57	0.57				0.00	0.33	0.33	0.33	0.33	0.00
Sat Flow, veh/h	1781	5106	1585				0	1315	471	1306	1870	0
Grp Volume(v), veh/h	5	951	24				0	0	91	39	8	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585				0	0	1786	1306	1870	0
Q Serve(g_s), s	0.1	8.8	0.6				0.0	0.0	3.2	2.0	0.3	0.0
Cycle Q Clear(g_c), s	0.1	8.8	0.6				0.0	0.0	3.2	5.2	0.3	0.0
Prop In Lane	1.00		1.00				0.00		0.26	1.00		0.00
Lane Grp Cap(c), veh/h	1019	2922	907				0	0	585	461	613	0
V/C Ratio(X)	0.00	0.33	0.03				0.00	0.00	0.16	0.08	0.01	0.00
Avail Cap(c_a), veh/h	1019	2922	907				0	0	585	461	613	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.3	10.1	8.4				0.0	0.0	21.4	23.3	20.4	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.1				0.0	0.0	0.6	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.9	0.2				0.0	0.0	1.4	0.6	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.3	10.4	8.4				0.0	0.0	22.0	23.6	20.5	0.0
LnGrp LOS	A	B	A				A	A	C	C	C	A
Approach Vol, veh/h		980						91			47	
Approach Delay, s/veh		10.4						22.0			23.1	
Approach LOS		B						C			C	

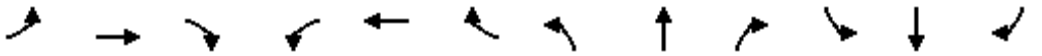
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		56.0		34.0				34.0				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		51.5		29.5				29.5				
Max Q Clear Time (g_c+I1), s		10.8		7.2				5.2				
Green Ext Time (p_c), s		7.4		0.1				0.4				

Intersection Summary												
HCM 6th Ctrl Delay			11.8									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	10	2119	61	39	100	22
Future Volume (vph)	10	2119	61	39	100	22
Turn Type	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		8		4
Permitted Phases	2		2		4	
Detector Phase	2	2	2	8	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	65.0	65.0	65.0	25.0	25.0	25.0
Total Split (%)	72.2%	72.2%	72.2%	27.8%	27.8%	27.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	60.5	60.5	60.5	20.5	20.5	20.5
Actuated g/C Ratio	0.67	0.67	0.67	0.23	0.23	0.23
v/c Ratio	0.01	0.67	0.06	0.14	0.36	0.06
Control Delay	4.9	10.1	1.5	24.9	26.7	21.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.9	10.1	1.5	24.9	26.7	21.4
LOS	A	B	A	C	C	C
Approach Delay		9.8		24.9		25.7
Approach LOS		A		C		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 11.0	Intersection LOS: B
Intersection Capacity Utilization 61.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Rhapsody Road & RidgeGate Pkwy EB



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	2119	61	0	0	0	0	39	14	100	22	0
Future Volume (veh/h)	10	2119	61	0	0	0	0	39	14	100	22	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	11	2303	66				0	42	15	109	24	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	1197	3432	1066				0	300	107	352	426	0
Arrive On Green	0.67	0.67	0.67				0.00	0.23	0.23	0.23	0.23	0.00
Sat Flow, veh/h	1781	5106	1585				0	1316	470	1346	1870	0
Grp Volume(v), veh/h	11	2303	66				0	0	57	109	24	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585				0	0	1786	1346	1870	0
Q Serve(g_s), s	0.2	24.2	1.3				0.0	0.0	2.3	6.3	0.9	0.0
Cycle Q Clear(g_c), s	0.2	24.2	1.3				0.0	0.0	2.3	8.6	0.9	0.0
Prop In Lane	1.00		1.00				0.00		0.26	1.00		0.00
Lane Grp Cap(c), veh/h	1197	3432	1066				0	0	407	352	426	0
V/C Ratio(X)	0.01	0.67	0.06				0.00	0.00	0.14	0.31	0.06	0.00
Avail Cap(c_a), veh/h	1197	3432	1066				0	0	407	352	426	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	4.9	8.8	5.0				0.0	0.0	27.7	31.2	27.2	0.0
Incr Delay (d2), s/veh	0.0	1.1	0.1				0.0	0.0	0.7	2.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	6.8	0.4				0.0	0.0	1.0	2.2	0.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.9	9.9	5.2				0.0	0.0	28.4	33.4	27.4	0.0
LnGrp LOS	A	A	A				A	A	C	C	C	A
Approach Vol, veh/h		2380						57			133	
Approach Delay, s/veh		9.7						28.4			32.3	
Approach LOS		A						C			C	

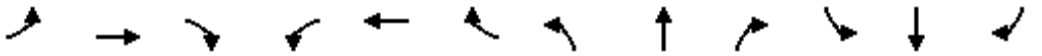
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		65.0		25.0				25.0				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		60.5		20.5				20.5				
Max Q Clear Time (g_c+I1), s		26.2		10.6				4.3				
Green Ext Time (p_c), s		23.9		0.3				0.2				

Intersection Summary												
HCM 6th Ctrl Delay			11.3									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	5	882	22	62	36	7
Future Volume (vph)	5	882	22	62	36	7
Turn Type	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		8		4
Permitted Phases	2		2		4	
Detector Phase	2	2	2	8	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	56.0	56.0	56.0	34.0	34.0	34.0
Total Split (%)	62.2%	62.2%	62.2%	37.8%	37.8%	37.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	51.5	51.5	51.5	29.5	29.5	29.5
Actuated g/C Ratio	0.57	0.57	0.57	0.33	0.33	0.33
v/c Ratio	0.00	0.32	0.03	0.15	0.09	0.01
Control Delay	8.4	10.4	3.6	17.4	16.6	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.4	10.4	3.6	17.4	16.6	16.1
LOS	A	B	A	B	B	B
Approach Delay		10.3		17.4		16.5
Approach LOS		B		B		B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.32	
Intersection Signal Delay: 11.1	Intersection LOS: B
Intersection Capacity Utilization 57.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Rhapsody Road & RidgeGate Pkwy EB



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	882	22	0	0	0	0	62	22	36	7	0
Future Volume (veh/h)	5	882	22	0	0	0	0	62	22	36	7	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	5	928	23				0	65	23	38	7	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	1019	2922	907				0	432	153	463	613	0
Arrive On Green	0.57	0.57	0.57				0.00	0.33	0.33	0.33	0.33	0.00
Sat Flow, veh/h	1781	5106	1585				0	1319	467	1309	1870	0
Grp Volume(v), veh/h	5	928	23				0	0	88	38	7	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585				0	0	1786	1309	1870	0
Q Serve(g_s), s	0.1	8.6	0.6				0.0	0.0	3.1	1.9	0.2	0.0
Cycle Q Clear(g_c), s	0.1	8.6	0.6				0.0	0.0	3.1	5.0	0.2	0.0
Prop In Lane	1.00		1.00				0.00		0.26	1.00		0.00
Lane Grp Cap(c), veh/h	1019	2922	907				0	0	586	463	613	0
V/C Ratio(X)	0.00	0.32	0.03				0.00	0.00	0.15	0.08	0.01	0.00
Avail Cap(c_a), veh/h	1019	2922	907				0	0	586	463	613	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.3	10.1	8.4				0.0	0.0	21.4	23.2	20.4	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.1				0.0	0.0	0.5	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.8	0.2				0.0	0.0	1.4	0.6	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.3	10.4	8.4				0.0	0.0	21.9	23.5	20.4	0.0
LnGrp LOS	A	B	A				A	A	C	C	C	A
Approach Vol, veh/h		956						88			45	
Approach Delay, s/veh		10.3						21.9			23.0	
Approach LOS		B						C			C	

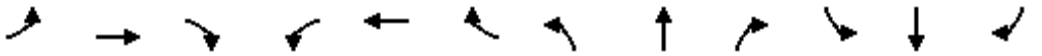
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		56.0		34.0				34.0				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		51.5		29.5				29.5				
Max Q Clear Time (g_c+I1), s		10.6		7.0				5.1				
Green Ext Time (p_c), s		7.1		0.1				0.4				

Intersection Summary												
HCM 6th Ctrl Delay			11.8									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	10	2134	61	39	100	22
Future Volume (vph)	10	2134	61	39	100	22
Turn Type	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		8		4
Permitted Phases	2		2		4	
Detector Phase	2	2	2	8	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	65.0	65.0	65.0	25.0	25.0	25.0
Total Split (%)	72.2%	72.2%	72.2%	27.8%	27.8%	27.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	60.5	60.5	60.5	20.5	20.5	20.5
Actuated g/C Ratio	0.67	0.67	0.67	0.23	0.23	0.23
v/c Ratio	0.01	0.67	0.06	0.14	0.35	0.06
Control Delay	4.9	10.1	1.5	24.9	26.6	21.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.9	10.1	1.5	24.9	26.6	21.5
LOS	A	B	A	C	C	C
Approach Delay		9.8		24.9		25.6
Approach LOS		A		C		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 10.9	Intersection LOS: B
Intersection Capacity Utilization 62.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Rhapsody Road & RidgeGate Pkwy EB



