GWINNETT COUNTY
PLANNING AND DEVELOPMENT

RECEIVED

5/5/22

REZONING APPLICATION

AN APPLICATION TO AMEND THE OFFICIAL ZONING MAP OF GWINNETT COUNTY, GA.

APPLICANT INFORMATION	PROPERTY OWNER INFORMATION*
NAME: Brand Properties, LLC c/o Mahaffey Pickens Tucker, LLP	NAME: BD 2651 Satellite Boulevard II, LLC
ADDRESS: 1550 North Brown Road, Suite 125	ADDRESS: 2187 Atlantic St, 9th Floor
CITY: Lawrenceville	CITY: Stamford
STATE: Georgia ZIP: 30043	STATE: Connecticut ZIP: 06902
PHONE: 770 232 0000	PHONE: 770 232 0000

CONTACT PERSON: Shane Lanham PHONE: 770 232 0000

CONTACT'S E-MAIL: slanham@mptlawfirm.com

APPLICANT IS THE:

☐ OWNER'S AGENT ☐ PROPERTY OWNER ☑ CONTRACT PURCHASER

PRESENT ZONING DISTRICTS(S): M-1 & RA-200 REQUESTED ZONING DISTRICT: RM-24

PARCEL NUMBER(S): R7079 008 ACREAGE: +/- 36.308

ADDRESS OF PROPERTY: 2651 Satellite Boulevard

PROPOSED DEVELOPMENT: Mixed-Use Development with residential and commercial uses

RESIDENTIAL DEVELOPMENT	NON-RESIDENTIAL DEVELOPMENT
No. of Lots/Dwelling Units: 712	No. of Buildings/Lots: NA
Dwelling Unit Size (Sq. Ft.): varies per UDO	Total Building Sq. Ft. NA
Gross Density: +/- 19.61 units per acre	Density: NA
Net Density: +/- 20.59 units per acre	

PLEASE ATTACH A LETTER OF INTENT EXPLAINING WHAT IS PROPOSED

REZONING APPLICATION

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APPLICANT IS THE:

☐ OWNER'S AGENT ☐ PROPERTY OWNER ☑ CONTRACT PURCHASER

PRESENT ZONING DISTRICTS(S): M-1 & RA-200 REQUESTED ZONING DISTRICT: MU-R

PARCEL NUMBER(S): R7079 008 ACREAGE: +/- 3.79

ADDRESS OF PROPERTY: 2651 Satellite Boulevard

PROPOSED DEVELOPMENT: Mixed-Use Development with residential and commercial uses

RESIDENTIAL DEVELOPMENT	NON-RESIDENTIAL DEVELOPMENT
No. of Lots/Dwelling Units: 52	No. of Buildings/Lots: 3 mixed-use buildings
Dwelling Unit Size (Sq. Ft.): varies per UDO	Total Building Sq. Ft. +/-25,000
Gross Density: +/- 13.72 units per acre	Density: +/-6,600 square feet per acre
Net Density: +/- 13.72 units per acre	

PLEASE ATTACH A LETTER OF INTENT EXPLAINING WHAT IS PROPOSED

Mahaffey Pickens Tucker, LLP
ATTORNEYS AT LAW

Matthew P. Benson
G. Tyler Boyd
Catherine W. Davidson
Gerald Davidson, Jr.*
Rebecca B. Gober
Brian T. Easley
Christopher D. Holbrook

Shane M. Lanham
Jeffrey R. Mahaffey
Jessica R. Pickens
Steven A. Pickens
Andrew D. Stancil
R. Lee Tucker, Jr.

*Of Counsel

COMBINED LETTER OF INTENT FOR REZONING APPLICATIONS OF BRAND PROPERTIES, LLC

Mahaffey Pickens Tucker, LLP submits this Letter of Intent and attached rezoning applications (the "Applications") on behalf of Brand Properties, LLC, (the "Applicant"), for the purpose of requesting the rezoning of an approximately 40.09-acre tract (the "Property") situated at the intersection of Satellite Boulevard and Boggs Road. The surrounding area is characterized by a mix of land uses including commercial, industrial, and multifamily residential. The Property is currently zoned M-1 and RA-200 and is located within the Workplace Centers Character Area.

The Applicant is requesting to rezone the Property to the MU-R and RM-24 zoning classifications in order to develop the Property as a mixed-use community, including commercial and multifamily residential uses. The proposed development would include a total of 712 residential units including three vertically-mixed buildings with residential units provided over commercial/retail and/or office uses on the ground floor. Access to the proposed development would be provided by a single access driveway on Boggs Road and three access drives on Satellite Boulevard. The proposed vertically-mixed buildings would be located along Satellite Boulevard, including at the intersection of Satellite Boulevard and Boggs Road. Residents would have convenient access to major transportation corridors including Satellite Boulevard, Duluth Highway (State Route 120), University parkway (State Route 316), and Interstate 85. Residents would also have convenient access to several nearby regional employment centers, commercial hubs, and entertainment districts including Gwinnett Place Mall, Sugarloaf Mills Mall, and the Gas South District.

The proposed development would feature first-class amenities for the use and enjoyment of residents including two pools with resort-style patio decks with lounge space, grilling stations,

fire pits, and other community gathering spaces. Community open space would also be provided within the development including a larger community greenspace located among the proposed multifamily cottages, two pocket parks, and a dog park. A 12-foot wide multi-use trail is also proposed around the perimeter of the Property including along the frontages of Boggs Road and Satellite Boulevard. This proposed multi-use path would enhance the walkability of Boggs Road and Satellite Boulevard and provide important additions to Gwinnett's growing trail network. The Property also enjoys two existing transit stops for Routes 10A and 10B located on Boggs Road and Satellite Boulevard.

The proposed development is compatible with the mix of surrounding land uses, is in line with the spirit and intent of the Gwinnett County 2040 Unified Plan (the "2040 Plan"), and would add much-needed residential critical mass to aid and support lagging office and commercial uses in the surrounding area. The existing land use mix of the surrounding area includes commercial, multifamily residential, office, and industrial uses. The proposed mixed-use development would complement those uses by activating an underutilized site which currently includes an aging and increasingly functionally and economically obsolete office building.

The proposed development is in line with the land use policy of the 2040 Plan which designates the Property as within the Workplace Centers Character Area. The 2040 Plan's area narrative for Workplace Centers provides that predominantly employment-focused areas "should be supported where appropriate by opportunities for residential uses and multi-use oriented commercial areas." Moreover, the 2040 Plan specifically identifies "mixed-use developments" and "apartments" as potential development types. The proposed development is also compatible with the 2040 Plan's general housing policy which addresses the continued need for housing supply and diversity of housing types within the County. According to the 2040 Plan, the vast majority of housing units are single-family detached homes which represent approximately 73% of all housing units. In contrast to the current supply, recent demand has skewed towards smaller housing units within walkable mixed-use areas such as the proposed mixed-use development. Additionally, the Applicant is proposing a variety of multifamily housing options within the proposed development. In addition to the proposed multifamily-style homes, the proposed development also includes 64 multifamily cottages, which would provide access to the same amenities and provide the same

low-maintenance lifestyle, but with larger units that provide more space and more privacy. The proposed multifamily cottages are located in the center of the site and would be served by a mix of "on-street" and surface parking areas.

In order to develop the Property for use as a mixed-use development as set forth in the Applications, the Applicant specifically requests the following waivers, modifications, variances and/or conditions of zoning, as applicable:

- Variance from Section 210-225.8 to allow the minimum project area to be less than 15 acres;
- Variance from Section 210-225.8 and Section 230-10 to reduce the internal building setbacks to 0 feet;
- Variance from Section 210-225.5(A)(2) to allow more than 20 percent of the required parking for the development to be in parking lots located between the facade of the building and the street on which the building faces;
- Variance from Section 210-225.6(A & F) and Section 230-120.13 to allow the location and screening of off-street loading and service areas and dumpsters in general accordance with the site plan.

The Applicant and its representatives welcome the opportunity to meet with staff of the Gwinnett County Department of Planning & Development to answer any questions or to address any concerns relating to the matters set forth in this letter or in the Rezoning Application filed herewith. The Applicant respectfully requests your approval of these Applications.

Respectfully submitted this 25th day of May, 2022.

MAHAFFEY PICKENS TUCKER, LLP

Shane M. Lanham

Shane M. Lanham
Attorneys for Applicant

REZONING APPLICANT'S RESPONSE

STANDARDS GOVERNING THE EXERCISE OF THE ZONING POWER

PURSUANT TO REQUIREMENTS OF THE UNIFIED DEVELOPMENT ORDINANCE, THE BOARD OF COMMISSIONERS FINDS THAT THE FOLLOWING STANDARDS ARE RELEVANT IN BALANCING THE INTEREST IN PROMOTING THE PUBLIC HEALTH, SAFETY, MORALITY OR GENERAL WELFARE AGAINST THE RIGHT TO THE UNRESTRICTED USE OF PROPERTY AND SHALL GOVERN THE EXERCISE OF THE ZONING POWER.

PLEASE RESPOND TO THE FOLLOWING STANDARDS IN THE SPACE PROVIDED OR USE AN ATTACHMENT AS NECESSARY:

(A) WHETHER A PROPOSED REZONING WILL PERMIT A USE THAT IS SUITABLE IN VIEW OF THE USE AND DEVELOPMENT OF ADJACENT AND NEARBY PROPERTY:

Please see attached

(B) WHETHER A PROPOSED REZONING WILL ADVERSELY AFFECT THE EXISTING USE OR USABILITY OF ADJACENT OR NEARBY PROPERTY:

Please see attached

(C) WHETHER THE PROPERTY TO BE AFFECTED BY A PROPOSED REZONING HAS REASONABLE ECONOMIC USE AS CURRENTLY ZONED:

Please see attached

(D) WHETHER THE PROPOSED REZONING WILL RESULT IN A USE WHICH WILL OR COULD CAUSE AN EXCESSIVE OR BURDENSOME USE OF EXISTING STREETS, TRANSPORTATION FACILITIES, UTILITIES, OR SCHOOLS:

Please see attached

(E) WHETHER THE PROPOSED REZONING IS IN CONFORMITY WITH THE POLICY AND INTENT OF THE LAND USE PLAN:

Please see attached

(F) WHETHER THERE ARE OTHER EXISTING OR CHANGING CONDITIONS AFFECTING THE USE AND DEVELOPMENT OF THE PROPERTY WHICH GIVE SUPPORTING GROUNDS FOR EITHER APPROVAL OR DISAPPROVAL OF THE PROPOSED REZONING:

Please see attached

STANDARDS GOVERNING THE EXERCISE OF THE ZONING POWER

A. Approval of the proposed rezoning will permit a use that is suitable in view of the use and development of adjacent and nearby property. The surrounding area is characterized by a mix of multifamily residential, office, and commercial uses. The proposed mixed-use development would complement this existing land use mix and provide much-needed residential critical mass.

B. Approval of the proposed rezoning will not adversely affect the existing use or usability of adjacent or nearby property. Rather the proposed development would complement surrounding land uses by providing additional housing options for current and future residents of Gwinnett County. Residents of the proposed community would have convenient access to several major employment centers, commercial hubs, and entertainment districts including Gwinnett Place Mall, Sugarloaf Mills Mall, and the Gas South District. Additionally, the proposed non-residential component of the proposed development would provide additional shopping and dining options for people who live and work in the surrounding area.

C. The Applicant submits that due to its size, location, and layout, the subject property does not have a reasonable economic use as currently zoned.

D. Approval of the proposed rezoning will not result in a use which will or could cause an excessive or burdensome use of existing streets, transportation facilities, utilities, or schools. The property has convenient access to Satellite Boulevard, Duluth Highway (State Route 120), University Parkway (State Route 316), and Interstate 85. The property has access to water and sewer utilities on-site.

E. The proposed rezoning is in conformity with the policy and intent of the 2040 Plan. The subject Property is designated as within the Workplace Centers Character Area on the 2040 Plan Future Development Map. Encouraged land uses for this character area specifically include “mixed-use developments” and “apartments” as potential development types.

F. The Property’s near-immediate access to Interstate 85 via Boggs Road, two adjacent transit stops, and proposed trail connections provide additional supporting grounds for approval of the Applications.

LEGAL DESCRIPTION
RM-24

ALL THAT TRACT OR PARCEL OF LAND lying and being in Land Lot 79 of the 7th District, Gwinnett County, Georgia and being more particularly described as follows:

To find the TRUE POINT OF BEGINNING, commence from the south end of the mitered intersection of the southwest right-of-way of Boggs Road (50' from centerline) with the northwest right-of-way line of Satellite Boulevard (50' from centerline); thence along Satellite Boulevard thence 663.13 feet along an arc of a curve to the right, said curve having a radius of 4,574.91 feet and a chord bearing and distance of South 51 degrees 9 minutes 39 seconds West 662.55 feet to the POINT OF BEGINNING; thence 692.16 feet along an arc of a curve to the right, said curve having a radius of 4,574.91 feet and a chord bearing and distance of South 59 degrees 38 minutes 51 seconds West 691.50 feet; thence South 63 degrees 58 minutes 54 seconds West a distance of 712.36 feet to a point; thence leaving said right-of-way line 433.16 feet along an arc of a curve to the right, said curve having a radius of 341.33 feet and a chord bearing and distance of North 21 degrees 34 minutes 43 seconds East 404.67 feet to a point; thence North 28 degrees 41 minutes 28 seconds West a distance of 20.13 feet to a point; thence North 29 degrees 3 minutes 51 seconds West a distance of 222.19 feet to a point; thence South 60 degrees 56 minutes 9 seconds West a distance of 160.00 feet to a point; thence North 42 degrees 53 minutes 35 seconds West a distance of 188.58 feet to a point; thence North 29 degrees 3 minutes 24 seconds West a distance of 548.52 feet to a point; thence North 8 degrees 40 minutes 49 seconds West a distance of 37.55 feet to a point; thence North 81 degrees 23 minutes 58 seconds East a distance of 204.85 feet to a point; thence continue Easterly along said line, a distance of 1,865.02 feet; thence 242.04 feet along an arc of a curve to the left, said curve having a radius of 1,004.93 feet and a chord bearing and distance of South 29 degrees 28 minutes 18 seconds East 241.45 feet to a point; thence South 54 degrees 0 minutes 35 seconds West a distance of 549.67 feet to a point; thence North 36 degrees 12 minutes 50 seconds West a distance of 30.28 feet to a point; thence South 53 degrees 47 minutes 10 seconds West a distance of 143.74 feet to a point; thence South 35 degrees 59 minutes 25 seconds East a distance of 270.83 feet to a point and the TRUE POINT OF BEGINNING.

Said tract containing 36.308 acres.

LEGAL DESCRIPTION
MUR TRACT

ALL THAT TRACT OR PARCEL OF LAND lying and being in Land Lot 79 of the 7th District, Gwinnett County, Georgia and being more particularly described as follows:

BEGINNING at the south end of the mitered intersection of the southwest right-of-way of Boggs Road (50' from centerline) with the northwest right-of-way line of Satellite Boulevard (50' from centerline); thence along Satellite Boulevard 663.13 feet along an arc of a curve to the right, said curve having a radius of 4,574.91 feet and a chord bearing and distance of South 51 degrees 9 minutes 39 seconds West 662.55 feet; thence leaving said right-of-way line North 35 degrees 59 minutes 25 seconds West a distance of 270.83 feet to a point; thence North 53 degrees 47 minutes 10 seconds East a distance of 143.74 feet to a point; thence South 36 degrees 12 minutes 50 seconds East a distance of 30.28 feet to a point; thence North 54 degrees 0 minutes 35 seconds East a distance of 549.67 feet to a point; thence 114.39 feet along an arc of a curve to the left, said curve having a radius of 1,004.93 feet and a chord bearing and distance of South 39 degrees 37 minutes 57 seconds East 114.32 feet to a point; thence South 42 degrees 49 minutes 13 seconds East a distance of 38.70 feet to a point; thence South 2 degrees 7 minutes 21 seconds West a distance of 70.74 feet to a point and the POINT OF BEGINNING.

Said tract containing 3.788 acres.

GWINNETT COUNTY
PLANNING AND DEVELOPMENT

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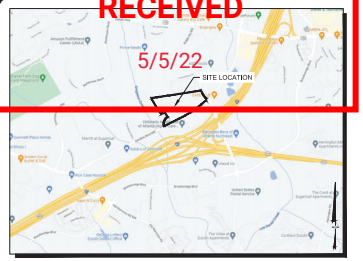
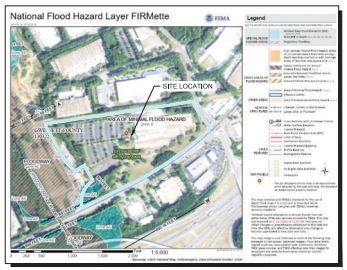
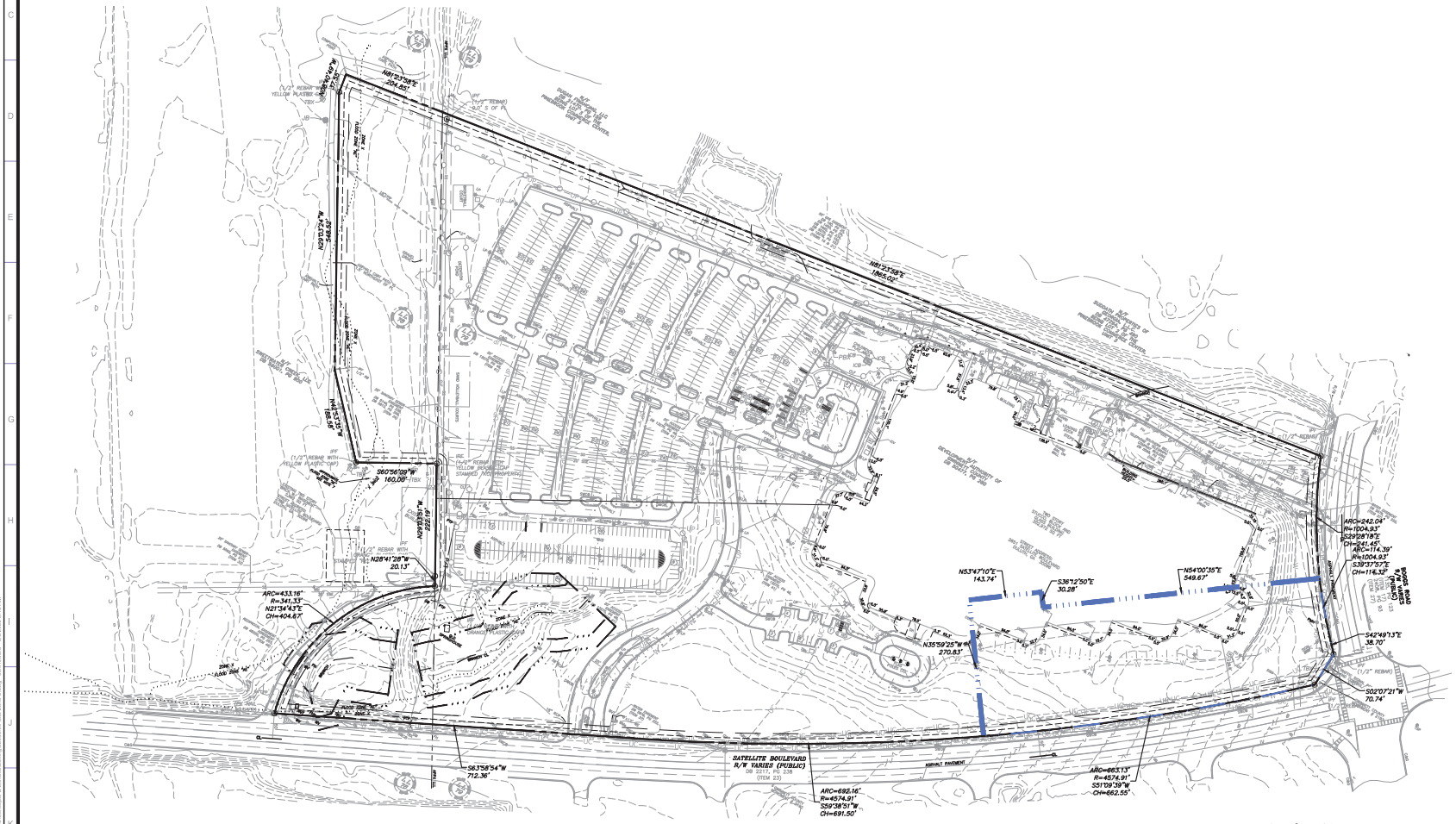
5/5/22



SITE LOCATION MAP
NOT TO SCALE



FEMA FIRM MAP
NOT TO SCALE



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PROJECT

SATELLITE BLVD.

A MASTER PLANNED RESIDENTIAL DEVELOPMENT

AT

2651 SATELLITE BLVD.
DULUTH, GEORGIA 30096

CITY OF DULUTH/
GWINNETT COUNTY JURISDICTION

FOR

BRAND PROPERTIES

MUNICIPALITY PROJECT #

REVISIONS

NO.	DATE	BY	DESCRIPTION
-1	05/04/2022	PEC	COUNTY COMMENTS

THIS SEAL IS ONLY VALID IF COUNTER SIGNED AND DATED WITH AN ORIGINAL SIGNATURE.

GEORGIA REGISTERED No. 37096 PROFESSIONAL ENGINEER MATTHEW F KRUCZKOWSKI

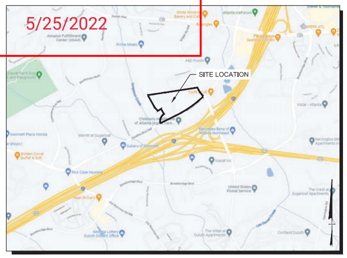
GSWCC LEVEL II DESIGN PROFESSIONAL CERTIFICATION # 0000066476 EXP. 06/27/2024

SURVEY EXHIBIT

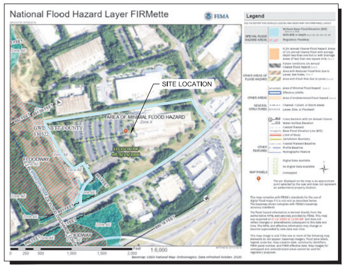
0 50 100 200 300

SCALE: 1" = 100'
DATE: 03/02/2022
PROJECT: 22038.00

SE
SHEET



SITE LOCATION MAP
NOT TO SCALE



FEMA FIRM MAP
NOT TO SCALE

GENERAL NOTES:

1. ALL STREETS INTERNAL TO DEVELOPMENT TO BE PRIVATE STREETS.
2. ALL SIDEWALKS PROPOSED ON SITE TO BE CONCRETE AND FIVE IN WIDTH, UNLESS OTHER WISE NOTED ON PLAN.
3. ALL OFF-STREET SURFACE PARKING SHALL COMPLY WITH GWINNETT COUNTY UDO SECTION 620-30 OFF-STREET SURFACE PARKING LOT PLANTING REQUIREMENTS.
4. NO DAMN BREACH ZONE WAS LOCATED ON SITE.
5. SITE SHALL COMPLY WITH SECTION 210-225.10 OF THE GWINNETT UDO FOR STREETSCAPE DESIGN.

MU-R DISTRICT BONUSES PROVIDED:

AMENITIES PROVIDED FOR FAR BONUS FOR MU-R DISTRICT:

MIN. COMMON AREA (15%)
COMMON AREA PROVIDED: 17.2% (ADDITIONAL COMMON AREA=2.2%) DENSITY BONUS= 0.22 FAR

MULTI-USE PATH BONUS = 1.2 (CALCULATED .2 FAR/ 1,000' OF PATH) 6,000 LF OF PATH PROVIDED

TOTAL FAR BONUSES = 1.2 (MULTI-USE PATH) + 0.22 (COMMON AREAS)= 1.42

TOTAL FAR (INCLUDING BONUSES) = 1.82 (1.42 BONUS + .4 BASE)

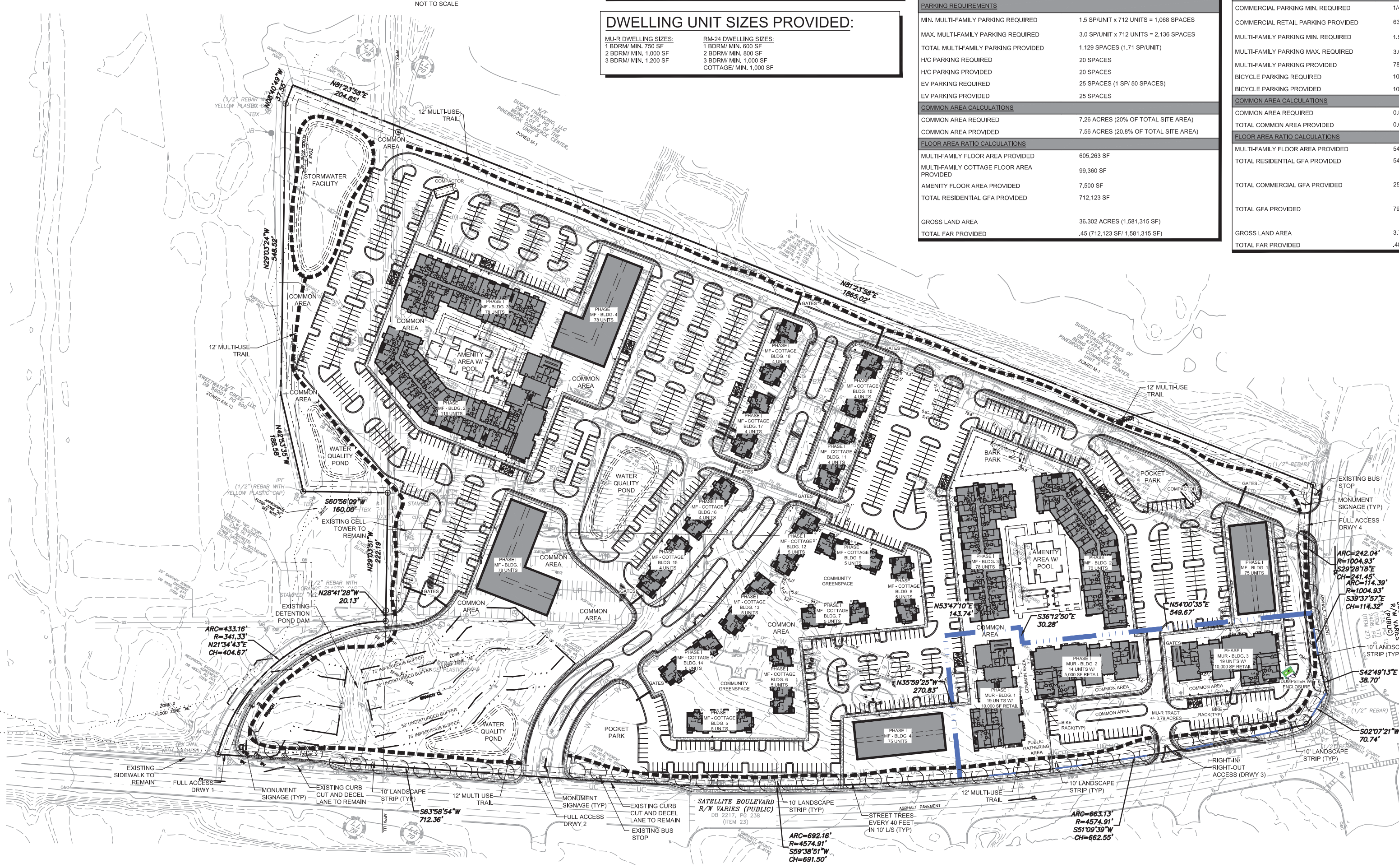
APPLICABLE DENSITY BASED ON 1.82 FAR = 48 UNITS/ACRE

DWELLING UNIT SIZES PROVIDED:

MU-R DWELLING SIZES:	RM-24 DWELLING SIZES:
1 BDRM/ MIN. 750 SF	1 BDRM/ MIN. 600 SF
2 BDRM/ MIN. 1,000 SF	2 BDRM/ MIN. 800 SF
3 BDRM/ MIN. 1,200 SF	3 BDRM/ MIN. 1,000 SF
	COTTAGE/ MIN. 1,000 SF

SITE DATA RM-24 TRACT:	
RM-24 TRACT SITE AREA	36.308 ACRES
FLOODPLAIN & GAS EASEMENT	3.46 ACRES (50% = 1.73 ACRES)
NET LOT AREA	34.578 ACRES
ZONING	
EXISTING ZONING	M-1 & RA200
PROPOSED ZONING	RM-24
ZONING JURISDICTION	GWINNETT COUNTY
SETBACK/BUFFER REQUIREMENTS	
EXTERNAL FRONT YARD (BOGGS RD/SATELLITE BLVD.)	15 FEET
EXTERNAL SIDE YARD	15 FEET
EXTERNAL REAR YARD	30 FEET
FRONTAGE LANDSCAPE STRIP OFF R/W	10 FEET
DEVELOPMENT STANDARDS	
MAXIMUM HEIGHT OF BUILDINGS	4-STORIES (65 FEET)
MULTI-FAMILY 4 STORY UNITS	648 UNITS
MULTI-FAMILY COTTAGE UNITS	64 UNITS
TOTAL NUMBER OF UNITS MF	712 UNITS
GROSS SITE DENSITY PROVIDED	19.61 UNITS PER ACRE
NET SITE DENSITY PROVIDED	20.59 UNITS PER ACRE
PARKING REQUIREMENTS	
MIN. MULTI-FAMILY PARKING REQUIRED	1.5 SP/UNIT x 712 UNITS = 1,068 SPACES
MAX. MULTI-FAMILY PARKING REQUIRED	3.0 SP/UNIT x 712 UNITS = 2,136 SPACES
TOTAL MULTI-FAMILY PARKING PROVIDED	1,129 SPACES (1.71 SP/UNIT)
H/C PARKING REQUIRED	20 SPACES
H/C PARKING PROVIDED	20 SPACES
EV PARKING REQUIRED	25 SPACES (1 SP/ 50 SPACES)
EV PARKING PROVIDED	25 SPACES
COMMON AREA CALCULATIONS	
COMMON AREA REQUIRED	7.26 ACRES (20% OF TOTAL SITE AREA)
COMMON AREA PROVIDED	7.56 ACRES (20.8% OF TOTAL SITE AREA)
FLOOR AREA RATIO CALCULATIONS	
MULTI-FAMILY FLOOR AREA PROVIDED	605,263 SF
MULTI-FAMILY COTTAGE FLOOR AREA PROVIDED	99,360 SF
AMENITY FLOOR AREA PROVIDED	7,500 SF
TOTAL RESIDENTIAL GFA PROVIDED	712,123 SF
GROSS LAND AREA	36.302 ACRES (1,581,315 SF)
TOTAL FAR PROVIDED	.45 (712,123 SF/ 1,581,315 SF)

SITE DATA MU-R TRACT:	
MU-R TRACT SITE AREA	3.788 ACRES
FLOODPLAIN & GAS EASEMENT	N/A
NET LOT AREA	3.788 ACRES
ZONING	
EXISTING ZONING	M-1
PROPOSED ZONING	MU-R
ZONING JURISDICTION	GWINNETT COUNTY
SETBACK/BUFFER REQUIREMENTS	
EXTERNAL FRONT YARD (BOGGS RD/SATELLITE BLVD.)	20 FEET
EXTERNAL SIDE YARD	20 FEET
EXTERNAL REAR YARD	20 FEET
FRONTAGE LANDSCAPE STRIP OFF R/W	10 FEET
DEVELOPMENT STANDARDS	
MAXIMUM HEIGHT OF BUILDINGS w/ BONUSES	15 STORIES (210 FEET)
TOTAL COMMERCIAL AREA PROVIDED	25,000 SF
TOTAL MULTI-FAMILY UNITS PROVIDED	52 UNITS
GROSS SITE DENSITY PROVIDED	13.72 UNITS PER ACRE
NET SITE DENSITY PROVIDED	13.72 UNITS
PARKING REQUIREMENTS	
COMMERCIAL PARKING MIN. REQUIRED	1/400 SF x 25,000 SF = 63 SPACES
COMMERCIAL RETAIL PARKING PROVIDED	63 SPACES (1/400 SF)
MULTI-FAMILY PARKING MIN. REQUIRED	1.5 SP/UNIT x 52 UNITS = 78 SPACES
MULTI-FAMILY PARKING MAX. REQUIRED	3.0 SP/UNIT x 52 UNITS = 156 SPACES
MULTI-FAMILY PARKING PROVIDED	78 SPACES (1.5 SP/UNIT)
BICYCLE PARKING REQUIRED	10 SPACES (1 RACK/5 SPACES/50 PARKING SP.)
BICYCLE PARKING PROVIDED	10 SPACES
COMMON AREA CALCULATIONS	
COMMON AREA REQUIRED	0.57 ACRES (15% OF TOTAL SITE AREA)
TOTAL COMMON AREA PROVIDED	0.65 ACRES (28,180 SF) 17.2% OF SITE AREA
FLOOR AREA RATIO CALCULATIONS	
MULTI-FAMILY FLOOR AREA PROVIDED	54,837 SF
TOTAL RESIDENTIAL GFA PROVIDED	54,837 SF (68.7% OF GFA)
TOTAL COMMERCIAL GFA PROVIDED	25,000 SF (31.3% OF GFA)
TOTAL GFA PROVIDED	79,837 SF
GROSS LAND AREA	3.79 ACRES (165,092 SF)
TOTAL FAR PROVIDED	.484 (79,837 SF/ 165,092 SF)



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PROJECT

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-1	05/04/2022	PEC	COUNTY COMMENTS
-2	05/25/2022	PEC	COUNTY COMMENTS

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GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 37096 MATTHEW E. KACZENSKI

GSWCC LEVEL II DESIGN PROFESSIONAL CERTIFICATION # 0000066476 EXP. 06/27/2024

MASTER REZONING PLAN

0 50 100 200 300

SCALE: 1" = 100'
DATE: 03/02/2022
PROJECT: 22038.00

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BOGGS RD DEVELOPMENT
2651 Satellite Boulevard
DULUTH, GA 30096

Rezoning Application
MUR & RM-24 Conversion Plans
March 3, 2022

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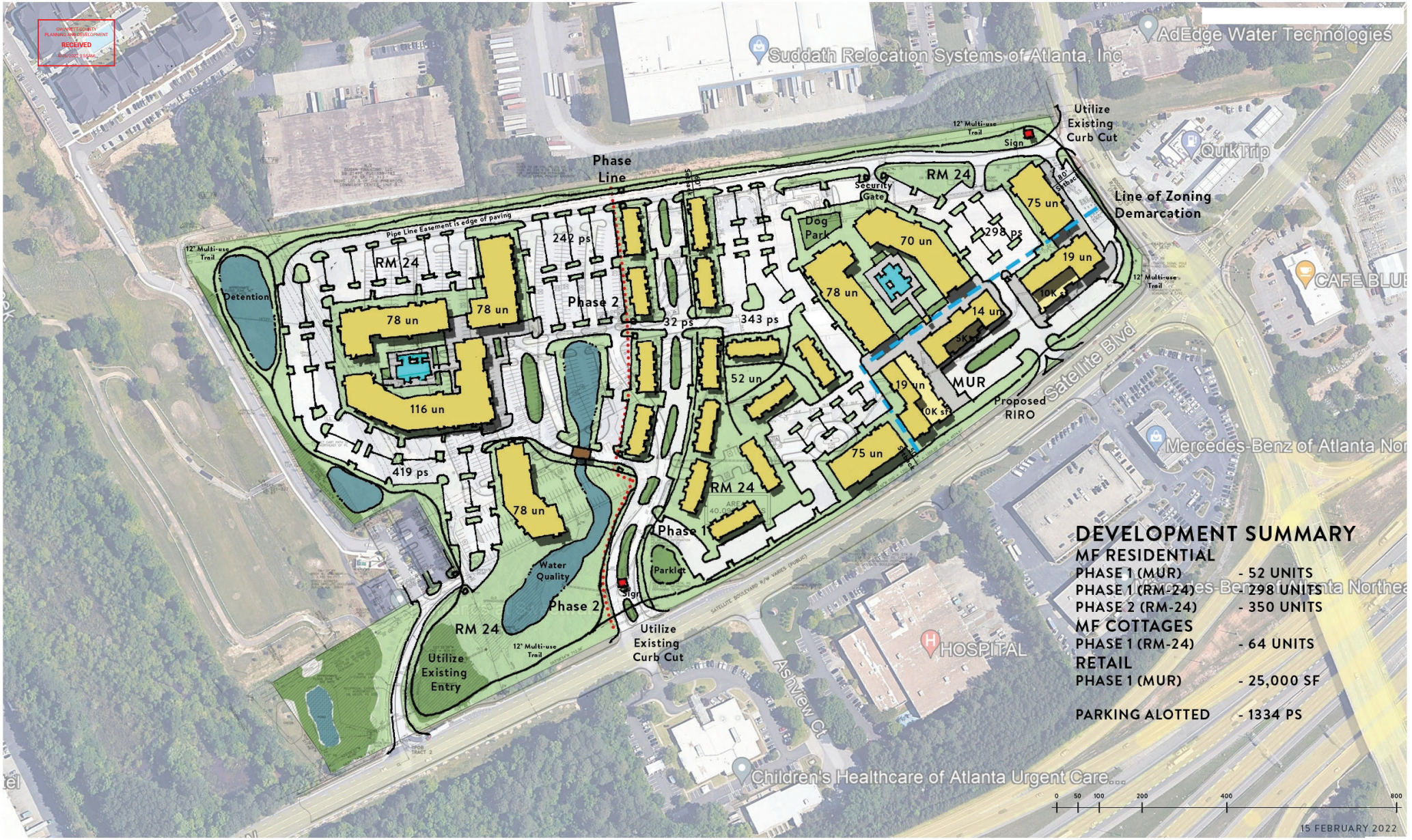


