

February 14, 2020

PCD File No. PPR1933

Ms. Sarah Pearsons  
Pearsons Ministries International  
PO Box 340  
Woodland Park, CO 80866



Re: Green Mountain Falls Church  
Traffic Study and Turn Lane Assessment Letter  
Green Mountain Falls, Colorado

Dear Ms. Pearsons

The purpose of this letter is to provide trip generation, trip distribution, and project traffic assignment for a proposed Green Mountain Falls Church redevelopment project to determine the increase in traffic attributable to the proposed project for purposes of applying for an access permit application from CDOT for the existing US-24 project access. Green Mountain Falls Church is proposed to be located within the existing building at 10460 West Highway 24 in Green Mountain Falls, Colorado. Project traffic was assigned to the US-24 access intersection. This traffic study identifies the amount of traffic associated with this proposed church. A vicinity map illustrating the location of the project is attached in **Figure 1**.

### Existing Roadway Network and Traffic Counts

Existing peak hour of the generator vehicle counts were conducted at the US-24 access intersection during the identified Sunday peak hour of the generator for Green Mountain Falls Church. Regional and direct access to the proposed church will be provided by US Highway-24 (US-24). The existing direct access is located approximately 1,670 feet east of the US-24 and Green Mountain Falls Road intersection.

US-Highway 24 is a four-lane divided roadway that provides two through lanes in each direction, eastbound and westbound, with a 55 mile per hour speed limit throughout the study area. Eastbound and westbound US-24 are separated by an approximate 100-foot wide grass median at the access location. The project site has an existing unpaved driveway with direct access to US Hwy 24. The driveway serves multiple buildings on the subject parcel of land as well as an unpaved surface parking lot. The site area, land uses, and roadway network surrounding the site are shown in **Figure 2**.

The T-intersection of US-24 Westbound and the project access is unsignalized with stop control on the southbound access approach and is restricted to right-in/right-out movements only for turns to and from US-24. Westbound US-24 includes two through lanes, with the outside lane serving as a shared through/right turn lane. Additionally, an acceleration lane along westbound US-24 does not exist at this access location. Green Mountain Falls Road exists approximately 1,650 feet northwest of the access, while Lucky 4 Road exists approximately 1,800 feet southeast of the access. Since the project access is located along westbound US-24 with right-in/right-out movements, project traffic is anticipated to use the adjacent intersections to turn around as needed. All intersections operate with two-way stop

control with US-24 providing the major street through movements. The northwestbound left turn lane at US-24 Westbound and Green Mountain Falls Road has an approximate 200-foot left turn lane with 250-foot taper. The southeastbound left turn lane at the US-24 Eastbound and Lucky 4 Road intersection has an approximate 100-foot left turn lane with 175-foot taper. An existing lane configurations figure for the access intersection is attached as **Figure 3**.

The future Green Mountain Falls Church plans to have one Sunday morning service beginning at 10:00 AM and concluding at 12:00 PM. Based on the anticipated service time, existing peak hour turning movement counts were conducted at the study key intersection of 10460 W Hwy 24 Westbound right-in/right-out access intersection on Sunday, June 9, 2019 during the anticipated peak arrival and departure hours. Turning Movement Counts were conducted in 15-minute intervals from 9:00 am to 10:00 am and 11:30 am to 12:30 pm at the 10460 W Hwy 24 right-in/right-out access intersection. Existing turning movement counts are illustrated in **Figure 4** with count sheets attached as well.

#### Unspecified Development Traffic Growth

According to information provided on the CDOT transportation information website, the 20-year growth factor along US-24 in the vicinity of the project is 1.26. This equates to an annual growth rate of approximately 1.16 percent. US-24 traffic information from the CDOT Online Transportation Information System (OTIS) website is attached. Due to this, a rounded annual growth rate of 1.25 percent was used to calculate future through traffic volumes along US-24. No additional traffic volume growth is expected into or out of the proposed site area using the access. The annual growth rate was used to estimate near term 2020 and long term 2040 traffic volume projections at the key intersection. Background traffic volumes for 2020 and 2040 are shown in **Figures 5** and **6**, respectively.

#### 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* published by the Institute of Transportation Engineers (ITE). ITE has established trip rates in nationwide studies of similar land uses. Trip generation is based on the ITE Trip Generation, 10<sup>th</sup> Edition (most current edition) average rate equations for Church (ITE Code 560) for traffic associated with this development. Trip generation was calculated for the church based on the anticipated number of seats in the worship space. The following **Table 1** summarizes the anticipated trip generation for the proposed redevelopment (trip generation calculations are attached). Project generated traffic volumes are identified on a Sunday daily basis as well as on for the anticipated Sunday service peak arrival and departure hours.

**Table 1 – Green Mountain Falls Church Traffic Generation**

Land Use	Daily	Peak Arrival Hour			Peak Departure Hour		
		In	Out	Total	In	Out	Total
Church (ITE 560) – 500 Seats	606	132	0	132	0	138	138

As summarized in the table, the proposed Green Mountain Falls Church is anticipated to generate 606 Sunday daily trips with 132 trips into the site during the arriving peak hour and 138 trips out of the site during the departing peak hour on Sundays. It was assumed that no trips would occur into or out of the project site during the actual church service.

### **Distribution, Assignment, and Total Traffic**

Distribution of site traffic was based on the area street system characteristics, existing traffic patterns and volumes, 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. The project traffic was distributed and assigned to the project access intersection along westbound US-24. Since US-24 is a divided highway with a 100-foot wide grass median separating the opposing lanes of traffic, all project traffic will arrive to and depart from the project site along westbound US-24. Arriving eastbound project traffic is anticipated to conduct a U-turn movement at the intersection of US-24 and Lucky 4 Road located approximately 1,800 feet east of the project site, in order to access the right-in/right-out restricted access. Similarly, eastbound destined project traffic departing from the project site is anticipated to U-turn at the intersection of US-24 and Green Mountain Falls Road located approximately 1,650 feet west of the project site to proceed eastbound on US-24 back to their original source.

**Figure 7** illustrates the expected trip distribution for the proposed Green Mountain Falls Church. Traffic assignment was obtained by applying the project trip distribution from **Figure 7** to the estimated traffic generation of the development shown in the trip generation table. The traffic assignment is shown in **Figure 8**. Site traffic volumes were added to the 2020 and 2040 background volumes to represent estimated build-out year and long-term traffic conditions. These total traffic volumes for the site are illustrated in **Figure 9** and **Figure 10**.

### **Traffic Operations Analysis**

Kimley-Horn's analysis of traffic operations in the site vicinity was conducted to determine potential capacity deficiencies at the project key intersections for the 2020 build-out and 2040 long term horizon of the proposed Green Mountain Falls Church. The acknowledged source for determining overall capacity is the *Highway Capacity Manual*<sup>1</sup>.

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, typical traffic study practice identifies overall intersection LOS D and movements or approaches LOS E as the minimum thresholds for acceptable operations. The following **Table 2** shows the definition of level of service for signalized and unsignalized intersections.

<sup>1</sup> Transportation Research Board, *Highway Capacity Manual*, Sixth Edition, Washington DC, 2016.

**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.

### US-24 Westbound Access LOS

The T-intersection of the existing westbound US-24 right-in/right-out access is unsignalized with stop control on the southbound access approach due to the absence of an acceleration lane along westbound US-24 for free right turn movements. This project access is located approximately 1,670 feet east of the US-24 and Green Mountain Falls Road intersection (measured center to center). With this configuration and control in the opening year of 2020 as well as the long-term 2040 horizon, the southbound right turn movement at this access intersection is anticipated to operate with acceptable level of service during the Sunday morning peak hours of generator assuming the stop control on this approach remains. **Table 3** provides the results of the level of service at this intersection.

**Table 3 – US-24 Westbound Right-In/Right-Out Access LOS Results**

Scenario	Sunday Arrival Peak Hour		Sunday Departure Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
<b>2019 Existing</b> Southbound Right Turn	11.2	B	0.0	A
<b>2020 Background</b> Southbound Right Turn	11.2	B	0.0	A
<b>2020 Total</b> Southbound Right Turn	12.6	B	19.4	C
<b>2040 Background</b> Southbound Right Turn	12.0	B	0.0	A
<b>2040 Total</b> Southbound Right Turn	14.1	B	28.0	D

### **Project Access and CDOT Access Permits**

Direct access to the site will be provided from westbound US-24 at the existing right-in/right-out access located approximately 1,650 feet east of the US-24 and Green Mountain Falls Road intersection.