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	2134	61	0	0	0	0	39	14	100	22	0
Future Volume (veh/h)	10	2134	61	0	0	0	0	39	14	100	22	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	11	2295	66				0	42	15	108	24	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	1197	3432	1066				0	300	107	352	426	0
Arrive On Green	0.67	0.67	0.67				0.00	0.23	0.23	0.23	0.23	0.00
Sat Flow, veh/h	1781	5106	1585				0	1316	470	1346	1870	0
Grp Volume(v), veh/h	11	2295	66				0	0	57	108	24	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585				0	0	1786	1346	1870	0
Q Serve(g_s), s	0.2	24.1	1.3				0.0	0.0	2.3	6.3	0.9	0.0
Cycle Q Clear(g_c), s	0.2	24.1	1.3				0.0	0.0	2.3	8.6	0.9	0.0
Prop In Lane	1.00		1.00				0.00		0.26	1.00		0.00
Lane Grp Cap(c), veh/h	1197	3432	1066				0	0	407	352	426	0
V/C Ratio(X)	0.01	0.67	0.06				0.00	0.00	0.14	0.31	0.06	0.00
Avail Cap(c_a), veh/h	1197	3432	1066				0	0	407	352	426	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	4.9	8.8	5.0				0.0	0.0	27.7	31.1	27.2	0.0
Incr Delay (d2), s/veh	0.0	1.1	0.1				0.0	0.0	0.7	2.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	6.8	0.4				0.0	0.0	1.0	2.2	0.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.9	9.8	5.2				0.0	0.0	28.4	33.4	27.4	0.0
LnGrp LOS	A	A	A				A	A	C	C	C	A
Approach Vol, veh/h		2372						57			132	
Approach Delay, s/veh		9.7						28.4			32.3	
Approach LOS		A						C			C	

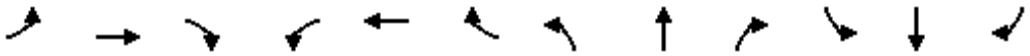
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		65.0		25.0				25.0				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		60.5		20.5				20.5				
Max Q Clear Time (g_c+I1), s		26.1		10.6				4.3				
Green Ext Time (p_c), s		23.8		0.3				0.2				

Intersection Summary												
HCM 6th Ctrl Delay			11.3									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	55	1198	130	140	57	93
Future Volume (vph)	55	1198	130	140	57	93
Turn Type	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		8		4
Permitted Phases	2		2		4	
Detector Phase	2	2	2	8	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	55.0	55.0	55.0	35.0	35.0	35.0
Total Split (%)	61.1%	61.1%	61.1%	38.9%	38.9%	38.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	None	Max	Max
Act Effct Green (s)	50.5	50.5	50.5	30.5	30.5	30.5
Actuated g/C Ratio	0.56	0.56	0.56	0.34	0.34	0.34
v/c Ratio	0.06	0.44	0.15	0.36	0.18	0.16
Control Delay	9.2	12.1	2.1	21.4	25.0	24.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.2	12.1	2.1	21.4	25.0	24.0
LOS	A	B	A	C	C	C
Approach Delay		11.1		21.4		24.4
Approach LOS		B		C		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 80 (89%), Referenced to phase 2:EBTL, Start of Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.44	
Intersection Signal Delay: 13.5	Intersection LOS: B
Intersection Capacity Utilization 81.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: RidgeGate Pkwy EB & Rhapsody Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	1198	130	0	0	0	0	140	69	57	93	0
Future Volume (veh/h)	55	1198	130	0	0	0	0	140	69	57	93	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	58	1261	141				0	152	75	60	101	0
Peak Hour Factor	0.95	0.95	0.92				0.92	0.92	0.92	0.95	0.92	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	1000	2865	889				0	401	198	358	634	0
Arrive On Green	0.56	0.56	0.56				0.00	0.34	0.34	0.11	0.11	0.00
Sat Flow, veh/h	1781	5106	1585				0	1182	583	1154	1870	0
Grp Volume(v), veh/h	58	1261	141				0	0	227	60	101	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585				0	0	1765	1154	1870	0
Q Serve(g_s), s	1.3	13.0	3.9				0.0	0.0	8.8	4.4	4.4	0.0
Cycle Q Clear(g_c), s	1.3	13.0	3.9				0.0	0.0	8.8	13.2	4.4	0.0
Prop In Lane	1.00		1.00				0.00		0.33	1.00		0.00
Lane Grp Cap(c), veh/h	1000	2865	889				0	0	598	358	634	0
V/C Ratio(X)	0.06	0.44	0.16				0.00	0.00	0.38	0.17	0.16	0.00
Avail Cap(c_a), veh/h	1000	2865	889				0	0	598	358	634	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.00	1.00	0.91	0.91	0.00
Uniform Delay (d), s/veh	9.0	11.5	9.5				0.0	0.0	22.6	36.4	28.4	0.0
Incr Delay (d2), s/veh	0.1	0.5	0.4				0.0	0.0	0.4	0.9	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	4.3	1.2				0.0	0.0	3.6	1.4	2.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.1	12.0	9.9				0.0	0.0	23.0	37.3	28.9	0.0
LnGrp LOS	A	B	A				A	A	C	D	C	A
Approach Vol, veh/h		1460						227			161	
Approach Delay, s/veh		11.7						23.0			32.0	
Approach LOS		B						C			C	

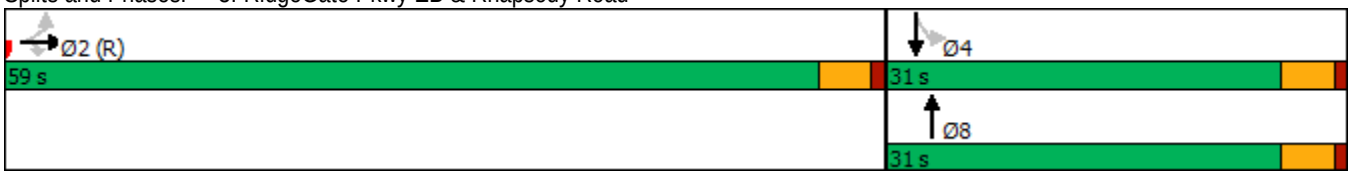
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		55.0		35.0				35.0				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		50.5		30.5				30.5				
Max Q Clear Time (g_c+I1), s		15.0		15.2				10.8				
Green Ext Time (p_c), s		11.3		0.6				1.2				

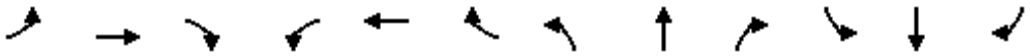
Intersection Summary												
HCM 6th Ctrl Delay			14.8									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	155	2628	175	190	123	128
Future Volume (vph)	155	2628	175	190	123	128
Turn Type	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		8		4
Permitted Phases	2		2		4	
Detector Phase	2	2	2	8	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	59.0	59.0	59.0	31.0	31.0	31.0
Total Split (%)	65.6%	65.6%	65.6%	34.4%	34.4%	34.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	None	Max	Max
Act Effct Green (s)	54.5	54.5	54.5	26.5	26.5	26.5
Actuated g/C Ratio	0.61	0.61	0.61	0.29	0.29	0.29
v/c Ratio	0.16	0.92	0.19	0.53	0.56	0.25
Control Delay	8.2	22.1	3.3	30.7	41.3	28.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.2	22.1	3.3	30.7	41.3	28.8
LOS	A	C	A	C	D	C
Approach Delay		20.2		30.7		34.9
Approach LOS		C		C		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 85 (94%), Referenced to phase 2:EBTL, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 22.1	Intersection LOS: C
Intersection Capacity Utilization 83.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: RidgeGate Pkwy EB & Rhapsody Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	2628	175	0	0	0	0	190	68	123	128	0
Future Volume (veh/h)	155	2628	175	0	0	0	0	190	68	123	128	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	167	2826	190				0	207	74	132	139	0
Peak Hour Factor	0.93	0.93	0.92				0.92	0.92	0.92	0.93	0.92	0.93
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	1079	3092	960				0	387	138	259	551	0
Arrive On Green	0.61	0.61	0.61				0.00	0.29	0.29	0.59	0.59	0.00
Sat Flow, veh/h	1781	5106	1585				0	1315	470	1098	1870	0
Grp Volume(v), veh/h	167	2826	190				0	0	281	132	139	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585				0	0	1786	1098	1870	0
Q Serve(g_s), s	3.7	44.0	4.8				0.0	0.0	11.9	9.6	3.2	0.0
Cycle Q Clear(g_c), s	3.7	44.0	4.8				0.0	0.0	11.9	21.5	3.2	0.0
Prop In Lane	1.00		1.00				0.00		0.26	1.00		0.00
Lane Grp Cap(c), veh/h	1079	3092	960				0	0	526	259	551	0
V/C Ratio(X)	0.15	0.91	0.20				0.00	0.00	0.53	0.51	0.25	0.00
Avail Cap(c_a), veh/h	1079	3092	960				0	0	526	259	551	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.00	1.00	0.98	0.98	0.00
Uniform Delay (d), s/veh	7.7	15.7	8.0				0.0	0.0	26.6	22.7	13.7	0.0
Incr Delay (d2), s/veh	0.3	5.4	0.5				0.0	0.0	1.1	6.9	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	14.8	1.5				0.0	0.0	5.1	2.4	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.0	21.1	8.4				0.0	0.0	27.6	29.6	14.8	0.0
LnGrp LOS	A	C	A				A	A	C	C	B	A
Approach Vol, veh/h		3183						281			271	
Approach Delay, s/veh		19.7						27.6			22.0	
Approach LOS		B						C			C	

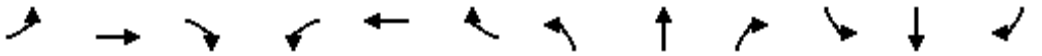
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		59.0		31.0				31.0				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		54.5		26.5				26.5				
Max Q Clear Time (g_c+I1), s		46.0		23.5				13.9				
Green Ext Time (p_c), s		8.1		0.4				1.3				