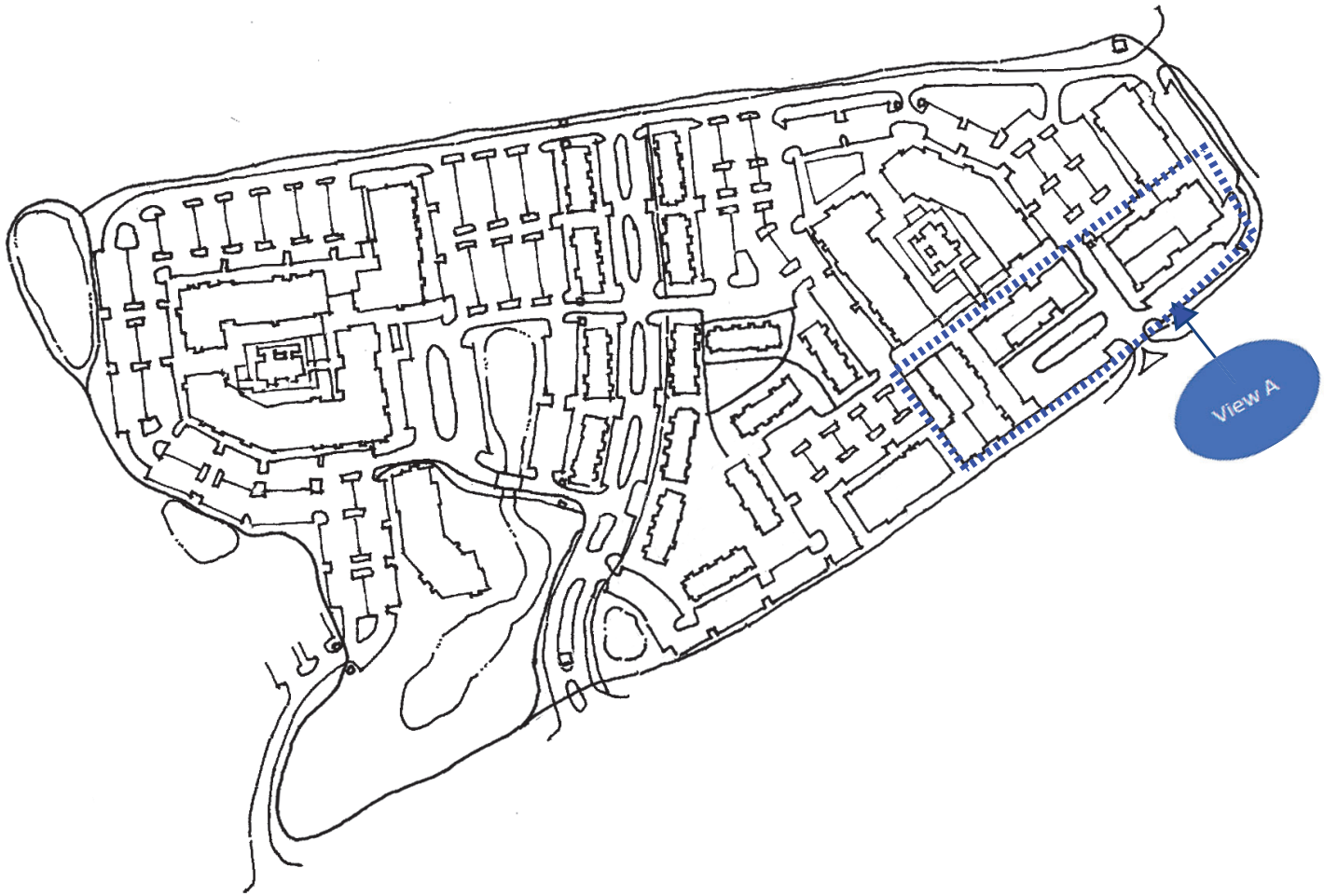
SATELLITE BLVD MIXED USE

2651 Satellite Boulevard DULUTH | GEORGIA

Mixed Use Development

SATELLITE BLVD MIXED USE
2651 Satellite Boulevard DULUTH | GEORGIA

MUR REZONING DEVELOPMENT REQUEST



VIEW A

VIEW A - WEST | 1/8" = 1'-0"

VIEW A - EAST | 1/8" = 1'-0"

VIEW A - WEST | 1/8" = 1'-0"

BUILDING ELEVATION KEYNOTE LEGEND

#	DESCRIPTION
1	ASPHALT SHINGLE ROOF; TYP. (CHARCOAL BLACK)
2	STANDING SEAM METAL ROOF
3	FULLY ADHERED TPO ROOFING BEYOND; WHITE
4	ROOF CRICKET; SEE ROOF PLANS
5	OFF-RIDGE VENT PROVIDING 150 SQ. IN. OF OPEN AIR; SEE ROOF PLANS
9A	BRICK MASONRY ROWLOCK COURSE
9B	BRICK MASONRY SOLDIER COURSE
9C	BRICK MASONRY SOLDIER COURSE - CORBEL. SEE DETAIL 10/A13.12 AT PARAPET CONDITION
9D	BRICK MASONRY STACKED COURSE
10	BRICK MASONRY ROWLOCK OVER SOLDIER COURSE
11	PRECAST WALL CAP
12	SHUTTERS, COLOR TBD
13	BUILT-UP FIBER CEMENT TRIM PROFILE. SEE DETAIL 8/A13.12
14	1X12 FIBER CEMENT TRIM BOARD. SEE DETAIL 9/A13.12
14B	FIBER CEMENT WOODTONE RUSTIC SERIES TRIM- 8" EXPOSURE
15	BUILT-UP FIBER CEMENT TRIM PROFILE. SEE DETAIL 7/A13.12
16	1X4 FIBER CEMENT TRIM BOARD (COLOR TO MATCH ADJACENT SIDING)
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21	STAINED WOOD ENTRY DOOR (NO GLAZING)
22	FC WRAPPED BALCONY COLUMN
23	PREFINISHED 5" ALUMINUM GUTTER - CHARCOAL GRAY
24	PREFINISHED 4" ALUMINUM ROUND DOWNSPOUT - CHARCOAL GRAY
25	PREFINISHED ALUMINUM SCUPPER, COLLECTION BOX, AND DOWNSPOUT - CHARCOAL GRAY
26A	CANTILEVERED BALCONY ROOF - WRAP IN METAL PANEL
26B	PRE-ENGINEERED METAL AWNING
27	CORNICE PROFILE - METAL PANEL. SEE DETAIL 6/A13.12
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BB	GOOSENECK STYLE SIGNAGE LIGHTING; REFER TO ELECTRICAL SCHEDULE
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EX	EMERGENCY EXTERIOR LIGHT; REFER TO ELECTRICAL SCHEDULE
EX-1	EMERGENCY EXTERIOR LIGHT; REFER TO ELECTRICAL SCHEDULE
F	FAN; REFER TO ELECTRICAL SCHEDULE
K	
L1	FIBER CEMENT WOODTONE RUSTIC SERIES LAP SIDING "L1"- WINCHESTER BROWN (4" EXPOSURE)
L2	FIBER CEMENT LAP SIDING "L2" SW 7630 'RAISIN' (7" EXPOSURE)
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M1	BRICK MASONRY VENEER - M1 - AUGUSTA, QUEEN SIZE, RUNNING BOND, MORTAR: COOSA GLACIER WHITE
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M4	MASONRY - ARRISCRAFT "TAUPE", RENAISSANCE MAGNOLIA, 12X24, RUNNING BOND
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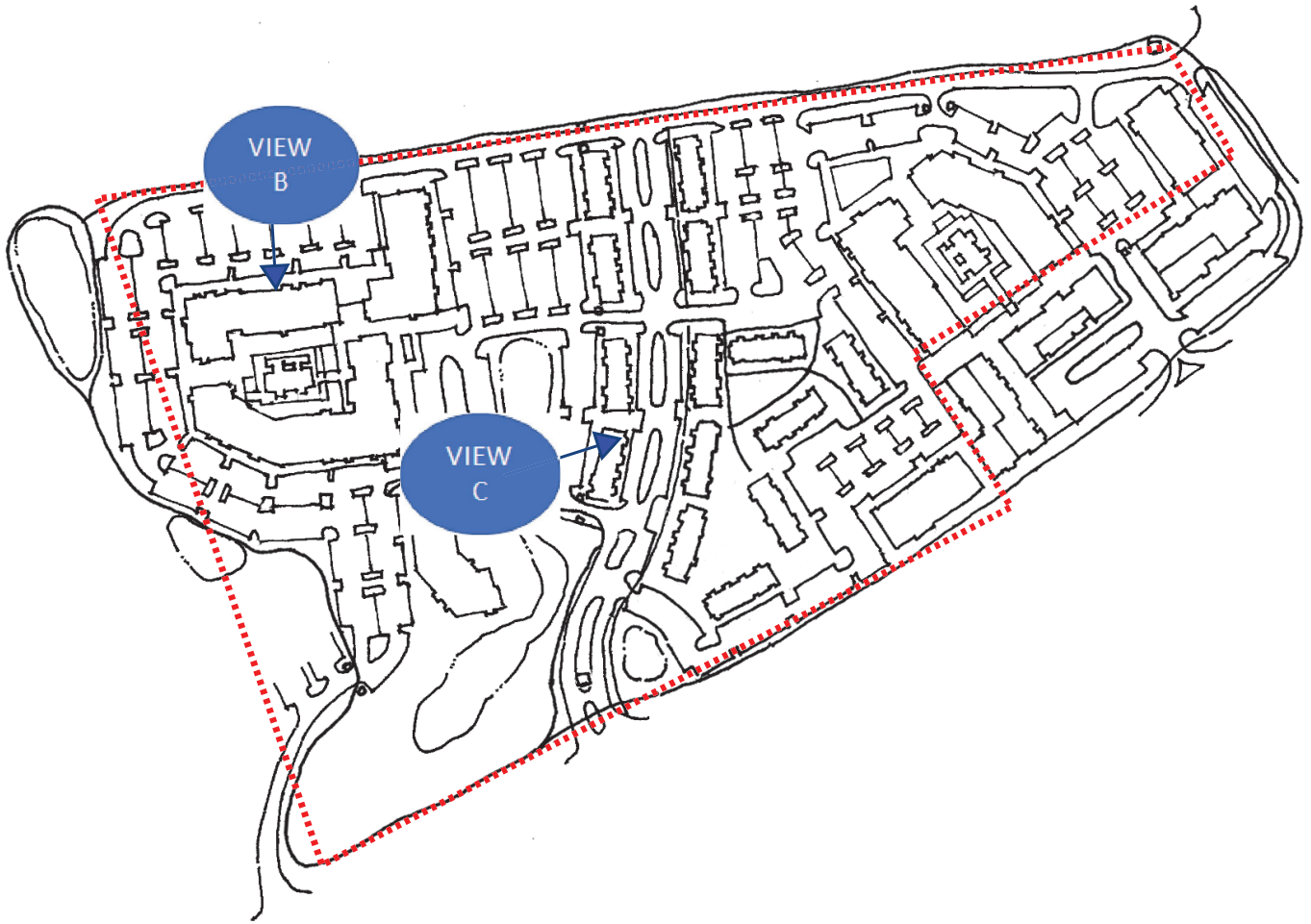
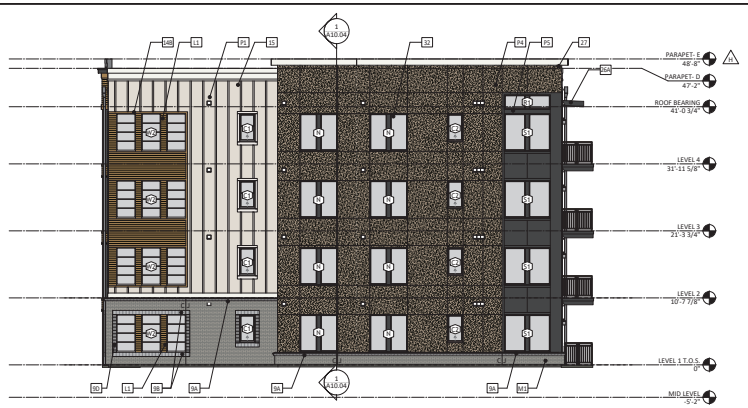
US	EXTERIOR WALL SCONCE; 6'-8" CLEAR A.F.F.

RM-24 REZONING DEVELOPMENT REQUEST

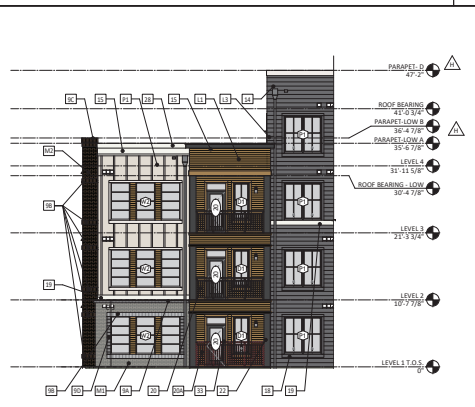


VIEW B

VIEWB - EAST 1/8" = 1'-0"



VIEWB - SOUTH 1/8" = 1'-0"



VIEWB - NORTH 1/8" = 1'-0"

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VIEW C

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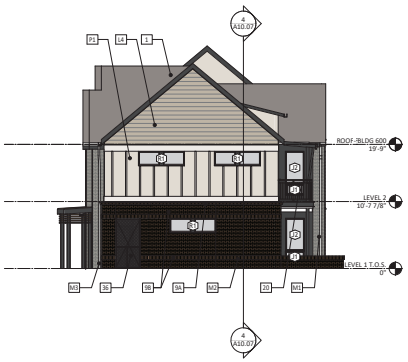
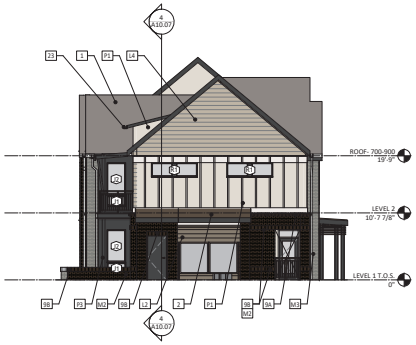


COTTAGE VIEW C - EAST — 1/8" = 1'-0"

COTTAGE VIEW C - SOUTH — 1/8" = 1'-0"



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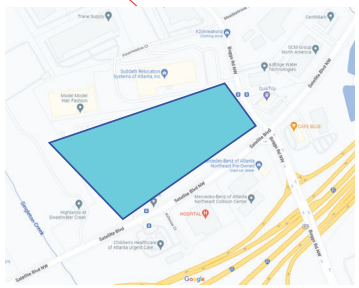
DEVELOPMENT SIGNAGE PLAN

UNDER DESIGN - CONCEPTS AND DESIGN INTENT PROVIDED



SITE LOCATION

IDENTIFICATION SIGNAGE

- (A) Primary ID Monument
- (D) Project ID - Bldg/Roof Mounted
- (E) Project ID / Primary Bldg. Entry
- (F) Leasing Center ID / Hours
- (FF) Project ID - Roof North
- (HH) Retaining Wall Signs

WAYFINDING SIGNAGE

- (H) Vehicular Directional - Medium
- (K1) Property Sign - Post & Panel
- (K2) Property Sign - Resident Referral
- (M) Regulatory
- (N1) Regulatory - Handicap at Leasing
- (N2) Regulatory - Handicap at Bldgs.

BUILDING SIGNAGE

- (O) Building Number ID

PLAQUE SIGNAGE

- (T) Rules - Large
- (U) Rules - Medium
- (U.2) No Lifeguard
- (V) Rules - Small
- (W) Rules - Horizontal
- (X) Notice Plaque
- (Y) Precaution Equipment Plaque - Large
- (Z) Precaution Equipment Plaque - Small
- (AA1) Room ID - ADA
- (AA2) Room ID - Exterior
- (BB) Unit ID - ADA
- (CC) Mail Center
- (DD) Restroom ID - ADA
- (GG) Balcony Plaque
- (JJ) Tenant Directory Plaque

LOBBY SIGNAGE

- (EE) Desktop Sign

d e A-L-001

- SIGN NUMBER
- LEVEL
- SIGN TYPE
- DENOTES ELECTRICAL HOOKUP REQUIRED
- DENOTES DATA LINE REQUIRED

COLOR PALETTE*

P1 Paint to match Sherwin Williams Iron Ore SW 7069

P2 Matthews Paint Light Silver MP18091

P3 Paint to match EPERNAY CHAMPAGNE Metal Composite by GC

P4 Paint to match Sherwin Williams Peppercorn SW 7674

P5 Matthews Paint White Wonder MP32071

P6 To match M2

NOTE:
Owner to confirm architectural colors prior to fabrication; colors subject to change based on final branding package

VINYLS*

V1 3M Scotchlite Opaque White 7725-20

V2 3M Scotchlite White Reflective 680CR-10

V3 3M Scotchlite Translucent White 5650-20

MATERIALS

M1 To match architectural brick

M2 To match architectural wood

*Printed colors are for reference only and should not be matched from this page or any other pages in this document.

*Typefaces and artwork are indicated for reference only and shall not be scanned from this page or any other pages in this document. Use only electronic art provided by the client or Huie Design. For typefaces use only computer generated fonts.

NOTE: All paint finishes to be low gloss.

PROJECT TYPEFACE**

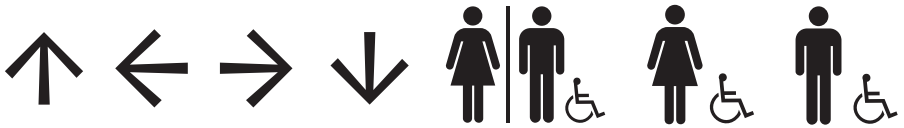
GOTHAM BOOK
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890

GOTHAM BOLD
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890

For noted exterior rules:

Futura PT Book
abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
&$ 1234567890

ARTWORK**



NOTE:
Signage code restrictions are derived from the classification of the project as "civic overlay district"

CODE INFORMATION

Code information based on the Gwinnett County sign ordinance of January 2015, table for sign allowances #86-114a, item 10 for residential developments. Section 1315 for Civic Center Overlay District.

Freestanding signs require Gwinnett County ground sign permit application.

PERMANENT ENTRANCE SIGN

Sec. 78-102 - General provisions.

(b) Permanent primary ground signs must adhere to the following standards:

(1) Must have a base at least two feet tall consisting of brick or stone, or material similar to the primary structure on the parcel. The sign face cannot extend over the base in the front, back, or sides. No open spaces which allow a direct line of sight from one side of the sign to the other are permissible in the area located beneath the widest part of the sign face when the message is located in a direct vertical plane to the ground.

(2) In activity center/corridor overlay districts, the construction material used for the base of the sign must be used to frame the sign face on both sides with a minimum width of eight inches, and a decorative architectural feature above the sign face that is the full width of the monument sign.

(3) No ground sign shall be located closer than ten feet to the back-of-curb of a public roadway.

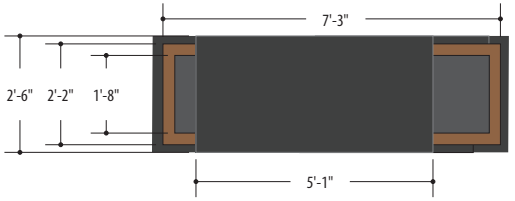
(4) Properties with multiple road frontages may transfer a maximum of 50 percent of the allowable square footage from one road frontage to the other for ground signs only

(c) Sign face backgrounds must consist of neutral non-white colors.

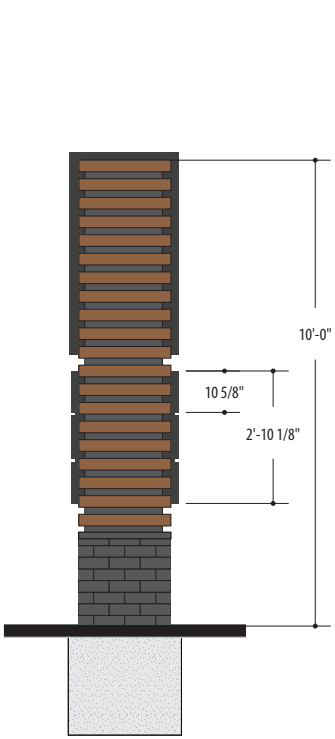
Ground Signage shall be limited to monument-type signs and shall be subject to review by the Dir of Planning & Dev. Sign shall include a minimum two-foot high brick or stacked stone base, complementing the building's architectural treatment. The masonry base shall extend at least the full width of the sign cabinet, and the cabinet shall be fully surrounded by the same materials. Ground signs shall not exceed 10 feet in height.

NOTE:
Huie Design to provide initial code analysis. Sign fabricator to confirm and notify owner of all code compliance.

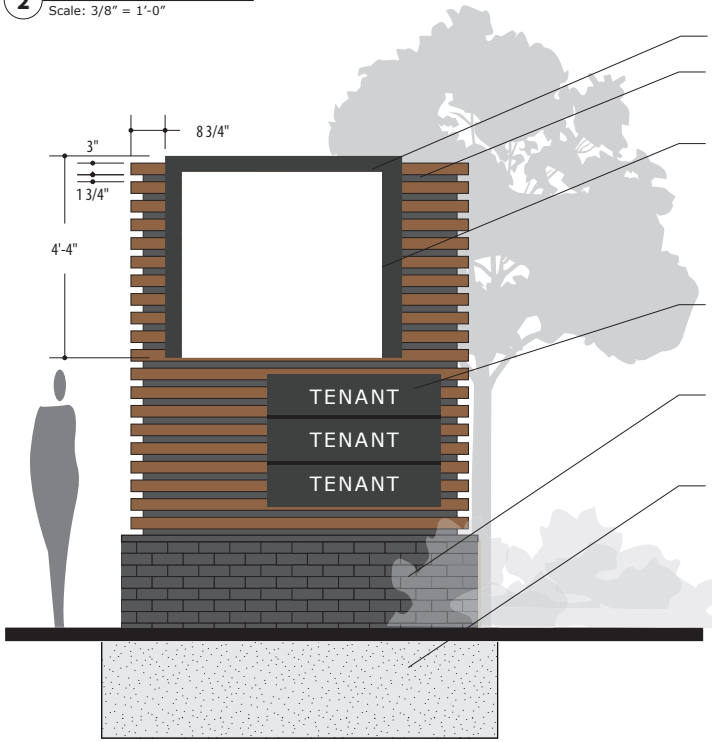
Sign fabricator responsible for supplying all electrical and blocking requirements.



2 **Plan View**
Scale: 3/8" = 1'-0"



3 **Side Elevation**
Scale: 3/8" = 1'-0"



1 **Front Elevation**
Scale: 3/8" = 1'-0"

Timber slats M2

Brick masonry sign cabinet P1

Internally illuminated painted aluminum sign cabinet with push through project ID P1

Changeable internally illuminated tenant ID plaques with push through lettering P1

Concrete base clad with brick veneer to match architectural materials M1

Poured in place concrete footer as required by sign fabricator's engineer

NOTE:
Sign is doubled-sided

Sign is not code compliant based on further review. See the alternate code compliant option on the following page.

Conceptual Plan dated 3/1/2022

NOTE:
Signage code restrictions are derived from the classification of the project as "civic overlay district"

CODE INFORMATION

Code information based on the Gwinnett County sign ordinance of January 2015, table for sign allowances #86-114a, item 10 for residential developments. Section 1315 for Civic Center Overlay District.

Freestanding signs require Gwinnett County ground sign permit application.

PERMANENT ENTRANCE SIGN

Sec. 78-102 - General provisions.

(b) Permanent primary ground signs must adhere to the following standards:

(1) Must have a base at least two feet tall consisting of brick or stone, or material similar to the primary structure on the parcel. The sign face cannot extend over the base in the front, back, or sides. No open spaces which allow a direct line of sight from one side of the sign to the other are permissible in the area located beneath the widest part of the sign face when the message is located in a direct vertical plane to the ground.

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(c) Sign face backgrounds must consist of neutral non-white colors.

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NOTE:
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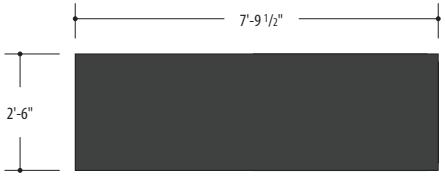
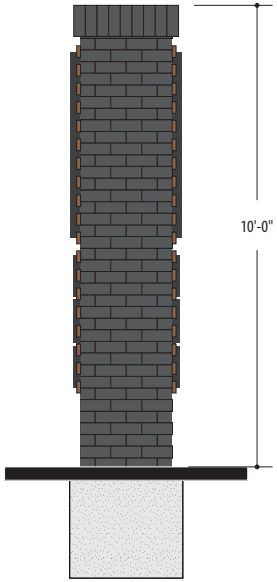
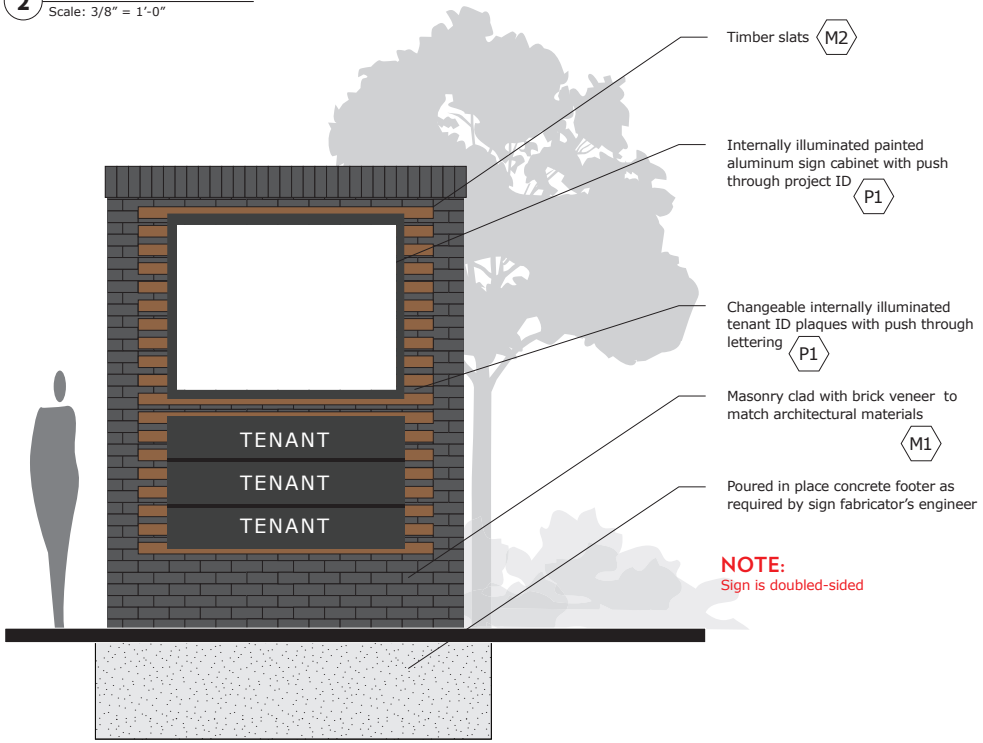
Sign fabricator responsible for supplying all electrical and blocking requirements.



2 Plan View
Scale: 3/8" = 1'-0"



3 Side Elevation
Scale: 3/8" = 1'-0"



NOTE:
Sign is doubled-sided

1 Front Elevation
Scale: 3/8" = 1'-0"

Conceptual Plan dated 3/1/2022

NOTE:
Huie Design to provide initial code analysis. Sign fabricator to confirm and notify owner of all code compliance.

Sign fabricator responsible for supplying all electrical and blocking requirements.

CODE INFORMATION

Code information based on the Gwinnett County sign ordinance of January 2015, table for sign allowances #86-114a, item 10 for residential developments. Section 1315 for Civic Center Overlay District.

Freestanding signs require Gwinnett County ground sign permit application.

ZONING DESIGNATION:
RM-24, Civic Center Overlay District

LEASING CENTER ID = "Interior Project Directional Signs"

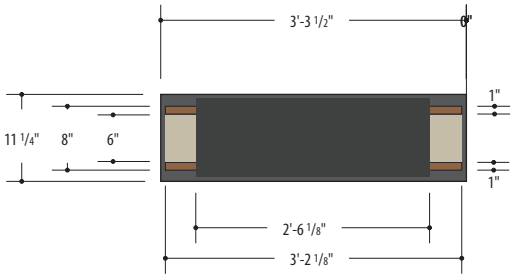
MAXIMUM QUANTITY
1 sign at each internal intersection of private driveways or public streets within the project

MAXIMUM HEIGHT
Allowed: 4 ft

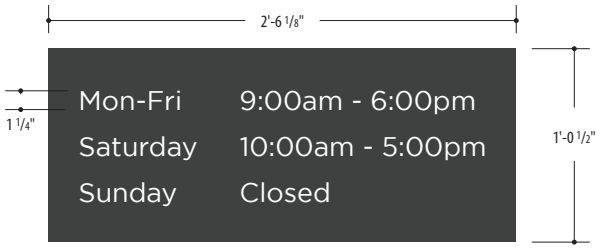
MAXIMUM SIGN AREA (square feet per side)
Allowed: 32 SF

SETBACK REQUIREMENTS
Locate no closer than 100 ft from the project entry.