The threshold for requiring an access permit along CDOT roadways occurs when project traffic is anticipated to increase access traffic volumes by more than 20 percent over existing. Based on traffic projections, the addition of Church traffic at the intersection of westbound US-24 right-in/right-out access is anticipated to increase traffic volumes by more than 20 percent; therefore, it is believed that an access permit will be required by CDOT for this existing access intersection in association with this project.

Since US-24 is a state owned and maintained facility, it is recommended that auxiliary turn lanes along US-24 be constructed in accordance with the current CDOT State Highway Access Code (SHAC). CDOT categorizes the segment of US-24 through the study area as E-X: Expressway. According to the State Highway Access Code for category E-X roadways, the following thresholds apply:

- A left turn deceleration lane and taper with storage length is required for any access with a projected peak hour left ingress turning volume greater than 10 vehicles per hour (vph).
- A right turn deceleration lane and taper is required for any access with a projected peak hour right ingress turning volume greater than 10 vph.
- A right turn acceleration lane and taper is required for any access with a projected peak hour right turning volume greater than 10 vph.

Based on traffic projections and the above thresholds, auxiliary turn lane requirements were calculated for the westbound US-24 right-in/right-out project access intersection as well as the left turn lanes along US-24 at the Green Mountain Falls Road and Lucky 4 Road intersections anticipated to include Church traffic. US-24 provides two through lanes of travel in each direction and has a posted speed limit of 55 miles within the study area. Additionally, US-24 is a divided highway with a 100-foot wide grass median separating the opposing lanes of traffic. As such, turn lane requirements at the study area access intersection along westbound US-24 are as follows:

#### US-24 Westbound Right-In/Right-Out Access

- An eastbound left turn deceleration lane **is not** warranted as this intersection is restricted to right-in/right-out movements only.
- A westbound right turn deceleration lane **is** warranted based on projected 2020 background plus project traffic being 133 westbound right turns during the peak hour and the threshold being 10 vph. Since US-24 has a category of E-X, the right turn lane requirement is a deceleration length plus taper length. Based on a speed limit of 55 mph, the required total westbound right turn deceleration length is 820 feet (a 600 feet deceleration lane plus a 220-foot taper length, with 18.5 to 1 ratio).

- A westbound acceleration lane from the southbound right turn **is** warranted based on projected 2020 background plus project traffic being 138 southbound right turns during the peak hour and the threshold being 10 vph. Since US-24 has a category of E-X, the acceleration lane requirement is acceleration length plus bay taper length. Based on a speed limit of 55 mph, the total required southbound to westbound right turn acceleration length is 1,180 feet (a 960-foot acceleration length plus a 220-foot taper length, 18.5 to 1 ratio). There is an existing driveway for Leggett's RV Storage located approximately 825 feet west of the project site access. Therefore, it is recommended that a continuous right turn auxiliary lane be constructed from the right-in/right-out project access to this RV Storage lot driveway for approximately 825 feet with striping to include deceleration and acceleration turn lanes. However, it is important to note that SHAC standards aren't met for combination auxiliary acceleration/deceleration turn lane lengths, it isn't certain if a right turn deceleration lane is warranted for the RV storage facility.

#### US-24 Westbound and Green Mountain Falls Road

- A westbound left turn deceleration lane **is** warranted and exists at this intersection. Based on the 55 mph speed limit and amount of church traffic anticipated in this left turn lane (97 vehicles per hour), the left turn lane requirement is 700 feet (600-foot deceleration and 100-foot storage) plus a 225-foot taper (18.5 to 1 taper ratio). This existing left turn lane is approximately 200 feet long with a 250-foot taper. Therefore, CDOT may require lengthening of this left turn lane. However, it is extremely likely (as much as a certainty can be without actually knowing) that this left turn lane is warranted based on existing weekday afternoon peak hour traffic from traffic traveling between Colorado Springs and other points east with a destination in Green Mountain Falls. Therefore, this left turn lane length is an existing deficiency and should be considered for improvement by others.

#### US-24 Eastbound and Lucky 4 Road

- An eastbound left turn deceleration lane **is** warranted and exists at this intersection. Based on the 55 mph speed limit and amount of church traffic anticipated in this left turn lane (66 vehicles per hour), the left turn lane requirement is 675 feet (600-foot deceleration and 75-foot storage) plus a 225-foot taper (18.5 to 1 taper ratio). This existing left turn lane is approximately 100 feet long with a 175-foot taper. Therefore, CDOT may require lengthening of this left turn lane. However, it is likely that this left turn lane is warranted based on existing weekday afternoon peak hour traffic from traffic traveling between Woodland Park and other points west with a destination to the residences along Lucky 4 Road. Therefore, this left turn lane length is likely an existing deficiency and should be considered for improvement by others.

Based on the results of the intersection operational and turn lane auxiliary analysis, the recommended lane configurations and control of the study key intersections is shown in **Figure 11**.



### **Recommendations and Conclusions**

Based on the analysis presented in this report, Kimley-Horn believes Green Mountain Falls Church, proposed within the existing building located at 10460 West Highway 24 in Green Mountain Falls, Colorado, will be successfully incorporated into the existing and future roadway network. The proposed project development resulted in the following recommendations and conclusions:

- The addition of project traffic at the existing westbound US-24 right-in/right-out project access is anticipated to increase traffic volumes by more than 20 percent over existing; therefore, it is believed that CDOT will require an access permit in association with this project. An Access Permit Application was prepared for the access intersection as part of this project for submittal to CDOT.
- Based on the State Highway Access Code (SHAC) guidelines, a westbound right turn deceleration lane as well as a westbound acceleration lane from the southbound right turn are warranted at the existing right-in/right-out access intersection of westbound US-24. The total required westbound right turn deceleration length is 820 feet (a 600 feet deceleration lane plus a 220-foot taper length, with an 18.5 to 1 ratio). The total required southbound to westbound right turn acceleration length is 1,180 feet (a 960-foot acceleration length plus a 220-foot taper length, 18.5 to 1 ratio). There is an existing driveway for Leggett's RV Storage located approximately 825 feet west of the project site driveway. Therefore, it is recommended that a continuous right turn auxiliary lane be constructed from the right-in/right-out access to this RV Storage lot entrance.
- Based on the State Highway Access Code (SHAC) guidelines, the existing 200-foot with 250-foot taper westbound left turn lane along US-24 Westbound at the Green Mountain Falls Road intersection may need to be lengthened to 700 feet plus 225-foot taper to meet CDOT SHAC requirements. This left turn lane length is an existing deficiency and should be considered for improvement by others.
- Based on the State Highway Access Code (SHAC) guidelines, the existing 100-foot with 175-foot taper eastbound left turn lane along US-24 Eastbound at the Lucky 4 Road intersection may need to be lengthened to 675 feet plus 225-foot taper to meet CDOT SHAC requirements. This left turn lane length is likely an existing deficiency and should be considered for improvement by others.
- Any on-site and off-site roadway improvements should be incorporated into the Civil Drawings and conform to standards of El Paso County, The Town of Green Mountain Falls, The Colorado Department of Transportation, Institute of Transportation Engineers (ITE), and the Manual on Traffic Control Devices (MUTCD) – 2009 Edition.

### **Sight Distance Evaluation**

The existing access along US-24 was evaluated for sight distance as requested by El Paso County staff. This was evaluated per guidelines set for from the American Association of State Highway and Transportation Officials (AASHTO) "A Policy on Geometric Design of Highways and Streets". This is the national standard with which roadway design standards are required to meet. As previously identified, US-24 has a posted speed limit of 55 miles per hour. Based on this speed, right turn exiting drivers from the access onto westbound

US-24 have a requirement to see 530 feet to the left. This distance is measured from a point 14.5 feet from the edge of the travel way. Based on this distance, the sight distance requirement is met as acceptable sight lines are provided from the access to the left. The access is located on the outside of a curve at the ending point of the horizontal curvature, which provides optimal views of oncoming traffic. Likewise, there is no vertical curvature in this location that blocks the access sight distance. Therefore, it is believed that the existing sight distance at the access, which will be maintained with the Green Mountain Falls project, is acceptable.