Intersection Summary												
HCM 6th Ctrl Delay			20.4									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	55	1205	130	140	60	95
Future Volume (vph)	55	1205	130	140	60	95
Turn Type	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		8		4
Permitted Phases	2		2		4	
Detector Phase	2	2	2	8	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	55.0	55.0	55.0	35.0	35.0	35.0
Total Split (%)	61.1%	61.1%	61.1%	38.9%	38.9%	38.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	50.5	50.5	50.5	30.5	30.5	30.5
Actuated g/C Ratio	0.56	0.56	0.56	0.34	0.34	0.34
v/c Ratio	0.06	0.44	0.14	0.36	0.18	0.16
Control Delay	9.2	12.2	2.1	21.1	31.3	29.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.2	12.2	2.1	21.1	31.3	29.9
LOS	A	B	A	C	C	C
Approach Delay		11.1		21.1		30.4
Approach LOS		B		C		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 84 (93%), Referenced to phase 2:EBTL, Start of Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.44	
Intersection Signal Delay: 14.0	Intersection LOS: B
Intersection Capacity Utilization 82.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Rhapsody Road & RidgeGate Pkwy EB



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	1205	130	0	0	0	0	140	70	60	95	0
Future Volume (veh/h)	55	1205	130	0	0	0	0	140	70	60	95	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	58	1268	137				0	147	74	63	100	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	1000	2865	889				0	398	200	363	634	0
Arrive On Green	0.56	0.56	0.56				0.00	0.34	0.34	0.11	0.11	0.00
Sat Flow, veh/h	1781	5106	1585				0	1173	591	1160	1870	0
Grp Volume(v), veh/h	58	1268	137				0	0	221	63	100	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585				0	0	1764	1160	1870	0
Q Serve(g_s), s	1.3	13.0	3.7				0.0	0.0	8.5	4.6	4.4	0.0
Cycle Q Clear(g_c), s	1.3	13.0	3.7				0.0	0.0	8.5	13.1	4.4	0.0
Prop In Lane	1.00		1.00				0.00		0.33	1.00		0.00
Lane Grp Cap(c), veh/h	1000	2865	889				0	0	598	363	634	0
V/C Ratio(X)	0.06	0.44	0.15				0.00	0.00	0.37	0.17	0.16	0.00
Avail Cap(c_a), veh/h	1000	2865	889				0	0	598	363	634	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.00	1.00	0.92	0.92	0.00
Uniform Delay (d), s/veh	9.0	11.5	9.5				0.0	0.0	22.5	36.2	28.4	0.0
Incr Delay (d2), s/veh	0.1	0.5	0.4				0.0	0.0	1.8	1.0	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	4.3	1.2				0.0	0.0	3.7	1.5	2.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.1	12.0	9.9				0.0	0.0	24.2	37.2	28.8	0.0
LnGrp LOS	A	B	A				A	A	C	D	C	A
Approach Vol, veh/h		1463						221			163	
Approach Delay, s/veh		11.7						24.2			32.1	
Approach LOS		B						C			C	

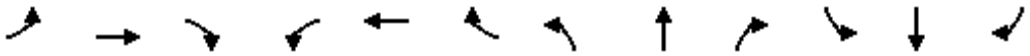
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		55.0		35.0				35.0				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		50.5		30.5				30.5				
Max Q Clear Time (g_c+I1), s		15.0		15.1				10.5				
Green Ext Time (p_c), s		11.4		0.6				1.2				

Intersection Summary												
HCM 6th Ctrl Delay			15.0									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	155	2645	175	190	125	130
Future Volume (vph)	155	2645	175	190	125	130
Turn Type	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		8		4
Permitted Phases	2		2		4	
Detector Phase	2	2	2	8	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	59.0	59.0	59.0	31.0	31.0	31.0
Total Split (%)	65.6%	65.6%	65.6%	34.4%	34.4%	34.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	54.5	54.5	54.5	26.5	26.5	26.5
Actuated g/C Ratio	0.61	0.61	0.61	0.29	0.29	0.29
v/c Ratio	0.16	0.92	0.19	0.53	0.57	0.26
Control Delay	8.2	22.5	3.3	30.8	33.7	22.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.2	22.5	3.3	30.8	33.7	22.3
LOS	A	C	A	C	C	C
Approach Delay		20.7		30.8		27.9
Approach LOS		C		C		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 85 (94%), Referenced to phase 2:EBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 21.9	Intersection LOS: C
Intersection Capacity Utilization 83.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Rhapsody Road & RidgeGate Pkwy EB



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	2645	175	0	0	0	0	190	70	125	130	0
Future Volume (veh/h)	155	2645	175	0	0	0	0	190	70	125	130	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	167	2844	188				0	204	75	134	140	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	1079	3092	960				0	384	141	260	551	0
Arrive On Green	0.61	0.61	0.61				0.00	0.29	0.29	0.59	0.59	0.00
Sat Flow, veh/h	1781	5106	1585				0	1304	480	1100	1870	0
Grp Volume(v), veh/h	167	2844	188				0	0	279	134	140	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585				0	0	1784	1100	1870	0
Q Serve(g_s), s	3.7	44.6	4.8				0.0	0.0	11.8	9.7	3.3	0.0
Cycle Q Clear(g_c), s	3.7	44.6	4.8				0.0	0.0	11.8	21.5	3.3	0.0
Prop In Lane	1.00		1.00				0.00		0.27	1.00		0.00
Lane Grp Cap(c), veh/h	1079	3092	960				0	0	525	260	551	0
V/C Ratio(X)	0.15	0.92	0.20				0.00	0.00	0.53	0.52	0.25	0.00
Avail Cap(c_a), veh/h	1079	3092	960				0	0	525	260	551	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.00	1.00	0.98	0.98	0.00
Uniform Delay (d), s/veh	7.7	15.8	7.9				0.0	0.0	26.6	22.7	13.7	0.0
Incr Delay (d2), s/veh	0.3	5.8	0.5				0.0	0.0	3.8	7.0	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	15.1	1.5				0.0	0.0	5.4	2.5	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.0	21.6	8.4				0.0	0.0	30.4	29.7	14.8	0.0
LnGrp LOS	A	C	A				A	A	C	C	B	A
Approach Vol, veh/h		3199						279			274	
Approach Delay, s/veh		20.1						30.4			22.1	
Approach LOS		C						C			C	

Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		59.0		31.0				31.0				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		54.5		26.5				26.5				
Max Q Clear Time (g_c+I1), s		46.6		23.5				13.8				
Green Ext Time (p_c), s		7.6		0.4				1.3				

Intersection Summary												
HCM 6th Ctrl Delay			21.0									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	897	0	0	37	0
Future Vol, veh/h	12	897	0	0	37	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	1082	2439	680	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	975	0	0	40	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	416	-
Stage 1	-	-	0	-
Stage 2	-	-	416	-
Critical Hdwy	5.34	-	5.74	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	6.04	-
Follow-up Hdwy	3.12	-	3.82	-
Pot Cap-1 Maneuver	-	-	600	0
Stage 1	-	-	-	0
Stage 2	-	-	580	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	600	-
Mov Cap-2 Maneuver	-	-	600	-
Stage 1	-	-	-	-
Stage 2	-	-	580	-

Approach	EB	SB
HCM Control Delay, s		11.4
HCM LOS		B

Minor Lane/Major Mvmt	EBL	EBT	SBLn1
Capacity (veh/h)	-	-	600
HCM Lane V/C Ratio	-	-	0.067
HCM Control Delay (s)	-	-	11.4
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.2

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	31	2169	0	0	20	0
Future Vol, veh/h	31	2169	0	0	20	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	1082	2439	680	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	2358	0	0	22	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	1011	-
Stage 1	-	-	0	-
Stage 2	-	-	1011	-
Critical Hdwy	5.34	-	5.74	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	6.04	-
Follow-up Hdwy	3.12	-	3.82	-
Pot Cap-1 Maneuver	-	-	307	0
Stage 1	-	-	-	0
Stage 2	-	-	282	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	307	-
Mov Cap-2 Maneuver	-	-	307	-
Stage 1	-	-	-	-
Stage 2	-	-	282	-

Approach	EB	SB
HCM Control Delay, s		17.6
HCM LOS		C

Minor Lane/Major Mvmt	EBL	EBT	SBLn1
Capacity (veh/h)	-	-	307
HCM Lane V/C Ratio	-	-	0.071
HCM Control Delay (s)	-	-	17.6
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.2

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	897	0	0	45	0
Future Vol, veh/h	19	897	0	0	45	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Stop	Stop	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	1082	2439	680	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	944	0	0	47	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	418	-
Stage 1	-	-	0	-
Stage 2	-	-	418	-
Critical Hdwy	5.34	-	5.74	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	6.04	-
Follow-up Hdwy	3.12	-	3.82	-
Pot Cap-1 Maneuver	-	-	599	0
Stage 1	-	-	-	0
Stage 2	-	-	579	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	599	-
Mov Cap-2 Maneuver	-	-	599	-
Stage 1	-	-	-	-
Stage 2	-	-	579	-

Approach	EB	SB
HCM Control Delay, s		11.5
HCM LOS		B

Minor Lane/Major Mvmt	EBL	EBT	SBLn1
Capacity (veh/h)	-	-	599
HCM Lane V/C Ratio	-	-	0.079
HCM Control Delay (s)	-	-	11.5
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.3