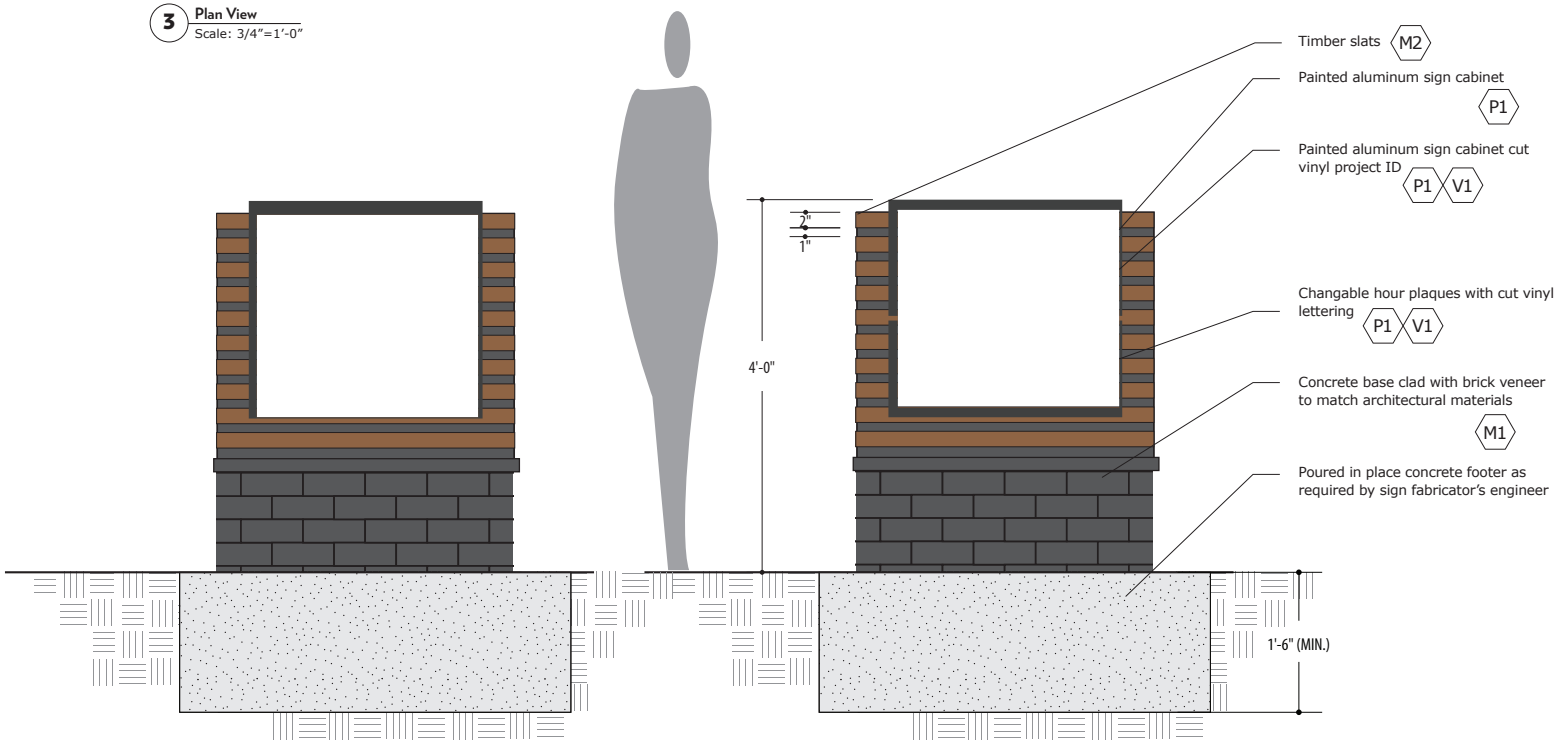
NOTE:
Board of Commissioners (BOC) resolution regarding zoning designation RM-13 (2015-07-28) is more strict than the Civic Center Overlay district, requiring that "the masonry base shall extend at least the full width of the sign cabinet, and the cabinet shall be fully surrounded by the same materials." Design shown will need to change if the requirements of the Civic Center Overlay District don't supersede the zoning resolution



3 Plan View
Scale: 3/4"=1'-0"

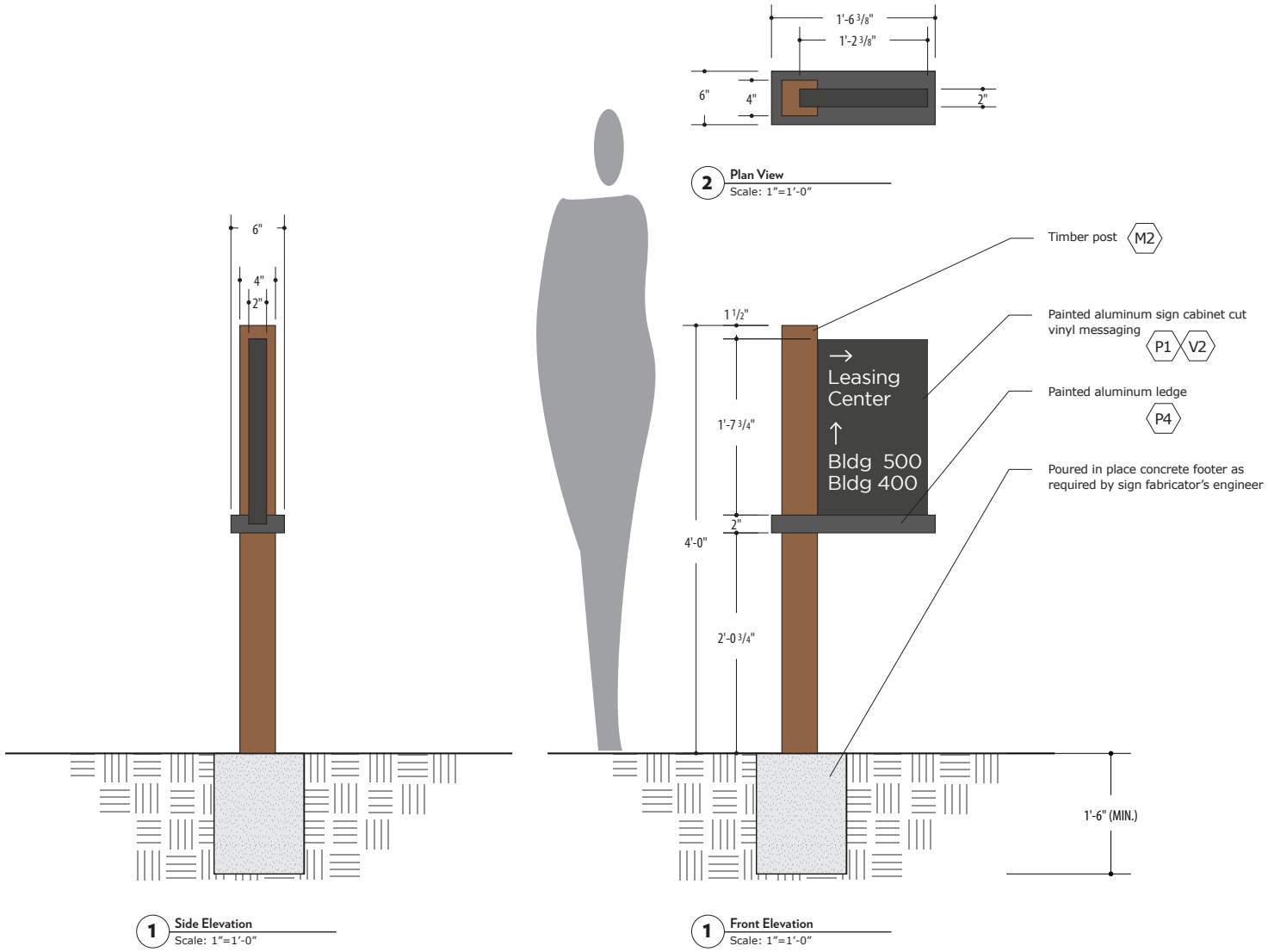


2 Panel Detail
Scale: 1 1/2"=1'-0"

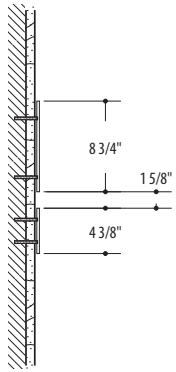


4 Back Elevation
Scale: 3/4"=1'-0"

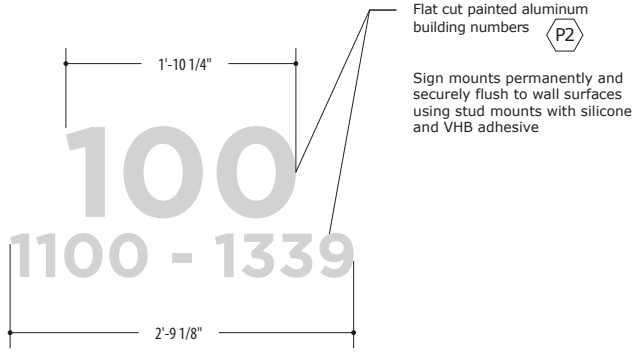
1 Front Elevation
Scale: 3/4"=1'-0"



3 **Front Elevation**
Scale: 1/4" = 1'-0"



2 **Front Elevation**
Scale: 1"=1'-0"



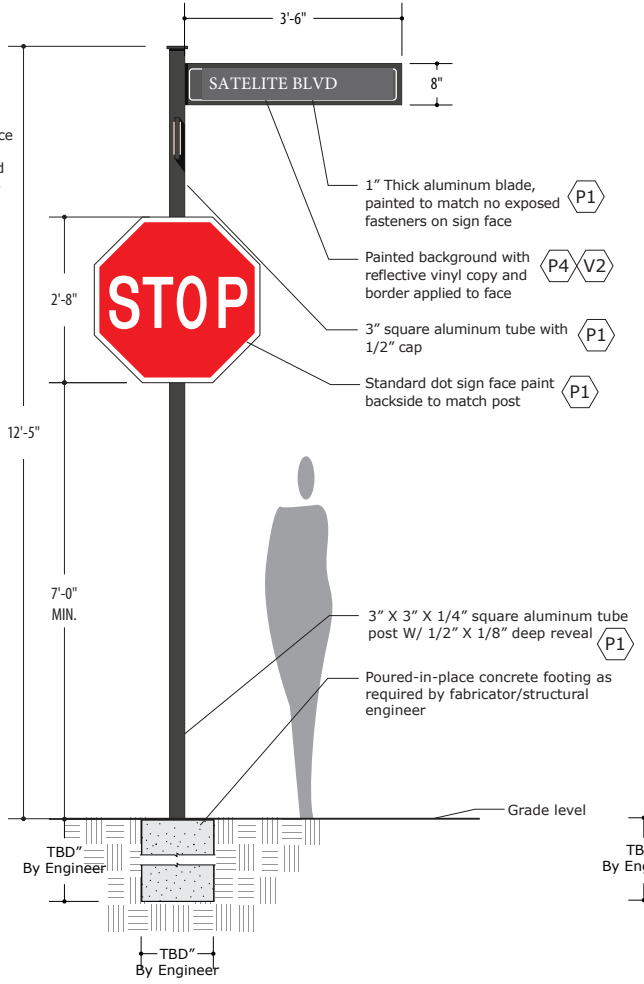
1 **Front Elevation**
Scale: 1"=1'-0"

1" Thick aluminum blade, painted to match (P1)

No exposed fasteners on sign face welded 1/8" aluminum plate attachment with pins as required smooth all welds and fill all gaps prior to painting (TYP.)

1 Mounting Detail B
Scale:1"= 1'-0"

NOTE:
Street names to be provided by owner



1" Thick aluminum blade, painted to match no exposed fasteners on sign face (P1)

Painted background with reflective vinyl copy and border applied to face (P4 V2)

3" square aluminum tube with 1/2" cap (P1)

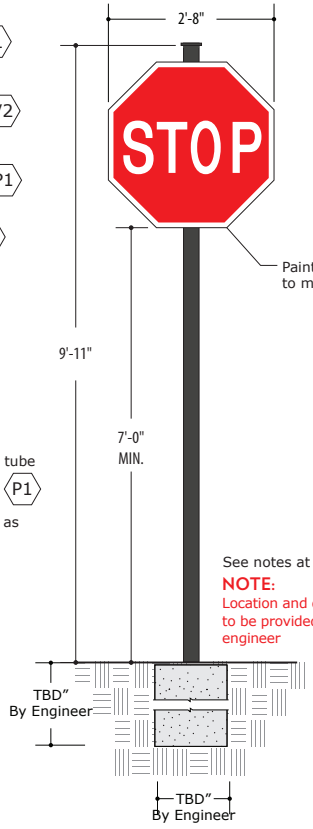
Standard dot sign face paint backside to match post (P1)

3" X 3" X 1/4" square aluminum tube post W/ 1/2" X 1/8" deep reveal (P1)

Poured-in-place concrete footing as required by fabricator/structural engineer

Grade level

2 Sign Type L: Street Name Sign W/Regulatory
Scale:1/2"= 1'-0"

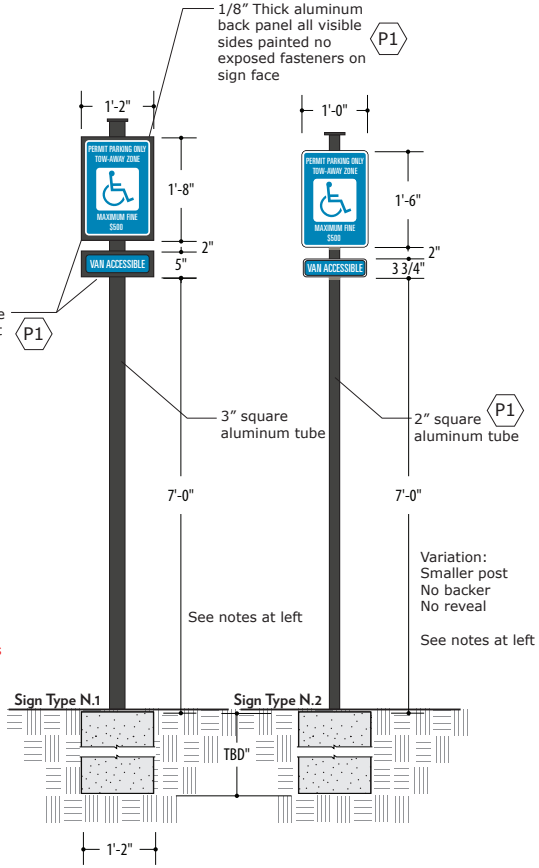


Paint backside to match post (P1)

See notes at left

NOTE:
Location and quantities to be provided by civil engineer

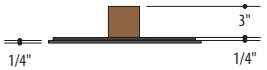
3 Sign Type M: Regulatory sign
Scale:1/2"= 1'-0"



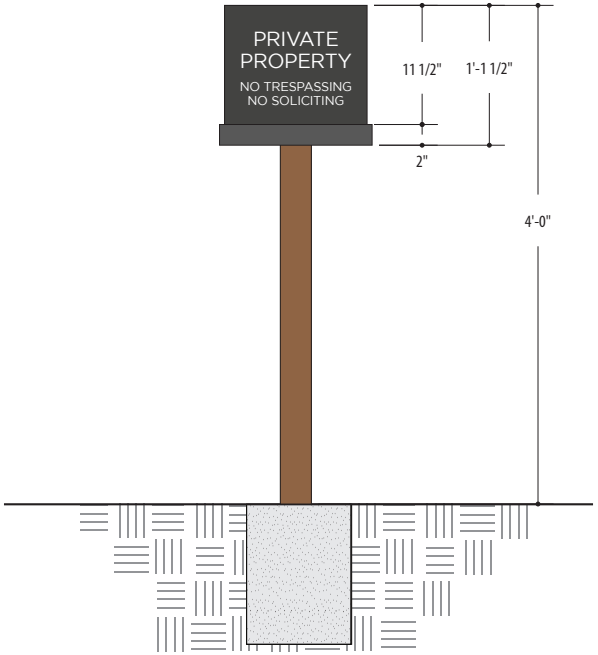
4 Sign Type N: Handicap parking at leasing office
Scale:1/2"= 1'-0"

Conceptual Plan dated 3/1/2022

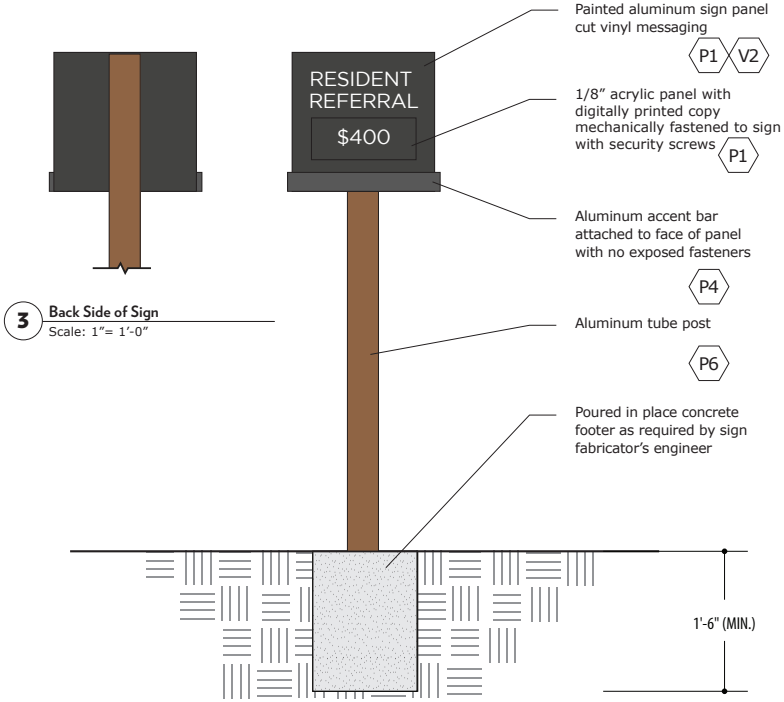
4 **Alternate Messages**
Scale: 1" = 1'-0"



2 **Plan View**
Scale: 1"=1'-0"

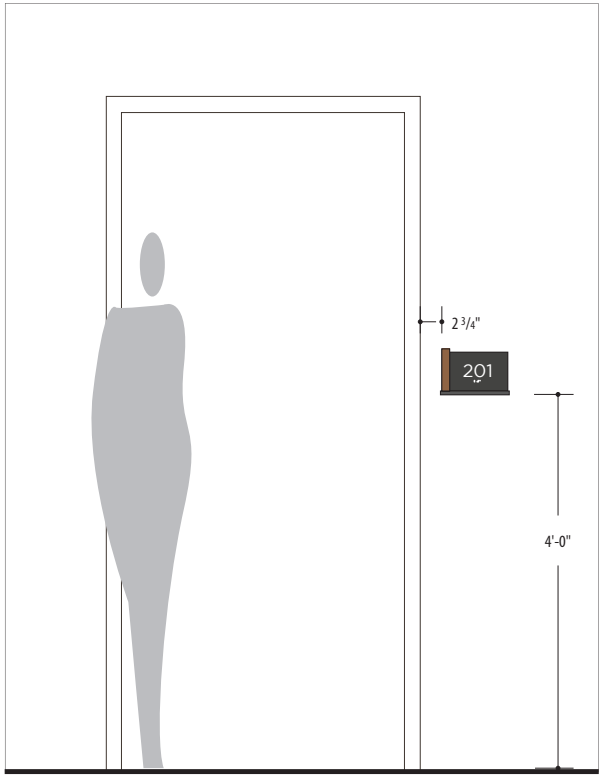


5 **Front Elevation (ST-K1 Sign)**
Scale: 1" = 1'-0"

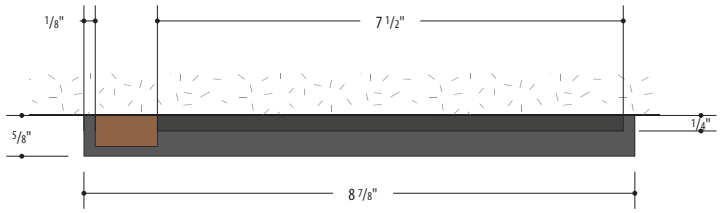


3 **Back Side of Sign**
Scale: 1"= 1'-0"

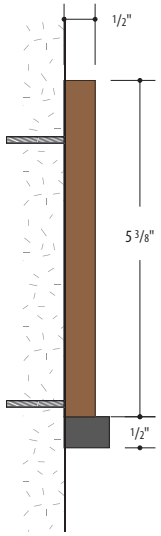
1 **Front Elevation (ST-K2 Sign with Removeable panel)**
Scale: 1"=1'-0"



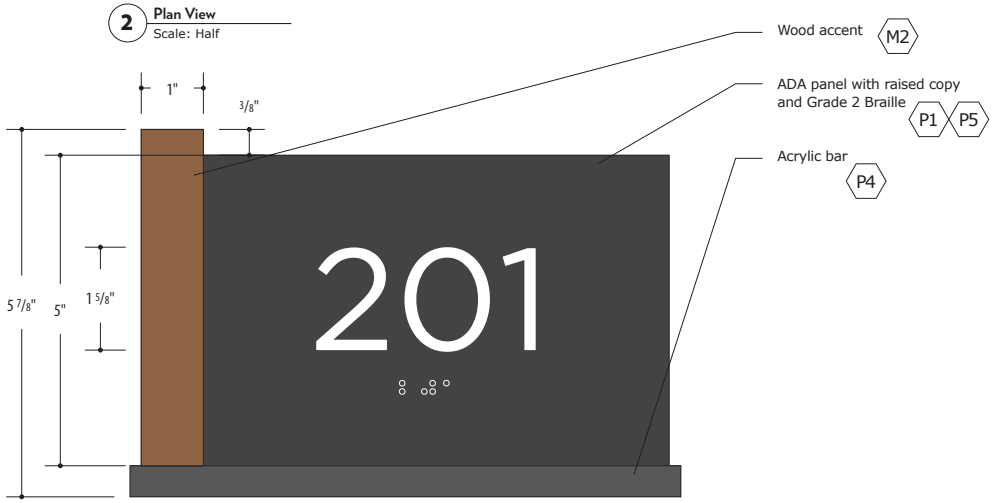
4 Typical Elevation
Scale: 3/4" = 1'-0"



2 Plan View
Scale: Half



3 Side Elevation
Scale: Half



1 Front Elevation
Scale: Half

REZONING APPLICANT'S CERTIFICATION

THE UNDERSIGNED BELOW IS AUTHORIZED TO MAKE THIS APPLICATION. THE UNDERSIGNED IS AWARE THAT NO APPLICATION OR REAPPLICATION AFFECTING THE SAME LAND SHALL BE ACTED UPON WITHIN 12 MONTHS FROM THE DATE OF LAST ACTION BY THE BOARD OF COMMISSIONERS UNLESS WAIVED BY THE BOARD OF COMMISSIONERS. IN NO CASE SHALL AN APPLICATION OR REAPPLICATION BE ACTED UPON IN LESS THAN SIX (6) MONTHS FROM THE DATE OF LAST ACTION BY THE BOARD OF COMMISSIONERS.

Signature of Applicant — Date: 3/2/22

Shane Lanham, attorney for the Applicant
Type or Print Name and Title

Signature of Notary Public — Date: 3/2/2022

JENNIFER E BURKHOLDER NOTARY PUBLIC GWINNETT COUNTY, GA Exp. Oct. 2, 2024
Notary Seal

REZONING APPLICANT'S CERTIFICATION

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Signature of Applicant — 2-28-22 Date

Anna Forgey, Development Partner @ Brand Properties
Type or Print Name and Title

J. Michelle Cheek — 2/28/22 Date — Notary Seal

J MICHELLE CHEEK
NOTARY PUBLIC
DEKALB COUNTY, GEORGIA
MY COMMISSION EXPIRES JULY 20, 2023

Signature of Notary Public

REZONING PROPERTY OWNER'S CERTIFICATION

THE UNDERSIGNED BELOW, OR AS ATTACHED, IS THE OWNER OF THE PROPERTY CONSIDERED IN THIS APPLICATION. THE UNDERSIGNED IS AWARE THAT NO APPLICATION OR REAPPLICATION AFFECTING THE SAME LAND SHALL BE ACTED UPON WITHIN 12 MONTHS FROM THE DATE OF LAST ACTION BY THE BOARD OF COMMISSIONERS UNLESS WAIVED BY THE BOARD OF COMMISSIONERS. IN NO CASE SHALL AN APPLICATION OR REAPPLICATION BE ACTED UPON IN LESS THAN SIX (6) MONTHS FROM THE DATE OF LAST ACTION BY THE BOARD OF COMMISSIONERS.

BD 2651 SATELLITE BOULEVARD II, L.L.C.

BY: _____ 3/2/2022

Signature of Property Owner — Date

SAMUEL GOLDFARB, AUTHORIZED SIGNATORY

Type or Print Name and Title

_____ 3/2/2022

Signature of Notary Public — Date — Notary Seal

CONFLICT OF INTEREST CERTIFICATION FOR REZONING

The undersigned below, making application for a Rezoning, has complied with the Official Code of Georgia Section 36-67A-1, et. seq, Conflict of Interest in Zoning Actions, and has submitted or attached the required information on the forms provided.

SIGNATURE OF APPLICANT	DATE	TYPE OR PRINT NAME AND TITLE
	3/2/22	Shane Lanham, attorney for the Applicant
SIGNATURE OF APPLICANT'S ATTORNEY OR REPRESENTATIVE	DATE	TYPE OR PRINT NAME AND TITLE
	3/2/2022	
SIGNATURE OF NOTARY PUBLIC	DATE	NOTARY SEAL

JENNIFER E BURKHOLDER NOTARY PUBLIC GWINNETT COUNTY, GA My Comm. Exp. Oct. 2, 2024

DISCLOSURE OF CAMPAIGN CONTRIBUTIONS

Have you, within the two years immediately preceding the filing of this application, made campaign contributions aggregating $250.00 or more to a member of the Board of Commissioners or a member of the Gwinnett County Planning Commission?

☑ YES ☐ NO Mahaffey Pickens Tucker, LLP
YOUR NAME

If the answer is yes, please complete the following section:

NAME AND OFFICAL POSITION OF GOVERNMENT OFFICIAL	CONTRIBUTIONS (List all which aggregate to $250 or More)	DATE CONTRIBUTION WAS MADE (Within last two years)
Kirkland Carden	$2,800	

Attach additional sheets if necessary to disclose or describe all contributions.

CONFLICT OF INTEREST CERTIFICATION FOR REZONING

The undersigned below, making application for a Rezoning, has complied with the Official Code of Georgia Section 36-67A-1, et. seq, Conflict of Interest in Zoning Actions, and has submitted or attached the required information on the forms provided.

[signature]	2-28-22	Anna Forgey, Development Partner
SIGNATURE OF APPLICANT	DATE	TYPE OR PRINT NAME AND TITLE

SIGNATURE OF APPLICANT'S ATTORNEY OR REPRESENTATIVE	DATE	TYPE OR PRINT NAME AND TITLE

J. Michelle Cheek	2/28/22	J MICHELLE CHEEK NOTARY PUBLIC DEKALB COUNTY, GEORGIA MY COMMISSION EXPIRES JULY 20, 2023
SIGNATURE OF NOTARY PUBLIC	DATE	NOTARY SEAL

DISCLOSURE OF CAMPAIGN CONTRIBUTIONS

Have you, within the two years immediately preceding the filing of this application, made campaign contributions aggregating $250.00 or more to a member of the Board of Commissioners or a member of the Gwinnett County Planning Commission?

☑ YES ☐ NO Anna Forgey on behalf of Brand Properties
YOUR NAME

If the answer is yes, please complete the following section:

NAME AND OFFICAL POSITION OF GOVERNMENT OFFICIAL	CONTRIBUTIONS (List all which aggregate to $250 or More)	DATE CONTRIBUTION WAS MADE (Within last two years)
Jasper Watkins, District II Commissioner	$2,000	9/23/20
Kirkland Carden, District I Commissioner	$2,800	11/1/21
Ben Ku, District II Commissioner	$2,800	12/1/21
Nicole Love Hendrickson, Chairwoman	$2,500	11/1/20

Attach additional sheets if necessary to disclose or describe all contributions.

Boys

VERIFICATION OF CURRENT PAID PROPERTY TAXES FOR REZONING

THE UNDERSIGNED BELOW IS AUTHORIZED TO MAKE THIS APPLICATION. THE UNDERSIGNED CERTIFIES THAT ALL GWINNETT COUNTY PROPERTY TAXES BILLED TO DATE FOR THE PARCEL LISTED BELOW HAVE BEEN PAID IN FULL TO THE TAX COMMISSIONER OF GWINNETT COUNTY, GEORGIA. IN NO CASE SHALL AN APPLICATION OR REAPPLICATION FOR REZONING BE PROCESSED WITHOUT SUCH PROPERTY VERIFICATION.

***Note**: **A SEPARATE VERIFICATION FORM MUST BE COMPLETED FOR EACH TAX PARCEL INCLUDED IN THE REZONING REQUEST.**

PARCEL I.D. NUMBER: 7 - 079 - 008
(Map Reference Number) District Land Lot Parcel

Signature of Applicant — 3/2/22 Date

Shane Lanham, attorney for the Applicant
Type or Print Name and Title

PLEASE TAKE THIS FORM TO THE TAX COMMISSIONERS OFFICE AT THE GWINNETT JUSTICE AND ADMINISTRATION CENTER, 75 LANGLEY DRIVE, FOR THEIR APPROVAL BELOW.

TAX COMMISSIONERS USE ONLY

(PAYMENT OF ALL PROPERTY TAXES BILLED TO DATE FOR THE ABOVE REFERENCED PARCEL HAVE BEEN VERIFIED AS PAID CURRENT AND CONFIRMED BY THE SIGNATURE BELOW)

Anita Flowers — NAME
Tax Services Assoc II — TITLE
3-2-22 — DATE
Taxes are Current

TRAFFIC IMPACT STUDY
FOR
PROPOSED REDEVELOPMENT ON SATELLITE BOULEVARD,

GWINNETT COUNTY, GEORGIA

Prepared for:

Brand Properties,
3328 Peachtree Road, NE, Suite 100
Atlanta, GA 30326

Prepared By:

A&R Engineering Inc.
2160 Kingston Court, Suite O
Marietta, GA 30067
Tel: (770) 690-9255 Fax: (770) 690-9210
www.areng.com

February 28, 2022
A & R Project # 22-034

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LIST OF TABLES

LIST OF FIGURES

1.0 INTRODUCTION

The purpose of this study is to determine the traffic impact due to the proposed redevelopment which is located along Satellite Boulevard, at northwest corner of the intersection of Satellite Boulevard at Boggs Road in Gwinnett County, Georgia. The traffic analysis evaluates the current operations and future conditions with the traffic generated by the redevelopment. The redevelopment includes the demolition of existing development to allow construction of:

- Single Family Attached Housing: 36 units
- Multifamily Housing: 700 units
- Retail: 25,000 square feet

The redevelopment will use the existing two full access driveways on Satellite Boulevard and one existing full access driveway on Boggs Road. In addition, the redevelopment proposes one right-in/right-out driveway on Satellite Boulevard.

In this study, the existing development volumes are removed in No-Build condition.

The AM and PM peak hours have been analyzed in this study. In addition to the site access points, this study includes the evaluation of traffic operations at the intersections of:

- Satellite Boulevard at Boggs Road
- Satellite Boulevard at Children's Healthcare of Atlanta Urgent Care Center Driveway / Existing Access
- Satellite Boulevard at Highlands at Sweetwater Creek Driveway
- Satellite Boulevard at Evergreen Boulevard
- Boggs Road at Existing Access

Recommendations to improve traffic operations have been identified as appropriate and are discussed in detail in the following sections of the report. The location of the development and the surrounding roadway network is shown in Figure 1.

LOCATION MAP

FIGURE 1

A&R Engineering Inc.

2.0 EXISTING FACILITIES / CONDITIONS

2.1 Roadway Facilities

The following is a brief description of each of the roadway facilities located in proximity to the site:

2.1.1 Satellite Boulevard

Satellite Boulevard is an east-west, four-lane roadway with a two-way left-turn lane and posted with a speed limit of 45 mph in the vicinity of the site. Georgia Department of Transportation (GDOT) traffic counts (Station ID 135-0581) indicates that the daily traffic volume on Satellite Boulevard in 2019 was 24,200 vehicles per day, east of Old Norcross Road. GDOT classifies Satellite Boulevard as an Urban Minor Arterial roadway.

2.1.2 Boggs Road

Boggs Road is a north-south, four-lane roadway with a posted speed limit of 45 mph in the vicinity of the site. South of Satellite Boulevard, Boggs Road is a four lane with median divided roadway and north of Satellite Boulevard, Boggs Road is a four lane with a two-way left-turn lane roadway. Georgia Department of Transportation (GDOT) traffic counts (Station ID 135-0527) indicates that the daily traffic volume on Boggs Road in 2019 was 12,100 vehicles per day, north of Satellite Boulevard. GDOT classifies Boggs Road as an Urban Minor Arterial roadway.

2.1.3 Evergreen Boulevard

Evergreen Boulevard is a north-south, four-lane undivided roadway with a posted speed limit of 35 mph in the vicinity of the site.

3.0 Study Methodology

In this study, the methodology used for evaluating traffic operations at each of the subject intersections is based on the criteria set forth in the Transportation Research Board's Highway Capacity Manual, 6th edition (HCM 6). Synchro software, which utilizes the HCM methodology, was used for the analysis. The following is a description of the methodology employed for the analysis of unsignalized and signalized intersections.

3.1 Unsignalized Intersections

For unsignalized intersections controlled by a stop sign on minor streets, the level-of-service (LOS) for motor vehicles with controlled movements is determined by the computed control delay according to the thresholds stated in Table 1 below. LOS is determined for each minor street movement (or shared movement), as well as major street left turns. LOS is not defined for the intersection as a whole or for major street approaches. The LOS of any controlled movement which experiences a volume to capacity ratio greater than 1 is designated as "F" regardless of the control delay.

Control delay for unsignalized intersections includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Several factors affect the control delay for unsignalized intersections, such as the availability and distribution of gaps in the conflicting traffic stream, critical gaps, and follow-up time for a vehicle in the queue.

Level-of-service is assigned a letter designation from "A" through "F". Level-of-service "A" indicates excellent operations with little delay to motorists, while level-of-service "F" exists when there are insufficient gaps of acceptable size to allow vehicles on the side street to cross the main road without experiencing long total delays.

Table 1 – Level-of-Service Criteria for Unsignalized Intersections

Control Delay (sec/vehicle)	LOS by Volume-to-Capacity Ratio*	
	v/c ≤ 1.0	**v/c ≥ 1.0**
≤ 10	A	F
> 10 and ≤ 15	B	F
> 15 and ≤ 25	C	F
> 25 and ≤ 35	D	F
> 35 and ≤ 50	E	F
> 50	F	F

*The LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for major-street approaches or for the intersection.

Source: Highway Capacity Manual, 6th edition, Exhibit 20-2 *LOS Criteria: Motorized Vehicle Mode*

3.2 Signalized Intersections

According to HCM procedures, LOS can be calculated for the entire intersection, each intersection approach, and each lane group. HCM uses control delay alone to characterize LOS for the entire intersection or an approach. Control delay per vehicle is composed of initial deceleration delay, queue

move-up time, stopped delay, and final acceleration delay. Both control delay and volume-to-capacity ratio is used to characterize LOS for a lane group. A volume-to-capacity ratio of 1.0 or more for a lane group indicates failure from capacity perspective. Therefore, such a lane group is assigned LOS F regardless of the amount of control delay.

Table 2 below summarizes the LOS criteria from HCM for motorized vehicles at signalized intersection.

TABLE 2 – LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

Control Delay (sec/vehicle)*	LOS for Lane Group by Volume-to-Capacity Ratio*	
	v/c ≤ 1.0	**v/c ≥ 1.0**
≤ 10	A	F
> 10 and ≤ 20	B	F
> 20 and ≤ 35	C	F
> 35 and ≤ 45	D	F
> 55 and ≤ 80	E	F
> 80	F	F

*For approach-based and intersection wide assessments, LOS is defined solely by control delay

Source: Highway Capacity Manual, 6th edition, Exhibit 19-8 *LOS Criteria: Motorized Vehicle Mode*

LOS A is typically assigned when the volume-to-capacity (v/c) ratio is low and either progression is exceptionally favorable, or the cycle length is very short. LOS B is typically assigned when the v/c ratio is low and either progression is highly favorable, or the cycle length is short. However, more vehicles are stopped than with LOS A. LOS C is typically assigned when progression is favorable, or the cycle length is moderate. Individual *cycle failures* (one or more queued vehicles are not able to depart because of insufficient capacity during the cycle) may begin to appear at this level. Many vehicles still pass through the intersection without stopping, but the number of vehicles stopping is significant. LOS D is typically assigned when the v/c ratio is high and either progression is ineffective, or the cycle length is long. There are many vehicle-stops and individual cycle failures are noticeable. LOS E is typically assigned when the v/c ratio is high, progression is very poor, the cycle length is long, and individual cycle failures are frequent. LOS F is typically assigned when the v/c ratio is very high, progression is very poor, the cycle length is long, and most cycles fail to clear the queue.

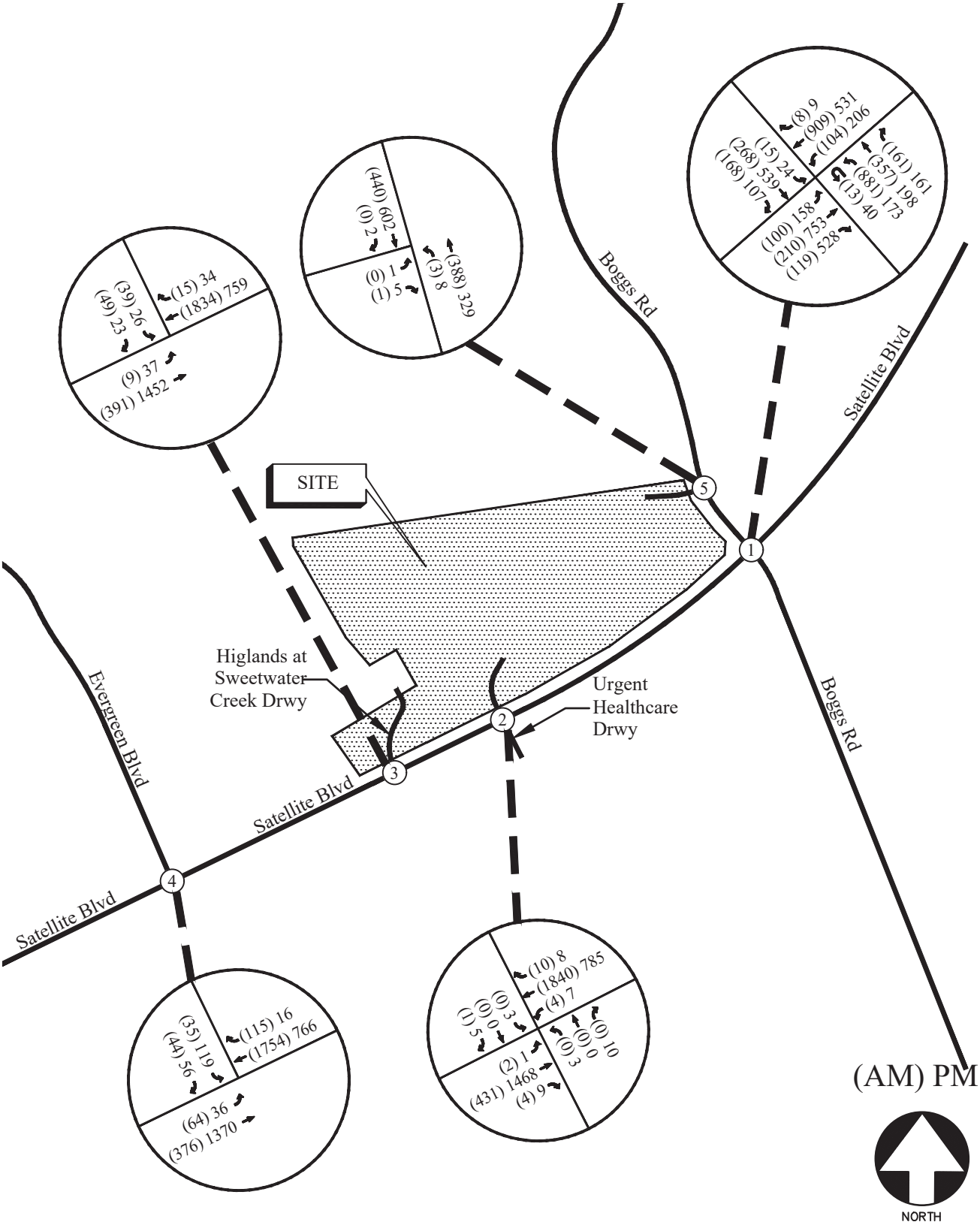
4.0 EXISTING 2022 TRAFFIC ANALYSIS

4.1 Existing 2022 Traffic Volumes

Existing traffic counts were obtained at the following study intersections:

- Satellite Boulevard at Boggs Road
- Satellite Boulevard at Children's Healthcare of Atlanta Urgent Care Center Driveway / Existing Access
- Satellite Boulevard at Highlands at Sweetwater Creek Driveway
- Satellite Boulevard at Evergreen Boulevard
- Boggs Road at Existing Access

Turning movement counts were collected on Tuesday, February 15, 2022. All turning movement counts were recorded during the AM and PM peak hours between 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM, respectively. The four consecutive 15-minute interval volumes that summed to produce the highest volume at the intersections were then determined. These volumes make up the peak hour traffic volumes for the intersections counted and are shown in Figure 2.