If you have any questions or require anything further, please feel free to call me at (303) 228-2304.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.



Curtis D. Rowe, P.E., PTOE  
Vice President



#### Traffic Engineer's Statement

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




Curtis D. Rowe, P.E., PTOE, PE #36355

February 14, 2020  
Date

#### Developer's Statement

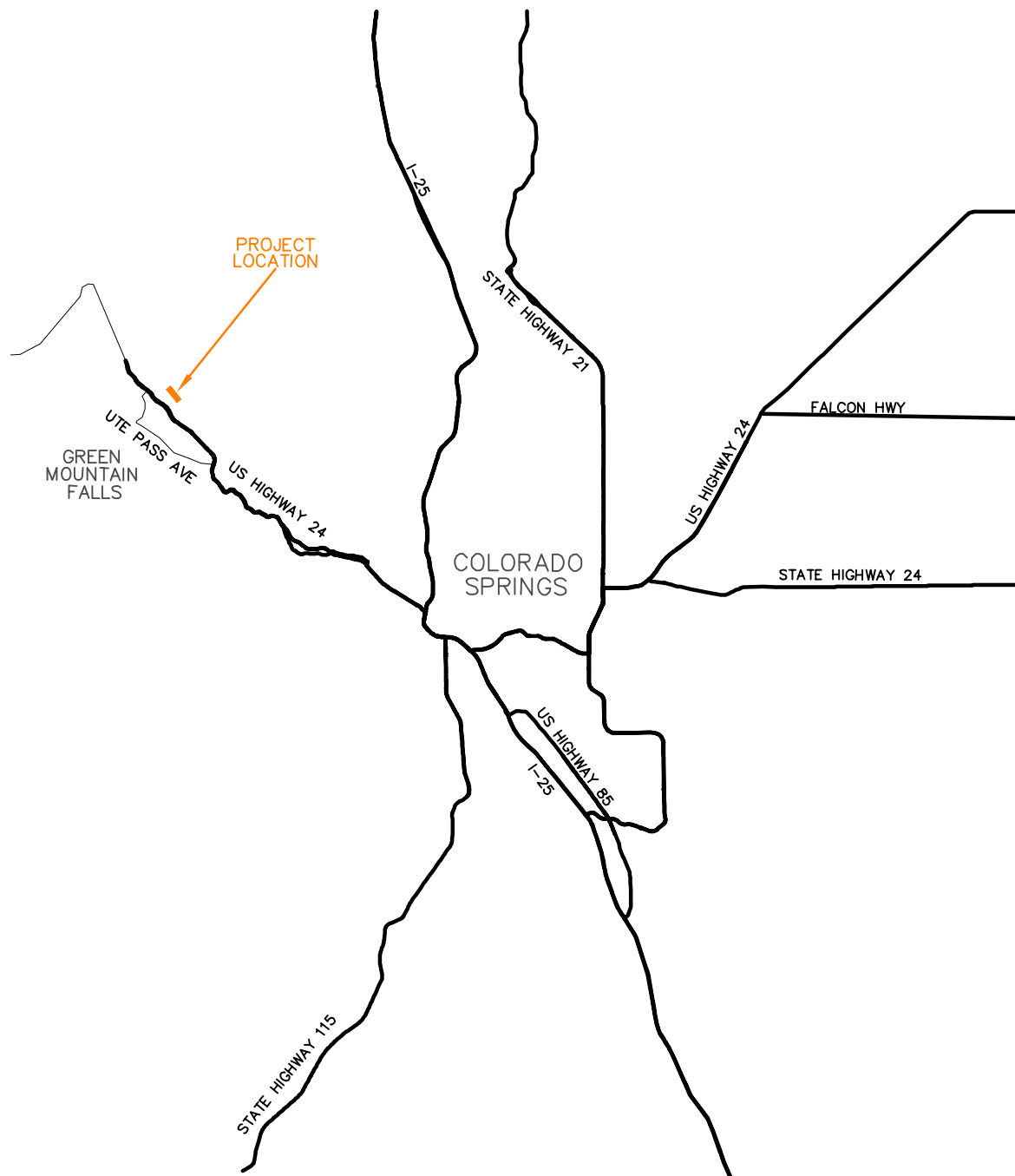
I, the Developer, have read and will comply with all commitments made on my behalf within this report.



Ms. Sarah Pearsons  
Pearsons Ministries International  
PO Box 340  
Woodland Park CO 80866

2/18/20  
Date





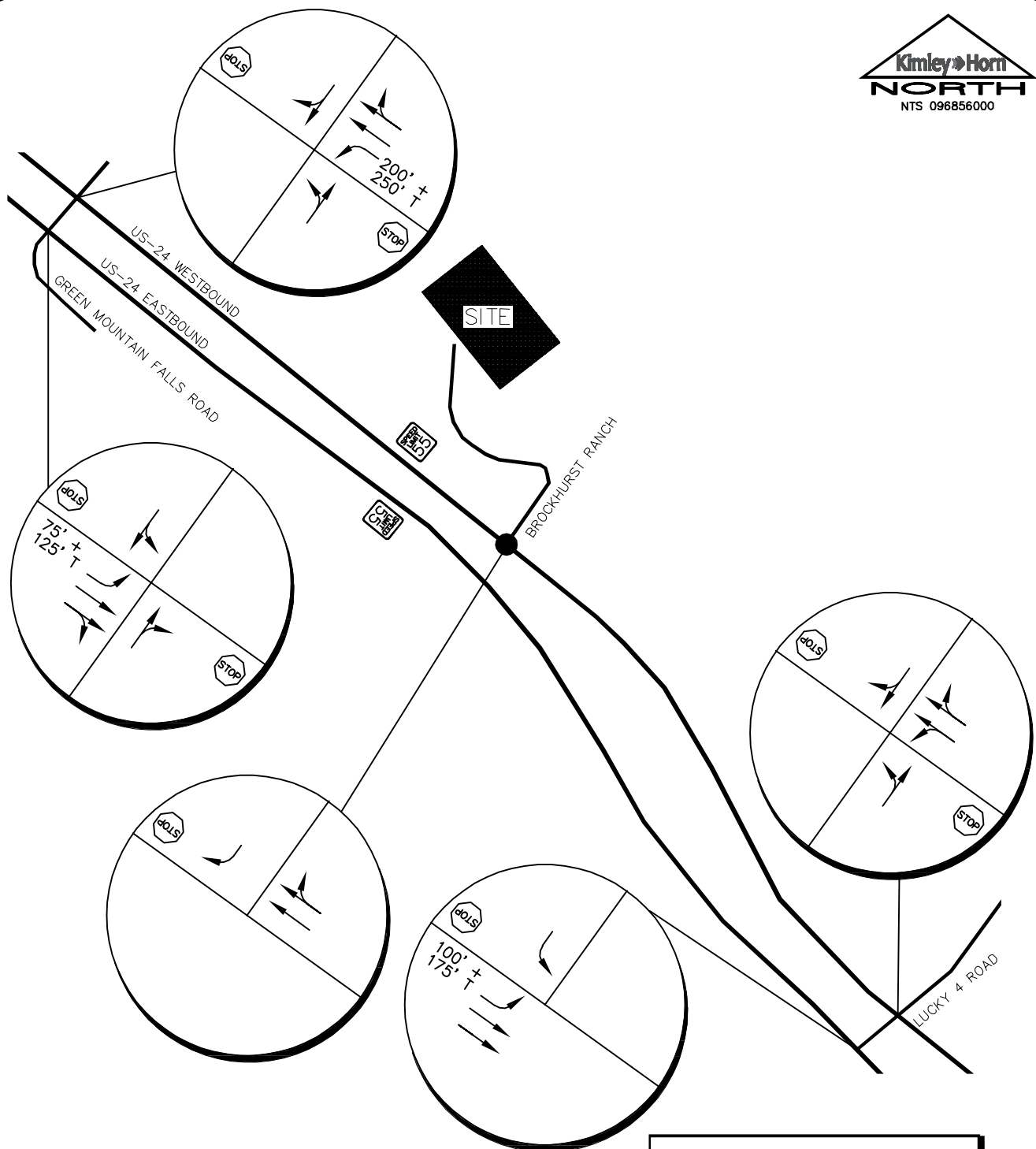
GREEN MOUNTAIN FALLS CHURCH  
VICINITY MAP