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	46	2169	0	0	26	0
Future Vol, veh/h	46	2169	0	0	26	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Stop	Stop	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	1082	2439	680	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	2332	0	0	28	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	1031	-
Stage 1	-	-	0	-
Stage 2	-	-	1031	-
Critical Hdwy	5.34	-	5.74	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	6.04	-
Follow-up Hdwy	3.12	-	3.82	-
Pot Cap-1 Maneuver	-	-	300	0
Stage 1	-	-	-	0
Stage 2	-	-	275	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	300	-
Mov Cap-2 Maneuver	-	-	300	-
Stage 1	-	-	-	-
Stage 2	-	-	275	-

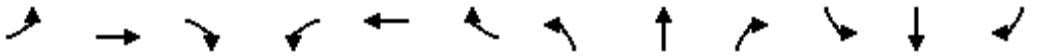
Approach	EB	SB
HCM Control Delay, s		18.2
HCM LOS		C

Minor Lane/Major Mvmt	EBL	EBT	SBLn1
Capacity (veh/h)	-	-	300
HCM Lane V/C Ratio	-	-	0.093
HCM Control Delay (s)	-	-	18.2
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.3

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	54	1255	5	107	70
Future Volume (vph)	54	1255	5	107	70
Turn Type	Perm	NA	NA	Perm	NA
Protected Phases		2	8		4
Permitted Phases	2			4	
Detector Phase	2	2	8	4	4
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5
Total Split (s)	53.0	53.0	37.0	37.0	37.0
Total Split (%)	58.9%	58.9%	41.1%	41.1%	41.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	48.5	48.5	32.5		32.5
Actuated g/C Ratio	0.54	0.54	0.36		0.36
v/c Ratio	0.06	0.49	0.04		0.34
Control Delay	3.0	5.5	9.6		21.9
Queue Delay	0.0	0.0	0.0		0.0
Total Delay	3.0	5.5	9.6		21.9
LOS	A	A	A		C
Approach Delay		5.4	9.6		21.9
Approach LOS		A	A		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 2 (2%), Referenced to phase 2:EBTL, Start of Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 7.4	Intersection LOS: A
Intersection Capacity Utilization 48.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: RidgeGate Pkwy EB & N/S Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	1255	15	0	0	0	0	5	20	107	70	0
Future Volume (veh/h)	54	1255	15	0	0	0	0	5	20	107	70	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	57	1321	11				0	5	21	113	74	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	960	2815	23				0	113	476	387	239	0
Arrive On Green	0.18	0.18	0.18				0.00	0.36	0.36	0.60	0.60	0.00
Sat Flow, veh/h	1781	5223	43				0	314	1319	895	661	0
Grp Volume(v), veh/h	57	861	471				0	0	26	187	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1863				0	0	1633	1556	0	0
Q Serve(g_s), s	2.4	20.4	20.4				0.0	0.0	0.9	3.8	0.0	0.0
Cycle Q Clear(g_c), s	2.4	20.4	20.4				0.0	0.0	0.9	5.1	0.0	0.0
Prop In Lane	1.00		0.02				0.00		0.81	0.60		0.00
Lane Grp Cap(c), veh/h	960	1834	1004				0	0	590	626	0	0
V/C Ratio(X)	0.06	0.47	0.47				0.00	0.00	0.04	0.30	0.00	0.00
Avail Cap(c_a), veh/h	960	1834	1004				0	0	590	626	0	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	1.67	1.67	1.00
Upstream Filter(I)	0.91	0.91	0.91				0.00	0.00	1.00	0.94	0.00	0.00
Uniform Delay (d), s/veh	18.0	25.5	25.5				0.0	0.0	18.7	12.4	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.8	1.4				0.0	0.0	0.1	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	9.3	10.4				0.0	0.0	0.4	1.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.2	26.2	26.9				0.0	0.0	18.8	13.5	0.0	0.0
LnGrp LOS	B	C	C				A	A	B	B	A	A
Approach Vol, veh/h		1389						26			187	
Approach Delay, s/veh		26.1						18.8			13.5	
Approach LOS		C						B			B	

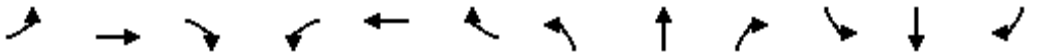
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		53.0		37.0				37.0				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		48.5		32.5				32.5				
Max Q Clear Time (g_c+I1), s		22.4		7.1				2.9				
Green Ext Time (p_c), s		9.6		1.0				0.1				

Intersection Summary												
HCM 6th Ctrl Delay			24.5									
HCM 6th LOS			C									

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	146	2693	20	93	35
Future Volume (vph)	146	2693	20	93	35
Turn Type	Perm	NA	NA	Perm	NA
Protected Phases		2	8		4
Permitted Phases	2			4	
Detector Phase	2	2	8	4	4
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5
Total Split (s)	67.0	67.0	23.0	23.0	23.0
Total Split (%)	74.4%	74.4%	25.6%	25.6%	25.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	62.5	62.5	18.5		18.5
Actuated g/C Ratio	0.69	0.69	0.21		0.21
v/c Ratio	0.13	0.82	0.30		0.50
Control Delay	1.1	2.3	32.2		34.5
Queue Delay	0.0	0.0	0.0		0.0
Total Delay	1.1	2.4	32.2		34.5
LOS	A	A	C		C
Approach Delay		2.3	32.2		34.5
Approach LOS		A	C		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 4.6	Intersection LOS: A
Intersection Capacity Utilization 73.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: RidgeGate Pkwy EB & N/S Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	2693	5	0	0	0	0	20	75	93	35	0
Future Volume (veh/h)	146	2693	5	0	0	0	0	20	75	93	35	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	157	2896	5				0	22	81	100	38	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	1237	3655	6				0	72	265	225	75	0
Arrive On Green	0.23	0.23	0.23				0.00	0.21	0.21	0.21	0.21	0.00
Sat Flow, veh/h	1781	5264	9				0	350	1288	758	365	0
Grp Volume(v), veh/h	157	1872	1029				0	0	103	138	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1869				0	0	1638	1123	0	0
Q Serve(g_s), s	6.3	46.6	46.7				0.0	0.0	4.8	7.2	0.0	0.0
Cycle Q Clear(g_c), s	6.3	46.6	46.7				0.0	0.0	4.8	11.9	0.0	0.0
Prop In Lane	1.00		0.00				0.00		0.79	0.72		0.00
Lane Grp Cap(c), veh/h	1237	2364	1298				0	0	337	300	0	0
V/C Ratio(X)	0.13	0.79	0.79				0.00	0.00	0.31	0.46	0.00	0.00
Avail Cap(c_a), veh/h	1237	2364	1298				0	0	337	300	0	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.39	0.39	0.39				0.00	0.00	1.00	0.97	0.00	0.00
Uniform Delay (d), s/veh	13.0	28.6	28.6				0.0	0.0	30.3	34.5	0.0	0.0
Incr Delay (d2), s/veh	0.1	1.1	2.0				0.0	0.0	2.3	4.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	21.0	23.5				0.0	0.0	2.1	3.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.1	29.7	30.6				0.0	0.0	32.6	39.3	0.0	0.0
LnGrp LOS	B	C	C				A	A	C	D	A	A
Approach Vol, veh/h		3058						103			138	
Approach Delay, s/veh		29.1						32.6			39.3	
Approach LOS		C						C			D	

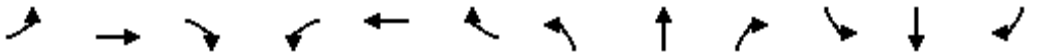
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		67.0		23.0				23.0				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		62.5		18.5				18.5				
Max Q Clear Time (g_c+I1), s		48.7		13.9				6.8				
Green Ext Time (p_c), s		12.8		0.2				0.3				

Intersection Summary												
HCM 6th Ctrl Delay			29.7									
HCM 6th LOS			C									

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	65	1255	5	115	70
Future Volume (vph)	65	1255	5	115	70
Turn Type	Perm	NA	NA	Perm	NA
Protected Phases		2	8		4
Permitted Phases	2			4	
Detector Phase	2	2	8	4	4
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5
Total Split (s)	53.0	53.0	37.0	37.0	37.0
Total Split (%)	58.9%	58.9%	41.1%	41.1%	41.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	48.5	48.5	32.5		32.5
Actuated g/C Ratio	0.54	0.54	0.36		0.36
v/c Ratio	0.07	0.49	0.04		0.36
Control Delay	3.9	5.2	9.4		18.8
Queue Delay	0.0	0.0	0.0		0.0
Total Delay	3.9	5.2	9.4		18.8
LOS	A	A	A		B
Approach Delay		5.2	9.4		18.8
Approach LOS		A	A		B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 3 (3%), Referenced to phase 2:EBTL, Start of Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 6.9	Intersection LOS: A
Intersection Capacity Utilization 48.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: RidgeGate Pkwy EB & N/S Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	1255	15	0	0	0	0	5	20	115	70	0
Future Volume (veh/h)	65	1255	15	0	0	0	0	5	20	115	70	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	68	1321	16				0	5	22	121	76	0
Peak Hour Factor	0.95	0.95	0.92				0.92	0.92	0.92	0.95	0.92	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	960	2802	34				0	109	480	392	232	0
Arrive On Green	0.18	0.18	0.18				0.00	0.36	0.36	0.60	0.60	0.00
Sat Flow, veh/h	1781	5200	63				0	302	1329	908	643	0
Grp Volume(v), veh/h	68	865	472				0	0	27	197	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1859				0	0	1631	1551	0	0
Q Serve(g_s), s	2.9	20.5	20.5				0.0	0.0	1.0	4.2	0.0	0.0
Cycle Q Clear(g_c), s	2.9	20.5	20.5				0.0	0.0	1.0	5.5	0.0	0.0
Prop In Lane	1.00		0.03				0.00		0.81	0.61		0.00
Lane Grp Cap(c), veh/h	960	1834	1002				0	0	589	625	0	0
V/C Ratio(X)	0.07	0.47	0.47				0.00	0.00	0.05	0.32	0.00	0.00
Avail Cap(c_a), veh/h	960	1834	1002				0	0	589	625	0	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	1.67	1.67	1.00
Upstream Filter(I)	0.90	0.90	0.90				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.2	25.5	25.5				0.0	0.0	18.7	12.4	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.8	1.4				0.0	0.0	0.1	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	9.3	10.4				0.0	0.0	0.4	2.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.4	26.3	26.9				0.0	0.0	18.8	13.8	0.0	0.0
LnGrp LOS	B	C	C				A	A	B	B	A	A
Approach Vol, veh/h		1405						27			197	
Approach Delay, s/veh		26.1						18.8			13.8	
Approach LOS		C						B			B	