EXISTING WEEKDAY PEAK-HOUR VOLUMES FIGURE 2

A&R Engineering Inc.

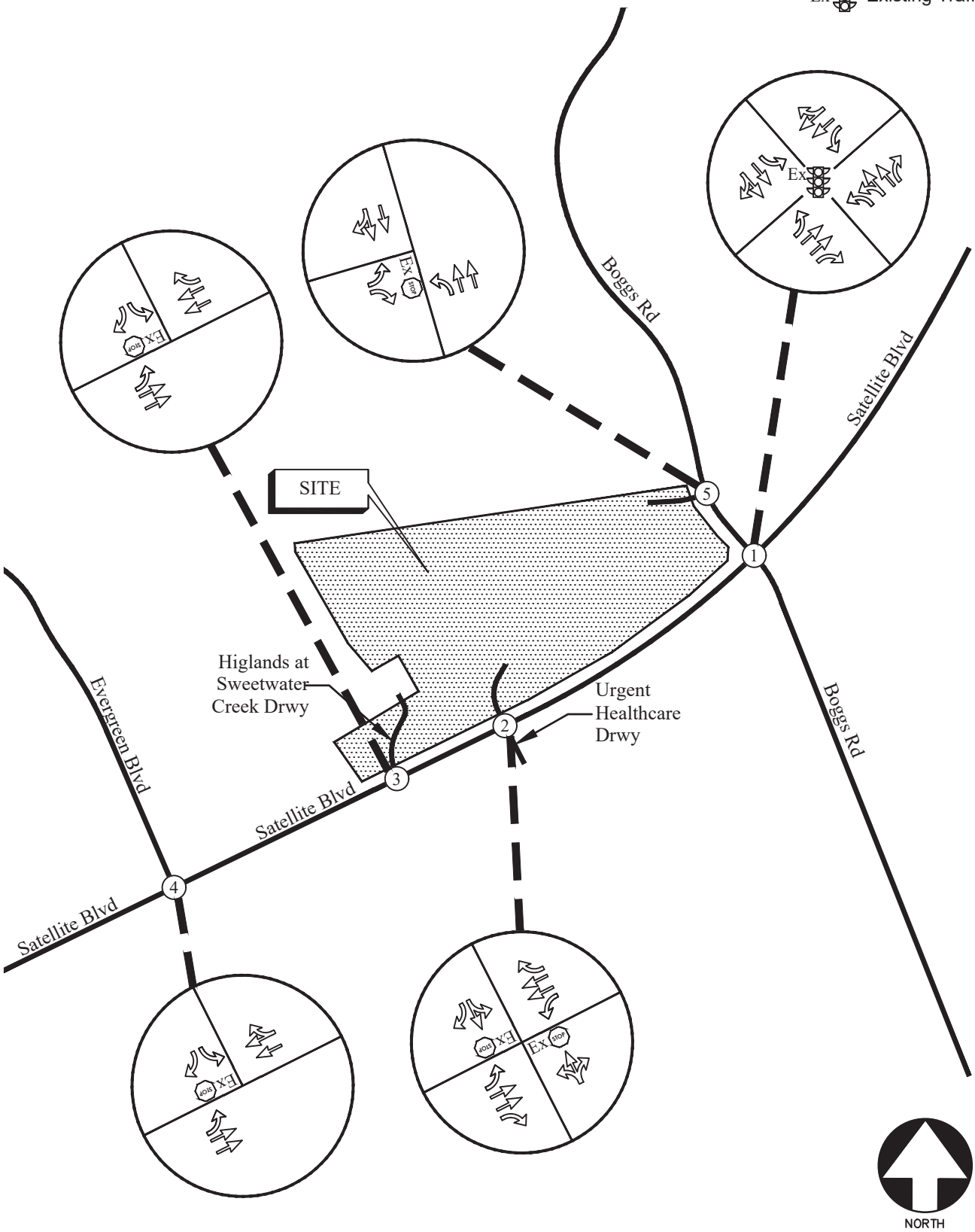
4.2 Existing 2022 Traffic Operations

Existing 2022 traffic operations were analyzed at the study intersections in accordance with the HCM methodology. The results of the analysis are shown in Table 3. The existing traffic control and lane geometry for the intersections are shown in Figure 3.

TABLE 3 – EXISTING INTERSECTION OPERATIONS

	Intersection	Existing Condition: LOS (Delay)		
		Traffic Control	Existing	
			AM Peak	PM Peak
1	**Satellite Boulevard @ Boggs Road**	Signalized	**E (63.1)**	**D (48.9)**
	-Eastbound Approach		C (33.2)	D (35.2)
	-Westbound Approach		D (47.0)	C (32.8)
	-Northbound Approach		E (79.6)	E (63.8)
	-Southbound Approach		E (68.4)	E (72.9)
2	**Satellite Boulevard @ Urgent Healthcare Driveway / Site Driveway 2(M)**	Stop Controlled on NB and SB Approaches		
	-Eastbound Left		C (17.2)	A (9.6)
	-Westbound Left		A (8.3)	B (13.8)
	-Northbound Approach		A (0.0)	E (41.3)
	-Southbound Approach		C (19.3)	D (31.1)
3	**Satellite Boulevard @ Highland at Sweetwater Creek Driveway**	Stop Controlled on SB Approach		
	-Eastbound Left		C (17.3)	A (9.8)
	-Southbound Approach		E (47.2)	C (18.6)
4	**Satellite Boulevard @ Evergreen Boulevard**	Stop Controlled on SB Approach		
	-Eastbound Left		C (18.3)	A (9.7)
	-Southbound Approach		F (52.7)	D (32.7)
5	**Boggs Road @ Site Driveway 4**	Stop Controlled on EB Approach		
	-Eastbound Approach		A (9.7)	B (11.2)
	-Northbound Left		A (8.3)	A (9.0)

The results of existing traffic operations analysis indicate that both the signalized and unsignalized study intersections are operating at a level of service “E” or better in both the AM and PM peak hours, except the southbound approach of the intersection Boggs Road at Evergreen Boulevard (Unsignalized) is operating at a level of service “F” in the AM peak hour. These areas are addressed in the Future Traffic Operations section.



EXISTING TRAFFIC CONTROL AND LANE GEOMETRY FIGURE 3

A&R Engineering Inc.

5.0 PROPOSED DEVELOPMENT

The redevelopment includes the demolition of existing development to allow construction of:

- Single Family Attached Housing: 36 units
- Multifamily Housing: 700 units
- Retail: 25,000 square feet

The redevelopment will use the existing two full access driveways on Satellite Boulevard and one existing full access driveway on Boggs Road. In addition, the redevelopment proposes one right-in/right-out driveway on Satellite Boulevard.

A site plan is shown in Figure 4.

FIGURE 4
SITE PLAN
A&R Engineering Inc.

5.1 Trip Generation

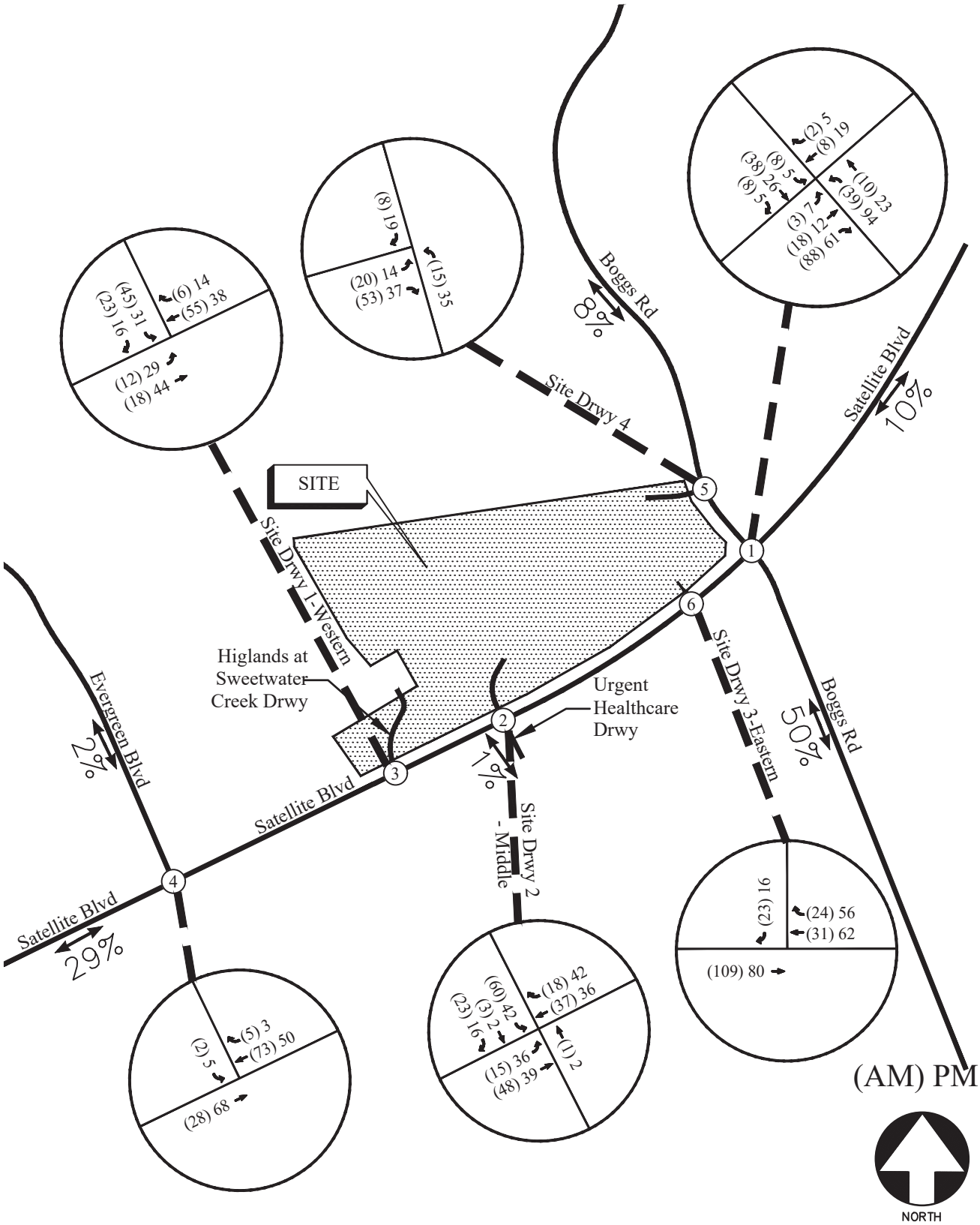
Trip generation estimates for the project were based on the rates and equations published in the 11th edition of the Institute of Transportation Engineers (ITE) Trip Generation report. This reference contains traffic volume count data collected at similar facilities nationwide. The trip generation was based on the following ITE Land Uses: *215 – Single-Family Attached Housing, 221- Multifamily Housing (Mid-rise) and 822 – Strip Retail Plaza (<40k).* The calculated total trip generation for the proposed redevelopment is shown in Table 4.

TABLE 4 – TRIP GENERATION

Land Use	Size	AM Peak Hour			PM Peak Hour			24 Hour
		Enter	Exit	Total	Enter	Exit	Total	Two-way
ITE 215 – Single-Family Attached Housing	36 units	4	9	13	10	8	18	224
Mixed-Use Reduction		0	0	0	0	-1	-1	-8
ITE 221 – Multifamily Housing (Mid-rise)	700 units	68	228	296	166	107	273	3,293
Mixed-Use Reduction		-3	-3	-6	-7	-8	-15	-121
ITE 822 – Strip Retail Plaza (<40K)	25,000 sf	32	21	53	74	75	149	1,285
Mixed-Use Reduction		-3	-3	-6	-9	-7	-16	-129
Total Trips (without Reductions)		**104**	**258**	**362**	**250**	**190**	**440**	**4,802**
New External Trips (with Reductions)		**98**	**252**	**350**	**234**	**174**	**408**	**4,544**

5.2 Trip Distribution

The trip distribution describes how traffic arrives and departs from the site. An overall trip distribution was developed for the site based on a review of the existing travel patterns in the area and the locations of major roadways and highways that will serve the development. The site-generated peak hour traffic volumes, shown in Table 4, were assigned to the study area intersections based on this distribution. The outer-leg distribution and AM and PM peak hour new traffic generated by the site are shown in Figure 5.



TRIP DISTRIBUTION AND SITE-GENERATED WEEKDAY PEAK HOUR VOLUMES

FIGURE 5

A&R Engineering Inc.

6.0 FUTURE 2025 TRAFFIC ANALYSIS

The future 2025 traffic operations are analyzed for the “Build” and “No-Build” conditions..

6.1 Future “No-Build” Conditions

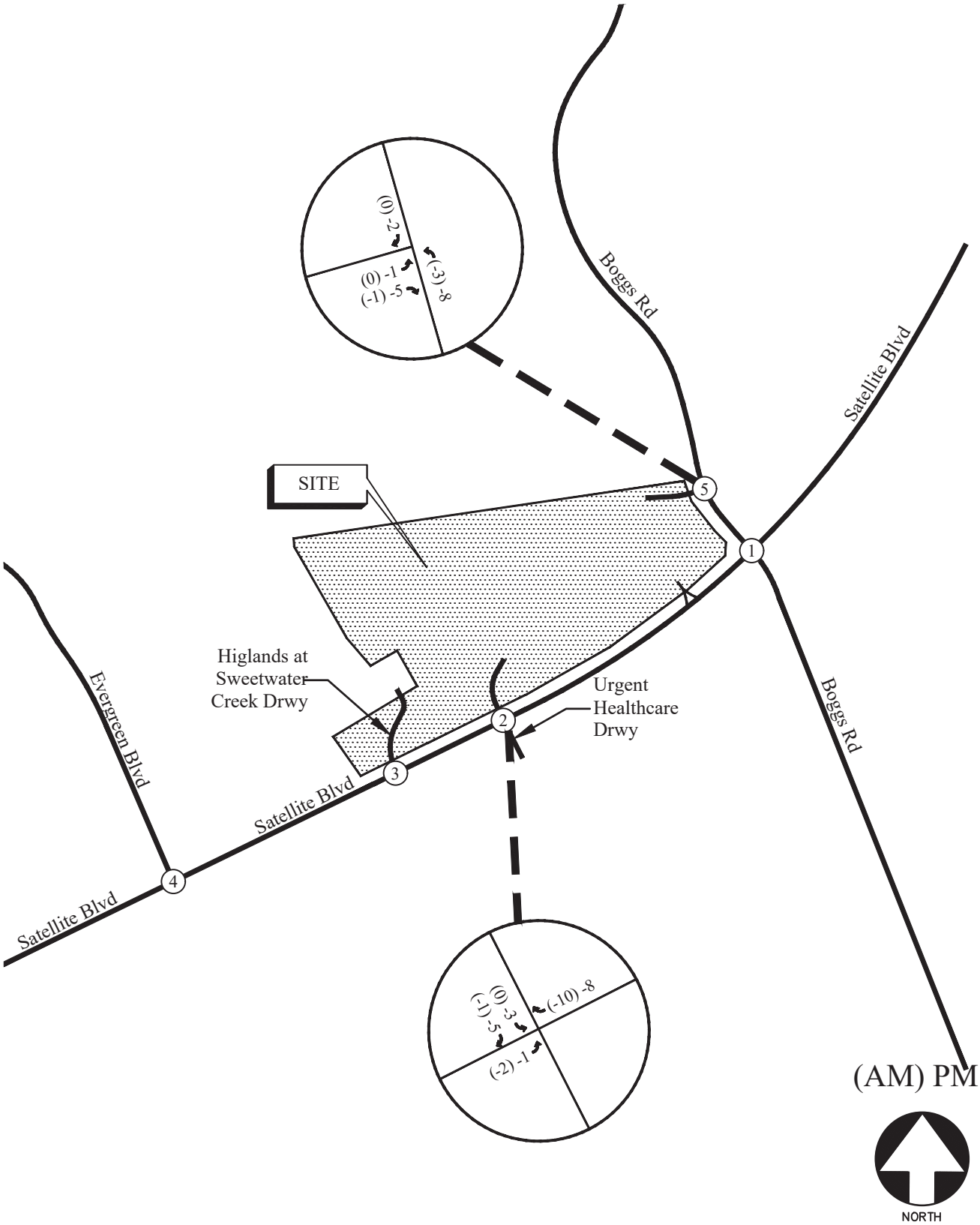
The “No-Build” (or background) conditions provide an assessment of how traffic will operate in the study horizon year without the study site being developed as proposed, with projected increase in through traffic volumes due to normal annual growth. The Future “No-Build” volumes consist of the existing traffic volumes (Figure 2) plus increase in annual growth of through traffic. In this study, the existing development generated volumes are removed in “No-Build” condition. These removed traffic volumes are shown in Figure 6.

6.1.1 Annual Traffic Growth

To evaluate future traffic operations in this area, a projection of normal traffic growth was applied to the existing volumes. The Georgia Department of Transportation recorded average daily traffic volumes at several locations in the vicinity of the site. Reviewing the growth over the last three years has revealed a growth of approximately 1% in the area and this was used in the analysis. This growth factor was applied to the existing traffic volumes between collector and arterial roadways to estimate the future year traffic volumes prior to the addition of site-generated traffic. The resulting Future “No-Build” volumes on the roadway are shown in Figure 7.

6.2 Future “Build” Conditions

The “Build” or development conditions include the estimated background traffic from the “No-Build” conditions plus the added traffic from the proposed development. To evaluate future traffic operations in this area, the additional traffic volumes from the site (Figure 5) were added to base traffic volumes (Figure 7) to calculate the future traffic volumes after the construction of the development. These total future “Build” traffic volumes are shown in Figure 8.



REMOVED TRAFFIC VOLUMES

FIGURE 6

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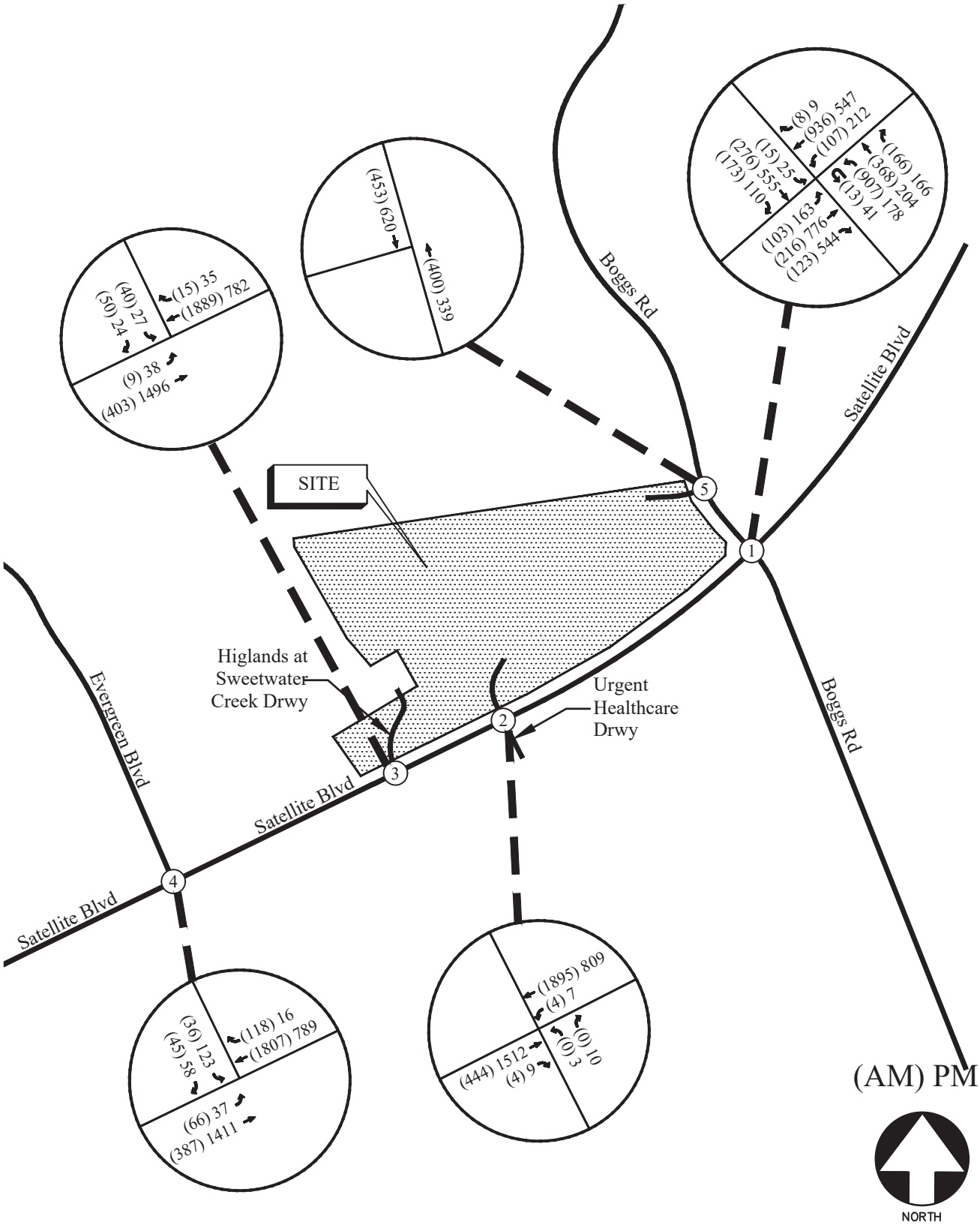
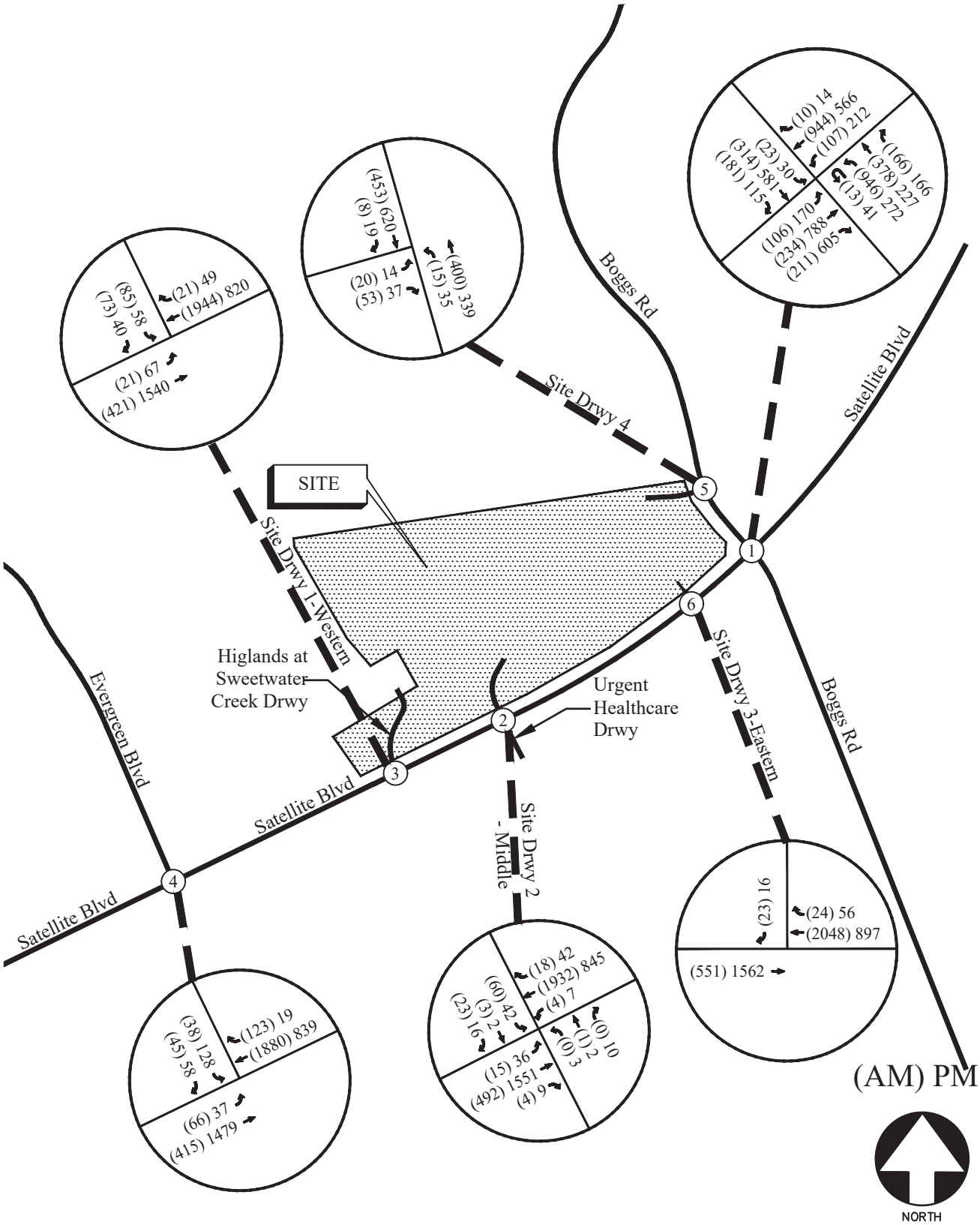


FUTURE (NO-BUILD) WEEKDAY PEAK HOUR VOLUMES FIGURE 7

A&R Engineering Inc.



FUTURE (BUILD) WEEKDAY PEAK HOUR VOLUMES FIGURE 8

A&R Engineering Inc.

6.2.1 Auxiliary Lane Analysis

Included below are analyses for left-turn lanes and deceleration lanes for all site driveways per GDOT standards. The analyses below are based on the trip distribution included in Section 5.2. According to the trip distribution, the 24-hour two-way volume entering and exiting of the site are 4,802 vehicles.

A two way left turn lane already exists at the Site Driveway 1, Site Driveway 2 and Site Driveway 4. And also Site Driveway 3 is right-in/right-out driveway. A left turn lane analysis is therefore not included.

6.2.1.1 Deceleration Turn Lane Analysis

For four lane roadways with AADT's greater than 10,000 vehicles and a posted speed limit of 45 mph, the threshold of daily site generated right-turn volume to warrant a right-turn lane is 100 vehicles. The projected right-turn volume per day for the proposed driveway is shown in Table 5.

TABLE 5 - GDOT REQUIREMENTS FOR DECELERATION LANES

Intersection	Right-turn traffic (% total entering)	Right turn / roadway direction	Right-turn volume (vehicle/day)	Roadway speed/ # lanes / ADT	GDOT threshold (vehicle/day)	**Warrant met?**
Satellite Boulevard @ Site Drwy 3 (E)	24%	Satellite Boulevard (WB)	**545** (Total trips-mixed-use trips) ÷ 2 × 0.24 = (4,802-258) ÷ 2 x 0.24= 545	45 mph / 4-lane/ >10,000	75	**Yes**
Boggs Road @ Site Drwy 4	8%	Boggs Road (NB)	**182** (Total trips-mixed-use trips) ÷ 2 × 0.08 = (4,802-258) ÷ 2 x 0.08= 182	45 mph / 4-lane/ >10,000	75	**Yes**

Deceleration lanes are warranted at the Site Driveway 3 on Satellite Boulevard as per GDOT standard. And also a deceleration lane is warranted at the Site Driveway 4 on Boggs Road as per GDOT standard. Since deceleration lanes are already exists at the Site Driveway 1 and Site Driveway 2, these intersections are not included in the analysis.

6.2.2 Future Traffic Operations

The future "No-Build" traffic operations were analyzed using the volumes in Figure 6.

6.2.2.1 Recommendations for System Improvements

A summary of the system improvements, which address deficiencies that are found within the existing road network for the "No-Build" conditions, is provided below. These are recommended for the local municipality to use in planning future transportation projects.

Summary of Recommended System Improvements

- Satellite Boulevard at Boggs Road (Intersection 1)
  - Provide triple left turn lanes, one through lane and one right turn lane.
  - Addition of one receiving lane on westbound Satellite Boulevard going away from the intersection.
  - Optimization of signal timings (splits only)

The results of "No-build" with and without system improvements are shown in Table 6.

TABLE 6 – FUTURE INTERSECTION OPERATIONS " NO BUILD"

	Intersection	No-Build Condition: LOS (Delay)			
		NO IMPROVEMENTS		SYSTEM IMPROVEMENTS	
		AM	PM	AM	PM
1	**Satellite Boulevard @ Boggs Road**	**E (59.2)**	**D (50.2)**	**D (52.1)**	**D (50.1)**
	-Eastbound Approach	D (40.1)	D (36.8)	D (35.1)	D (38.2)
	-Westbound Approach	E (61.4)	D (35.4)	D (49.4)	C (34.2)
	-Northbound Approach	E (57.9)	E (63.4)	D (53.6)	E (70.6)
	-Southbound Approach	E (71.2)	E (73.6)	E (65.5)	E (66.6)
2	**Satellite Boulevard @ Urgent Healthcare Driveway / Site Driveway 2 – Middle**				
	-Eastbound Left	-	-	-	-
	-Westbound Left	A (8.3)	B (14.2)	A (8.3)	B (14.2)
	-Northbound Approach	A (0.0)	E (44.9)	A (0.0)	E (44.9)
	-Southbound Approach	-	-	-	-
3	**Satellite Boulevard @ Highland at Sweetwater Creek Driveway (Site Driveway 1-Western)**				
	-Eastbound Left	C (18.0)	A (10.0)	C (18.0)	A (10.0)
	-Southbound Approach	F (52.6)	C (19.2)	F (52.6)	C (19.2)
4	**Satellite Boulevard @ Evergreen Boulevard**				
	-Eastbound Left	C (19.3)	A (9.8)	C (19.3)	A (9.8)
	-Southbound Approach	F (60.1)	E (36.3)	F (60.1)	E (36.3)
5	**Boggs Road @ Site Driveway 4**				
	-Eastbound Approach	-	-	-	-
	-Northbound Left				

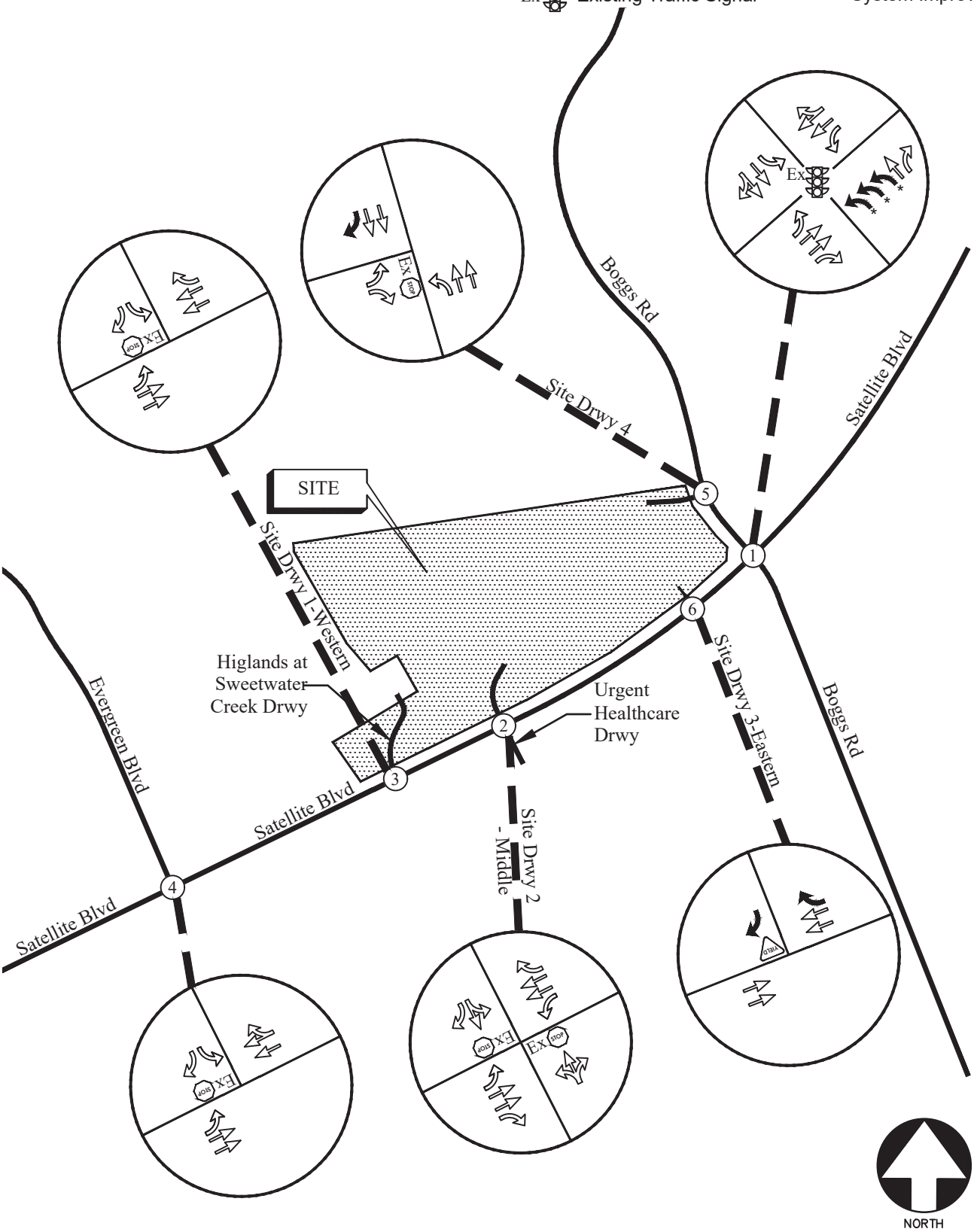
The "Build" conditions are evaluated with added traffic from the proposed development and with system improvements. The future "Build" traffic operations were analyzed using the volumes in Figure 7 and the results are shown in Table 7 below.

TABLE 7 – FUTURE INTERSECTION OPERATIONS "BUILD"

	Intersection	Future Condition: LOS (Delay) BUILD AM Peak	Future Condition: LOS (Delay) BUILD PM Peak
1	**Satellite Boulevard @ Boggs Road**	**D (54.9)**	**D (52.5)**
	-Eastbound Approach	D (37.6)	D (41.6)
	-Westbound Approach	D (54.8)	D (38.0)
	-Northbound Approach	E (55.1)	E (68.8)
	-Southbound Approach	E (66.0)	E (66.8)
2	**Satellite Boulevard @ Urgent Healthcare Driveway / Site Driveway 2 – Middle**		
	-Eastbound Left	C (19.2)	B (10.3)
	-Westbound Left	A (8.5)	B (14.6)
	-Northbound Approach	F (176.7)	F (95.3)
	-Southbound Approach	F (*)	F (274.5)
3	**Satellite Boulevard @ Highland at Sweetwater Creek Driveway (Site Driveway 1-Western)**		
	-Eastbound Left	C (19.4)	B (10.5)
	-Southbound Approach	F (168.0)	D (26.2)
4	**Satellite Boulevard @ Evergreen Boulevard**		
	-Eastbound Left	C (20.6)	B (10.0)
	-Southbound Approach	F (76.0)	E (44.0)
5	**Boggs Road @ Site Driveway 4**		
	-Eastbound Approach	B (11.0)	B (12.4)
	-Northbound Left	A (8.4)	A (9.3)
6	**Satellite Boulevard @ Site Driveway 3 (RIRO-Eastern)**		
	-Southbound Approach	D (29.1)	B (13.3)

After addition of site generated volumes to the "No-Build" condition, the "Build" condition traffic operations analysis indicates that the northbound and southbound approaches of Satellite Boulevard at Urgent Healthcare Driveway / Site Driveway 2-Middle (Unsignalized) will operate at level-of-service "F" in both the AM and PM peak hours. And also the southbound approach of the unsignalized intersections of Satellite Boulevard at Highlands at Sweetwater Creek Driveway (Site Driveway 1 – Western) and Satellite Boulevard at Evergreen Boulevard will continue to operate at level-of-service "F" in the AM and "E" in the PM peak hours. It is not unusual for stop-controlled site-streets along arterial roadways to have elevated delays during peak periods as delays are caused by side-street wait times to turn left onto the mainline. The side street left turn traffic volumes do not meet the thresholds for installation of traffic signal. All other intersections will operate at level-of-service "D" or better in both the AM and PM peak hours.