FIGURE 1



GREEN MOUNTAIN FALLS CHURCH  
SURROUNDING SITE AREA

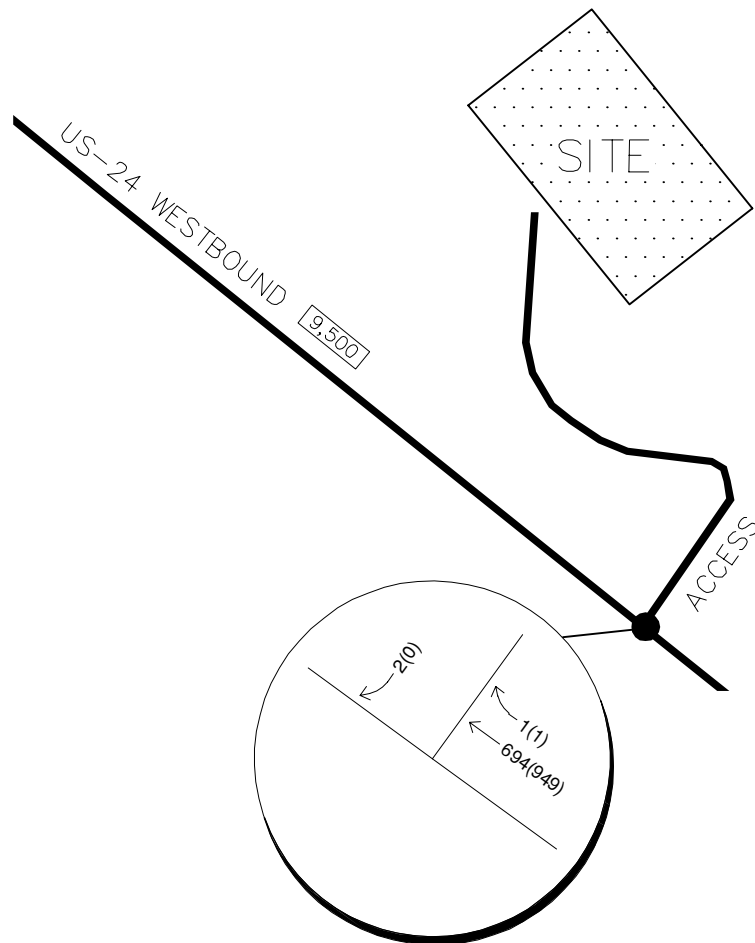
FIGURE 2



LEGEND	
	Study Area Key Intersection
	Signalized Intersection
	Stop Controlled Approach
	Roadway Speed Limit
XXX'	Turn Lane Length

GREEN MOUNTAIN FALLS CHURCH  
EXISTING LANE CONFIGURATIONS

FIGURE 3

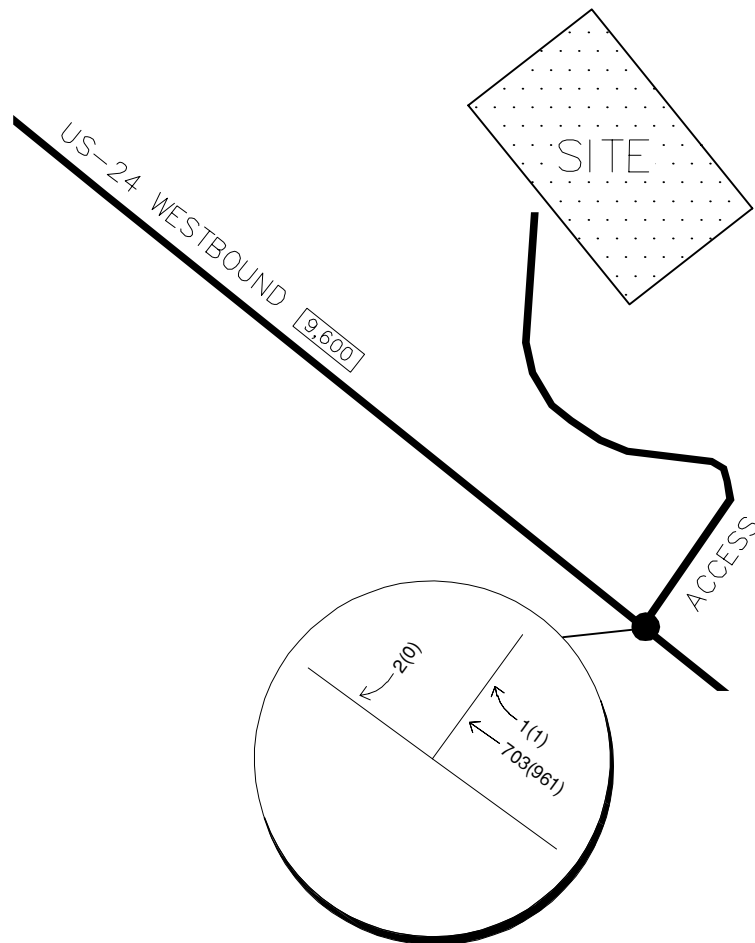


Sunday, June 9, 2019  
 9:00 AM to 10:00 AM (11:30 AM to 12:30 PM)

LEGEND	
●	Study Area Key Intersection
xxx(xxx)	Weekday AM(Midday) Peak Hour Traffic Volumes
xx,x00	Estimated Sunday Daily Traffic Volume

GREEN MOUNTAIN FALLS CHURCH  
 EXISTING TRAFFIC VOLUMES

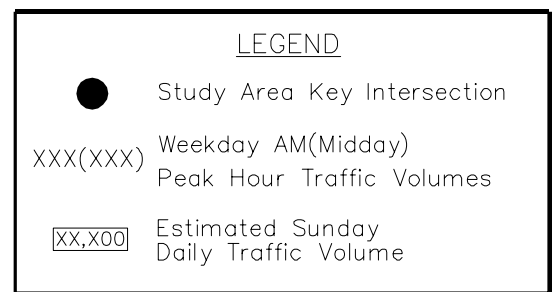
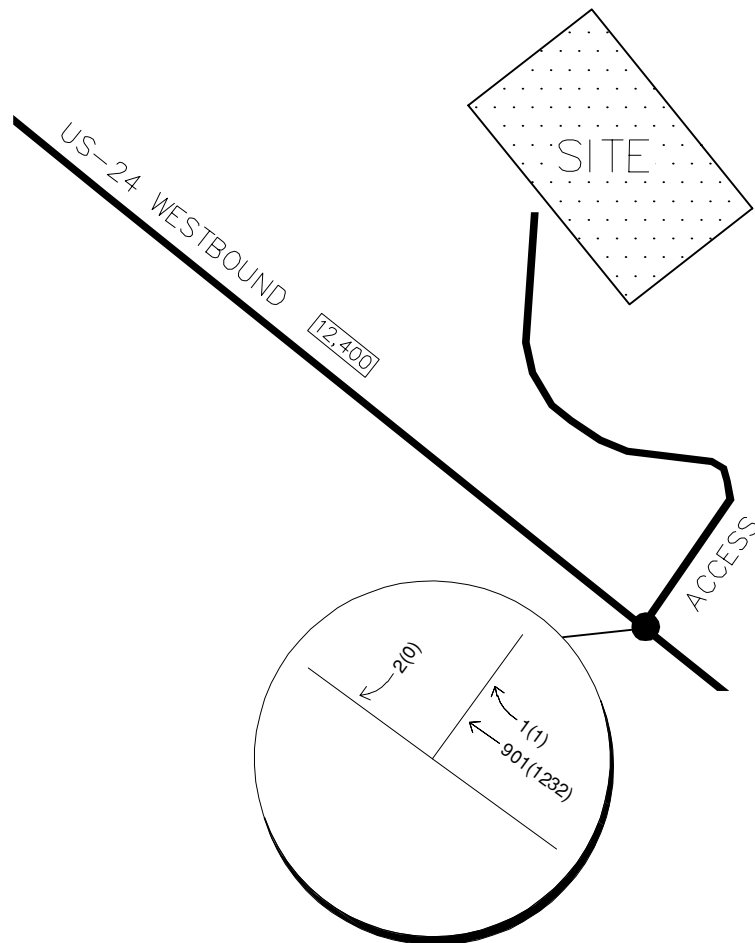
FIGURE 4