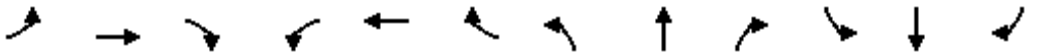
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		53.0		37.0				37.0				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		48.5		32.5				32.5				
Max Q Clear Time (g_c+I1), s		22.5		7.5				3.0				
Green Ext Time (p_c), s		9.7		1.1				0.1				

Intersection Summary			
HCM 6th Ctrl Delay		24.5	
HCM 6th LOS		C	

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	165	2695	20	100	35
Future Volume (vph)	165	2695	20	100	35
Turn Type	Perm	NA	NA	Perm	NA
Protected Phases		2	8		4
Permitted Phases	2			4	
Detector Phase	2	2	8	4	4
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5
Total Split (s)	67.0	67.0	23.0	23.0	23.0
Total Split (%)	74.4%	74.4%	25.6%	25.6%	25.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	62.5	62.5	18.5		18.5
Actuated g/C Ratio	0.69	0.69	0.21		0.21
v/c Ratio	0.14	0.82	0.30		0.53
Control Delay	1.1	2.3	32.2		31.8
Queue Delay	0.0	0.1	0.0		0.0
Total Delay	1.1	2.3	32.2		31.8
LOS	A	A	C		C
Approach Delay		2.3	32.3		31.8
Approach LOS		A	C		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 4.5	Intersection LOS: A
Intersection Capacity Utilization 73.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: RidgeGate Pkwy EB & N/S Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	2695	5	0	0	0	0	20	75	100	35	0
Future Volume (veh/h)	165	2695	5	0	0	0	0	20	75	100	35	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	177	2898	5				0	22	82	108	38	0
Peak Hour Factor	0.93	0.93	0.92				0.92	0.92	0.92	0.93	0.92	0.93
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	1237	3655	6				0	71	265	227	70	0
Arrive On Green	0.23	0.23	0.23				0.00	0.21	0.21	0.21	0.21	0.00
Sat Flow, veh/h	1781	5264	9				0	346	1291	766	341	0
Grp Volume(v), veh/h	177	1874	1029				0	0	104	146	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1869				0	0	1638	1107	0	0
Q Serve(g_s), s	7.1	46.7	46.7				0.0	0.0	4.8	7.8	0.0	0.0
Cycle Q Clear(g_c), s	7.1	46.7	46.7				0.0	0.0	4.8	12.7	0.0	0.0
Prop In Lane	1.00		0.00				0.00		0.79	0.74		0.00
Lane Grp Cap(c), veh/h	1237	2364	1298				0	0	337	297	0	0
V/C Ratio(X)	0.14	0.79	0.79				0.00	0.00	0.31	0.49	0.00	0.00
Avail Cap(c_a), veh/h	1237	2364	1298				0	0	337	297	0	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.38	0.38	0.38				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.3	28.6	28.6				0.0	0.0	30.3	34.9	0.0	0.0
Incr Delay (d2), s/veh	0.1	1.1	2.0				0.0	0.0	2.4	5.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	21.0	23.4				0.0	0.0	2.1	3.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.4	29.7	30.6				0.0	0.0	32.7	40.6	0.0	0.0
LnGrp LOS	B	C	C				A	A	C	D	A	A
Approach Vol, veh/h		3080						104			146	
Approach Delay, s/veh		29.0						32.7			40.6	
Approach LOS		C						C			D	

Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		67.0		23.0				23.0				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		62.5		18.5				18.5				
Max Q Clear Time (g_c+I1), s		48.7		14.7				6.8				
Green Ext Time (p_c), s		12.8		0.2				0.4				

Intersection Summary												
HCM 6th Ctrl Delay			29.7									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	14	12	7	4	37
Future Vol, veh/h	8	14	12	7	4	37
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	15	13	7	4	39

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	64	17	0	0	20	0
Stage 1	17	-	-	-	-	-
Stage 2	47	-	-	-	-	-
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	942	1062	-	-	1596	-
Stage 1	1006	-	-	-	-	-
Stage 2	975	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	939	1062	-	-	1596	-
Mov Cap-2 Maneuver	939	-	-	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	972	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	0.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1014	1596	-
HCM Lane V/C Ratio	-	-	0.023	0.003	-
HCM Control Delay (s)	-	-	8.6	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	12	31	15	8	20
Future Vol, veh/h	6	12	31	15	8	20
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	13	33	16	9	22

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	81	41	0	0	49	0
Stage 1	41	-	-	-	-	-
Stage 2	40	-	-	-	-	-
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	921	1030	-	-	1558	-
Stage 1	981	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	915	1030	-	-	1558	-
Mov Cap-2 Maneuver	915	-	-	-	-	-
Stage 1	981	-	-	-	-	-
Stage 2	976	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	2.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	989	1558	-
HCM Lane V/C Ratio	-	-	0.02	0.006	-
HCM Control Delay (s)	-	-	8.7	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	15	65	10	5	180
Future Vol, veh/h	10	15	65	10	5	180
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	16	68	11	5	189

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	273	74	0	0	79	0
Stage 1	74	-	-	-	-	-
Stage 2	199	-	-	-	-	-
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	*813	1024	-	-	1533	-
Stage 1	*968	-	-	-	-	-
Stage 2	*881	-	-	-	-	-
Platoon blocked, %	1	1	-	-	1	-
Mov Cap-1 Maneuver	*810	1024	-	-	1533	-
Mov Cap-2 Maneuver	*810	-	-	-	-	-
Stage 1	*968	-	-	-	-	-
Stage 2	*878	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	926	1533	-
HCM Lane V/C Ratio	-	-	0.028	0.003	-
HCM Control Delay (s)	-	-	9	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	15	165	15	10	130
Future Vol, veh/h	10	15	165	15	10	130
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	16	177	16	11	140

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	347	185	0	0	193	0
Stage 1	185	-	-	-	-	-
Stage 2	162	-	-	-	-	-
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	740	935	-	-	1405	-
Stage 1	888	-	-	-	-	-
Stage 2	896	-	-	-	-	-
Platoon blocked, %	1	1	-	-	1	-
Mov Cap-1 Maneuver	734	935	-	-	1405	-
Mov Cap-2 Maneuver	734	-	-	-	-	-
Stage 1	888	-	-	-	-	-
Stage 2	889	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	0.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	843	1405	-
HCM Lane V/C Ratio	-	-	0.032	0.008	-
HCM Control Delay (s)	-	-	9.4	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