Recommendations for future traffic control and lane geometry is shown in Figure 9.



FUTURE TRAFFIC CONTROL AND LANE GEOMETRY FIGURE 9

A&R Engineering Inc.

7.0 CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study is to determine the traffic impact due to the proposed redevelopment is located along Satellite Boulevard, at northwest corner of existing intersection of Satellite Boulevard at Boggs Road in Gwinnett County, Georgia. The redevelopment includes the demolition of existing development to allow construction of:

- Single Family Attached Housing: 36 units
- Multifamily Housing: 700 units
- Retail: 25,000 square feet

The redevelopment will use the existing two full access driveway on Satellite Boulevard and one existing full access driveway on Boggs Road. In addition, the redevelopment proposes one right-in/right-out driveway on Satellite Boulevard.

Existing and future operations after completion of the project were analyzed at the intersections of:

- Satellite Boulevard at Boggs Road
- Satellite Boulevard at Children's Healthcare of Atlanta Urgent Care Center Driveway / Site Driveway 2 -Middle
- Satellite Boulevard at Highlands at Sweetwater Creek Driveway (Site Driveway 1-Western)
- Satellite Boulevard at Evergreen Boulevard
- Boggs Road at Site Driveway 4
- Satellite Boulevard at Proposed Site Driveway 3 (Right-in-right-out driveway-Eastern)

The analysis included the evaluation of Future operations for “No-Build” and “Build” conditions, the differences between “No-Build” and “Build” accounts for increase in traffic due to proposed redevelopment. The results of “No-Build” and “Build” traffic operations analysis indicates that the northbound and southbound approaches of Satellite Boulevard at Urgent Healthcare Driveway / Site Driveway 2-Middle (Unsignalized) will operate at level-of-service “F” in both the AM and PM peak hours. And also the southbound approach of the unsignalized intersections of Satellite Boulevard at Highlands at Sweetwater Creek Driveway (Site Driveway 1 – Western) and Satellite Boulevard at Evergreen Boulevard will continue to operate at level-of-service “F” in the AM and “E” in the PM peak hours. It is not unusual for stop-controlled site-streets along arterial roadways to have elevated delays during peak periods as delays are caused by side-street wait times to turn left onto the mainline. The side street left turn traffic volumes do not meet the thresholds for installation of traffic signal. All other intersections will operate at level-of-service “D” or better in both the AM and PM peak hours after recommended system improvements are completed.

7.1 Recommendation for Site Access Configuration

The following improvements are recommended at the site driveway intersections.

- Site Driveway 1: Full access driveway (Western) on Satellite Boulevard
  - Existing one entering and one exiting lane.
  - Stop-sign controlled on the driveway approach with Satellite Boulevard remaining free flow.
  - Left turn lane for entering traffic (two-way left turn lane exists)
  - Deceleration lane for entering traffic (right turn lane exists)

- Site Driveway 2: Full access driveway (Middle) on Satellite Boulevard that will align with Children's Healthcare of Atlanta Urgent Care Center Driveway
  - Existing one entering and two exiting lanes.
  - Stop-sign controlled on the driveway approach and Children's Healthcare of Atlanta Urgent Care Center Driveway with Satellite Boulevard remaining free flow.
  - Left turn lane for entering traffic (two-way left turn lane exists)
  - Deceleration lane for entering traffic (right turn lane exists)

- Site Driveway 3: Right-In/right-out driveway on Satellite Boulevard
  - One entering and one exiting lane.
  - Stop-sign controlled on the driveway approach with Satellite Boulevard remaining free flow.
  - Deceleration lane for entering traffic.
  - Confirm adequate sight distance per AASHTO standards.

- Site Driveway 4: Existing full-access driveway on Boggs Road
  - Existing one entering and two exiting lane.
  - Stop-sign controlled on the driveway approach with Boggs Road remaining free flow.
  - Left turn lane for entering traffic (two-way left turn lane exists)
  - Deceleration lane for entering traffic.

7.2 Summary of Recommended System Improvements

- Satellite Boulevard at Boggs Road
  - Provide triple left turn lanes, one through lane and one right turn lane.
  - Addition of one receiving lane on westbound Satellite Boulevard going away from the intersection.
  - Optimization of signal timings (splits only)

Appendix

EXISTING INTERSECTION TRAFFIC COUNTS

A & R Engineering, Inc.

2160 Kingston Court, Suite 'O',
Marietta, GA 30067

TMC DATA
Boggs Rd @ Existing Site Access Point
7-9 am | 4-6 pm

File Name : 20220055
Site Code : 20220055
Start Date : 2/15/2022
Page No : 1

Groups Printed- Cars, Trucks & Buses

	Boggs Rd Northbound				Boggs Rd Southbound				Existing Site Access Point Eastbound				Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	70	0	70	0	69	0	69	0	0	0	0	0	0	0	0	139
07:15 AM	0	69	0	69	0	82	0	82	0	0	1	1	0	0	0	0	152
07:30 AM	0	68	0	68	0	95	0	95	0	0	0	0	0	0	0	0	163
07:45 AM	1	85	0	86	0	108	0	108	0	0	0	0	0	0	0	0	194
Total	1	292	0	293	0	354	0	354	0	0	1	1	0	0	0	0	648
08:00 AM	0	105	0	105	0	113	0	113	0	0	0	0	0	0	0	0	218
08:15 AM	1	94	0	95	0	112	0	112	0	0	1	1	0	0	0	0	208
08:30 AM	1	104	0	105	0	107	0	107	0	0	0	0	0	0	0	0	212
08:45 AM	2	85	0	87	0	94	0	94	0	0	0	0	0	0	0	0	181
Total	4	388	0	392	0	426	0	426	0	0	1	1	0	0	0	0	819
*** BREAK ***																	
04:00 PM	2	66	0	68	0	136	1	137	0	0	0	0	0	0	0	0	205
04:15 PM	2	77	0	79	0	126	0	126	0	0	1	1	0	0	0	0	206
04:30 PM	0	60	0	60	0	151	0	151	0	0	0	0	0	0	0	0	211
04:45 PM	1	60	0	61	0	119	1	120	0	0	1	1	0	0	0	0	182
Total	5	263	0	268	0	532	2	534	0	0	2	2	0	0	0	0	804
05:00 PM	1	98	0	99	0	165	1	166	1	0	0	1	0	0	0	0	266
05:15 PM	3	77	0	80	0	174	0	174	0	0	2	2	0	0	0	0	256
05:30 PM	1	66	0	67	0	150	1	151	0	0	1	1	0	0	0	0	219
05:45 PM	3	88	0	91	0	113	0	113	0	0	2	2	0	0	0	0	206
Total	8	329	0	337	0	602	2	604	1	0	5	6	0	0	0	0	947
Grand Total	18	1272	0	1290	0	1914	4	1918	1	0	9	10	0	0	0	0	3218
Apprch %	1.4	98.6	0		0	99.8	0.2		10	0	90		0	0	0		
Total %	0.6	39.5	0	40.1	0	59.5	0.1	59.6	0	0	0.3	0.3	0	0	0	0	

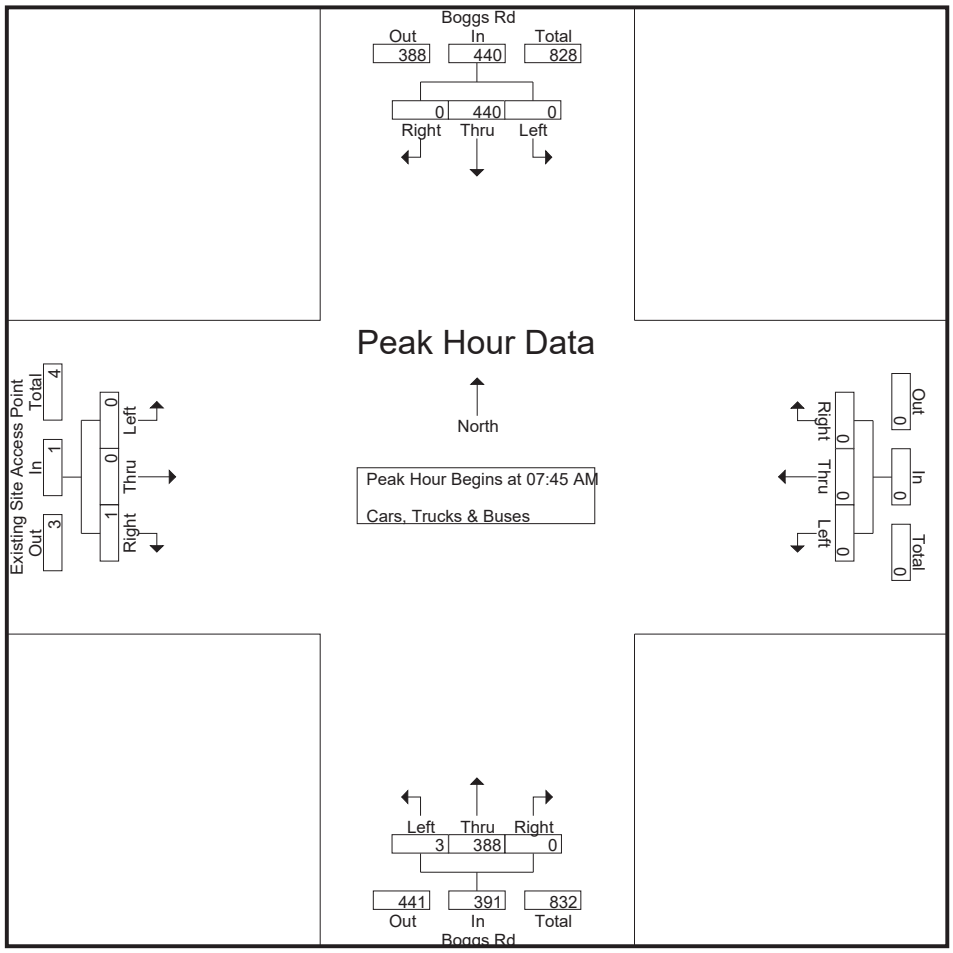
A & R Engineering, Inc.

2160 Kingston Court, Suite 'O',
Marietta, GA 30067

TMC DATA
Boggs Rd @ Existing Site Access Point
7-9 am | 4-6 pm

File Name : 20220055
Site Code : 20220055
Start Date : 2/15/2022
Page No : 2

	Boggs Rd Northbound				Boggs Rd Southbound				Existing Site Access Point Eastbound				Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	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 07:45 AM																	
07:45 AM	**1**	85	0	86	0	108	0	108	0	0	0	0	0	0	0	0	194
08:00 AM	0	**105**	0	**105**	0	**113**	0	**113**	0	0	0	0	0	0	0	0	**218**
08:15 AM	1	94	0	95	0	112	0	112	0	0	**1**	**1**	0	0	0	0	208
08:30 AM	1	104	0	105	0	107	0	107	0	0	0	0	0	0	0	0	212
Total Volume	3	388	0	391	0	440	0	440	0	0	1	1	0	0	0	0	832
% App. Total	0.8	99.2	0		0	100	0		0	0	100		0	0	0		
PHF	.750	.924	.000	.931	.000	.973	.000	.973	.000	.000	.250	.250	.000	.000	.000	.000	.954



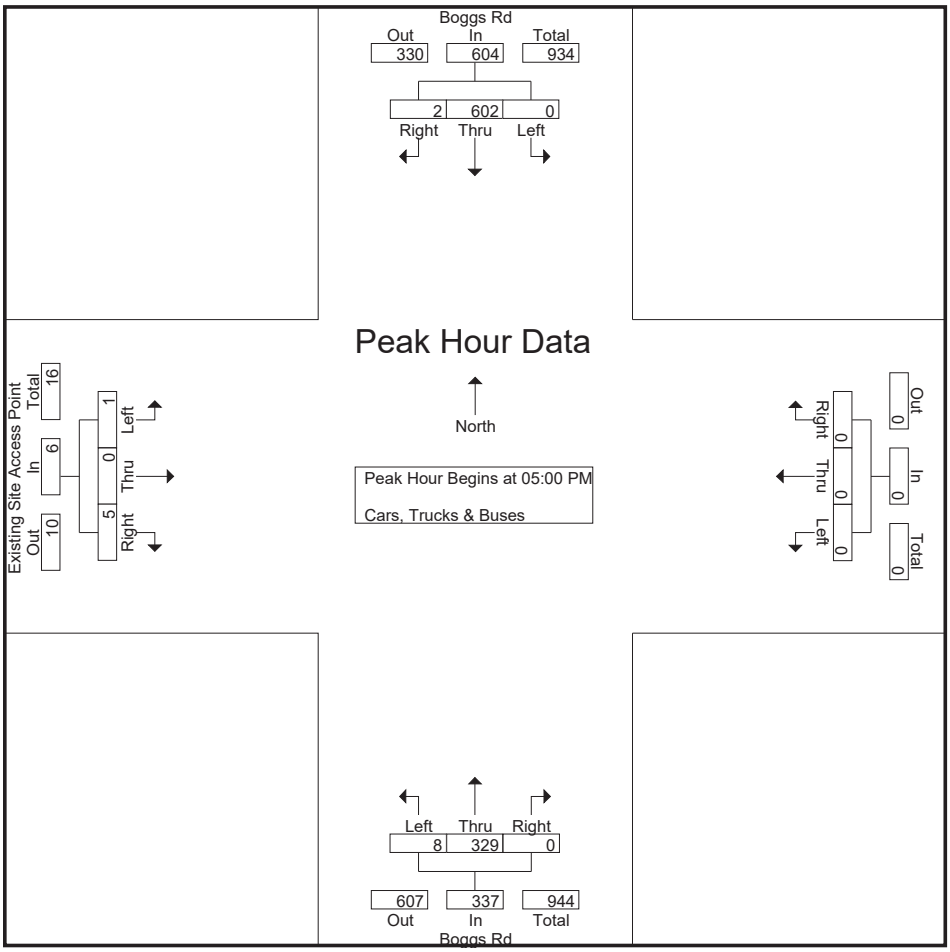
A & R Engineering, Inc.

2160 Kingston Court, Suite 'O',
Marietta, GA 30067

TMC DATA
Boggs Rd @ Existing Site Access Point
7-9 am | 4-6 pm

File Name : 20220055
Site Code : 20220055
Start Date : 2/15/2022
Page No : 3

	Boggs Rd Northbound				Boggs Rd Southbound				Existing Site Access Point Eastbound				Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	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 05:00 PM																	
05:00 PM	1	**98**	0	**99**	0	165	**1**	166	**1**	0	0	1	0	0	0	0	**266**
05:15 PM	**3**	77	0	80	0	**174**	0	**174**	0	0	**2**	**2**	0	0	0	0	256
05:30 PM	1	66	0	67	0	150	1	151	0	0	1	1	0	0	0	0	219
05:45 PM	3	88	0	91	0	113	0	113	0	0	2	2	0	0	0	0	206
Total Volume	8	329	0	337	0	602	2	604	1	0	5	6	0	0	0	0	947
% App. Total	2.4	97.6	0		0	99.7	0.3		16.7	0	83.3		0	0	0		
PHF	.667	.839	.000	.851	.000	.865	.500	.868	.250	.000	.625	.750	.000	.000	.000	.000	.890



A & R Engineering, Inc.

2160 Kingston Court, Suite 'O',
Marietta, GA 30067

TMC DATA
Satellite Blvd @ Boggs Rd
7-9 am | 4-6 pm

File Name : 20220056
Site Code : 20220056
Start Date : 2/15/2022
Page No : 1

Groups Printed- Cars,Buses & Trucks

	Boggs Rd Northbound					Boggs Rd Southbound				Satellite Blvd Eastbound				Satellite Blvd Westbound				
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	96	75	30	0	201	0	54	11	65	13	27	29	69	35	100	1	136	471
07:15 AM	103	69	27	2	201	1	61	15	77	12	31	29	72	34	110	2	146	496
07:30 AM	159	47	31	0	237	1	83	24	108	12	38	32	82	37	147	3	187	614
07:45 AM	193	78	52	1	324	6	69	28	103	22	55	28	105	25	210	2	237	769
Total	551	269	140	3	963	8	267	78	353	59	151	118	328	131	567	8	706	2350
08:00 AM	233	90	45	1	369	5	66	51	122	17	41	29	87	22	240	1	263	841
08:15 AM	203	90	26	5	324	1	60	41	102	28	48	33	109	31	208	3	242	777
08:30 AM	193	82	36	5	316	4	59	43	106	31	60	25	116	22	220	1	243	781
08:45 AM	252	95	54	2	403	5	83	33	121	24	61	32	117	29	241	3	273	914
Total	881	357	161	13	1412	15	268	168	451	100	210	119	429	104	909	8	1021	3313
*** BREAK ***																		
04:00 PM	60	50	26	3	139	2	77	15	94	24	116	92	232	44	128	0	172	637
04:15 PM	39	46	31	4	120	3	146	34	183	38	119	132	289	50	112	1	163	755
04:30 PM	32	41	41	10	124	8	125	29	162	42	144	121	307	51	103	4	158	751
04:45 PM	42	38	36	3	119	4	112	29	145	31	167	144	342	53	112	5	170	776
Total	173	175	134	20	502	17	460	107	584	135	546	489	1170	198	455	10	663	2919
05:00 PM	38	52	39	9	138	8	114	25	147	38	153	125	316	49	124	2	175	776
05:15 PM	39	48	41	9	137	7	177	24	208	51	194	167	412	60	126	4	190	947
05:30 PM	35	43	41	9	128	7	142	36	185	36	241	128	405	51	155	1	207	925
05:45 PM	61	55	40	13	169	2	106	22	130	33	165	108	306	46	126	2	174	779
Total	173	198	161	40	572	24	539	107	670	158	753	528	1439	206	531	9	746	3427
Grand Total	1778	999	596	76	3449	64	1534	460	2058	452	1660	1254	3366	639	2462	35	3136	12009
Apprch %	51.6	29	17.3	2.2		3.1	74.5	22.4		13.4	49.3	37.3		20.4	78.5	1.1		
Total %	14.8	8.3	5	0.6	28.7	0.5	12.8	3.8	17.1	3.8	13.8	10.4	28	5.3	20.5	0.3	26.1	

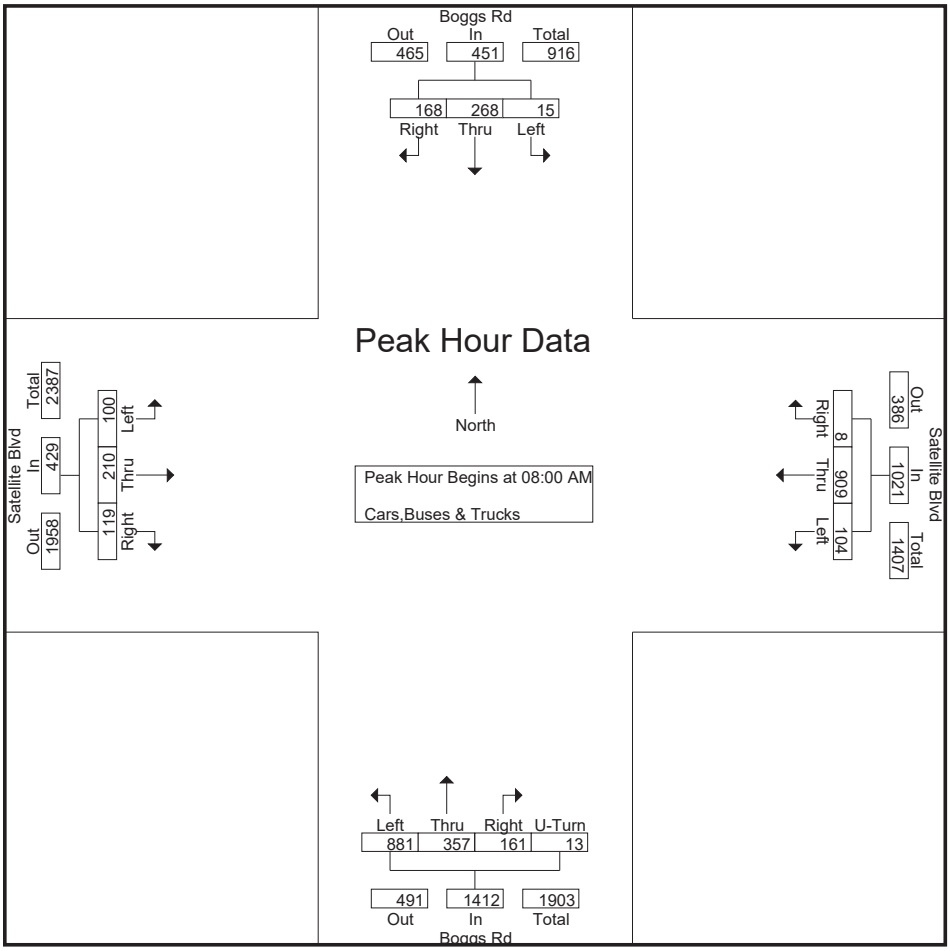
A & R Engineering, Inc.

2160 Kingston Court, Suite 'O',
Marietta, GA 30067

TMC DATA
Satellite Blvd @ Boggs Rd
7-9 am | 4-6 pm

File Name : 20220056
Site Code : 20220056
Start Date : 2/15/2022
Page No : 2

	Boggs Rd Northbound					Boggs Rd Southbound				Satellite Blvd Eastbound				Satellite Blvd Westbound				
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	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 08:00 AM																		
08:00 AM	233	90	45	1	369	**5**	66	**51**	**122**	17	41	29	87	22	240	1	263	841
08:15 AM	203	90	26	**5**	324	1	60	41	102	28	48	**33**	109	**31**	208	**3**	242	777
08:30 AM	193	82	36	5	316	4	59	43	106	**31**	60	25	116	22	220	1	243	781
08:45 AM	**252**	**95**	**54**	2	**403**	5	**83**	33	121	24	**61**	32	**117**	29	**241**	3	**273**	**914**
Total Volume	881	357	161	13	1412	15	268	168	451	100	210	119	429	104	909	8	1021	3313
% App. Total	62.4	25.3	11.4	0.9		3.3	59.4	37.3		23.3	49	27.7		10.2	89	0.8		
PHF	.874	.939	.745	.650	.876	.750	.807	.824	.924	.806	.861	.902	.917	.839	.943	.667	.935	.906



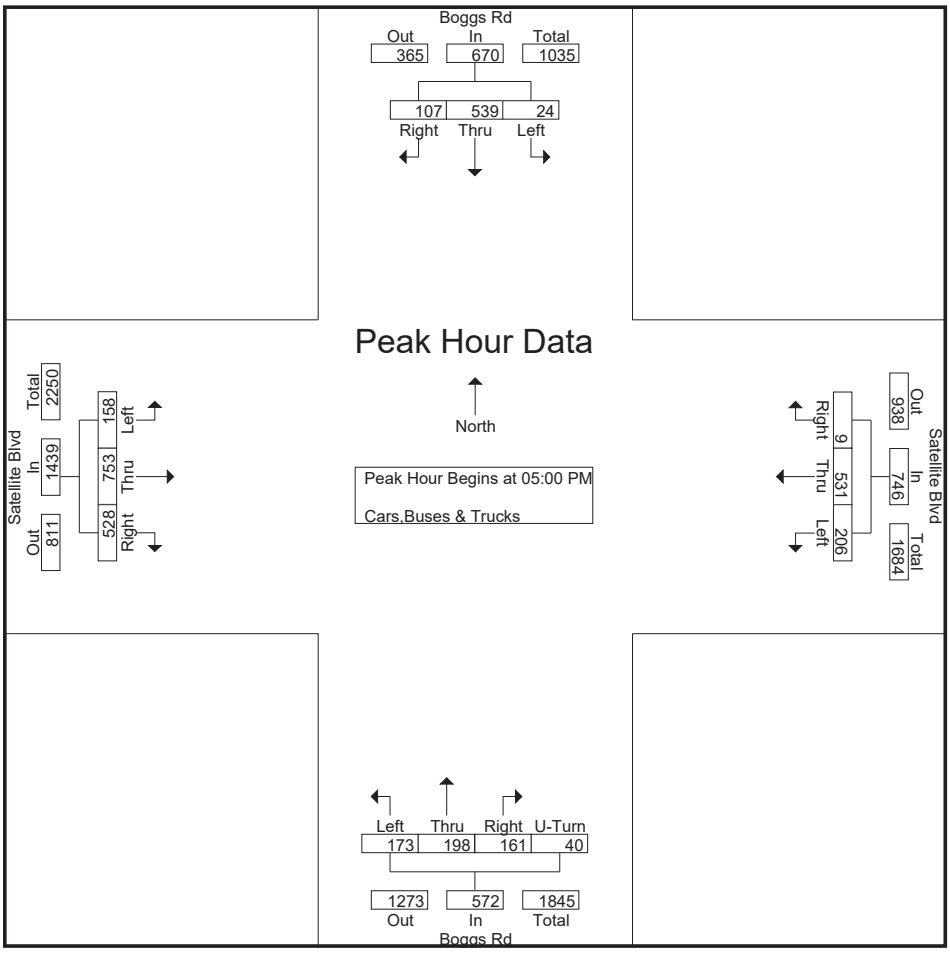
A & R Engineering, Inc.

2160 Kingston Court, Suite 'O',
Marietta, GA 30067

TMC DATA
Satellite Blvd @ Boggs Rd
7-9 am | 4-6 pm

File Name : 20220056
Site Code : 20220056
Start Date : 2/15/2022
Page No : 3

	Boggs Rd Northbound					Boggs Rd Southbound				Satellite Blvd Eastbound				Satellite Blvd Westbound				
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	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 05:00 PM																		
05:00 PM	38	52	39	9	138	**8**	114	25	147	38	153	125	316	49	124	2	175	776
05:15 PM	39	48	**41**	9	137	7	**177**	24	**208**	**51**	194	**167**	**412**	**60**	126	**4**	190	**947**
05:30 PM	35	43	41	9	128	7	142	**36**	185	36	**241**	128	405	51	**155**	1	**207**	925
05:45 PM	**61**	**55**	40	**13**	**169**	2	106	22	130	33	165	108	306	46	126	2	174	779
Total Volume	173	198	161	40	572	24	539	107	670	158	753	528	1439	206	531	9	746	3427
% App. Total	30.2	34.6	28.1	7		3.6	80.4	16		11	52.3	36.7		27.6	71.2	1.2		
PHF	.709	.900	.982	.769	.846	.750	.761	.743	.805	.775	.781	.790	.873	.858	.856	.563	.901	.905



A & R Engineering, Inc.

2160 Kingston Court, Suite 'O',
Marietta, GA 30067

TMC DATA
Satellite Blvd @ Highlands at Sweetwater Creek (Western Access)
7-9 am | 4-6 pm

File Name : 20220058
Site Code : 20220058
Start Date : 2/15/2022
Page No : 1

Groups Printed- Cars,Buses & Trucks

	Northbound				Highlands at Sweetwater Creek (Western Access) Southbound				Satellite Blvd Eastbound				Satellite Blvd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	6	0	7	13	0	77	0	77	0	200	1	201	291
07:15 AM	0	0	0	0	12	0	6	18	0	72	0	72	0	279	0	279	369
07:30 AM	0	0	0	0	10	0	5	15	3	82	0	85	0	375	0	375	475
07:45 AM	0	0	0	0	14	0	8	22	3	86	0	89	0	493	4	497	608
Total	0	0	0	0	42	0	26	68	6	317	0	323	0	1347	5	1352	1743
08:00 AM	0	0	0	0	6	0	16	22	3	101	0	104	0	464	3	467	593
08:15 AM	0	0	0	0	10	0	13	23	2	101	0	103	0	443	1	444	570
08:30 AM	0	0	0	0	9	0	12	21	1	103	0	104	0	434	7	441	566
08:45 AM	0	0	0	0	8	0	4	12	1	99	0	100	0	483	6	489	601
Total	0	0	0	0	33	0	45	78	7	404	0	411	0	1824	17	1841	2330
*** BREAK ***																	
04:00 PM	0	0	0	0	7	0	3	10	7	276	0	283	0	187	4	191	484
04:15 PM	0	0	0	0	5	0	2	7	6	277	0	283	0	147	8	155	445
04:30 PM	0	0	0	0	9	0	6	15	2	343	0	345	0	164	7	171	531
04:45 PM	0	0	0	0	10	0	7	17	5	316	0	321	0	224	5	229	567
Total	0	0	0	0	31	0	18	49	20	1212	0	1232	0	722	24	746	2027
05:00 PM	0	0	0	0	9	0	4	13	10	401	0	411	0	154	12	166	590
05:15 PM	0	0	0	0	3	0	7	10	15	401	0	416	0	191	7	198	624
05:30 PM	0	0	0	0	4	0	5	9	7	334	0	341	0	190	10	200	550
05:45 PM	0	0	0	0	6	0	2	8	13	308	0	321	0	198	7	205	534
Total	0	0	0	0	22	0	18	40	45	1444	0	1489	0	733	36	769	2298
Grand Total	0	0	0	0	128	0	107	235	78	3377	0	3455	0	4626	82	4708	8398
Apprch %	0	0	0		54.5	0	45.5		2.3	97.7	0		0	98.3	1.7		
Total %	0	0	0	0	1.5	0	1.3	2.8	0.9	40.2	0	41.1	0	55.1	1	56.1	

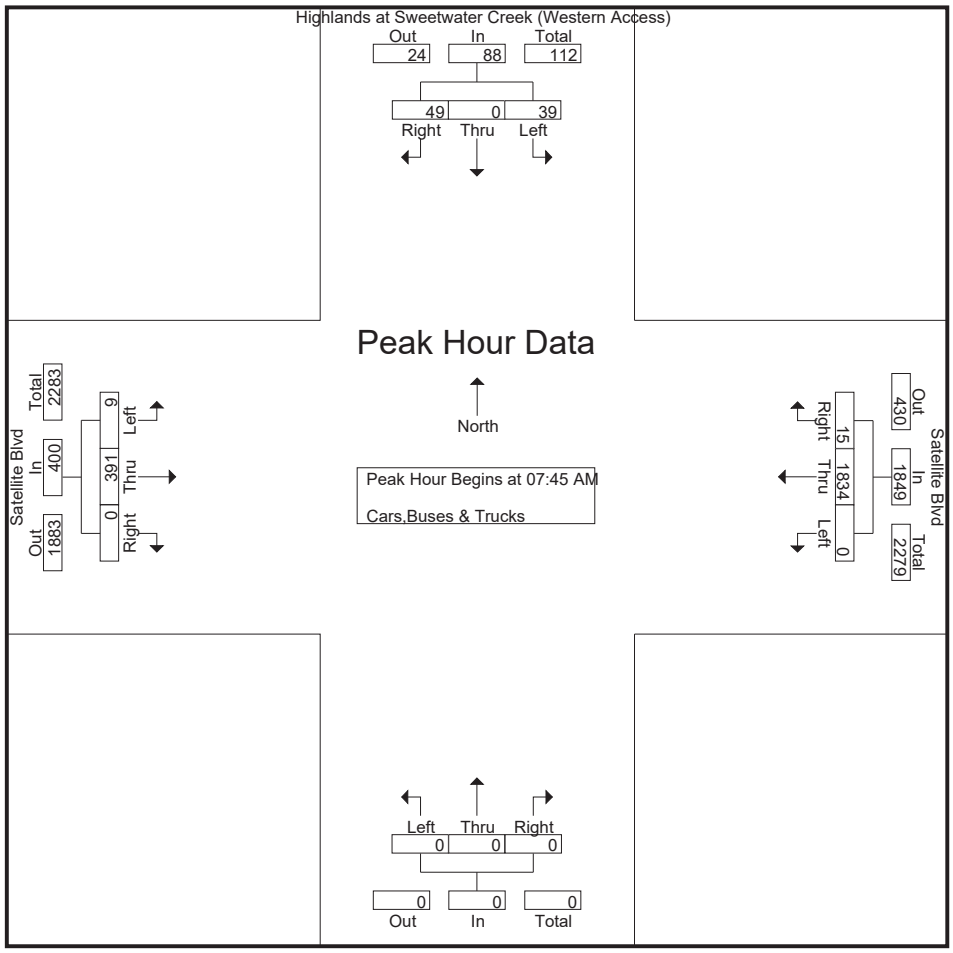
A & R Engineering, Inc.

2160 Kingston Court, Suite 'O',
Marietta, GA 30067

TMC DATA
Satellite Blvd @ Highlands at Sweetwater Creek (Western Access)
7-9 am | 4-6 pm

File Name : 20220058
Site Code : 20220058
Start Date : 2/15/2022
Page No : 2

	Northbound				Highlands at Sweetwater Creek (Western Access) Southbound				Satellite Blvd Eastbound				Satellite Blvd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	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 07:45 AM																	
07:45 AM	0	0	0	0	**14**	0	8	22	**3**	86	0	89	0	**493**	4	**497**	**608**
08:00 AM	0	0	0	0	6	0	**16**	22	3	101	0	**104**	0	464	3	467	593
08:15 AM	0	0	0	0	10	0	13	**23**	2	101	0	103	0	443	1	444	570
08:30 AM	0	0	0	0	9	0	12	21	1	**103**	0	104	0	434	**7**	441	566
Total Volume	0	0	0	0	39	0	49	88	9	391	0	400	0	1834	15	1849	2337
% App. Total	0	0	0		44.3	0	55.7		2.2	97.8	0		0	99.2	0.8		
PHF	.000	.000	.000	.000	.696	.000	.766	.957	.750	.949	.000	.962	.000	.930	.536	.930	.961



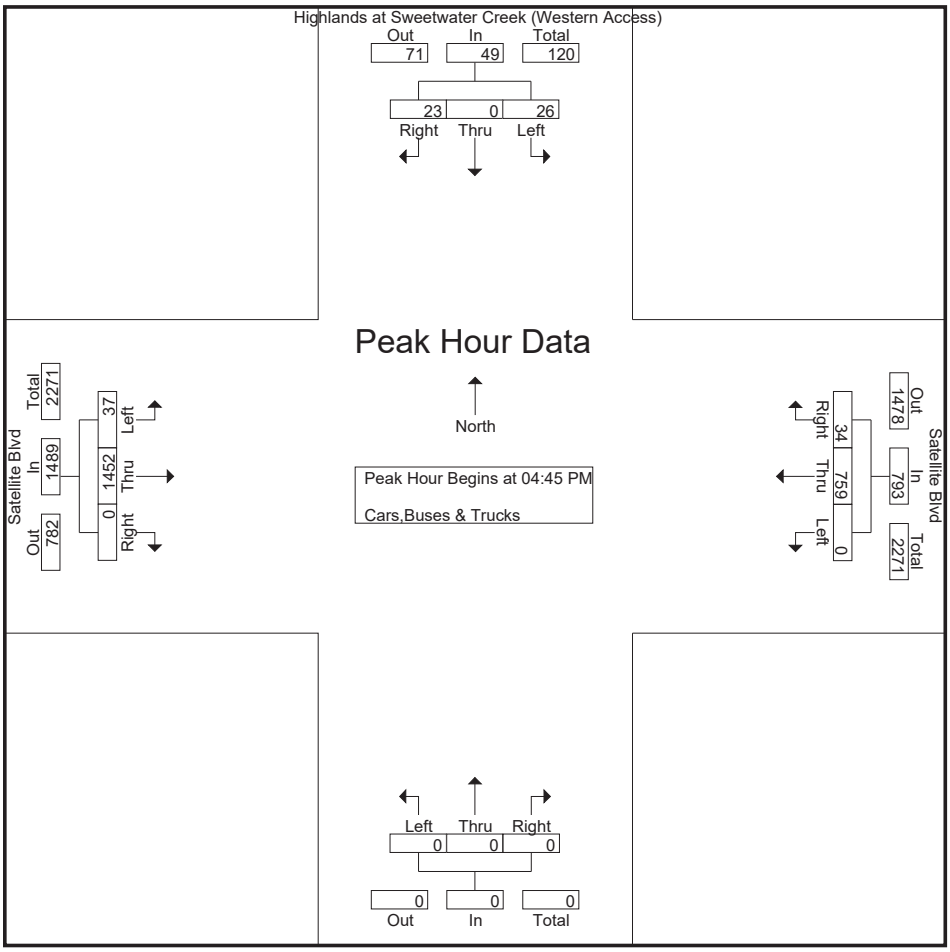
A & R Engineering, Inc.