LEGEND	
	Study Area Key Intersection
xxx(XXX)	Weekday AM(Midday) Peak Hour Traffic Volumes
<span style="border: 1px solid black; padding: 2px;">xx,x00</span>	Estimated Sunday Daily Traffic Volume

GREEN MOUNTAIN FALLS CHURCH  
 2020 BACKGROUND TRAFFIC VOLUMES

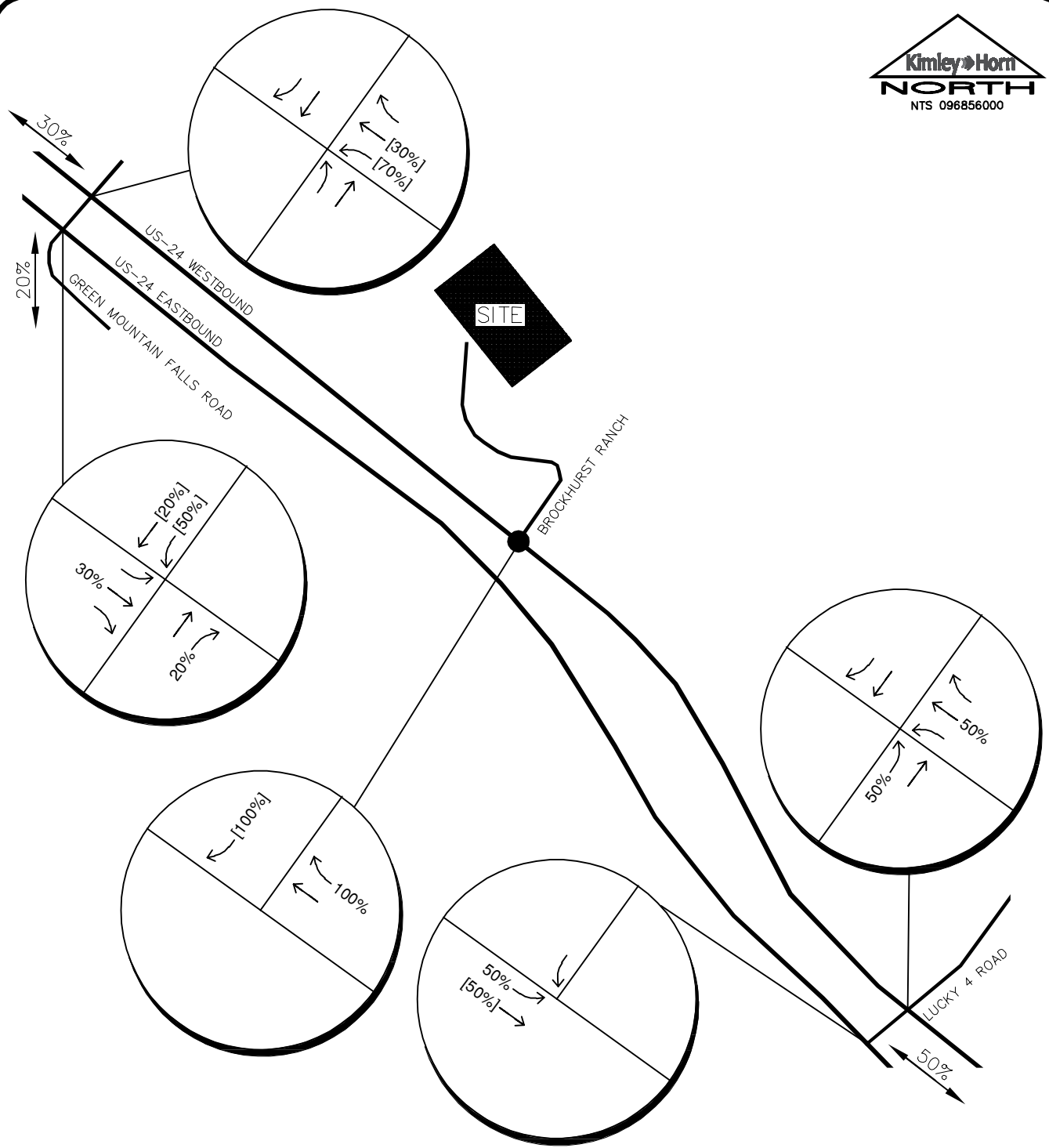
FIGURE 5



GREEN MOUNTAIN FALLS CHURCH  
2040 BACKGROUND TRAFFIC VOLUMES

FIGURE 6





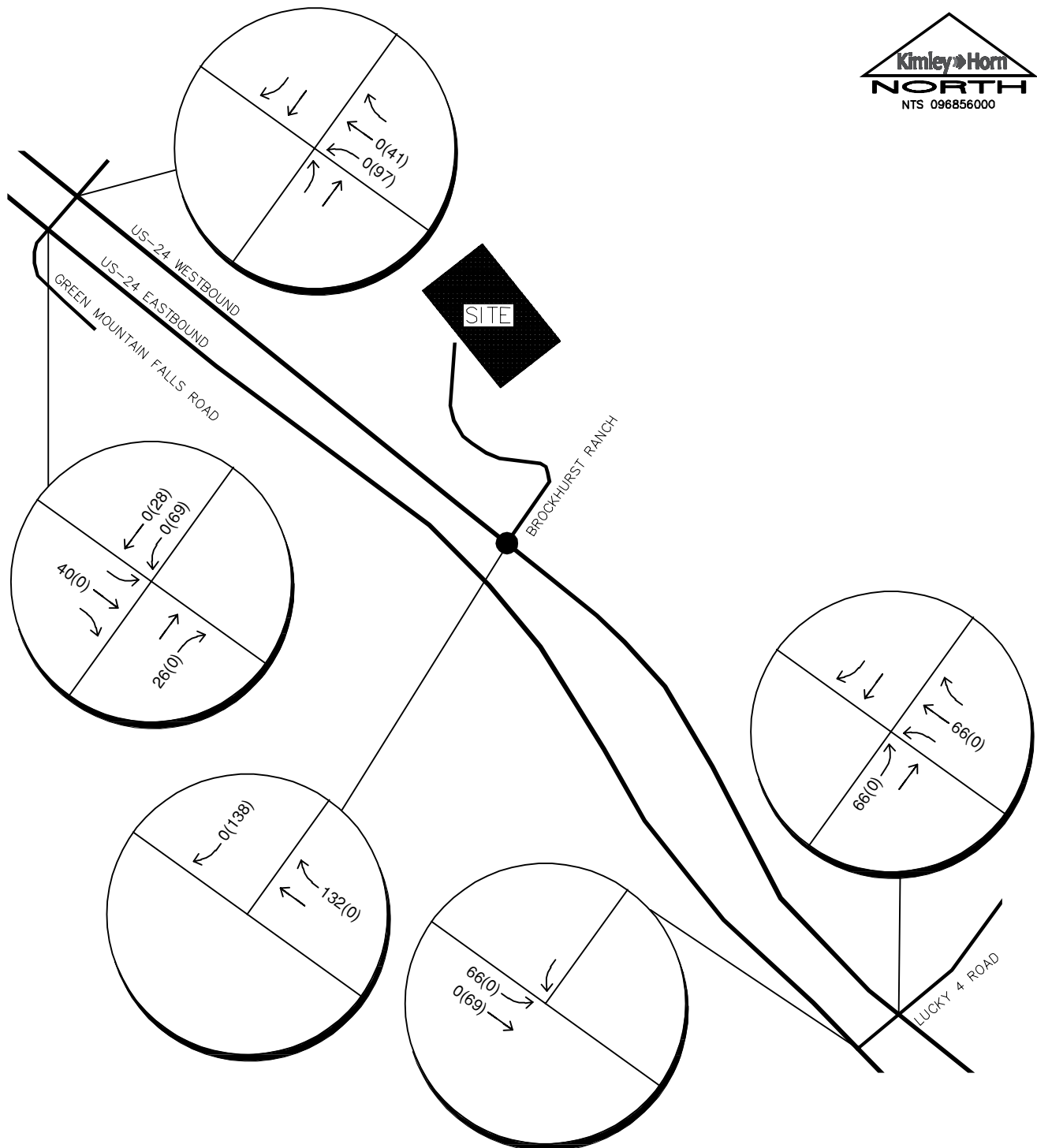
LEGEND

● Study Area Key Intersection