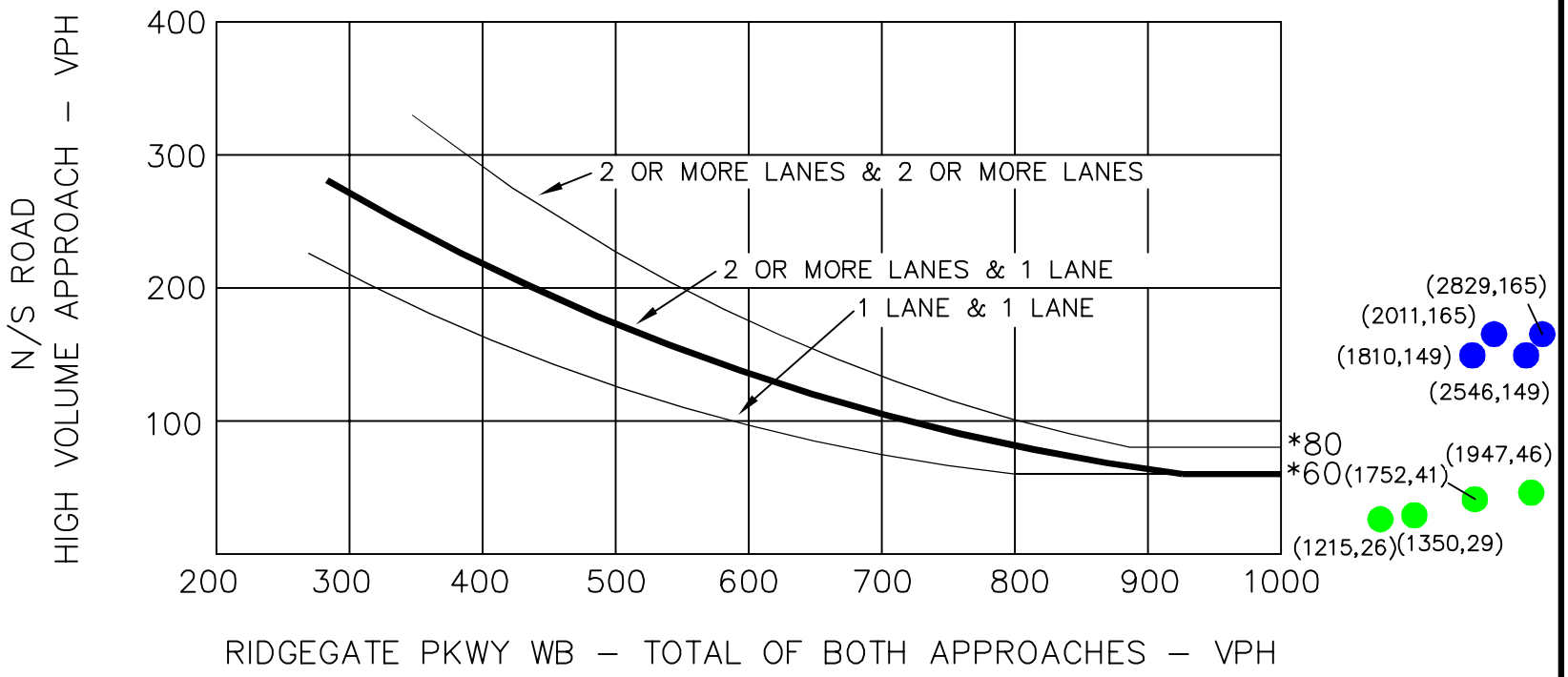
APPENDIX E

Signal Warrant Analysis Worksheets

Scale: 1=100

WARRANT 2 - FOUR HOUR VEHICULAR VOLUME (70% FACTOR)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



* NOTE: 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 60 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

RIDGEGATE PKWY WB & N/S RD (#2)
SIGNAL WARRANT ANALYSIS
FOUR HOUR VOLUME WARRANT

● 2028 TOTAL TRAFFIC DATA POINT
● 2045 BACKGROUND TRAFFIC DATA POINT

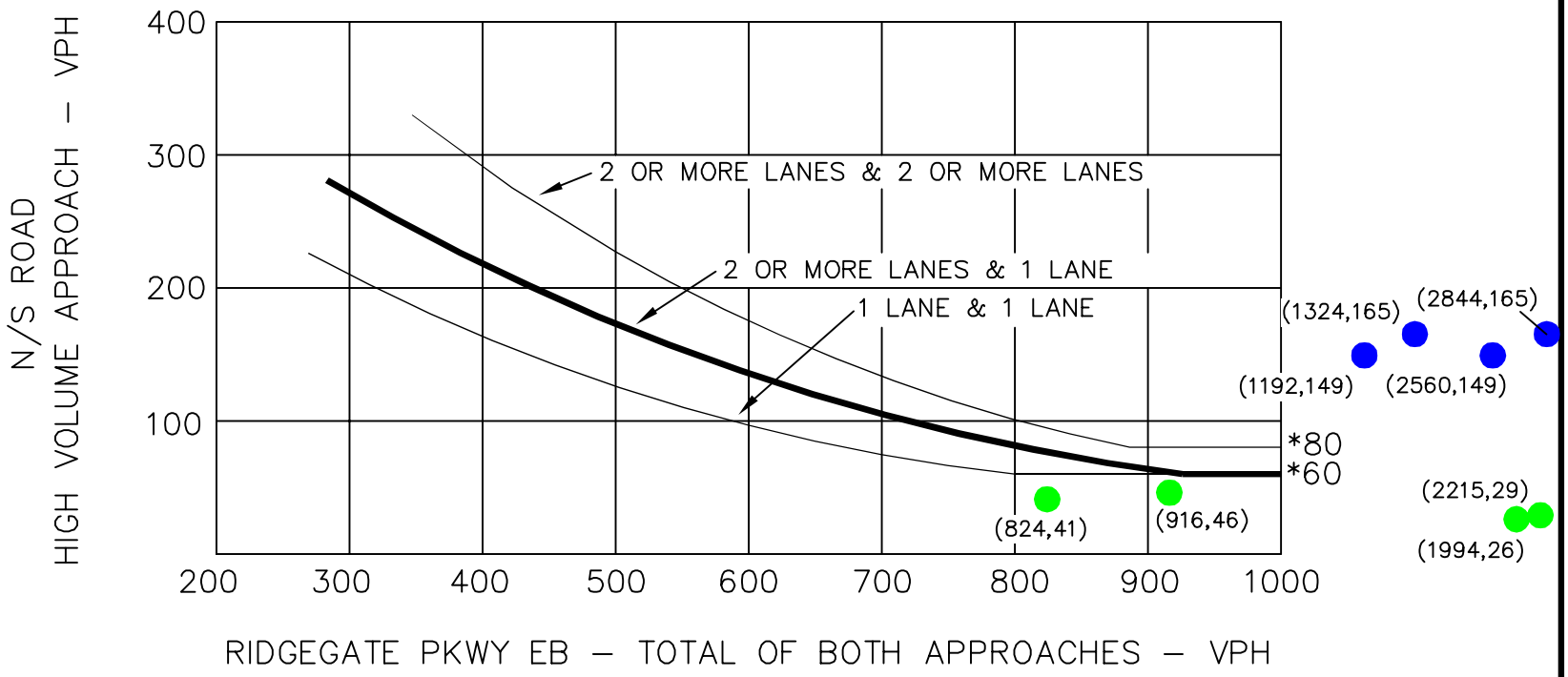
Source: Manual of Uniform Traffic Control Devices 2009

Kimley»Horn

Scale: 1=100

WARRANT 2 - FOUR HOUR VEHICULAR VOLUME (70% FACTOR)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



* NOTE: 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 60 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

RIDGEGATE PKWY EB & N/S RD (#4)
SIGNAL WARRANT ANALYSIS
FOUR HOUR VOLUME WARRANT

● 2028 TOTAL TRAFFIC DATA POINT
● 2045 BACKGROUND TRAFFIC DATA POINT

Source: Manual of Uniform Traffic Control Devices 2009

Kimley»Horn

APPENDIX F

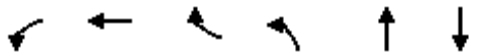
Queue Analysis Worksheets

Lane Group	WBL	WBT	NBL
Lane Group Flow (vph)	77	2043	72
v/c Ratio	0.06	0.60	0.22
Control Delay	5.2	9.0	16.3
Queue Delay	0.0	0.0	0.0
Total Delay	5.2	9.0	16.3
Queue Length 50th (ft)	13	204	15
Queue Length 95th (ft)	27	243	22
Internal Link Dist (ft)		820	
Turn Bay Length (ft)	150		150
Base Capacity (vph)	1189	3418	321
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.06	0.60	0.22

Intersection Summary

Lane Group	WBL	WBT	NBL
Lane Group Flow (vph)	128	1351	60
v/c Ratio	0.12	0.42	0.16
Control Delay	7.1	9.0	12.2
Queue Delay	0.0	0.0	0.0
Total Delay	7.1	9.0	12.2
Queue Length 50th (ft)	26	128	12
Queue Length 95th (ft)	48	157	20
Internal Link Dist (ft)		820	
Turn Bay Length (ft)	150		150
Base Capacity (vph)	1111	3192	383
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.12	0.42	0.16

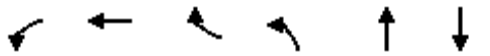
Intersection Summary



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	100	2826	84	126	79	226
v/c Ratio	0.09	0.89	0.08	0.50	0.16	0.48
Control Delay	3.7	9.2	0.6	26.3	17.4	31.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.7	9.2	0.6	26.3	17.4	31.4
Queue Length 50th (ft)	9	94	0	32	20	107
Queue Length 95th (ft)	m12	101	m1	82	37	177
Internal Link Dist (ft)		820			658	464
Turn Bay Length (ft)	150		150	150		
Base Capacity (vph)	1111	3192	1016	250	507	466
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.89	0.08	0.50	0.16	0.48

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	151	1817	124	204	188	204
v/c Ratio	0.16	0.66	0.14	0.53	0.28	0.32
Control Delay	6.2	8.1	0.6	24.3	19.1	21.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.2	8.1	0.6	24.3	19.1	21.3
Queue Length 50th (ft)	18	80	0	59	52	78
Queue Length 95th (ft)	m30	90	m4	120	104	134
Internal Link Dist (ft)		820			658	464
Turn Bay Length (ft)	150		150	150		
Base Capacity (vph)	953	2740	905	386	672	639
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.66	0.14	0.53	0.28	0.32

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	84	2853	49	107	179
v/c Ratio	0.07	0.80	0.04	0.42	0.51
Control Delay	4.4	11.5	1.6	36.4	37.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	4.4	11.5	1.6	36.4	37.2
Queue Length 50th (ft)	13	347	1	59	89
Queue Length 95th (ft)	26	413	10	112	154
Internal Link Dist (ft)		408		266	230
Turn Bay Length (ft)	150		150		
Base Capacity (vph)	1239	3559	1121	254	351
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.07	0.80	0.04	0.42	0.51

Intersection Summary

Lane Group	WBL	WBT	WBR	NBT	SBT
Lane Group Flow (vph)	70	1984	120	173	179
v/c Ratio	0.06	0.61	0.11	0.41	0.38
Control Delay	6.3	10.6	1.5	25.1	27.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	6.3	10.6	1.5	25.1	27.7
Queue Length 50th (ft)	13	219	0	83	76
Queue Length 95th (ft)	28	261	18	132	135
Internal Link Dist (ft)		408		266	230
Turn Bay Length (ft)	150		150		
Base Capacity (vph)	1130	3248	1054	425	466
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.06	0.61	0.11	0.41	0.38