2160 Kingston Court, Suite 'O',
Marietta, GA 30067

TMC DATA
Satellite Blvd @ Highlands at Sweetwater Creek (Western Access)
7-9 am | 4-6 pm

File Name : 20220058
Site Code : 20220058
Start Date : 2/15/2022
Page No : 3

	Northbound				Highlands at Sweetwater Creek (Western Access) Southbound				Satellite Blvd Eastbound				Satellite Blvd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	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 04:45 PM																	
04:45 PM	0	0	0	0	**10**	0	**7**	**17**	5	316	0	321	0	**224**	5	**229**	567
05:00 PM	0	0	0	0	9	0	4	13	10	**401**	0	411	0	154	**12**	166	590
05:15 PM	0	0	0	0	3	0	7	10	**15**	401	0	**416**	0	191	7	198	**624**
05:30 PM	0	0	0	0	4	0	5	9	7	334	0	341	0	190	10	200	550
Total Volume	0	0	0	0	26	0	23	49	37	1452	0	1489	0	759	34	793	2331
% App. Total	0	0	0		53.1	0	46.9		2.5	97.5	0		0	95.7	4.3		
PHF	.000	.000	.000	.000	.650	.000	.821	.721	.617	.905	.000	.895	.000	.847	.708	.866	.934



A & R Engineering, Inc.

2160 Kingston Court, Suite 'O',
Marietta, GA 30067

TMC DATA
Satellite Blvd @ Evergreen Blvd
7-9 am | 4-6 pm

File Name : 20220059
Site Code : 20220059
Start Date : 2/15/2022
Page No : 1

Groups Printed- Cars,Buses & Trucks

	Northbound				Evergreen Blvd Southbound				Satellite Blvd Eastbound				Satellite Blvd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	11	0	9	20	28	66	0	94	0	171	36	207	321
07:15 AM	0	0	0	0	6	0	6	12	13	66	0	79	0	266	19	285	376
07:30 AM	0	0	0	0	5	0	6	11	14	80	0	94	0	353	27	380	485
07:45 AM	0	0	0	0	7	0	3	10	19	82	0	101	0	458	43	501	612
Total	0	0	0	0	29	0	24	53	74	294	0	368	0	1248	125	1373	1794
08:00 AM	0	0	0	0	8	0	15	23	18	96	0	114	0	433	47	480	617
08:15 AM	0	0	0	0	9	0	10	19	16	94	0	110	0	431	25	456	585
08:30 AM	0	0	0	0	10	0	8	18	14	94	0	108	0	425	21	446	572
08:45 AM	0	0	0	0	8	0	11	19	16	92	0	108	0	465	22	487	614
Total	0	0	0	0	35	0	44	79	64	376	0	440	0	1754	115	1869	2388
*** BREAK ***																	
04:00 PM	0	0	0	0	27	0	18	45	9	256	0	265	0	180	10	190	500
04:15 PM	0	0	0	0	21	0	16	37	4	262	0	266	0	144	5	149	452
04:30 PM	0	0	0	0	27	0	14	41	9	318	0	327	0	163	7	170	538
04:45 PM	0	0	0	0	20	0	10	30	7	301	0	308	0	228	3	231	569
Total	0	0	0	0	95	0	58	153	29	1137	0	1166	0	715	25	740	2059
05:00 PM	0	0	0	0	50	0	26	76	13	361	0	374	0	151	7	158	608
05:15 PM	0	0	0	0	27	0	9	36	7	389	0	396	0	196	2	198	630
05:30 PM	0	0	0	0	22	0	11	33	9	319	0	328	0	191	4	195	556
05:45 PM	0	0	0	0	20	0	13	33	7	301	0	308	0	197	3	200	541
Total	0	0	0	0	119	0	59	178	36	1370	0	1406	0	735	16	751	2335
Grand Total	0	0	0	0	278	0	185	463	203	3177	0	3380	0	4452	281	4733	8576
Apprch %	0	0	0		60	0	40		6	94	0		0	94.1	5.9		
Total %	0	0	0	0	3.2	0	2.2	5.4	2.4	37	0	39.4	0	51.9	3.3	55.2	

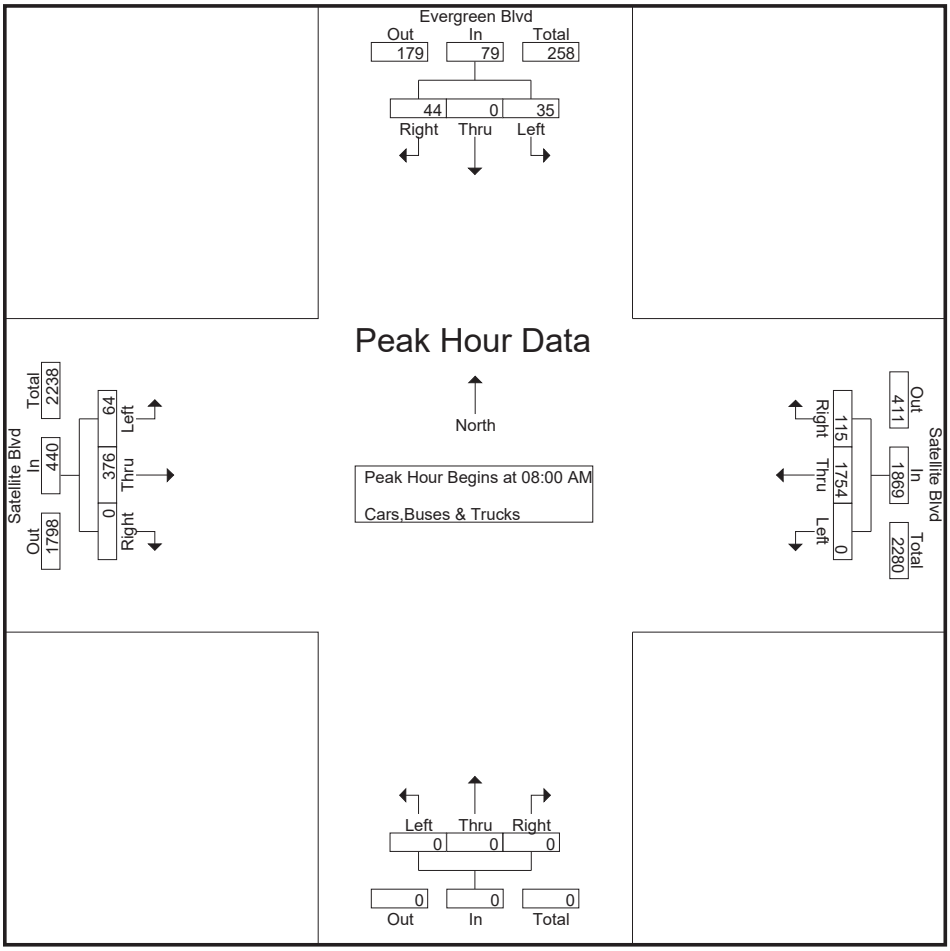
A & R Engineering, Inc.

2160 Kingston Court, Suite 'O',
Marietta, GA 30067

TMC DATA
Satellite Blvd @ Evergreen Blvd
7-9 am | 4-6 pm

File Name : 20220059
Site Code : 20220059
Start Date : 2/15/2022
Page No : 2

	Northbound				Evergreen Blvd Southbound				Satellite Blvd Eastbound				Satellite Blvd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	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 08:00 AM																	
08:00 AM	0	0	0	0	8	0	**15**	**23**	**18**	**96**	0	**114**	0	433	**47**	480	**617**
08:15 AM	0	0	0	0	9	0	10	19	16	94	0	110	0	431	25	456	585
08:30 AM	0	0	0	0	**10**	0	8	18	14	94	0	108	0	425	21	446	572
08:45 AM	0	0	0	0	8	0	11	19	16	92	0	108	0	**465**	22	**487**	614
Total Volume	0	0	0	0	35	0	44	79	64	376	0	440	0	1754	115	1869	2388
% App. Total	0	0	0		44.3	0	55.7		14.5	85.5	0		0	93.8	6.2		
PHF	.000	.000	.000	.000	.875	.000	.733	.859	.889	.979	.000	.965	.000	.943	.612	.959	.968



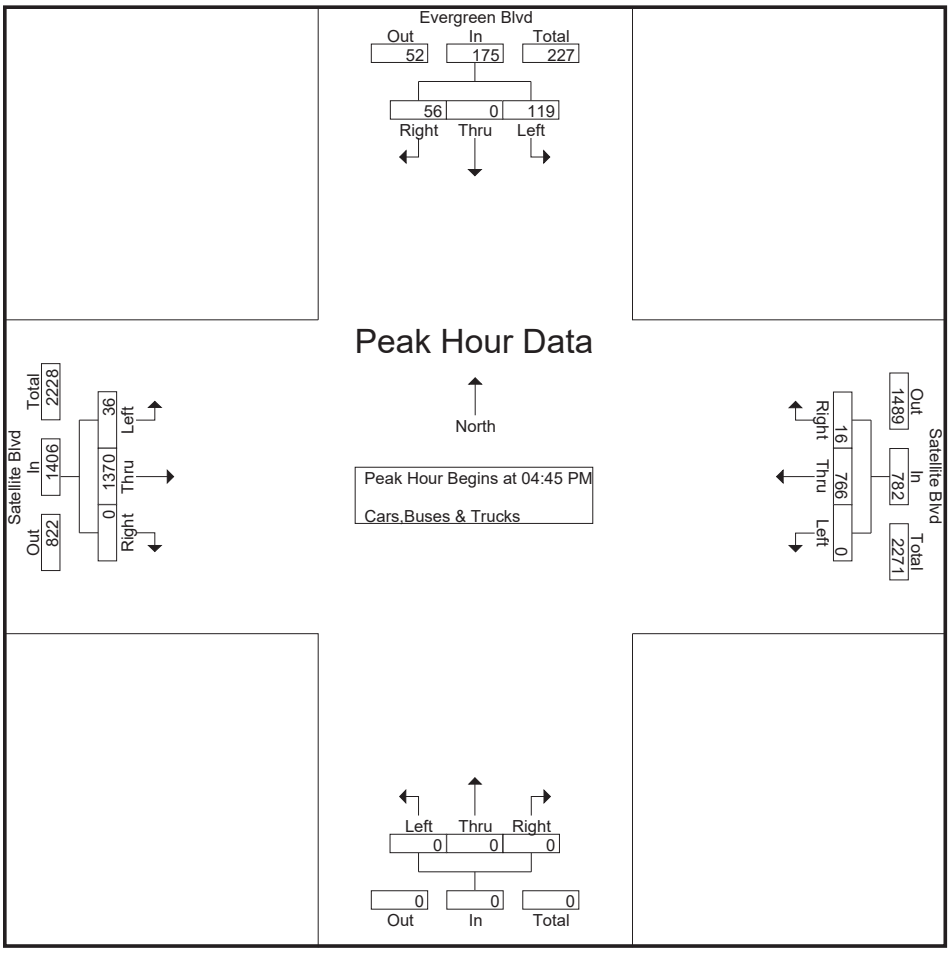
A & R Engineering, Inc.

2160 Kingston Court, Suite 'O',
Marietta, GA 30067

TMC DATA
Satellite Blvd @ Evergreen Blvd
7-9 am | 4-6 pm

File Name : 20220059
Site Code : 20220059
Start Date : 2/15/2022
Page No : 3

	Northbound				Evergreen Blvd Southbound				Satellite Blvd Eastbound				Satellite Blvd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	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 04:45 PM																	
04:45 PM	0	0	0	0	20	0	10	30	7	301	0	308	0	**228**	3	**231**	569
05:00 PM	0	0	0	0	**50**	0	**26**	**76**	**13**	361	0	374	0	151	**7**	158	608
05:15 PM	0	0	0	0	27	0	9	36	7	**389**	0	**396**	0	196	2	198	**630**
05:30 PM	0	0	0	0	22	0	11	33	9	319	0	328	0	191	4	195	556
Total Volume	0	0	0	0	119	0	56	175	36	1370	0	1406	0	766	16	782	2363
% App. Total	0	0	0		68	0	32		2.6	97.4	0		0	98	2		
PHF	.000	.000	.000	.000	.595	.000	.538	.576	.692	.880	.000	.888	.000	.840	.571	.846	.938



A & R Engineering, Inc.

2160 Kingston Court, Suite 'O',
Marietta, GA 30067

TMC DATA
Satellite Blvd @ Boggs Rd
7-9 am | 4-6 pm

File Name : 20220056
Site Code : 20220056
Start Date : 2/15/2022
Page No : 1

Groups Printed- Cars,Buses & Trucks

	Boggs Rd Northbound					Boggs Rd Southbound				Satellite Blvd Eastbound				Satellite Blvd Westbound				
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	96	75	30	0	201	0	54	11	65	13	27	29	69	35	103	1	139	474
07:15 AM	103	69	27	2	201	1	61	15	77	12	31	29	72	34	112	2	148	498
07:30 AM	159	47	31	0	237	1	83	24	108	12	38	32	82	37	151	3	191	618
07:45 AM	193	78	52	1	324	6	69	28	103	22	55	28	105	25	215	2	242	774
Total	551	269	140	3	963	8	267	78	353	59	151	118	328	131	581	8	720	2364
08:00 AM	237	87	42	0	366	8	78	53	139	17	41	28	86	23	240	1	264	855
08:15 AM	204	89	26	5	324	1	68	46	115	28	48	34	110	33	212	3	248	797
08:30 AM	193	83	35	5	316	4	64	45	113	31	61	25	117	23	224	1	248	794
08:45 AM	290	123	63	3	479	5	101	33	139	29	80	38	147	29	251	3	283	1048
Total	924	382	166	13	1485	18	311	177	506	105	230	125	460	108	927	8	1043	3494
*** BREAK ***																		
04:00 PM	60	50	26	3	139	2	77	15	94	24	116	92	232	44	134	0	178	643
04:15 PM	39	46	31	4	120	3	146	34	183	38	119	132	289	50	122	1	173	765
04:30 PM	32	41	41	10	124	8	125	29	162	42	144	121	307	51	112	4	167	760
04:45 PM	42	38	36	3	119	4	112	29	145	31	167	144	342	53	123	5	181	787
Total	173	175	134	20	502	17	460	107	584	135	546	489	1170	198	491	10	699	2955
05:00 PM	38	52	39	9	138	8	114	25	147	38	153	125	316	49	131	2	182	783
05:15 PM	39	48	41	9	137	7	177	24	208	51	194	167	412	60	127	4	191	948
05:30 PM	35	43	41	9	128	7	142	36	185	36	241	128	405	51	156	1	208	926
05:45 PM	61	55	40	13	169	2	106	22	130	33	165	108	306	46	134	2	182	787
Total	173	198	161	40	572	24	539	107	670	158	753	528	1439	206	548	9	763	3444
Grand Total	1821	1024	601	76	3522	67	1577	469	2113	457	1680	1260	3397	643	2547	35	3225	12257
Apprch %	51.7	29.1	17.1	2.2		3.2	74.6	22.2		13.5	49.5	37.1		19.9	79	1.1		
Total %	14.9	8.4	4.9	0.6	28.7	0.5	12.9	3.8	17.2	3.7	13.7	10.3	27.7	5.2	20.8	0.3	26.3	

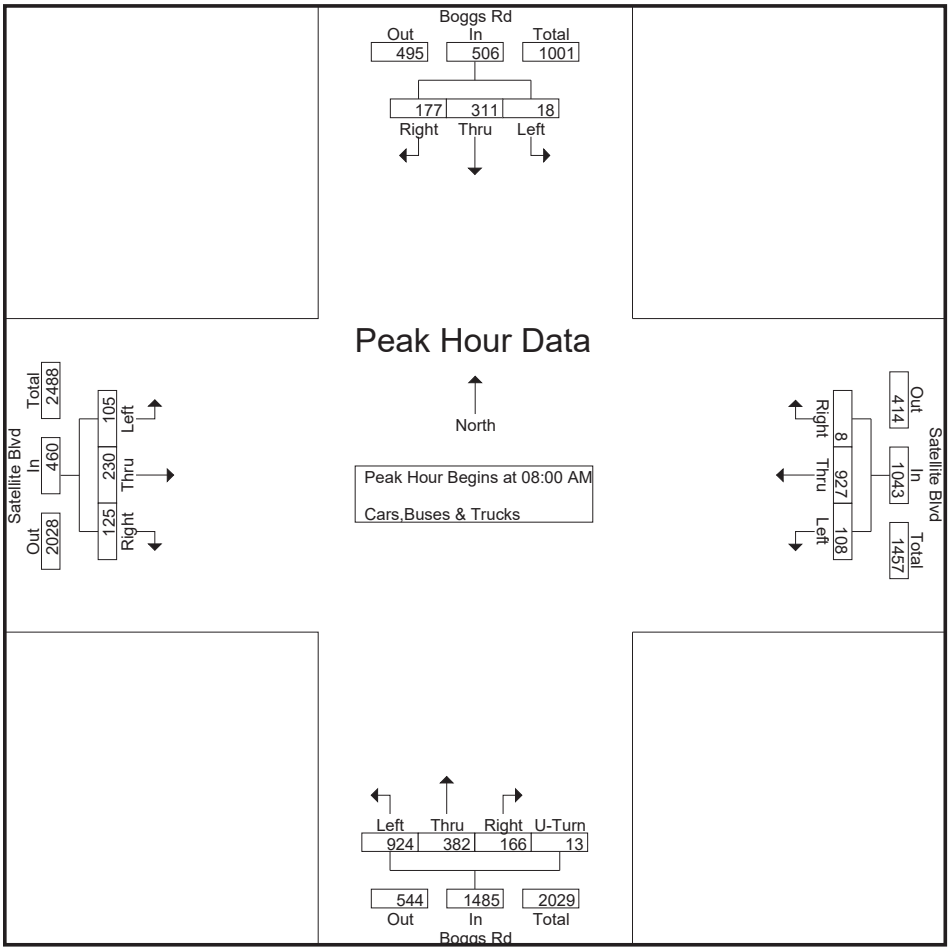
A & R Engineering, Inc.

2160 Kingston Court, Suite 'O',
Marietta, GA 30067

TMC DATA
Satellite Blvd @ Boggs Rd
7-9 am | 4-6 pm

File Name : 20220056
Site Code : 20220056
Start Date : 2/15/2022
Page No : 2

	Boggs Rd Northbound					Boggs Rd Southbound				Satellite Blvd Eastbound				Satellite Blvd Westbound				
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	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 08:00 AM																		
08:00 AM	237	87	42	0	366	**8**	78	**53**	**139**	17	41	28	86	23	240	1	264	855
08:15 AM	204	89	26	**5**	324	1	68	46	115	28	48	34	110	**33**	212	**3**	248	797
08:30 AM	193	83	35	5	316	4	64	45	113	**31**	61	25	117	23	224	1	248	794
08:45 AM	**290**	**123**	**63**	3	**479**	5	**101**	33	139	29	**80**	**38**	**147**	29	**251**	3	**283**	**1048**
Total Volume	924	382	166	13	1485	18	311	177	506	105	230	125	460	108	927	8	1043	3494
% App. Total	62.2	25.7	11.2	0.9		3.6	61.5	35		22.8	50	27.2		10.4	88.9	0.8		
PHF	.797	.776	.659	.650	.775	.563	.770	.835	.910	.847	.719	.822	.782	.818	.923	.667	.921	.833



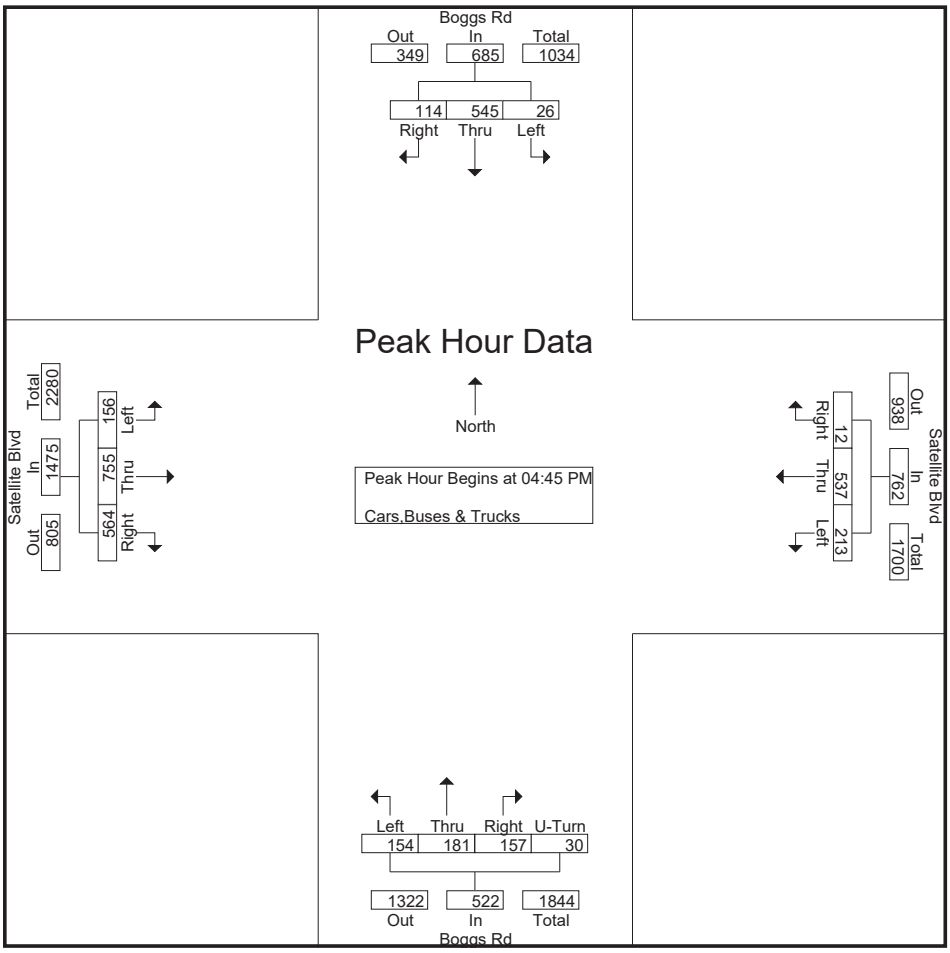
A & R Engineering, Inc.

2160 Kingston Court, Suite 'O',
Marietta, GA 30067

TMC DATA
Satellite Blvd @ Boggs Rd
7-9 am | 4-6 pm

File Name : 20220056
Site Code : 20220056
Start Date : 2/15/2022

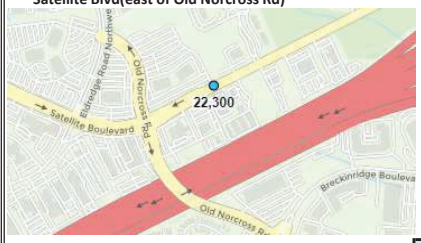
	Boggs Rd Northbound					Boggs Rd Southbound				Satellite Blvd Eastbound				Satellite Blvd Westbound				
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 04:45 PM																		
04:45 PM	**42**	38	36	3	119	4	112	29	145	31	167	144	342	53	123	**5**	181	787
05:00 PM	38	**52**	39	**9**	**138**	**8**	114	25	147	38	153	125	316	49	131	2	182	783
05:15 PM	39	48	**41**	9	137	7	**177**	24	**208**	**51**	194	**167**	**412**	**60**	127	4	191	**948**
05:30 PM	35	43	41	9	128	7	142	**36**	185	36	**241**	128	405	51	**156**	1	**208**	926
Total Volume	154	181	157	30	522	26	545	114	685	156	755	564	1475	213	537	12	762	3444
% App. Total	29.5	34.7	30.1	5.7		3.8	79.6	16.6		10.6	51.2	38.2		28	70.5	1.6		
PHF	.917	.870	.957	.833	.946	.813	.770	.792	.823	.765	.783	.844	.895	.888	.861	.600	.916	.908

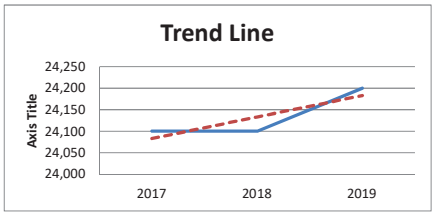


LINEAR REGRESSION OF DAILY TRAFFIC

Location	Growth Rate	R Squared	Station ID	Route	2017	2018	2019
Satellite Blvd(east of Old Norcro	0.2%	0.75	135-0581	00200100	24,100	24,100	24,200
Boggs Rd(north of Satellite Blvd	0.4%	0.75	135-0527	00055200	12,000	12,000	12,100
Boggs Rd(south of Breckinridge	-0.4%	0.43	135-0525	00055200	22,700	22,400	22,500
SR 120(west of Meadow Church	0.2%	0.75	135-0163	00012000	22,400	22,400	22,500
Weighted Average	**0.1%**	0.06	Sum of Count Stations =		81,200	80,900	81,300

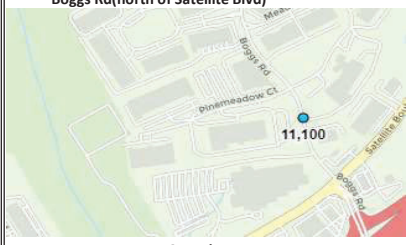
Location	Traffic Counter	RCLINK	2017	2018	2019
Satellite Blvd(east of Old Norcross Rd)	135-0581	00200100	24,100	24,100	24,200

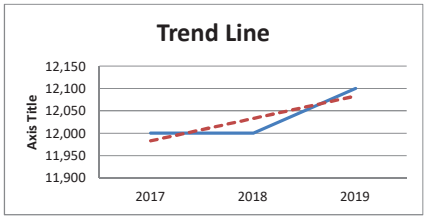




Growth Rate	0.2%	Intercept	-76,767	Slope	50.00
Trend Line			24,083	24,133	24,183

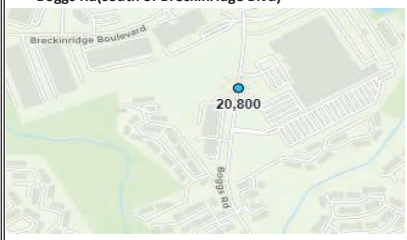
Location	Traffic Counter	RCLINK	2017	2018	2019
Boggs Rd(north of Satellite Blvd)	135-0527	00055200	12,000	12,000	12,100

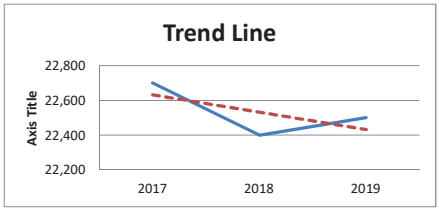




Growth Rate	0.4%	Intercept	-88,867	Slope	50.00
Trend Line			11,983	12,033	12,083

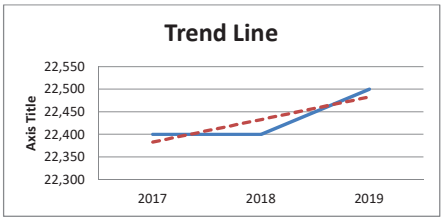
Location	Traffic Counter	RCLINK	2017	2018	2019
Boggs Rd(south of Breckinridge Blvd)	135-0525	00055200	22,700	22,400	22,500





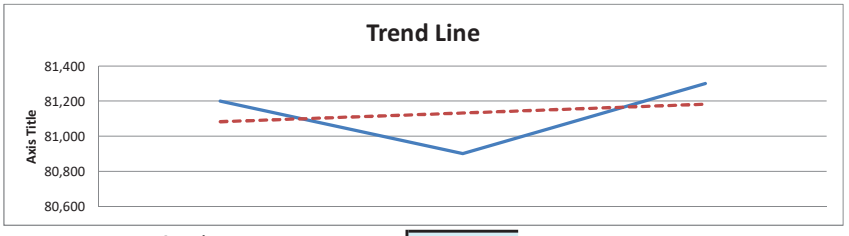
Growth Rate	-0.4%	Intercept	224,333	Slope	-100.00
Trend Line			22,633	22,533	22,433

Location	Traffic Counter	RCLINK	2017	2018	2019
SR 120(west of Meadow Church Rd)	135-0163	00012000	22,400	22,400	22,500



Growth Rate	0.2%	Intercept	-78,467	Slope	50.00
Trend Line			22,383	22,433	22,483

Weighted Average	2017	2018	2019
Sum of Count Stations	81,200	80,900	81,300



Growth Rate	0.1%	Intercept	-19,767	Slope	50.00
Trend Line			81,083	81,133	81,183

EXISTING INTERSECTION ANALYSIS

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	100	210	119	104	909	894	357	161	15	268
Future Volume (vph)	100	210	119	104	909	894	357	161	15	268
Lane Group Flow (vph)	110	231	131	114	1008	491	883	177	16	480
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Split	NA	Perm	Split	NA
Protected Phases	5	2		1	6	8	8		4	4
Permitted Phases	2		2	6				8		
Detector Phase	5	2	2	1	6	8	8	8	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	15.0	15.0	6.0	6.0
Minimum Split (s)	15.0	42.5	42.5	15.0	41.5	44.5	44.5	44.5	44.0	44.0
Total Split (s)	15.0	45.5	45.5	15.0	45.5	45.5	45.5	45.5	44.0	44.0
Total Split (%)	10.0%	30.3%	30.3%	10.0%	30.3%	30.3%	30.3%	30.3%	29.3%	29.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	None	C-Min	Min	Min	Min	None	None
Act Effct Green (s)	49.5	40.3	40.3	49.5	40.3	54.7	54.7	54.7	23.8	23.8
Actuated g/C Ratio	0.33	0.27	0.27	0.33	0.27	0.36	0.36	0.36	0.16	0.16
v/c Ratio	0.70	0.24	0.25	0.29	1.06	0.84	0.73	0.26	0.06	0.80
Control Delay	55.8	43.9	7.6	34.7	98.6	58.1	46.6	9.2	51.2	59.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.8	43.9	7.6	34.7	98.6	58.1	46.6	9.2	51.2	59.3
LOS	E	D	A	C	F	E	D	A	D	E
Approach Delay		36.6			92.1		46.0			59.0
Approach LOS		D			F		D			E
Queue Length 50th (ft)	73	94	0	75	~573	480	409	18	14	199
Queue Length 95th (ft)	#142	132	53	124	#713	#771	534	79	35	251
Internal Link Dist (ft)		1483			302		389			310
Turn Bay Length (ft)	195		500	160		210		285	185	
Base Capacity (vph)	161	950	521	397	949	587	1202	671	454	921
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.24	0.25	0.29	1.06	0.84	0.73	0.26	0.04	0.52

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 60.8	Intersection LOS: E
Intersection Capacity Utilization 86.8%	ICU Level of Service E
Analysis Period (min) 15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	210	119	104	909	8	894	357	161	15	268	168
Future Volume (veh/h)	100	210	119	104	909	8	894	357	161	15	268	168
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	110	231	0	114	999	9	982	392	177	16	295	185
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	209	1300		512	1325	12	950	499	423	299	356	217
Arrive On Green	0.05	0.37	0.00	0.05	0.37	0.37	0.27	0.27	0.27	0.17	0.17	0.17
Sat Flow, veh/h	1781	3554	1585	1781	3609	33	3563	1870	1585	1781	2120	1294
Grp Volume(v), veh/h	110	231	0	114	492	516	982	392	177	16	246	234
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1865	1781	1870	1585	1781	1777	1637
Q Serve(g_s), s	5.8	6.6	0.0	6.0	36.3	36.3	40.0	29.2	13.8	1.1	20.0	20.8
Cycle Q Clear(g_c), s	5.8	6.6	0.0	6.0	36.3	36.3	40.0	29.2	13.8	1.1	20.0	20.8
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		0.79
Lane Grp Cap(c), veh/h	209	1300		512	653	685	950	499	423	299	299	275
V/C Ratio(X)	0.53	0.18		0.22	0.75	0.75	1.03	0.79	0.42	0.05	0.82	0.85
Avail Cap(c_a), veh/h	231	1300		531	653	685	950	499	423	457	456	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.6	32.3	0.0	27.2	41.5	41.5	55.0	51.0	45.4	52.4	60.3	60.6
Incr Delay (d2), s/veh	2.0	0.3	0.0	0.2	7.9	7.5	38.2	9.3	1.4	0.1	7.2	9.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	2.9	0.0	2.5	16.9	17.7	22.5	14.7	5.5	0.5	9.5	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.6	32.6	0.0	27.5	49.4	49.1	93.2	60.3	46.8	52.5	67.4	70.5
LnGrp LOS	C	C		C	D	D	F	E	D	D	E	E
Approach Vol, veh/h		341	A		1122			1551			496	
Approach Delay, s/veh		33.2			47.0			79.6			68.4	
Approach LOS		C			D			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.4	60.4		30.7	13.2	60.6		45.5				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	9.5	40.0		38.5	9.5	40.0		40.0				
Max Q Clear Time (g_c+I1), s	8.0	8.6		22.8	7.8	38.3		42.0				
Green Ext Time (p_c), s	0.0	2.6		2.4	0.0	1.3		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			63.1									
HCM 6th LOS			E									

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	431	4	4	1840	10	0	0	0	0	0	1
Future Vol, veh/h	2	431	4	4	1840	10	0	0	0	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	235	-	135	235	-	145	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	454	4	4	1937	11	0	0	0	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1948	0	0	458	0	0	1435	2414	227	2176	2407	969
Stage 1	-	-	-	-	-	-	458	458	-	1945	1945	-
Stage 2	-	-	-	-	-	-	977	1956	-	231	462	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	297	-	-	1099	-	-	94	32	776	26	33	253
Stage 1	-	-	-	-	-	-	552	565	-	67	110	-
Stage 2	-	-	-	-	-	-	269	109	-	751	563	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	297	-	-	1099	-	-	93	32	776	26	33	253
Mov Cap-2 Maneuver	-	-	-	-	-	-	93	32	-	26	33	-
Stage 1	-	-	-	-	-	-	548	561	-	67	110	-
Stage 2	-	-	-	-	-	-	267	109	-	746	559	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	0	19.3
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	297	-	-	1099	-	-	-	253
HCM Lane V/C Ratio	-	0.007	-	-	0.004	-	-	-	0.004
HCM Control Delay (s)	0	17.2	-	-	8.3	-	-	0	19.3
HCM Lane LOS	A	C	-	-	A	-	-	A	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-	0

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	391	1834	15	39	49
Future Vol, veh/h	9	391	1834	15	39	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	235	-	-	135	45	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	407	1910	16	41	51

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1926	0	-	0	2132	955
Stage 1	-	-	-	-	1910	-
Stage 2	-	-	-	-	222	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	302	-	-	-	42	259
Stage 1	-	-	-	-	102	-
Stage 2	-	-	-	-	794	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	302	-	-	-	41	259
Mov Cap-2 Maneuver	-	-	-	-	87	-
Stage 1	-	-	-	-	99	-
Stage 2	-	-	-	-	794	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	47.2
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	302	-	-	-	87	259
HCM Lane V/C Ratio	0.031	-	-	-	0.467	0.197
HCM Control Delay (s)	17.3	-	-	-	78.4	22.3
HCM Lane LOS	C	-	-	-	F	C
HCM 95th %tile Q(veh)	0.1	-	-	-	2	0.7

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	64	376	1754	115	35	44
Future Vol, veh/h	64	376	1754	115	35	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	125	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	388	1808	119	36	45

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1808	0	-	0	2194	964
Stage 1	-	-	-	-	1868	-
Stage 2	-	-	-	-	326	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	336	-	-	-	38	255
Stage 1	-	-	-	-	108	-
Stage 2	-	-	-	-	704	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	336	-	-	-	~ 31	255
Mov Cap-2 Maneuver	-	-	-	-	75	-
Stage 1	-	-	-	-	87	-
Stage 2	-	-	-	-	704	-