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

GREEN MOUNTAIN FALLS CHURCH  
 PROJECT TRIP DISTRIBUTION

FIGURE 7

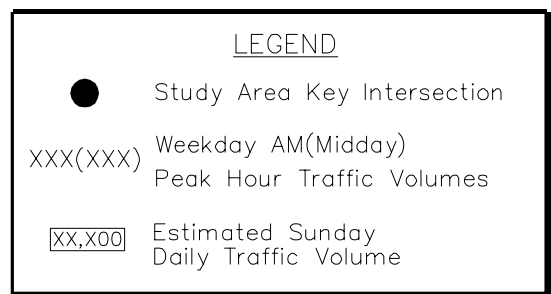
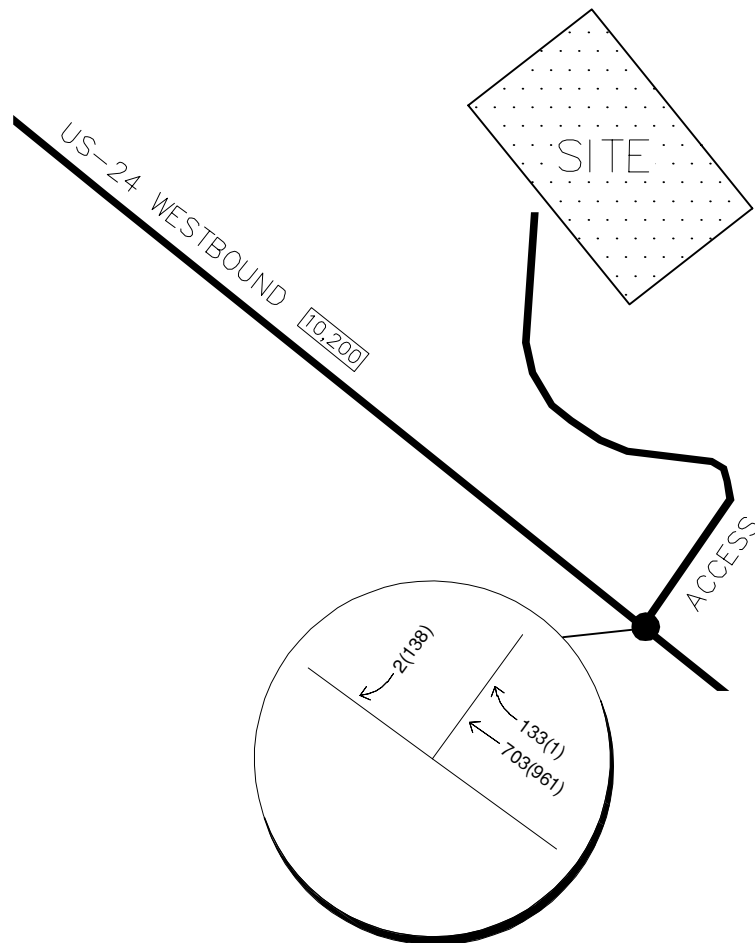


**LEGEND**

- Study Area Key Intersection
- XXX(XXX) Weekday AM(Midday) Peak Hour Traffic Volumes
- XX,X00 Estimated Sunday Daily Traffic Volume

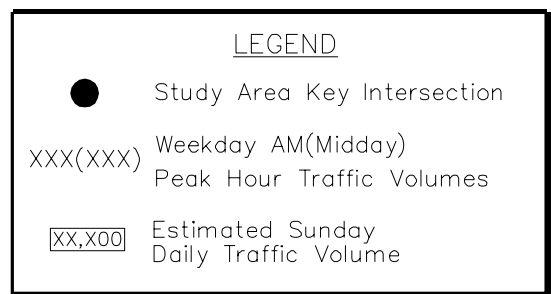
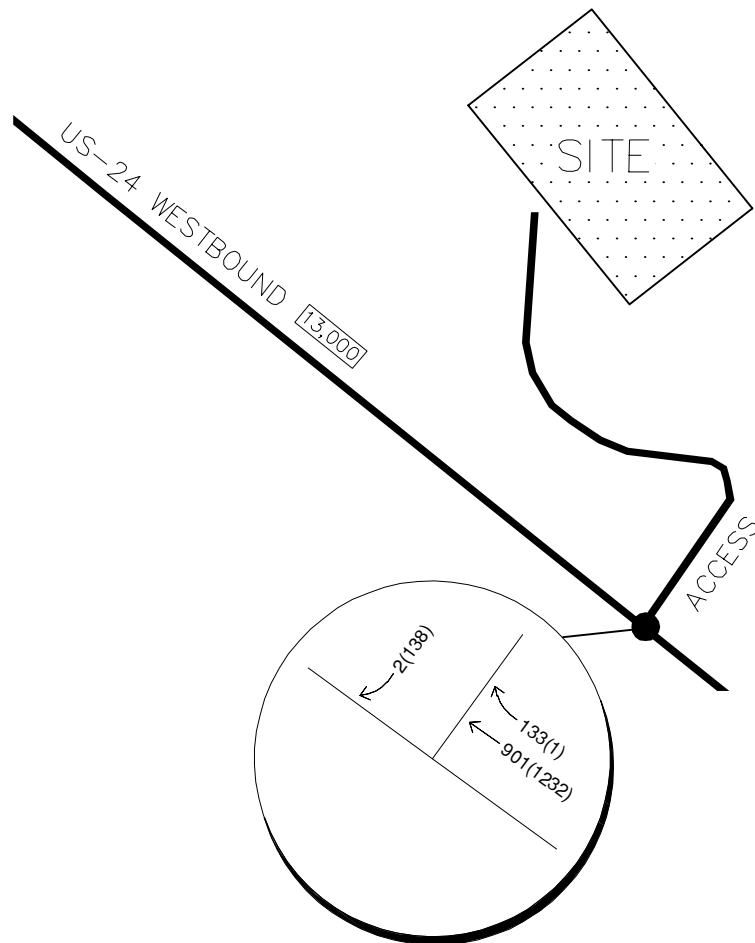
GREEN MOUNTAIN FALLS CHURCH  
 PROJECT TRAFFIC ASSIGNMENT