Intersection Summary

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	5	928	23	88	38	7
v/c Ratio	0.00	0.32	0.03	0.15	0.09	0.01
Control Delay	8.4	10.4	3.6	17.4	16.6	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.4	10.4	3.6	17.4	16.6	16.1
Queue Length 50th (ft)	1	93	0	26	15	3
Queue Length 95th (ft)	6	118	10	60	37	12
Internal Link Dist (ft)		554		198		658
Turn Bay Length (ft)	190		190		150	
Base Capacity (vph)	1012	2909	915	603	427	610
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.32	0.03	0.15	0.09	0.01

Intersection Summary

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	11	2295	66	57	108	24
v/c Ratio	0.01	0.67	0.06	0.14	0.35	0.06
Control Delay	4.9	10.1	1.5	24.9	26.6	21.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.9	10.1	1.5	24.9	26.6	21.5
Queue Length 50th (ft)	2	250	0	21	52	11
Queue Length 95th (ft)	7	297	12	53	100	31
Internal Link Dist (ft)		554		198		658
Turn Bay Length (ft)	190		190		150	
Base Capacity (vph)	1189	3418	1085	416	305	424
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.67	0.06	0.14	0.35	0.06

Intersection Summary

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	58	1268	137	221	63	100
v/c Ratio	0.06	0.44	0.14	0.36	0.18	0.16
Control Delay	9.2	12.2	2.1	21.1	31.3	29.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.2	12.2	2.1	21.1	31.3	29.9
Queue Length 50th (ft)	14	143	0	80	30	48
Queue Length 95th (ft)	31	177	24	140	m60	m88
Internal Link Dist (ft)		554		198		658
Turn Bay Length (ft)	150		150		150	
Base Capacity (vph)	993	2853	948	622	342	631
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.44	0.14	0.36	0.18	0.16

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	167	2844	188	279	134	140
v/c Ratio	0.16	0.92	0.19	0.53	0.57	0.26
Control Delay	8.2	22.5	3.3	30.8	33.7	22.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.2	22.5	3.3	30.8	33.7	22.3
Queue Length 50th (ft)	38	484	13	131	54	53
Queue Length 95th (ft)	66	576	39	210	114	108
Internal Link Dist (ft)		554		198		658
Turn Bay Length (ft)	150		150		150	
Base Capacity (vph)	1071	3079	1009	529	235	548
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.92	0.19	0.53	0.57	0.26

Intersection Summary

Lane Group	EBL	EBT	NBT	SBT
Lane Group Flow (vph)	68	1337	27	197
v/c Ratio	0.07	0.49	0.04	0.36
Control Delay	3.9	5.2	9.4	18.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.9	5.2	9.4	18.8
Queue Length 50th (ft)	5	37	2	57
Queue Length 95th (ft)	11	43	19	94
Internal Link Dist (ft)		583	180	245
Turn Bay Length (ft)	150			
Base Capacity (vph)	953	2736	612	541
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.07	0.49	0.04	0.36

Intersection Summary

Lane Group	EBL	EBT	NBT	SBT
Lane Group Flow (vph)	177	2903	104	146
v/c Ratio	0.14	0.82	0.30	0.53
Control Delay	1.1	2.3	32.2	31.8
Queue Delay	0.0	0.1	0.0	0.0
Total Delay	1.1	2.3	32.2	31.8
Queue Length 50th (ft)	7	42	49	49
Queue Length 95th (ft)	m7	45	95	81
Internal Link Dist (ft)		583	180	245
Turn Bay Length (ft)	150			
Base Capacity (vph)	1229	3531	344	274
Starvation Cap Reductn	0	41	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.14	0.83	0.30	0.53

Intersection Summary

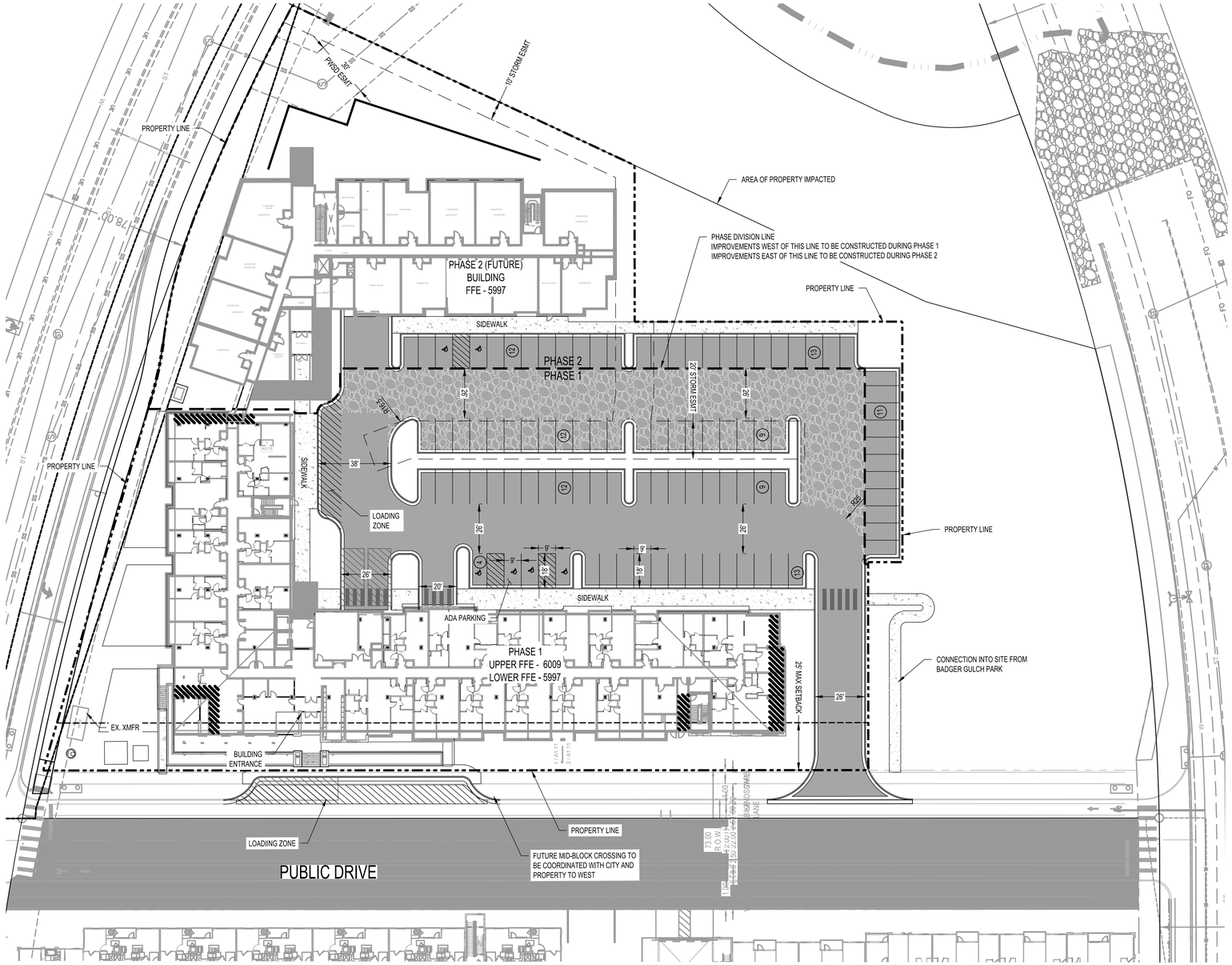
m Volume for 95th percentile queue is metered by upstream signal.

APPENDIX G

Conceptual Site Plan and Turn Lane Exhibit

RIDGEGATE SENIOR HOUSING

LOT 2231-242-00-006 LOT 7
RIDGEGATE EAST COUPLET DISTRICT MASTERPLAN
CENTRAL VILLAGE EAST COUPLET DISTRICT (MU CORE AREA)
2.857 ACRES
SIP-SPXX-XX



SITE DATA CHART (PHASE 1 & 2)		
TOTAL PROJECT SITE AREA = 124,475 SF / 2.857 AC		
IMPERVIOUS		
TYPE	AREA	%
SIDEWALK	5,934 SF	4.77
ASPHALT	36,429 SF	29.27
CONCRETE (C&G)	3,791 SF	3.05
BUILDINGS	42,914 SF	34.40
EX. IMPERVIOUS	21,529 SF	17.30
PERVIOUS		
LANDSCAPE	13,978 SF	11.23
PARKING		
STANDARD PARKING	159	
COMPACT PARKING	2	
ADA PARKING	7	
TOTAL	168	

LEGEND

EXISTING	PROPOSED	
		ASPHALT
		SIDEWALK / CONCRETE
		BUILDING
		GRAVEL
		ASPHALT PATCH
		SOFTSCAPE
		COVERED PARKING
		GRAVEL DURING PH. 1 PAVED DURING PH. 2
		TOP OF CURB
		FLOWLINE
		PAN
		SUBJECT BOUNDARY
		LOT LINE
		BUILDING SETBACK
		EASEMENT LINE
		RIGHT-OF-WAY (R.O.W.)
ST	ST	STORM SEWER LINE
SS	SS	SANITARY SEWER LINE
SAN SRV	SAN SRV	SANITARY SERVICE LINE
W	W	WATER LINE
WTR SRV	WTR SRV	WATER SERVICE LINE
		WATER FIRE LINE
G	G	GAS LINE
T	T	TELEPHONE LINE
E	E	ELECTRIC LINE
OE	OE	OVERHEAD ELECTRIC LINE
		ADA PARKING SYMBOL
		STORM SEWER INLET
		STORM SEWER MANHOLE
		SANITARY SEWER MANHOLE
		TELECOMM MANHOLE
		LIGHT POLE
		POWER POLE
		FIRE HYDRANT
		WATER VALVE
		FLARED END SECTION
E		ELECTRICAL BOX
G		GAS METER
		TELEPHONE PEDESTAL/BOX
	x	FENCE
		PROPERTY CORNER
5281	5281	MAJOR CONTOUR
5281	5281	MINOR CONTOUR
		ADA ACCESS ROUTE
	0.00 = 5000.00	SPOT ELEVATION TRUNCATION
	1	PARKING STALL COUNT

BRYANT FLINK ARCHITECTURE & DESIGN
2700 S. BROADWAY, SUITE 303
ENGLEWOOD, CO 80113

(303) 209-0073

www.bryantflink.com

CONTACT:
Rebecca Wilson
rwilson@bryantflink.com
(720) 638-9921

N S W

0' 5' 10' 20' 40'

30 0 15 30 60

ORIGINAL SCALE: 1"=30' HORIZ.