Approach	EB	WB	SB
HCM Control Delay, s	2.7	0	52.7
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	336	-	-	-	75	255
HCM Lane V/C Ratio	0.196	-	-	-	0.481	0.178
HCM Control Delay (s)	18.3	-	-	-	91.2	22.1
HCM Lane LOS	C	-	-	-	F	C
HCM 95th %tile Q(veh)	0.7	-	-	-	2	0.6

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1	3	388	440	0
Future Vol, veh/h	0	1	3	388	440	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	3	408	463	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	673	232	463	0	-	0
Stage 1	463	-	-	-	-	-
Stage 2	210	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	389	770	1095	-	-	-
Stage 1	600	-	-	-	-	-
Stage 2	805	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	387	770	1095	-	-	-
Mov Cap-2 Maneuver	481	-	-	-	-	-
Stage 1	598	-	-	-	-	-
Stage 2	805	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	0.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1095	-	-	770	-	-
HCM Lane V/C Ratio	0.003	-	-	0.001	-	-
HCM Control Delay (s)	8.3	0	0	9.7	-	-
HCM Lane LOS	A	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	158	753	528	206	531	213	198	161	24	539
Future Volume (vph)	158	753	528	206	531	213	198	161	24	539
Lane Group Flow (vph)	174	827	580	226	594	147	305	177	26	710
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Split	NA	Perm	Split	NA
Protected Phases	5	2		1	6	8	8		4	4
Permitted Phases	2		2	6				8		
Detector Phase	5	2	2	1	6	8	8	8	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	15.0	15.0	6.0	6.0
Minimum Split (s)	15.0	42.5	42.5	15.0	41.5	44.5	44.5	44.5	44.5	44.5
Total Split (s)	16.0	44.0	44.0	17.0	45.0	44.5	44.5	44.5	44.5	44.5
Total Split (%)	10.7%	29.3%	29.3%	11.3%	30.0%	29.7%	29.7%	29.7%	29.7%	29.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	None	Min	Min	Min	Min	None	None
Act Effct Green (s)	56.9	43.1	43.1	73.3	55.0	24.1	24.1	24.1	35.2	35.2
Actuated g/C Ratio	0.38	0.29	0.29	0.49	0.37	0.16	0.16	0.16	0.23	0.23
v/c Ratio	0.46	0.81	0.71	0.62	0.46	0.57	0.57	0.44	0.06	0.86
Control Delay	28.9	57.7	12.3	39.9	40.1	65.9	61.5	10.1	43.2	65.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	57.7	12.3	39.9	40.1	65.9	61.5	10.1	43.2	65.4
LOS	C	E	B	D	D	E	E	B	D	E
Approach Delay		37.9			40.1		48.1			64.6
Approach LOS		D			D		D			E
Queue Length 50th (ft)	94	401	51	140	234	148	154	0	20	344
Queue Length 95th (ft)	168	#532	206	#321	339	217	193	64	45	413
Internal Link Dist (ft)		1483			302		389			310
Turn Bay Length (ft)	195		500	160		210		285	185	
Base Capacity (vph)	379	1017	819	362	1293	418	869	542	460	908
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.81	0.71	0.62	0.46	0.35	0.35	0.33	0.06	0.78

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 45.3	Intersection LOS: D
Intersection Capacity Utilization 81.4%	ICU Level of Service D
Analysis Period (min) 15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	753	528	206	531	9	213	198	161	24	539	107
Future Volume (veh/h)	158	753	528	206	531	9	213	198	161	24	539	107
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	174	827	0	226	584	10	252	192	177	26	592	118
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	410	1414		327	1446	25	549	288	244	401	664	132
Arrive On Green	0.07	0.40	0.00	0.08	0.40	0.40	0.15	0.15	0.15	0.22	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	1781	3575	61	3563	1870	1585	1781	2954	587
Grp Volume(v), veh/h	174	827	0	226	290	304	252	192	177	26	355	355
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1859	1781	1870	1585	1781	1777	1765
Q Serve(g_s), s	8.6	27.4	0.0	11.5	17.4	17.5	9.7	14.5	16.0	1.7	29.1	29.2
Cycle Q Clear(g_c), s	8.6	27.4	0.0	11.5	17.4	17.5	9.7	14.5	16.0	1.7	29.1	29.2
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	410	1414		327	719	752	549	288	244	401	400	397
V/C Ratio(X)	0.42	0.59		0.69	0.40	0.40	0.46	0.67	0.73	0.06	0.89	0.89
Avail Cap(c_a), veh/h	410	1414		327	719	752	926	486	412	463	462	459
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	35.5	0.0	27.5	31.8	31.8	57.8	59.8	60.4	45.7	56.3	56.4
Incr Delay (d2), s/veh	0.7	1.8	0.0	6.1	0.8	0.7	1.3	5.6	8.4	0.1	17.2	17.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	12.0	0.0	5.3	7.5	7.9	4.4	7.2	6.9	0.8	14.7	14.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.4	37.2	0.0	33.6	32.6	32.5	59.0	65.4	68.9	45.8	73.5	74.2
LnGrp LOS	C	D		C	C	C	E	E	E	D	E	E
Approach Vol, veh/h		1001	A		820			621			736	
Approach Delay, s/veh		35.2			32.8			63.8			72.9	
Approach LOS		D			C			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.0	65.2		39.2	16.0	66.2		28.6				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	11.5	38.5		39.0	10.5	39.5		39.0				
Max Q Clear Time (g_c+I1), s	13.5	29.4		31.2	10.6	19.5		18.0				
Green Ext Time (p_c), s	0.0	5.2		2.5	0.0	5.9		5.1				

Intersection Summary			
HCM 6th Ctrl Delay		48.9	
HCM 6th LOS		D	

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1468	9	7	785	8	3	0	10	3	0	5
Future Vol, veh/h	1	1468	9	7	785	8	3	0	10	3	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	235	-	135	235	-	145	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1562	10	7	835	9	3	0	11	3	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	844	0	0	1572	0	0	1996	2422	781	1632	2423	418
Stage 1	-	-	-	-	-	-	1564	1564	-	849	849	-
Stage 2	-	-	-	-	-	-	432	858	-	783	1574	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	788	-	-	415	-	-	36	32	338	67	32	584
Stage 1	-	-	-	-	-	-	117	171	-	322	375	-
Stage 2	-	-	-	-	-	-	572	372	-	353	169	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	788	-	-	415	-	-	35	31	338	64	31	584
Mov Cap-2 Maneuver	-	-	-	-	-	-	35	31	-	64	31	-
Stage 1	-	-	-	-	-	-	117	171	-	322	369	-
Stage 2	-	-	-	-	-	-	557	366	-	341	169	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	41.3	31.1
HCM LOS			E	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	113	788	-	-	415	-	-	64	584
HCM Lane V/C Ratio	0.122	0.001	-	-	0.018	-	-	0.05	0.009
HCM Control Delay (s)	41.3	9.6	-	-	13.8	-	-	64.2	11.2
HCM Lane LOS	E	A	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.2	0

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	37	1452	759	34	26	23
Future Vol, veh/h	37	1452	759	34	26	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	235	-	-	135	45	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	40	1561	816	37	28	25

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	853	0	-	0	1677	408
Stage 1	-	-	-	-	816	-
Stage 2	-	-	-	-	861	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	782	-	-	-	86	593
Stage 1	-	-	-	-	395	-
Stage 2	-	-	-	-	374	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	782	-	-	-	82	593
Mov Cap-2 Maneuver	-	-	-	-	208	-
Stage 1	-	-	-	-	375	-
Stage 2	-	-	-	-	374	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	18.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	782	-	-	-	208	593
HCM Lane V/C Ratio	0.051	-	-	-	0.134	0.042
HCM Control Delay (s)	9.8	-	-	-	25	11.3
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5	0.1

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	36	1370	766	16	119	56
Future Vol, veh/h	36	1370	766	16	119	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	125	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	1457	815	17	127	60

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	815	0	-	0	1629	416
Stage 1	-	-	-	-	824	-
Stage 2	-	-	-	-	805	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	808	-	-	-	~ 93	585
Stage 1	-	-	-	-	391	-
Stage 2	-	-	-	-	400	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	808	-	-	-	~ 89	585
Mov Cap-2 Maneuver	-	-	-	-	217	-
Stage 1	-	-	-	-	373	-
Stage 2	-	-	-	-	400	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	32.7
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	808	-	-	-	217	585
HCM Lane V/C Ratio	0.047	-	-	-	0.583	0.102
HCM Control Delay (s)	9.7	-	-	-	42.5	11.9
HCM Lane LOS	A	-	-	-	E	B
HCM 95th %tile Q(veh)	0.1	-	-	-	3.3	0.3

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

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	5	8	329	602	2
Future Vol, veh/h	1	5	8	329	602	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	6	9	370	676	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	880	339	678	0	-	0
Stage 1	677	-	-	-	-	-
Stage 2	203	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	287	657	910	-	-	-
Stage 1	466	-	-	-	-	-
Stage 2	811	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	284	657	910	-	-	-
Mov Cap-2 Maneuver	380	-	-	-	-	-
Stage 1	460	-	-	-	-	-
Stage 2	811	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.2	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	910	-	380	657	-	-
HCM Lane V/C Ratio	0.01	-	0.003	0.009	-	-
HCM Control Delay (s)	9	0.1	14.5	10.5	-	-
HCM Lane LOS	A	A	B	B	-	-
HCM 95th %tile Q(veh)	0	-	0	0	-	-

FUTURE "NO-BUILD" INTERSECTION ANALYSIS

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	103	216	123	107	936	920	368	166	15	276
Future Volume (vph)	103	216	123	107	936	920	368	166	15	276
Lane Group Flow (vph)	113	237	135	118	1038	505	910	182	16	493
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Split	NA	Perm	Split	NA
Protected Phases	5	2		1	6	8	8		4	4
Permitted Phases	2		2	6				8		
Detector Phase	5	2	2	1	6	8	8	8	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	15.0	15.0	6.0	6.0
Minimum Split (s)	15.0	42.5	42.5	15.0	41.5	44.5	44.5	44.5	44.5	44.5
Total Split (s)	15.0	42.0	42.0	15.0	42.0	52.0	52.0	52.0	41.0	41.0
Total Split (%)	10.0%	28.0%	28.0%	10.0%	28.0%	34.7%	34.7%	34.7%	27.3%	27.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	None	Min	Min	Min	Min	None	None
Act Effct Green (s)	46.2	36.9	36.9	46.1	36.8	57.5	57.5	57.5	24.4	24.4
Actuated g/C Ratio	0.31	0.25	0.25	0.31	0.25	0.38	0.38	0.38	0.16	0.16
v/c Ratio	0.71	0.27	0.27	0.33	1.19	0.82	0.72	0.26	0.06	0.80
Control Delay	59.6	46.9	8.2	37.8	146.4	54.5	44.2	8.1	50.7	59.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.6	46.9	8.2	37.8	146.4	54.5	44.2	8.1	50.7	59.6
LOS	E	D	A	D	F	D	D	A	D	E
Approach Delay		39.1			135.3		43.4			59.3
Approach LOS		D			F		D			E
Queue Length 50th (ft)	78	100	0	81	~650	483	412	15	13	206
Queue Length 95th (ft)	#148	140	56	133	#791	#768	539	74	35	258
Internal Link Dist (ft)		1483			302		389			310
Turn Bay Length (ft)	195		500	160		210		285	185	
Base Capacity (vph)	162	870	491	366	869	616	1263	703	418	855
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.27	0.27	0.32	1.19	0.82	0.72	0.26	0.04	0.58

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.19	
Intersection Signal Delay: 73.3	Intersection LOS: E
Intersection Capacity Utilization 88.8%	ICU Level of Service E
Analysis Period (min) 15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	216	123	107	936	8	920	368	166	15	276	173
Future Volume (veh/h)	103	216	123	107	936	8	920	368	166	15	276	173
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	113	237	0	118	1029	9	1011	404	182	16	303	190
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	174	1132		459	1157	10	1093	574	486	304	361	221
Arrive On Green	0.06	0.32	0.00	0.06	0.32	0.32	0.31	0.31	0.31	0.17	0.17	0.17
Sat Flow, veh/h	1781	3554	1585	1781	3610	32	3563	1870	1585	1781	2119	1295
Grp Volume(v), veh/h	113	237	0	118	506	532	1011	404	182	16	253	240
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1865	1781	1870	1585	1781	1777	1637
Q Serve(g_s), s	6.4	7.3	0.0	6.6	40.6	40.6	41.2	28.6	13.5	1.1	20.6	21.4
Cycle Q Clear(g_c), s	6.4	7.3	0.0	6.6	40.6	40.6	41.2	28.6	13.5	1.1	20.6	21.4
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		0.79
Lane Grp Cap(c), veh/h	174	1132		459	570	598	1093	574	486	304	303	279
V/C Ratio(X)	0.65	0.21		0.26	0.89	0.89	0.92	0.70	0.37	0.05	0.83	0.86
Avail Cap(c_a), veh/h	188	1132		469	570	598	1104	580	491	422	421	387
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.1	37.3	0.0	31.5	48.4	48.4	50.3	46.0	40.7	52.1	60.2	60.5
Incr Delay (d2), s/veh	6.9	0.4	0.0	0.3	16.7	16.1	13.2	4.9	1.0	0.1	9.9	13.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	3.2	0.0	2.9	20.2	21.1	19.9	13.8	5.3	0.5	10.0	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.0	37.7	0.0	31.8	65.1	64.5	63.6	50.8	41.7	52.1	70.0	73.7
LnGrp LOS	D	D		C	E	E	E	D	D	D	E	E
Approach Vol, veh/h		350	A		1156			1597			509	
Approach Delay, s/veh		40.1			61.4			57.9			71.2	
Approach LOS		D			E			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.1	53.3		31.1	13.8	53.6		51.5				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	9.5	36.5		35.5	9.5	36.5		46.5				
Max Q Clear Time (g_c+I1), s	8.6	9.3		23.4	8.4	42.6		43.2				
Green Ext Time (p_c), s	0.0	2.6		2.2	0.0	0.0		2.8				

Intersection Summary			
HCM 6th Ctrl Delay		59.2	
HCM 6th LOS		E	

Notes

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

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	444	4	4	1895	0	0	0	0	0	0	0
Future Vol, veh/h	0	444	4	4	1895	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	235	-	135	235	-	145	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	467	4	4	1995	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1995	0	0	471	0	0	1473	2470	234	2237	2474	998
Stage 1	-	-	-	-	-	-	467	467	-	2003	2003	-
Stage 2	-	-	-	-	-	-	1006	2003	-	234	471	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	284	-	-	1087	-	-	88	30	768	23	29	242
Stage 1	-	-	-	-	-	-	545	560	-	61	103	-
Stage 2	-	-	-	-	-	-	258	103	-	748	558	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	284	-	-	1087	-	-	88	30	768	23	29	242
Mov Cap-2 Maneuver	-	-	-	-	-	-	88	30	-	23	29	-
Stage 1	-	-	-	-	-	-	545	560	-	61	103	-
Stage 2	-	-	-	-	-	-	257	103	-	748	558	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	284	-	-	1087	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	0.004	-	-	-	-
HCM Control Delay (s)	0	0	-	-	8.3	-	-	0	0
HCM Lane LOS	A	A	-	-	A	-	-	A	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	403	1889	15	40	50
Future Vol, veh/h	9	403	1889	15	40	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	235	-	-	135	45	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	420	1968	16	42	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1984	0	-	0	2196	984
Stage 1	-	-	-	-	1968	-
Stage 2	-	-	-	-	228	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	287	-	-	-	~ 38	248
Stage 1	-	-	-	-	95	-
Stage 2	-	-	-	-	788	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	287	-	-	-	~ 37	248
Mov Cap-2 Maneuver	-	-	-	-	81	-
Stage 1	-	-	-	-	92	-
Stage 2	-	-	-	-	788	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	52.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	287	-	-	-	81	248
HCM Lane V/C Ratio	0.033	-	-	-	0.514	0.21
HCM Control Delay (s)	18	-	-	-	89.3	23.3
HCM Lane LOS	C	-	-	-	F	C
HCM 95th %tile Q(veh)	0.1	-	-	-	2.2	0.8

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

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	66	387	1807	118	36	45
Future Vol, veh/h	66	387	1807	118	36	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	125	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	399	1863	122	37	46

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1863	0	-	0	2260	993
Stage 1	-	-	-	-	1924	-
Stage 2	-	-	-	-	336	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	320	-	-	-	~ 35	244
Stage 1	-	-	-	-	100	-
Stage 2	-	-	-	-	696	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	320	-	-	-	~ 28	244
Mov Cap-2 Maneuver	-	-	-	-	69	-
Stage 1	-	-	-	-	79	-
Stage 2	-	-	-	-	696	-

Approach	EB	WB	SB
HCM Control Delay, s	2.8	0	60.1
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	320	-	-	-	69	244
HCM Lane V/C Ratio	0.213	-	-	-	0.538	0.19
HCM Control Delay (s)	19.3	-	-	-	106.3	23.2
HCM Lane LOS	C	-	-	-	F	C
HCM 95th %tile Q(veh)	0.8	-	-	-	2.2	0.7

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

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	400	453	0
Future Vol, veh/h	0	0	0	400	453	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	421	477	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	688	239	477	0	-	0
Stage 1	477	-	-	-	-	-
Stage 2	211	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	380	762	1082	-	-	-
Stage 1	590	-	-	-	-	-
Stage 2	804	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	380	762	1082	-	-	-
Mov Cap-2 Maneuver	475	-	-	-	-	-
Stage 1	590	-	-	-	-	-
Stage 2	804	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1082	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	0	0	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	163	776	544	212	547	219	204	166	25	555
Future Volume (vph)	163	776	544	212	547	219	204	166	25	555
Lane Group Flow (vph)	179	853	598	233	611	152	313	182	27	731
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Split	NA	Perm	Split	NA
Protected Phases	5	2		1	6	8	8		4	4
Permitted Phases	2		2	6				8		
Detector Phase	5	2	2	1	6	8	8	8	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	15.0	15.0	6.0	6.0
Minimum Split (s)	15.0	42.5	42.5	15.0	41.5	44.5	44.5	44.5	44.5	44.5
Total Split (s)	16.0	44.0	44.0	17.0	45.0	44.5	44.5	44.5	44.5	44.5
Total Split (%)	10.7%	29.3%	29.3%	11.3%	30.0%	29.7%	29.7%	29.7%	29.7%	29.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	None	Min	Min	Min	Min	None	None
Act Effct Green (s)	55.1	41.0	41.0	72.0	53.3	24.5	24.5	24.5	36.0	36.0
Actuated g/C Ratio	0.37	0.27	0.27	0.48	0.36	0.16	0.16	0.16	0.24	0.24
v/c Ratio	0.49	0.88	0.75	0.65	0.49	0.58	0.57	0.44	0.06	0.87
Control Delay	30.3	64.1	14.9	45.2	41.6	65.8	61.3	9.9	42.9	65.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.3	64.1	14.9	45.2	41.6	65.8	61.3	9.9	42.9	65.5
LOS	C	E	B	D	D	E	E	A	D	E
Approach Delay		42.3			42.6		47.9			64.7
Approach LOS		D			D		D			E
Queue Length 50th (ft)	100	430	73	161	250	153	158	0	20	352
Queue Length 95th (ft)	174	#560	241	#360	350	221	197	65	47	427
Internal Link Dist (ft)		1483			302		389			310
Turn Bay Length (ft)	195		500	160		210		285	185	
Base Capacity (vph)	366	966	800	361	1256	418	869	546	460	908
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.88	0.75	0.65	0.49	0.36	0.36	0.33	0.06	0.81

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 47.7	Intersection LOS: D
Intersection Capacity Utilization 82.9%	ICU Level of Service E
Analysis Period (min) 15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	776	544	212	547	9	219	204	166	25	555	110
Future Volume (veh/h)	163	776	544	212	547	9	219	204	166	25	555	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	179	853	0	233	601	10	260	198	182	27	610	121
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	394	1382		311	1415	24	562	295	250	410	680	135
Arrive On Green	0.07	0.39	0.00	0.08	0.40	0.40	0.16	0.16	0.16	0.23	0.23	0.23
Sat Flow, veh/h	1781	3554	1585	1781	3577	59	3563	1870	1585	1781	2957	585
Grp Volume(v), veh/h	179	853	0	233	298	313	260	198	182	27	366	365
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1860	1781	1870	1585	1781	1777	1765
Q Serve(g_s), s	9.1	28.9	0.0	11.5	18.3	18.3	9.9	15.0	16.4	1.8	30.0	30.1
Cycle Q Clear(g_c), s	9.1	28.9	0.0	11.5	18.3	18.3	9.9	15.0	16.4	1.8	30.0	30.1
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	394	1382		311	703	736	562	295	250	410	409	406
V/C Ratio(X)	0.45	0.62		0.75	0.42	0.42	0.46	0.67	0.73	0.07	0.90	0.90
Avail Cap(c_a), veh/h	394	1382		311	703	736	926	486	412	463	462	459
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.7	36.8	0.0	30.2	32.9	32.9	57.4	59.5	60.1	45.2	56.0	56.1
Incr Delay (d2), s/veh	0.8	2.1	0.0	9.6	0.9	0.8	1.3	5.5	8.3	0.1	18.4	18.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	12.7	0.0	5.8	7.9	8.3	4.5	7.4	7.1	0.8	15.2	15.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.5	38.9	0.0	39.8	33.8	33.8	58.7	65.0	68.4	45.2	74.4	75.0
LnGrp LOS	C	D		D	C	C	E	E	E	D	E	E
Approach Vol, veh/h		1032	A		844			640			758	
Approach Delay, s/veh		36.8			35.4			63.4			73.6	
Approach LOS		D			D			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.0	63.8		40.0	16.0	64.8		29.2				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	11.5	38.5		39.0	10.5	39.5		39.0				
Max Q Clear Time (g_c+I1), s	13.5	30.9		32.1	11.1	20.3		18.4				
Green Ext Time (p_c), s	0.0	4.6		2.4	0.0	6.0		5.3				

Intersection Summary			
HCM 6th Ctrl Delay		50.2	
HCM 6th LOS		D	

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1512	9	7	809	0	3	0	10	0	0	0
Future Vol, veh/h	0	1512	9	7	809	0	3	0	10	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	235	-	135	235	-	145	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1609	10	7	861	0	3	0	11	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	861	0	0	1619	0	0	2054	2484	805	1680	2494	431
Stage 1	-	-	-	-	-	-	1609	1609	-	875	875	-
Stage 2	-	-	-	-	-	-	445	875	-	805	1619	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	776	-	-	398	-	-	32	29	325	62	29	573
Stage 1	-	-	-	-	-	-	109	162	-	310	365	-
Stage 2	-	-	-	-	-	-	562	365	-	342	160	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	776	-	-	398	-	-	32	28	325	59	28	573
Mov Cap-2 Maneuver	-	-	-	-	-	-	32	28	-	59	28	-
Stage 1	-	-	-	-	-	-	109	162	-	310	358	-
Stage 2	-	-	-	-	-	-	552	358	-	331	160	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	44.9	0
HCM LOS			E	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	104	776	-	-	398	-	-	-	-
HCM Lane V/C Ratio	0.133	-	-	-	0.019	-	-	-	-
HCM Control Delay (s)	44.9	0	-	-	14.2	-	-	0	0
HCM Lane LOS	E	A	-	-	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	38	1496	782	35	27	24
Future Vol, veh/h	38	1496	782	35	27	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	235	-	-	135	45	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	41	1609	841	38	29	26

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	879	0	-	0	1728	421
Stage 1	-	-	-	-	841	-
Stage 2	-	-	-	-	887	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	764	-	-	-	79	581
Stage 1	-	-	-	-	383	-
Stage 2	-	-	-	-	363	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	764	-	-	-	75	581
Mov Cap-2 Maneuver	-	-	-	-	200	-
Stage 1	-	-	-	-	362	-
Stage 2	-	-	-	-	363	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	19.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	764	-	-	-	200	581
HCM Lane V/C Ratio	0.053	-	-	-	0.145	0.044
HCM Control Delay (s)	10	-	-	-	26	11.5
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5	0.1

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	37	1411	789	16	123	58
Future Vol, veh/h	37	1411	789	16	123	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	125	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	1501	839	17	131	62

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	839	0	-	0	1677	428
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	829	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	791	-	-	-	~ 86	575
Stage 1	-	-	-	-	380	-
Stage 2	-	-	-	-	389	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	791	-	-	-	~ 82	575
Mov Cap-2 Maneuver	-	-	-	-	208	-
Stage 1	-	-	-	-	361	-
Stage 2	-	-	-	-	389	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	36.3
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	791	-	-	-	208	575
HCM Lane V/C Ratio	0.05	-	-	-	0.629	0.107
HCM Control Delay (s)	9.8	-	-	-	47.8	12
HCM Lane LOS	A	-	-	-	E	B
HCM 95th %tile Q(veh)	0.2	-	-	-	3.7	0.4

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

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	339	620	0
Future Vol, veh/h	0	0	0	339	620	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	381	697	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	888	349	697	0	-	0
Stage 1	697	-	-	-	-	-
Stage 2	191	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	283	647	895	-	-	-
Stage 1	455	-	-	-	-	-
Stage 2	822	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	283	647	895	-	-	-
Mov Cap-2 Maneuver	377	-	-	-	-	-
Stage 1	455	-	-	-	-	-
Stage 2	822	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	895	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	0	0	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-

FUTURE "NO-BUILD" INTERSECTION ANALYSIS (WITH IMPROVEMENTS)

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	103	216	123	107	936	920	368	166	15	276
Future Volume (vph)	103	216	123	107	936	920	368	166	15	276
Lane Group Flow (vph)	113	237	135	118	1038	1011	404	182	16	493
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Split	NA	Perm	Split	NA
Protected Phases	5	2		1	6	8	8		4	4
Permitted Phases	2		2	6				8		
Detector Phase	5	2	2	1	6	8	8	8	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	15.0	15.0	6.0	6.0
Minimum Split (s)	15.0	42.5	42.5	15.0	41.5	44.5	44.5	44.5	44.5	44.5
Total Split (s)	15.0	36.0	36.0	15.0	36.0	49.0	49.0	49.0	50.0	50.0
Total Split (%)	10.0%	24.0%	24.0%	10.0%	24.0%	32.7%	32.7%	32.7%	33.3%	33.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	None	Min	Min	Min	Min	None	None
Act Effct Green (s)	50.6	40.6	40.6	50.3	40.4	53.3	53.3	53.3	24.3	24.3
Actuated g/C Ratio	0.34	0.27	0.27	0.34	0.27	0.36	0.36	0.36	0.16	0.16
v/c Ratio	0.68	0.25	0.26	0.29	1.09	0.57	0.61	0.27	0.06	0.80
Control Delay	56.5	46.7	8.8	37.8	105.4	40.0	43.5	6.3	50.7	58.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.5	46.7	8.8	37.8	105.4	40.0	43.5	6.3	50.7	58.4
LOS	E	D	A	D	F	D	D	A	D	E
Approach Delay		38.4			98.5		37.1			58.1
Approach LOS		D			F		D			E
Queue Length 50th (ft)	78	103	0	82	~702	265	305	8	13	203
Queue Length 95th (ft)	#172	148	59	141	#868	317	424	61	35	254
Internal Link Dist (ft)		1483			302		389			310
Turn Bay Length (ft)	195			160		210			185	
Base Capacity (vph)	171	957	526	405	953	1793	669	676	525	1055
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.25	0.26	0.29	1.09	0.56	0.60	0.27	0.03	0.47

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 59.1	Intersection LOS: E
Intersection Capacity Utilization 80.8%	ICU Level of Service D
Analysis Period (min) 15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	216	123	107	936	8	920	368	166	15	276	173
Future Volume (veh/h)	103	216	123	107	936	8	920	368	166	15	276	173
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	113	237	0	118	1029	9	1011	404	182	16	303	190
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	196	1256		497	1283	11	1363	507	430	309	368	225
Arrive On Green	0.05	0.35	0.00	0.06	0.36	0.36	0.27	0.27	0.27	0.17	0.17	0.17
Sat Flow, veh/h	1781	3554	1585	1781	3610	32	5023	1870	1585	1781	2119	1295
Grp Volume(v), veh/h	113	237	0	118	506	532	1011	404	182	16	253	240
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1865	1674	1870	1585	1781	1777	1637
Q Serve(g_s), s	6.0	6.9	0.0	6.3	38.6	38.6	27.5	30.1	14.2	1.1	20.6	21.3
Cycle Q Clear(g_c), s	6.0	6.9	0.0	6.3	38.6	38.6	27.5	30.1	14.2	1.1	20.6	21.3
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		0.79
Lane Grp Cap(c), veh/h	196	1256		497	631	663	1363	507	430	309	308	284
V/C Ratio(X)	0.58	0.19		0.24	0.80	0.80	0.74	0.80	0.42	0.05	0.82	0.85
Avail Cap(c_a), veh/h	214	1256		512	631	663	1457	542	460	528	527	486
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.4	33.6	0.0	28.3	43.6	43.6	49.9	50.8	45.0	51.7	59.7	60.0
Incr Delay (d2), s/veh	3.2	0.3	0.0	0.2	8.3	8.0	2.5	9.2	1.4	0.1	5.4	6.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	3.0	0.0	2.7	18.0	18.8	11.6	15.1	5.7	0.5	9.6	9.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.5	33.9	0.0	28.5	51.9	51.6	52.4	60.0	46.4	51.8	65.1	66.9
LnGrp LOS	D	C		C	D	D	D	E	D	D	E	E
Approach Vol, veh/h		350	A		1156			1597			509	
Approach Delay, s/veh		35.1			49.4			53.6			65.5	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.8	58.5		31.5	13.5	58.8		46.2				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	9.5	30.5		44.5	9.5	30.5		43.5				
Max Q Clear Time (g_c+I1), s	8.3	8.9		23.3	8.0	40.6		32.1				
Green Ext Time (p_c), s	0.0	2.3		2.7	0.0	0.0		8.6				

Intersection Summary		
HCM 6th Ctrl Delay	52.1	
HCM 6th LOS	D	

Notes

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

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

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	444	4	4	1895	0	0	0	0	0	0	0
Future Vol, veh/h	0	444	4	4	1895	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	235	-	135	235	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	467	4	4	1995	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1995	0	0	471	0	0	1473	2470	234	2237	2474	998
Stage 1	-	-	-	-	-	-	467	467	-	2003	2003	-
Stage 2	-	-	-	-	-	-	1006	2003	-	234	471	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	284	-	-	1087	-	-	88	30	768	23	29	242
Stage 1	-	-	-	-	-	-	545	560	-	61	103	-
Stage 2	-	-	-	-	-	-	258	103	-	748	558	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	284	-	-	1087	-	-	88	30	768	23	29	242
Mov Cap-2 Maneuver	-	-	-	-	-	-	88	30	-	23	29	-
Stage 1	-	-	-	-	-	-	545	560	-	61	103	-
Stage 2	-	-	-	-	-	-	257	103	-	748	558	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	284	-	-	1087	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	0.004	-	-	-	-
HCM Control Delay (s)	0	0	-	-	8.3	-	-	0	0
HCM Lane LOS	A	A	-	-	A	-	-	A	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	403	1889	15	40	50
Future Vol, veh/h	9	403	1889	15	40	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	235	-	-	135	45	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	420	1968	16	42	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1984	0	-	0	2196	984
Stage 1	-	-	-	-	1968	-
Stage 2	-	-	-	-	228	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	287	-	-	-	~ 38	248
Stage 1	-	-	-	-	95	-
Stage 2	-	-	-	-	788	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	287	-	-	-	~ 37	248
Mov Cap-2 Maneuver	-	-	-	-	81	-
Stage 1	-	-	-	-	92	-
Stage 2	-	-	-	-	788	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	52.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	287	-	-	-	81	248
HCM Lane V/C Ratio	0.033	-	-	-	0.514	0.21
HCM Control Delay (s)	18	-	-	-	89.3	23.3
HCM Lane LOS	C	-	-	-	F	C
HCM 95th %tile Q(veh)	0.1	-	-	-	2.2	0.8

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

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	66	387	1807	118	36	45
Future Vol, veh/h	66	387	1807	118	36	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	125	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	399	1863	122	37	46

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1863	0	-	0	2260	993
Stage 1	-	-	-	-	1924	-
Stage 2	-	-	-	-	336	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	320	-	-	-	~ 35	244
Stage 1	-	-	-	-	100	-
Stage 2	-	-	-	-	696	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	320	-	-	-	~ 28	244
Mov Cap-2 Maneuver	-	-	-	-	69	-
Stage 1	-	-	-	-	79	-
Stage 2	-	-	-	-	696	-

Approach	EB	WB	SB
HCM Control Delay, s	2.8	0	60.1
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	320	-	-	-	69	244
HCM Lane V/C Ratio	0.213	-	-	-	0.538	0.19
HCM Control Delay (s)	19.3	-	-	-	106.3	23.2
HCM Lane LOS	C	-	-	-	F	C
HCM 95th %tile Q(veh)	0.8	-	-	-	2.2	0.7

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

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	400	453	0
Future Vol, veh/h	0	0	0	400	453	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	421	477	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	688	239	477	0	-	0
Stage 1	477	-	-	-	-	-
Stage 2	211	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	380	762	1082	-	-	-
Stage 1	590	-	-	-	-	-
Stage 2	804	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	380	762	1082	-	-	-
Mov Cap-2 Maneuver	475	-	-	-	-	-
Stage 1	590	-	-	-	-	-
Stage 2	804	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1082	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	0	0	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	163	776	544	212	547	219	204	166	25	555
Future Volume (vph)	163	776	544	212	547	219	204	166	25	555
Lane Group Flow (vph)	179	853	598	233	611	241	224	182	27	731
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Split	NA	Perm	Split	NA
Protected Phases	5	2		1	6	8	8		4	4
Permitted Phases	2		2	6				8		
Detector Phase	5	2	2	1	6	8	8	8	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	15.0	15.0	6.0	6.0
Minimum Split (s)	15.0	42.5	42.5	15.0	41.5	44.5	44.5	44.5	44.5	44.5
Total Split (s)	20.0	48.0	48.0	20.0	48.0	31.0	31.0	31.0	51.0	51.0
Total Split (%)	13.3%	32.0%	32.0%	13.3%	32.0%	20.7%	20.7%	20.7%	34.0%	34.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	None	Min	Min	Min	Min	None	None
Act Effct Green (s)	58.6	45.6	45.6	68.4	52.2	24.9	24.9	24.9	37.9	37.9
Actuated g/C Ratio	0.39	0.30	0.30	0.46	0.35	0.17	0.17	0.17	0.25	0.25
v/c Ratio	0.52	0.79	0.80	0.79	0.50	0.29	0.72	0.44	0.06	0.83
Control Delay	31.8	55.0	26.4	53.5	42.2	55.2	73.0	10.4	40.3	60.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.8	55.0	26.4	53.5	42.2	55.2	73.0	10.4	40.3	60.1
LOS	C	E	C	D	D	E	E	B	D	E
Approach Delay		42.0			45.4		48.8			59.4
Approach LOS		D			D		D			E
Queue Length 50th (ft)	105	416	219	156	260	72	206	0	20	350
Queue Length 95th (ft)	171	502	401	#363	340	102	307	70	44	400
Internal Link Dist (ft)		1483			302		389			310
Turn Bay Length (ft)	195			160		210			185	
Base Capacity (vph)	361	1075	747	295	1230	891	332	432	536	1057
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.79	0.80	0.79	0.50	0.27	0.67	0.42	0.05	0.69