FIGURE 8



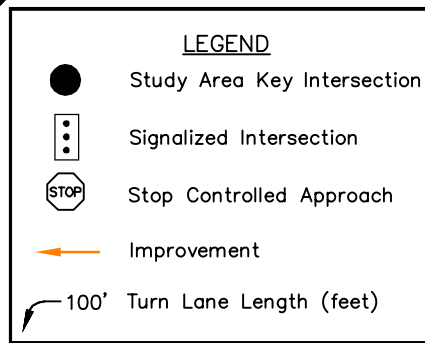
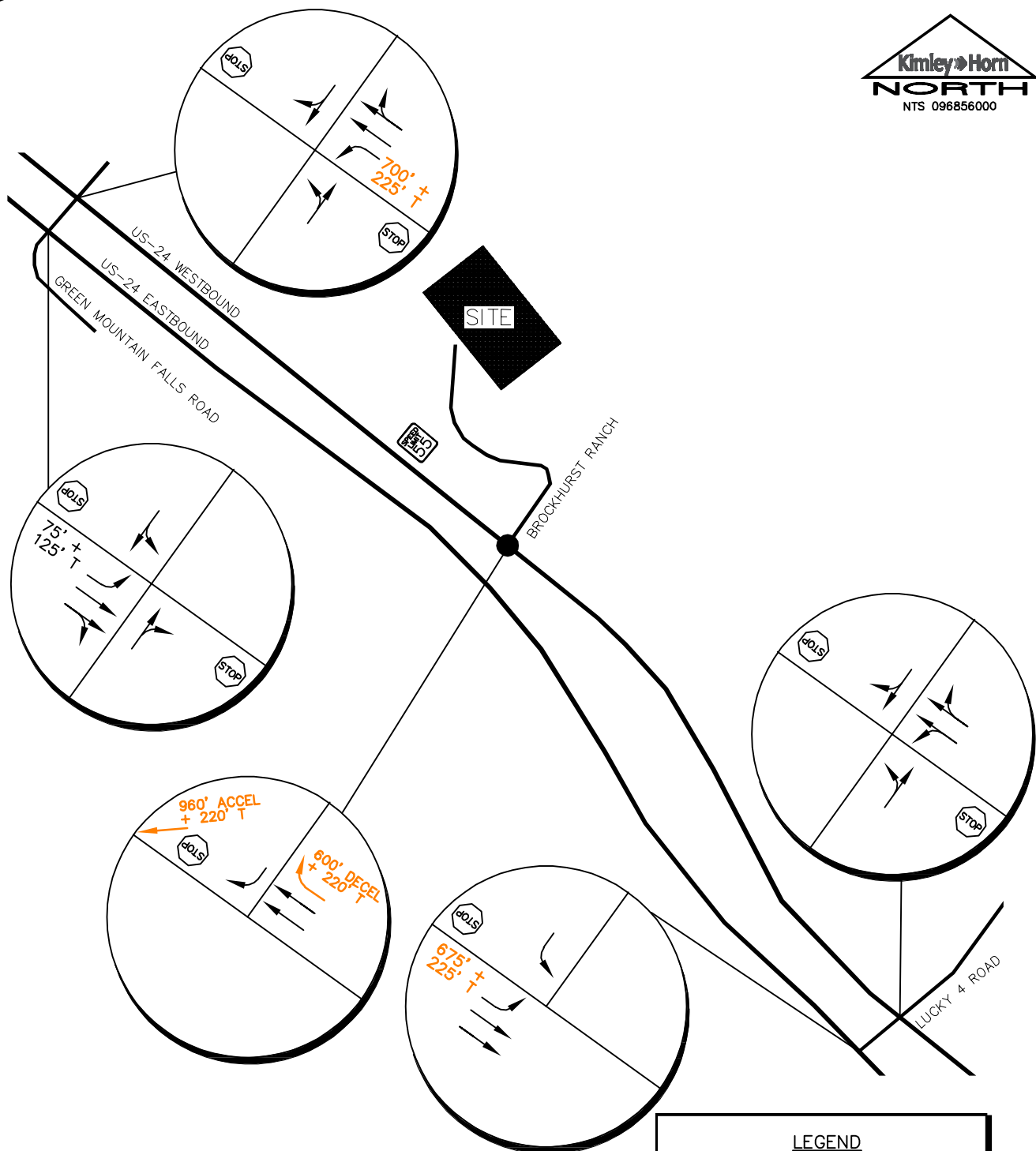
GREEN MOUNTAIN FALLS CHURCH  
2020 BACKGROUND PLUS  
PROJECT TRAFFIC VOLUMES

FIGURE 9



GREEN MOUNTAIN FALLS CHURCH  
 2040 BACKGROUND PLUS  
 PROJECT TRAFFIC VOLUMES

FIGURE 10



GREEN MOUNTAIN FALLS CHURCH  
 RECOMMENDED LANE  
 CONFIGURATION AND CONTROL

FIGURE 11

Green Mountain Falls Church Traffic Projections:

ROUTE	REFPT	ENDREFPT	LENGTH	AADT	AADTYR	COUNTYEAR	PKTRK	OFFPKTRK	YR20FACTOR	DHV	AADTTRUCKS	DVMT	VMT	LOCATION
024A	285.843	289.538	3.668	26000	2018	2017	0.21	3.3	1.26	10	860	95368	95368	ON SH 24 SE/O SHERIDAN AVE WOODLAND PARK
024A	289.538	293.645	4.203	25000	2018	2018	0.2	2.6	1.24	11	660	105075	105075	ON SH 24 SE/O UTE PASS AVE GREEN MOUNTAIN FALLS



Project Green Mountain Falls Church

Subject Trip Generation for Church

Designed by ACK

Date June 17, 2019

Job No. 096856000

Checked by

Date

Sheet No. 1 of 1

## **TRIP GENERATION MANUAL CALCULATIONS**

ITE Trip Generation 10th Edition, Average Rate Equations

Land Use Code - Church (560)

Independant Variable - Seats (X)

Seats = 500

X = 500.0

T = Average Vehicle Trip Ends

### **Sunday (page 500-198)**

T = 1.21 (X)

T = 1.21 \* 500.0

Directional Distribution: 50% ent. 50% exit.

T = 606 Average Vehicle Trip Ends

303 entering 303 exiting

303 + 303 = 606

### **Sunday - Peak Hour of Generator (page 500-199)**

T = 0.54 (X)

T = 0.54 \* 0.0

Directional Distribution: 49% ent. 51% exit.

T = 270 Average Vehicle Trip Ends

132 entering 138 exiting

132 + 138 = 270

Intersection

Int Delay, s/veh 0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↑↑			↑
Traffic Vol, veh/h	0	0	694	1	0	2
Future Vol, veh/h	0	0	694	1	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	84	84	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	826	1	0	4

Major/Minor	Major2	Minor2
Conflicting Flow All	-	0 414
Stage 1	-	- -
Stage 2	-	- -
Critical Hdwy	-	- 6.94
Critical Hdwy Stg 1	-	- -
Critical Hdwy Stg 2	-	- -
Follow-up Hdwy	-	- 3.32
Pot Cap-1 Maneuver	-	0 587
Stage 1	-	0 -
Stage 2	-	0 -
Platoon blocked, %	-	-
Mov Cap-1 Maneuver	-	- 587
Mov Cap-2 Maneuver	-	- -
Stage 1	-	- -
Stage 2	-	- -

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

Minor Lane/Major Mvmt	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	587
HCM Lane V/C Ratio	-	-	0.007
HCM Control Delay (s)	-	-	11.2
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↑↑			↑
Traffic Vol, veh/h	0	0	949	1	0	0
Future Vol, veh/h	0	0	949	1	0	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	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	98	98	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	968	1	0	0
Major/Minor	Major2		Minor2			
Conflicting Flow All			-	0	-	485
Stage 1			-	-	-	-
Stage 2			-	-	-	-
Critical Hdwy			-	-	-	6.94
Critical Hdwy Stg 1			-	-	-	-
Critical Hdwy Stg 2			-	-	-	-
Follow-up Hdwy			-	-	-	3.32
Pot Cap-1 Maneuver			-	-	0	528
Stage 1			-	-	0	-
Stage 2			-	-	0	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver			-	-	-	528
Mov Cap-2 Maneuver			-	-	-	-
Stage 1			-	-	-	-
Stage 2			-	-	-	-
Approach	WB		SB			
HCM Control Delay, s	0		0			
HCM LOS			A			
Minor Lane/Major Mvmt	WBT	WBR	SBLn1			
Capacity (veh/h)	-	-	-			
HCM Lane V/C Ratio	-	-	-			
HCM Control Delay (s)	-	-	0			
HCM Lane LOS	-	-	A			
HCM 95th %tile Q(veh)	-	-	-			

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↑↑			↑
Traffic Vol, veh/h	0	0	703	1	0	2
Future Vol, veh/h	0	0	703	1	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	84	84	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	837	1	0	4
Major/Minor	Major2		Minor2			
Conflicting Flow All			-	0	-	419
Stage 1			-	-	-	-
Stage 2			-	-	-	-
Critical Hdwy			-	-	-	6.94
Critical Hdwy Stg 1			-	-	-	-
Critical Hdwy Stg 2			-	-	-	-
Follow-up Hdwy			-	-	-	3.32
Pot Cap-1 Maneuver			-	-	0	583
Stage 1			-	-	0	-
Stage 2			-	-	0	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver			-	-	-	583
Mov Cap-2 Maneuver			-	-	-	-
Stage 1			-	-	-	-
Stage 2			-	-	-	-
Approach	WB		SB			
HCM Control Delay, s	0		11.2			
HCM LOS			B			
Minor Lane/Major Mvmt	WBT	WBR	SBLn1			
Capacity (veh/h)	-	-	583			
HCM Lane V/C Ratio	-	-	0.007			
HCM Control Delay (s)	-	-	11.2			
HCM Lane LOS	-	-	B			
HCM 95th %tile Q(veh)	-	-	0			