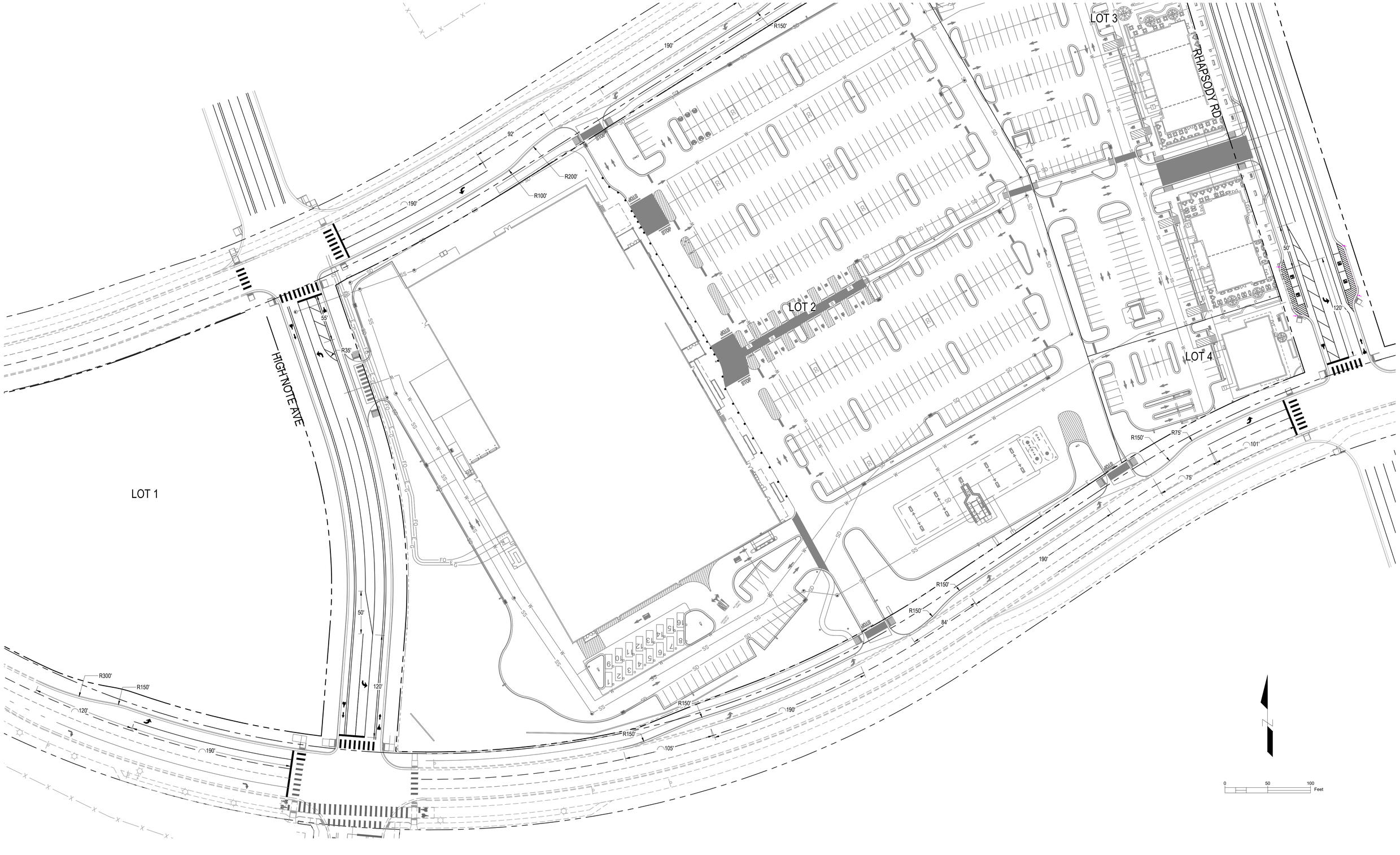
PLAN TRUE

PREPARATION DATE:

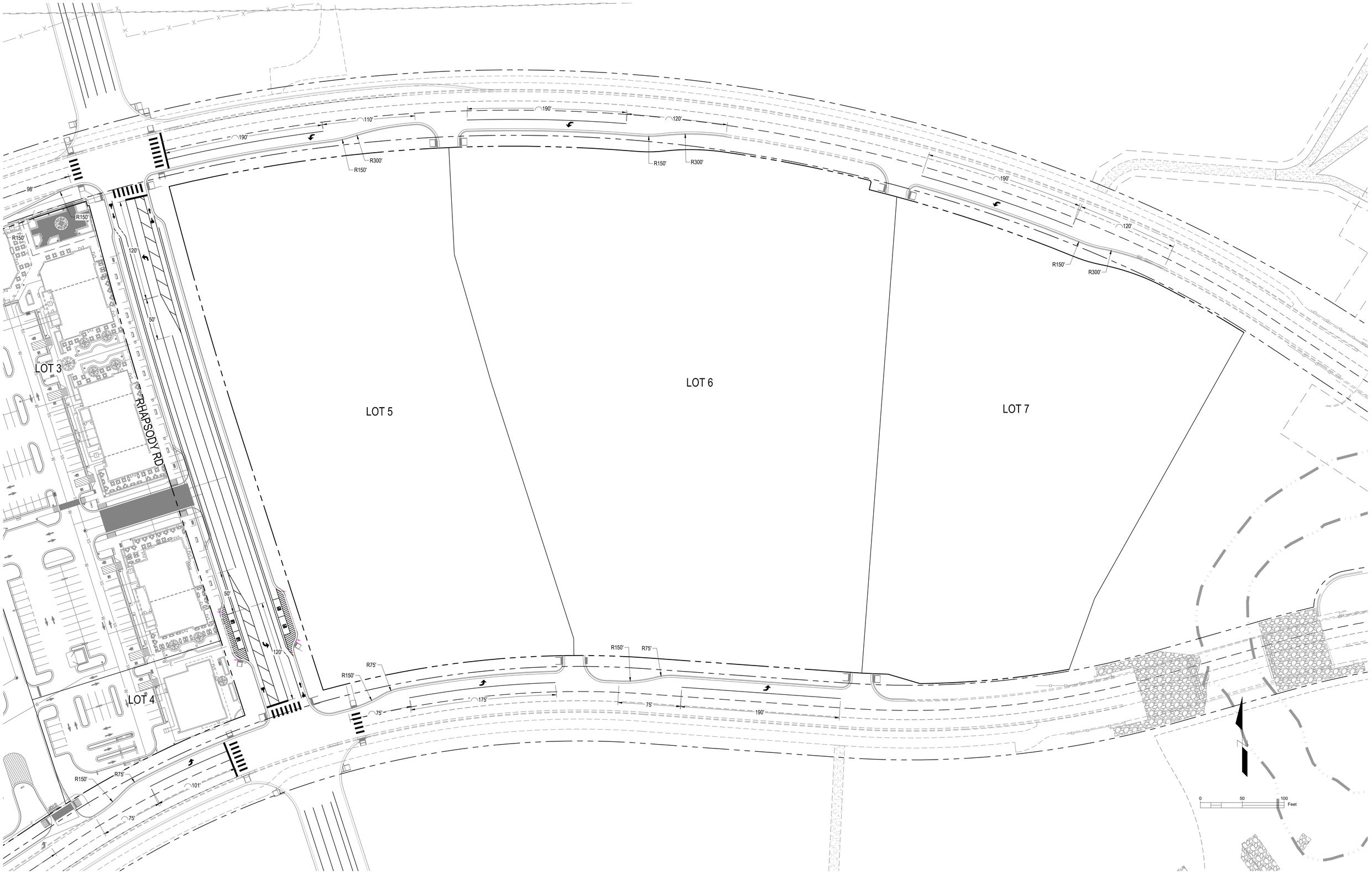
REVISION / COMMENTS

NO.	DATE	DESCRIPTION

OVERALL SITE PLAN C2


LOT 1
LOT 2
LOT 3
LOT 4
HIGH NOTE AVE
RHAPSODY RD
R150'
R200'
R100'
R300'
R75'
190'
120'
105'
101'
92'
84'
75'
50'
55'
R35'
STOP
N
0
50
100
Feet


LOT 2
LOT 3
LOT 4
LOT 5
LOT 6
RHAPSODY RD
0 50 100
Feet


LOT 3
LOT 4
LOT 5
LOT 6
LOT 7
RHAPSODY RD
98'
50'
120'
110'
190'
R150'
R300'
R75'
175'
75'
101'
0
50
100
Feet