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↑↑			↑
Traffic Vol, veh/h	0	0	961	1	0	0
Future Vol, veh/h	0	0	961	1	0	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	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	98	98	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	981	1	0	0
Major/Minor	Major2		Minor2			
Conflicting Flow All			-	0	-	491
Stage 1			-	-	-	-
Stage 2			-	-	-	-
Critical Hdwy			-	-	-	6.94
Critical Hdwy Stg 1			-	-	-	-
Critical Hdwy Stg 2			-	-	-	-
Follow-up Hdwy			-	-	-	3.32
Pot Cap-1 Maneuver			-	-	0	523
Stage 1			-	-	0	-
Stage 2			-	-	0	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver			-	-	-	523
Mov Cap-2 Maneuver			-	-	-	-
Stage 1			-	-	-	-
Stage 2			-	-	-	-
Approach	WB		SB			
HCM Control Delay, s	0		0			
HCM LOS			A			
Minor Lane/Major Mvmt	WBT	WBR	SBLn1			
Capacity (veh/h)	-	-	-			
HCM Lane V/C Ratio	-	-	-			
HCM Control Delay (s)	-	-	0			
HCM Lane LOS	-	-	A			
HCM 95th %tile Q(veh)	-	-	-			

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↑↑			↑
Traffic Vol, veh/h	0	0	703	133	0	2
Future Vol, veh/h	0	0	703	133	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	84	50	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	837	266	0	4
Major/Minor	Major2		Minor2			
Conflicting Flow All			-	0	-	552
Stage 1			-	-	-	-
Stage 2			-	-	-	-
Critical Hdwy			-	-	-	6.94
Critical Hdwy Stg 1			-	-	-	-
Critical Hdwy Stg 2			-	-	-	-
Follow-up Hdwy			-	-	-	3.32
Pot Cap-1 Maneuver			-	-	0	477
Stage 1			-	-	0	-
Stage 2			-	-	0	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver			-	-	-	477
Mov Cap-2 Maneuver			-	-	-	-
Stage 1			-	-	-	-
Stage 2			-	-	-	-
Approach	WB		SB			
HCM Control Delay, s	0		12.6			
HCM LOS			B			
Minor Lane/Major Mvmt	WBT	WBR	SBLn1			
Capacity (veh/h)	-	-	477			
HCM Lane V/C Ratio	-	-	0.008			
HCM Control Delay (s)	-	-	12.6			
HCM Lane LOS	-	-	B			
HCM 95th %tile Q(veh)	-	-	0			



Intersection

Int Delay, s/veh 4.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↑↑			↑
Traffic Vol, veh/h	0	0	961	1	0	138
Future Vol, veh/h	0	0	961	1	0	138
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	98	50	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	981	2	0	276

Major/Minor	Major2	Minor2
Conflicting Flow All	-	0 492
Stage 1	-	-
Stage 2	-	-
Critical Hdwy	-	- 6.94
Critical Hdwy Stg 1	-	-
Critical Hdwy Stg 2	-	-
Follow-up Hdwy	-	- 3.32
Pot Cap-1 Maneuver	-	0 522
Stage 1	-	0
Stage 2	-	0
Platoon blocked, %	-	-
Mov Cap-1 Maneuver	-	- 522
Mov Cap-2 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-

Approach	WB	SB
HCM Control Delay, s	0	19.4
HCM LOS		C

Minor Lane/Major Mvmt	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	522
HCM Lane V/C Ratio	-	-	0.529
HCM Control Delay (s)	-	-	19.4
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	3.1

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↑↑			↑
Traffic Vol, veh/h	0	0	703	133	0	2
Future Vol, veh/h	0	0	703	133	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	84	84	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	837	158	0	4
Major/Minor	Major2		Minor2			
Conflicting Flow All			-	0	-	498
Stage 1			-	-	-	-
Stage 2			-	-	-	-
Critical Hdwy			-	-	-	6.94
Critical Hdwy Stg 1			-	-	-	-
Critical Hdwy Stg 2			-	-	-	-
Follow-up Hdwy			-	-	-	3.32
Pot Cap-1 Maneuver			-	-	0	518
Stage 1			-	-	0	-
Stage 2			-	-	0	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver			-	-	-	518
Mov Cap-2 Maneuver			-	-	-	-
Stage 1			-	-	-	-
Stage 2			-	-	-	-
Approach	WB		SB			
HCM Control Delay, s	0		12			
HCM LOS			B			
Minor Lane/Major Mvmt	WBT	WBR	SBLn1			
Capacity (veh/h)	-	-	518			
HCM Lane V/C Ratio	-	-	0.008			
HCM Control Delay (s)	-	-	12			
HCM Lane LOS	-	-	B			
HCM 95th %tile Q(veh)	-	-	0			

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↑↑			↑
Traffic Vol, veh/h	0	0	1232	1	0	0
Future Vol, veh/h	0	0	1232	1	0	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	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	98	98	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1257	1	0	0

Major/Minor	Major2	Minor2
Conflicting Flow All	-	0 629
Stage 1	-	-
Stage 2	-	-
Critical Hdwy	-	- 6.94
Critical Hdwy Stg 1	-	-
Critical Hdwy Stg 2	-	-
Follow-up Hdwy	-	- 3.32
Pot Cap-1 Maneuver	-	0 425
Stage 1	-	0
Stage 2	-	0
Platoon blocked, %	-	-
Mov Cap-1 Maneuver	-	- 425
Mov Cap-2 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-

Approach	WB	SB
HCM Control Delay, s	0	0
HCM LOS		A

Minor Lane/Major Mvmt	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↑↑			↑
Traffic Vol, veh/h	0	0	901	133	0	2
Future Vol, veh/h	0	0	901	133	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	84	50	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1073	266	0	4

Major/Minor	Major2	Minor2
Conflicting Flow All	-	0
Stage 1	-	-
Stage 2	-	-
Critical Hdwy	-	-
Critical Hdwy Stg 1	-	-
Critical Hdwy Stg 2	-	-
Follow-up Hdwy	-	-
Pot Cap-1 Maneuver	-	0
Stage 1	-	0
Stage 2	-	0
Platoon blocked, %	-	-
Mov Cap-1 Maneuver	-	-
Mov Cap-2 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-

Approach	WB	SB
HCM Control Delay, s	0	14.1
HCM LOS		B

Minor Lane/Major Mvmt	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	399
HCM Lane V/C Ratio	-	-	0.01
HCM Control Delay (s)	-	-	14.1
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

HCM 6th TWSC  
1: US-24 & Brockhurst Ranch

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Intersection

Int Delay, s/veh 5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↑↑			↑
Traffic Vol, veh/h	0	0	1232	1	0	138
Future Vol, veh/h	0	0	1232	1	0	138
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	98	50	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1257	2	0	276

Major/Minor	Major2	Minor2
Conflicting Flow All	-	0 630
Stage 1	-	-
Stage 2	-	-
Critical Hdwy	-	- 6.94
Critical Hdwy Stg 1	-	-
Critical Hdwy Stg 2	-	-
Follow-up Hdwy	-	- 3.32
Pot Cap-1 Maneuver	-	0 424
Stage 1	-	0
Stage 2	-	0
Platoon blocked, %	-	-
Mov Cap-1 Maneuver	-	- 424
Mov Cap-2 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-

Approach	WB	SB
HCM Control Delay, s	0	28
HCM LOS		D

Minor Lane/Major Mvmt	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	424
HCM Lane V/C Ratio	-	-	0.651
HCM Control Delay (s)	-	-	28
HCM Lane LOS	-	-	D
HCM 95th %tile Q(veh)	-	-	4.5