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 47.3	Intersection LOS: D
Intersection Capacity Utilization 82.9%	ICU Level of Service E
Analysis Period (min) 15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	776	544	212	547	9	219	204	166	25	555	110
Future Volume (veh/h)	163	776	544	212	547	9	219	204	166	25	555	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	179	853	0	233	601	10	241	224	182	27	610	121
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	404	1341		331	1414	24	736	274	232	421	698	138
Arrive On Green	0.08	0.38	0.00	0.09	0.40	0.40	0.15	0.15	0.15	0.24	0.24	0.24
Sat Flow, veh/h	1781	3554	1585	1781	3577	59	5023	1870	1585	1781	2957	585
Grp Volume(v), veh/h	179	853	0	233	298	313	241	224	182	27	366	365
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1860	1674	1870	1585	1781	1777	1765
Q Serve(g_s), s	9.2	29.5	0.0	11.9	18.3	18.3	6.5	17.4	16.6	1.8	29.7	29.9
Cycle Q Clear(g_c), s	9.2	29.5	0.0	11.9	18.3	18.3	6.5	17.4	16.6	1.8	29.7	29.9
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	404	1341		331	703	735	736	274	232	421	420	417
V/C Ratio(X)	0.44	0.64		0.70	0.42	0.43	0.33	0.82	0.78	0.06	0.87	0.88
Avail Cap(c_a), veh/h	442	1341		337	703	735	854	318	269	540	539	535
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.0	38.2	0.0	28.7	33.0	33.0	57.4	62.1	61.7	44.4	55.1	55.2
Incr Delay (d2), s/veh	0.8	2.3	0.0	6.4	0.9	0.8	0.5	16.7	15.7	0.1	12.1	12.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	13.0	0.0	5.5	7.9	8.3	2.7	9.4	7.6	0.8	14.4	14.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.8	40.6	0.0	35.1	33.8	33.8	57.9	78.8	77.5	44.5	67.2	67.6
LnGrp LOS	C	D		D	C	C	E	E	E	D	E	E
Approach Vol, veh/h		1032	A		844			647			758	
Approach Delay, s/veh		38.2			34.2			70.6			66.6	
Approach LOS		D			C			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.5	62.1		40.9	16.8	64.8		27.5				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	14.5	42.5		45.5	14.5	42.5		25.5				
Max Q Clear Time (g_c+I1), s	13.9	31.5		31.9	11.2	20.3		19.4				
Green Ext Time (p_c), s	0.0	6.2		3.6	0.1	6.4		2.6				

Intersection Summary			
HCM 6th Ctrl Delay		50.1	
HCM 6th LOS		D	

Notes

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

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

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1512	9	7	809	0	3	0	10	0	0	0
Future Vol, veh/h	0	1512	9	7	809	0	3	0	10	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	235	-	135	235	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1609	10	7	861	0	3	0	11	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	861	0	0	1619	0	0	2054	2484	805	1680	2494	431
Stage 1	-	-	-	-	-	-	1609	1609	-	875	875	-
Stage 2	-	-	-	-	-	-	445	875	-	805	1619	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	776	-	-	398	-	-	32	29	325	62	29	573
Stage 1	-	-	-	-	-	-	109	162	-	310	365	-
Stage 2	-	-	-	-	-	-	562	365	-	342	160	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	776	-	-	398	-	-	32	28	325	59	28	573
Mov Cap-2 Maneuver	-	-	-	-	-	-	32	28	-	59	28	-
Stage 1	-	-	-	-	-	-	109	162	-	310	358	-
Stage 2	-	-	-	-	-	-	552	358	-	331	160	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	44.9	0
HCM LOS			E	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	104	776	-	-	398	-	-	-	-
HCM Lane V/C Ratio	0.133	-	-	-	0.019	-	-	-	-
HCM Control Delay (s)	44.9	0	-	-	14.2	-	-	0	0
HCM Lane LOS	E	A	-	-	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	38	1496	782	35	27	24
Future Vol, veh/h	38	1496	782	35	27	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	235	-	-	135	45	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	41	1609	841	38	29	26

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	879	0	-	0	1728	421
Stage 1	-	-	-	-	841	-
Stage 2	-	-	-	-	887	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	764	-	-	-	79	581
Stage 1	-	-	-	-	383	-
Stage 2	-	-	-	-	363	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	764	-	-	-	75	581
Mov Cap-2 Maneuver	-	-	-	-	200	-
Stage 1	-	-	-	-	362	-
Stage 2	-	-	-	-	363	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	19.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	764	-	-	-	200	581
HCM Lane V/C Ratio	0.053	-	-	-	0.145	0.044
HCM Control Delay (s)	10	-	-	-	26	11.5
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5	0.1

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	37	1411	789	16	123	58
Future Vol, veh/h	37	1411	789	16	123	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	125	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	1501	839	17	131	62

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	839	0	-	0	1677	428
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	829	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	791	-	-	-	~ 86	575
Stage 1	-	-	-	-	380	-
Stage 2	-	-	-	-	389	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	791	-	-	-	~ 82	575
Mov Cap-2 Maneuver	-	-	-	-	208	-
Stage 1	-	-	-	-	361	-
Stage 2	-	-	-	-	389	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	36.3
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	791	-	-	-	208	575
HCM Lane V/C Ratio	0.05	-	-	-	0.629	0.107
HCM Control Delay (s)	9.8	-	-	-	47.8	12
HCM Lane LOS	A	-	-	-	E	B
HCM 95th %tile Q(veh)	0.2	-	-	-	3.7	0.4

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

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	339	620	0
Future Vol, veh/h	0	0	0	339	620	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	381	697	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	888	349	697	0	-	0
Stage 1	697	-	-	-	-	-
Stage 2	191	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	283	647	895	-	-	-
Stage 1	455	-	-	-	-	-
Stage 2	822	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	283	647	895	-	-	-
Mov Cap-2 Maneuver	377	-	-	-	-	-
Stage 1	455	-	-	-	-	-
Stage 2	822	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	895	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	0	0	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-

FUTURE "BUILD" INTERSECTION ANALYSIS

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	106	234	211	107	944	959	378	166	23	314
Future Volume (vph)	106	234	211	107	944	959	378	166	23	314
Lane Group Flow (vph)	116	257	232	118	1048	1054	415	182	25	544
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Split	NA	Perm	Split	NA
Protected Phases	5	2		1	6	8	8		4	4
Permitted Phases	2		2	6				8		
Detector Phase	5	2	2	1	6	8	8	8	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	15.0	15.0	6.0	6.0
Minimum Split (s)	15.0	42.5	42.5	15.0	41.5	44.5	44.5	44.5	44.5	44.5
Total Split (s)	15.0	38.0	38.0	15.0	38.0	48.0	48.0	48.0	49.0	49.0
Total Split (%)	10.0%	25.3%	25.3%	10.0%	25.3%	32.0%	32.0%	32.0%	32.7%	32.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	None	Min	Min	Min	Min	None	None
v/c Ratio	0.72	0.28	0.40	0.32	1.14	0.61	0.64	0.28	0.08	0.81
Control Delay	61.1	47.3	7.7	38.5	124.7	42.0	46.1	7.6	48.7	59.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.1	47.3	7.7	38.5	124.7	42.0	46.1	7.6	48.7	59.7
Queue Length 50th (ft)	83	113	0	85	~713	282	318	12	20	234
Queue Length 95th (ft)	#172	156	73	138	#854	353	464	69	46	288
Internal Link Dist (ft)		339			302		389			310
Turn Bay Length (ft)	195			160		210			185	
Base Capacity (vph)	164	923	584	377	918	1733	646	655	513	1024
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.28	0.40	0.31	1.14	0.61	0.64	0.28	0.05	0.53

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Boggs Rd & Satellite Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	234	211	107	944	10	959	378	166	23	314	181
Future Volume (veh/h)	106	234	211	107	944	10	959	378	166	23	314	181
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	116	257	0	118	1037	11	1054	415	182	25	345	199
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	185	1203		470	1222	13	1358	506	429	335	412	233
Arrive On Green	0.06	0.34	0.00	0.06	0.34	0.34	0.27	0.27	0.27	0.19	0.19	0.19
Sat Flow, veh/h	1781	3554	1585	1781	3602	38	5023	1870	1585	1781	2187	1238
Grp Volume(v), veh/h	116	257	0	118	512	536	1054	415	182	25	279	265
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1863	1674	1870	1585	1781	1777	1648
Q Serve(g_s), s	6.3	7.7	0.0	6.4	40.1	40.1	29.1	31.2	14.2	1.7	22.7	23.3
Cycle Q Clear(g_c), s	6.3	7.7	0.0	6.4	40.1	40.1	29.1	31.2	14.2	1.7	22.7	23.3
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		0.75
Lane Grp Cap(c), veh/h	185	1203		470	603	632	1358	506	429	335	335	310
V/C Ratio(X)	0.63	0.21		0.25	0.85	0.85	0.78	0.82	0.42	0.07	0.83	0.85
Avail Cap(c_a), veh/h	200	1203		483	603	632	1423	530	449	517	515	478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	35.4	0.0	29.7	46.0	46.0	50.5	51.3	45.1	50.1	58.6	58.9
Incr Delay (d2), s/veh	5.4	0.4	0.0	0.3	11.9	11.4	3.2	11.0	1.4	0.1	7.0	9.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	3.4	0.0	2.8	19.2	20.1	12.3	15.9	5.7	0.8	10.7	10.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	35.8	0.0	29.9	57.9	57.4	53.7	62.3	46.5	50.2	65.6	67.9
LnGrp LOS	D	D		C	E	E	D	E	D	D	E	E
Approach Vol, veh/h		373	A		1166			1651			569	
Approach Delay, s/veh		37.6			54.8			55.1			66.0	
Approach LOS		D			D			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.9	56.3		33.7	13.8	56.4		46.1				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	9.5	32.5		43.5	9.5	32.5		42.5				
Max Q Clear Time (g_c+I1), s	8.4	9.7		25.3	8.3	42.1		33.2				
Green Ext Time (p_c), s	0.0	2.6		2.9	0.0	0.0		7.4				

Intersection Summary		
HCM 6th Ctrl Delay		54.9
HCM 6th LOS		D

Notes

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

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

Intersection	
Int Delay, s/veh	41

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	492	4	4	1932	18	0	1	0	60	3	23
Future Vol, veh/h	15	492	4	4	1932	18	0	1	0	60	3	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	235	-	135	235	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	518	4	4	2034	19	0	1	0	63	3	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2053	0	0	522	0	0	1577	2611	259	2334	2596	1017
Stage 1	-	-	-	-	-	-	550	550	-	2042	2042	-
Stage 2	-	-	-	-	-	-	1027	2061	-	292	554	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	270	-	-	1041	-	-	74	24	740	~ 20	25	235
Stage 1	-	-	-	-	-	-	487	514	-	~ 58	98	-
Stage 2	-	-	-	-	-	-	251	96	-	692	512	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	270	-	-	1041	-	-	57	22	740	~ 18	23	235
Mov Cap-2 Maneuver	-	-	-	-	-	-	57	22	-	~ 18	23	-
Stage 1	-	-	-	-	-	-	458	484	-	~ 55	98	-
Stage 2	-	-	-	-	-	-	217	96	-	650	482	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	176.7	$ 1209.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	22	270	-	-	1041	-	-	18	235
HCM Lane V/C Ratio	0.048	0.058	-	-	0.004	-	-	3.684	0.103
HCM Control Delay (s)	176.7	19.2	-	-	8.5	-	-	$ 1643.4	22.1
HCM Lane LOS	F	C	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	8.8	0.3

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

Intersection	
Int Delay, s/veh	10.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	421	1944	21	85	73
Future Vol, veh/h	21	421	1944	21	85	73
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	235	-	-	135	45	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	439	2025	22	89	76

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	2047	0	-	0	2289	1013
Stage 1	-	-	-	-	2025	-
Stage 2	-	-	-	-	264	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	271	-	-	-	~ 33	237
Stage 1	-	-	-	-	~ 88	-
Stage 2	-	-	-	-	756	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	271	-	-	-	~ 30	237
Mov Cap-2 Maneuver	-	-	-	-	~ 71	-
Stage 1	-	-	-	-	~ 81	-
Stage 2	-	-	-	-	756	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	168
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	271	-	-	-	71	237
HCM Lane V/C Ratio	0.081	-	-	-	1.247	0.321
HCM Control Delay (s)	19.4	-	-	-	288.9	27.2
HCM Lane LOS	C	-	-	-	F	D
HCM 95th %tile Q(veh)	0.3	-	-	-	7	1.3

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

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	66	415	1880	123	38	45
Future Vol, veh/h	66	415	1880	123	38	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	125	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	428	1938	127	39	46

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1938	0	-	0	2352	1033
Stage 1	-	-	-	-	2002	-
Stage 2	-	-	-	-	350	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	299	-	-	-	~ 30	230
Stage 1	-	-	-	-	91	-
Stage 2	-	-	-	-	684	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	299	-	-	-	~ 23	230
Mov Cap-2 Maneuver	-	-	-	-	61	-
Stage 1	-	-	-	-	70	-
Stage 2	-	-	-	-	684	-

Approach	EB	WB	SB
HCM Control Delay, s	2.8	0	76
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	299	-	-	-	61	230
HCM Lane V/C Ratio	0.228	-	-	-	0.642	0.202
HCM Control Delay (s)	20.6	-	-	-	136.9	24.6
HCM Lane LOS	C	-	-	-	F	C
HCM 95th %tile Q(veh)	0.9	-	-	-	2.7	0.7

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

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	53	15	400	453	8
Future Vol, veh/h	20	53	15	400	453	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	56	16	421	477	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	724	243	485	0	-	0
Stage 1	481	-	-	-	-	-
Stage 2	243	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	361	758	1074	-	-	-
Stage 1	588	-	-	-	-	-
Stage 2	775	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	354	758	1074	-	-	-
Mov Cap-2 Maneuver	456	-	-	-	-	-
Stage 1	577	-	-	-	-	-
Stage 2	775	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1074	-	456	758	-	-
HCM Lane V/C Ratio	0.015	-	0.046	0.074	-	-
HCM Control Delay (s)	8.4	0.1	13.3	10.1	-	-
HCM Lane LOS	A	A	B	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.2	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↱		↱
Traffic Vol, veh/h	0	551	2048	24	0	23
Future Vol, veh/h	0	551	2048	24	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	-	-	-	175	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	599	2226	26	0	25

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	1113
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	-	0	174
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	174
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	29.1
HCM LOS			D

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	174
HCM Lane V/C Ratio	-	-	-	0.144
HCM Control Delay (s)	-	-	-	29.1
HCM Lane LOS	-	-	-	D
HCM 95th %tile Q(veh)	-	-	-	0.5

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	170	788	605	212	566	313	227	166	30	581
Future Volume (vph)	170	788	605	212	566	313	227	166	30	581
Lane Group Flow (vph)	187	866	665	233	637	344	249	182	33	764
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Split	NA	Perm	Split	NA
Protected Phases	5	2		1	6	8	8		4	4
Permitted Phases	2		2	6				8		
Detector Phase	5	2	2	1	6	8	8	8	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	15.0	15.0	6.0	6.0
Minimum Split (s)	15.0	42.5	42.5	15.0	41.5	44.5	44.5	44.5	44.5	44.5
Total Split (s)	20.0	48.0	48.0	20.0	48.0	31.0	31.0	31.0	51.0	51.0
Total Split (%)	13.3%	32.0%	32.0%	13.3%	32.0%	20.7%	20.7%	20.7%	34.0%	34.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	None	Min	Min	Min	Min	None	None
Act Effct Green (s)	57.5	44.2	44.2	64.8	49.2	26.5	26.5	26.5	38.9	38.9
Actuated g/C Ratio	0.38	0.29	0.29	0.43	0.33	0.18	0.18	0.18	0.26	0.26
v/c Ratio	0.59	0.83	0.91	0.87	0.55	0.39	0.76	0.42	0.07	0.84
Control Delay	35.3	57.9	39.8	68.4	45.0	55.8	73.6	10.1	40.0	60.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.3	57.9	39.8	68.4	45.0	55.8	73.6	10.1	40.0	60.4
LOS	D	E	D	E	D	E	E	B	D	E
Approach Delay		48.4			51.3		50.8			59.6
Approach LOS		D			D		D			E
Queue Length 50th (ft)	117	425	326	~191	287	103	226	0	24	366
Queue Length 95th (ft)	178	512	#589	#379	356	142	#364	70	51	422
Internal Link Dist (ft)		339			302		389			310
Turn Bay Length (ft)	195			160		210			185	
Base Capacity (vph)	334	1041	730	269	1158	913	341	438	536	1057
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.83	0.91	0.87	0.55	0.38	0.73	0.42	0.06	0.72

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 51.6	Intersection LOS: D
Intersection Capacity Utilization 84.1%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	788	605	212	566	14	313	227	166	30	581	115
Future Volume (veh/h)	170	788	605	212	566	14	313	227	166	30	581	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	187	866	0	233	622	15	344	249	182	33	638	126
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	378	1262		313	1315	32	789	294	249	437	725	143
Arrive On Green	0.08	0.36	0.00	0.10	0.37	0.37	0.16	0.16	0.16	0.25	0.25	0.25
Sat Flow, veh/h	1781	3554	1585	1781	3546	85	5023	1870	1585	1781	2959	583
Grp Volume(v), veh/h	187	866	0	233	311	326	344	249	182	33	383	381
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1855	1674	1870	1585	1781	1777	1765
Q Serve(g_s), s	9.9	31.2	0.0	12.4	20.1	20.1	9.3	19.4	16.4	2.1	31.1	31.2
Cycle Q Clear(g_c), s	9.9	31.2	0.0	12.4	20.1	20.1	9.3	19.4	16.4	2.1	31.1	31.2
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	378	1262		313	659	688	789	294	249	437	435	433
V/C Ratio(X)	0.49	0.69		0.74	0.47	0.47	0.44	0.85	0.73	0.08	0.88	0.88
Avail Cap(c_a), veh/h	408	1262		314	659	688	854	318	269	540	539	535
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.1	41.2	0.0	31.1	36.0	36.0	57.2	61.5	60.2	43.5	54.5	54.5
Incr Delay (d2), s/veh	1.0	3.1	0.0	9.2	1.1	1.1	0.8	20.1	11.6	0.1	13.2	13.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	13.9	0.0	6.0	8.8	9.1	3.9	10.7	7.3	0.9	15.2	15.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.1	44.3	0.0	40.3	37.1	37.1	58.0	81.6	71.8	43.6	67.7	68.0
LnGrp LOS	C	D		D	D	D	E	F	E	D	E	E
Approach Vol, veh/h		1053	A		870			775			797	
Approach Delay, s/veh		41.6			38.0			68.8			66.8	
Approach LOS		D			D			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.9	58.8		42.3	17.5	61.1		29.1				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	14.5	42.5		45.5	14.5	42.5		25.5				
Max Q Clear Time (g_c+I1), s	14.4	33.2		33.2	11.9	22.1		21.4				
Green Ext Time (p_c), s	0.0	5.6		3.6	0.1	6.5		2.2				

Intersection Summary	
HCM 6th Ctrl Delay	52.5
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	1551	9	7	845	42	3	2	10	42	2	16
Future Vol, veh/h	36	1551	9	7	845	42	3	2	10	42	2	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	235	-	135	235	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	1650	10	7	899	45	3	2	11	45	2	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	944	0	0	1660	0	0	2191	2684	825	1815	2649	450
Stage 1	-	-	-	-	-	-	1726	1726	-	913	913	-
Stage 2	-	-	-	-	-	-	465	958	-	902	1736	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	722	-	-	384	-	-	25	22	316	49	23	556
Stage 1	-	-	-	-	-	-	92	142	-	294	350	-
Stage 2	-	-	-	-	-	-	547	334	-	299	140	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	722	-	-	384	-	-	21	20	316	~ 41	21	556
Mov Cap-2 Maneuver	-	-	-	-	-	-	21	20	-	~ 41	21	-
Stage 1	-	-	-	-	-	-	87	134	-	278	344	-
Stage 2	-	-	-	-	-	-	517	328	-	269	133	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	95.3	274.5
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	55	722	-	-	384	-	-	39	556
HCM Lane V/C Ratio	0.29	0.053	-	-	0.019	-	-	1.2	0.031
HCM Control Delay (s)	95.3	10.3	-	-	14.6	-	-	$ 370.1	11.7
HCM Lane LOS	F	B	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	1	0.2	-	-	0.1	-	-	4.7	0.1

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

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	67	1540	820	49	58	40
Future Vol, veh/h	67	1540	820	49	58	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	235	-	-	135	45	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	72	1656	882	53	62	43

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	935	0	-	0	1854	441
Stage 1	-	-	-	-	882	-
Stage 2	-	-	-	-	972	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	728	-	-	-	65	564
Stage 1	-	-	-	-	365	-
Stage 2	-	-	-	-	327	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	728	-	-	-	~ 59	564
Mov Cap-2 Maneuver	-	-	-	-	177	-
Stage 1	-	-	-	-	329	-
Stage 2	-	-	-	-	327	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	26.2
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	728	-	-	-	177	564
HCM Lane V/C Ratio	0.099	-	-	-	0.352	0.076
HCM Control Delay (s)	10.5	-	-	-	36	11.9
HCM Lane LOS	B	-	-	-	E	B
HCM 95th %tile Q(veh)	0.3	-	-	-	1.5	0.2

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

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	37	1479	839	19	128	58
Future Vol, veh/h	37	1479	839	19	128	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	125	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	1573	893	20	136	62

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	893	0	-	0	1768	457
Stage 1	-	-	-	-	903	-
Stage 2	-	-	-	-	865	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	755	-	-	-	~ 75	551
Stage 1	-	-	-	-	356	-
Stage 2	-	-	-	-	373	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	755	-	-	-	~ 71	551
Mov Cap-2 Maneuver	-	-	-	-	194	-
Stage 1	-	-	-	-	337	-
Stage 2	-	-	-	-	373	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	44
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	755	-	-	-	194	551
HCM Lane V/C Ratio	0.052	-	-	-	0.702	0.112
HCM Control Delay (s)	10	-	-	-	58.3	12.4
HCM Lane LOS	B	-	-	-	F	B
HCM 95th %tile Q(veh)	0.2	-	-	-	4.4	0.4

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

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	37	35	339	620	19
Future Vol, veh/h	14	37	35	339	620	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	42	39	381	697	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	977	359	718	0	-	0
Stage 1	708	-	-	-	-	-
Stage 2	269	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	248	638	879	-	-	-
Stage 1	449	-	-	-	-	-
Stage 2	752	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	234	638	879	-	-	-
Mov Cap-2 Maneuver	340	-	-	-	-	-
Stage 1	424	-	-	-	-	-
Stage 2	752	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.4	1.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	879	-	340	638	-	-
HCM Lane V/C Ratio	0.045	-	0.046	0.065	-	-
HCM Control Delay (s)	9.3	0.2	16.1	11	-	-
HCM Lane LOS	A	A	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.2	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↱		↱
Traffic Vol, veh/h	0	1562	897	56	0	16
Future Vol, veh/h	0	1562	897	56	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	-	-	-	175	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1698	975	61	0	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	488
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	-	0	450
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	450
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	450
HCM Lane V/C Ratio	-	-	-	0.039
HCM Control Delay (s)	-	-	-	13.3
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

TRAFFIC VOLUME WORKSHEETS

22-034-Mixed-Use Development on Satellite Boulevard-TIS

Traffic Volumes

A&R Engineering
February 2022

1. Satellite Blvd @ Boggs Rd

A.M. Peak Hour

	Boggs Road Northbound					Boggs Road Southbound					Satellite Boulevard Eastbound					Satellite Boulevard Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2022 Traffic Counts:	13	881	357	161	1412	0	15	268	168	451	0	100	210	119	429	0	104	909	8	1021
Removed Traffic Counts:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2025 Volumes:	13	907	368	166	1454	0	15	276	173	464	0	103	216	123	442	0	107	936	8	1051
Total New Trips:	0	39	10	0	49	0	8	38	8	54	0	3	18	88	109	0	0	8	2	10
Future 2025 Traffic Volumes:	13	946	378	166	1503	0	23	314	181	518	0	106	234	211	551	0	107	944	10	1061

P.M. Peak Hour

	Boggs Road Northbound					Boggs Road Southbound					Satellite Boulevard Eastbound					Satellite Boulevard Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2022 Traffic Counts:	40	173	198	161	572	0	24	539	107	670	0	158	753	528	1439	0	206	531	9	746
Removed Traffic Counts:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2025 Volumes:	41	178	204	166	589	0	25	555	110	690	0	163	776	544	1483	0	212	547	9	768
Total New Trips:	0	94	23	0	117	0	5	26	5	36	0	7	12	61	80	0	0	19	5	24
Future 2025 Traffic Volumes:	41	272	227	166	706	0	30	581	115	726	0	170	788	605	1563	0	212	566	14	792

22-034-Mixed-Use Development on Satellite Boulevard-TIS

Traffic Volumes

A&R Engineering
February 2022

2.Satellite Blvd@Site Drwy 2(M)

A.M. Peak Hour

	Children's Healthcare of Atlanta Urgent Care Center Driveway **Northbound**					Site Driveway 2 (Middle) **Southbound**					Satellite Boulevard **Eastbound**					Satellite Boulevard **Westbound**				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2022 Traffic Counts:	0	0	0	0	0	0	0	0	1	1	0	2	431	4	437	0	4	1840	10	1854
Removed Traffic Counts:	0	0	0	0	0	0	0	0	-1	-1	0	-2	0	0	-2	0	0	0	-10	-10
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2025 Volumes:	0	0	0	0	0	0	0	0	0	0	0	0	444	4	448	0	4	1895	0	1899
Total New Trips:	0	0	1	0	1	0	60	3	23	86	0	15	48	0	63	0	0	37	18	55
Future 2025 Traffic Volumes:	0	0	1	0	1	0	60	3	23	86	0	15	492	4	511	0	4	1932	18	1954

P.M. Peak Hour

	Children's Healthcare of Atlanta Urgent Care Center Driveway **Northbound**					Site Driveway 2 (Middle) **Southbound**					Satellite Boulevard **Eastbound**					Satellite Boulevard **Westbound**				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2022 Traffic Counts:	0	3	0	10	13	0	3	0	5	8	0	1	1468	9	1478	0	7	785	8	800
Removed Traffic Counts:	0	0	0	0	0	0	-3	0	-5	-8	0	-1	0	0	-1	0	0	0	-8	-8
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2025 Volumes:	0	3	0	10	13	0	0	0	0	0	0	0	1512	9	1521	0	7	809	0	816
Total New Trips:	0	0	2	0	2	0	42	2	16	60	0	36	39	0	75	0	0	36	42	78
Future 2025 Traffic Volumes:	0	3	2	10	15	0	42	2	16	60	0	36	1551	9	1596	0	7	845	42	894

22-034-Mixed-Use Development on Satellite Boulevard-TIS

Traffic Volumes

A&R Engineering
February 2022

3.Satellite Blvd@Site Drwy 1(W)

A.M. Peak Hour

Condition	- Northbound					Highlands at Sweetwater Creek Driveway(Site Driveway 1-Western) Southbound					Satellite Boulevard Eastbound					Satellite Boulevard Westbound				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2022 Traffic Counts:	0	0	0	0	0	0	39	0	49	88	0	9	391	0	400	0	0	1834	15	1849
Removed Traffic Counts:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2025 Volumes:	0	0	0	0	0	0	40	0	50	90	0	9	403	0	412	0	0	1889	15	1904
Total New Trips:	0	0	0	0	0	0	45	0	23	68	0	12	18	0	30	0	0	55	6	61
Future 2025 Traffic Volumes:	0	0	0	0	0	0	85	0	73	158	0	21	421	0	442	0	0	1944	21	1965

P.M. Peak Hour

Condition	- Northbound					Sweetwater Creek Driveway(Site Drivew Southbound					Satellite Boulevard Eastbound					Satellite Boulevard Westbound				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2022 Traffic Counts:	0	0	0	0	0	0	26	0	23	49	0	37	1452	0	1489	0	0	759	34	793
Removed Traffic Counts:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2025 Volumes:	0	0	0	0	0	0	27	0	24	51	0	38	1496	0	1534	0	0	782	35	817
Total New Trips:	0	0	0	0	0	0	31	0	16	47	0	29	44	0	73	0	0	38	14	52
Future 2025 Traffic Volumes:	0	0	0	0	0	0	58	0	40	98	0	67	1540	0	1607	0	0	820	49	869

22-034-Mixed-Use Development on Satellite Boulevard-TIS

Traffic Volumes

A&R Engineering
February 2022

4.Satellite Blvd@Evergreen Blvd

A.M. Peak Hour

Condition	- Northbound					Evergreen Boulevard Southbound					Satellite Boulevard Eastbound					Satellite Boulevard Westbound				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2022 Traffic Counts:	0	0	0	0	0	0	35	0	44	79	0	64	376	0	440	0	0	1754	115	1869
Removed Traffic Counts:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2025 Volumes:	0	0	0	0	0	0	36	0	45	81	0	66	387	0	453	0	0	1807	118	1925
Total New Trips:	0	0	0	0	0	0	2	0	0	2	0	0	28	0	28	0	0	73	5	78
Future 2025 Traffic Volumes:	0	0	0	0	0	0	38	0	45	83	0	66	415	0	481	0	0	1880	123	2003

P.M. Peak Hour

Condition	- Northbound					Evergreen Boulevard Southbound					Satellite Boulevard Eastbound					Satellite Boulevard Westbound				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2022 Traffic Counts:	0	0	0	0	0	0	119	0	56	175	0	36	1370	0	1406	0	0	766	16	782
Removed Traffic Counts:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2025 Volumes:	0	0	0	0	0	0	123	0	58	181	0	37	1411	0	1448	0	0	789	16	805
Total New Trips:	0	0	0	0	0	0	5	0	0	5	0	0	68	0	68	0	0	50	3	53
Future 2025 Traffic Volumes:	0	0	0	0	0	0	128	0	58	186	0	37	1479	0	1516	0	0	839	19	858

22-034-Mixed-Use Development on Satellite Boulevard-TIS

Traffic Volumes

A&R Engineering
February 2022

5. Boggs Rd @ Site Drwy 4

A.M. Peak Hour

	Boggs Road Northbound						Boggs Road Southbound						Site Driveway 4(Existing Access) Eastbound						- Westbound				
Condition	U	L	T	R	Tot		U	L	T	R	Tot		U	L	T	R	Tot		U	L	T	R	Tot
Existing 2022 Traffic Counts:	0	3	388	0	391		0	0	440	0	440		0	0	0	1	1		0	0	0	0	0
Removed Traffic Counts:	0	-3	0	0	-3		0	0	0	0	0		0	0	0	-1	-1		0	0	0	0	0
Growth Factor (%):	1	1	1	1			1	1	1	1			1	1	1	1			1	1	1	1	
No-Build 2025 Volumes:	0	0	400	0	400		0	0	453	0	453		0	0	0	0	0		0	0	0	0	0
Total New Trips:	0	15	0	0	15		0	0	0	8	8		0	20	0	53	73		0	0	0	0	0
Future 2025 Traffic Volumes:	0	15	400	0	415		0	0	453	8	461		0	20	0	53	73		0	0	0	0	0

P.M. Peak Hour

	Boggs Road Northbound						Boggs Road Southbound						Site Driveway 4(Existing Access) Eastbound						- Westbound				
Condition	U	L	T	R	Tot		U	L	T	R	Tot		U	L	T	R	Tot		U	L	T	R	Tot
Existing 2022 Traffic Counts:	0	8	329	0	337		0	0	602	2	604		0	1	0	5	6		0	0	0	0	0
Removed Traffic Counts:	0	-8	0	0	-8		0	0	0	-2	-2		0	-1	0	-5	-6		0	0	0	0	0
Growth Factor (%):	1	1	1	1			1	1	1	1			1	1	1	1			1	1	1	1	
No-Build 2025 Volumes:	0	0	339	0	339		0	0	620	0	620		0	0	0	0	0		0	0	0	0	0
Total New Trips:	0	35	0	0	35		0	0	0	19	19		0	14	0	37	51		0	0	0	0	0
Future 2025 Traffic Volumes:	0	35	339	0	374		0	0	620	19	639		0	14	0	37	51		0	0	0	0	0

22-034-Mixed-Use Development on Satellite Boulevard-TIS

Traffic Volumes

A&R Engineering
February 2022

6.Satellite Blvd@Site Drwy-RIRO

A.M. Peak Hour

Condition	- Northbound					Proposed Site Driveway 4 (Eastern - Right-In/Right-Out) Southbound					Satellite Boulevard Eastbound					Satellite Boulevard Westbound				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2022 Traffic Counts:	0	0	0	0	0	0	0	0	0	0	0	0	429	0	429	0	0	1958	0	1958
Removed Traffic Counts:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2025 Volumes:	0	0	0	0	0	0	0	0	0	0	0	0	442	0	442	0	0	2017	0	2017
Total New Trips:	0	0	0	0	0	0	0	0	23	23	0	0	109	0	109	0	0	31	24	55
Future 2025 Traffic Volumes:	0	0	0	0	0	0	0	0	23	23	0	0	551	0	551	0	0	2048	24	2072

P.M. Peak Hour

Condition	- Northbound					Proposed Site Driveway 4 (Eastern - Right-In/Right-Out) Southbound					Satellite Boulevard Eastbound					Satellite Boulevard Westbound				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2022 Traffic Counts:	0	0	0	0	0	0	0	0	0	0	0	0	1439	0	1439	0	0	811	0	811
Removed Traffic Counts:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2025 Volumes:	0	0	0	0	0	0	0	0	0	0	0	0	1482	0	1482	0	0	835	0	835
Total New Trips:	0	0	0	0	0	0	0	0	16	16	0	0	80	0	80	0	0	62	56	118
Future 2025 Traffic Volumes:	0	0	0	0	0	0	0	0	16	16	0	0	1562	0	1562	0	0	897	56	953

AMENDMENT TO AN APPLICATION TO AMEND THE OFFICIAL ZONING MAP OF GWINNETT COUNTY, GEORGIA

APPLICANT:	Brand Properties, LLC c/o Mahaffey Pickens Tucker, LLP
ZONING CASE NUMBER:	RZC2022-00017 & RZM2022-00018
PRESENT ZONING DISTRICT(S):	M1 & RA-200
REQUESTED ZONING DISTRICT(S):	MU-R & RM-24
PROPERTY:	2651 Satellite Boulevard
SIZE:	+/- 44 Acres
PROPOSED DEVELOPMENT:	Mixed-Use Development with Residential and Commercial Uses

The Applicant, hereby amends its applications to amend the official zoning map of Gwinnett County, Georgia heretofore filed with the Planning Division of Gwinnett County, Georgia by the addition of the attached Exhibit to the original applications.

This 21st day of June, 2022.

MAHAFFEY PICKENS TUCKER, LLP

Shane M. Lanham

Attorneys for Applicant

JUSTIFICATION FOR REZONING

The portions of the Gwinnett County Unified Development Ordinance (the "UDO") which classify or may classify the property which is the subject of these Applications (the "Property") into any less intensive zoning classification other than as requested by the Applicant, are or would be unconstitutional in that they would destroy the Applicant's property rights without first paying fair, adequate and just compensation for such rights, in violation of Article I, Section I, Paragraph II of the Constitution of the State of Georgia of 1983, and the Due Process Clause of the Fourteenth Amendment to the Constitution of the United States.

The application of the UDO as applied to the subject Property, which restricts its use to the present zoning classifications, is unconstitutional, illegal, null and void, constituting a taking of the Applicant's and the Owner's property in violation of the Just Compensation Clause of the Fifth Amendment and the Due Process Clause of the Fourteenth Amendment to the Constitution of the United States, Article I, Section I, Paragraph I, and Article I, Section I, Paragraph II of the Constitution of the State of Georgia of 1983, and the Equal Protection Clause of the Fourteenth Amendment to the Constitution of the United States denying the Applicant an economically viable use of its land while not substantially advancing legitimate state interests.

The Property is presently suitable for development under the MU-R & RM-24 classification as requested by the Applicant, and is not economically suitable for development under the present M1 & RA-200 zoning classification of Gwinnett County. A denial of the Applications would constitute an arbitrary and capricious act by the Gwinnett County Board of Commissioners without any rational basis therefore, constituting an abuse of discretion in violation of Article I, Section I, Paragraph I and Article I, Section I, Paragraph II of the Constitution of the State of Georgia of 1983, and the Due Process Clause of the Fourteenth Amendment to the Constitution of the United States.

A refusal by the Gwinnett County Board of Commissioners to rezone the Property to the MU-R & RM-24 classifications with such conditions as agreed to by the Applicant, so as to permit the only feasible economic use of the Property, would be unconstitutional and discriminate in an arbitrary, capricious and unreasonable manner between the Applicant and owners of similarly

situated property in violation of Article I, Section I, Paragraph II of the Constitution of the State of Georgia of 1983 and the Equal Protection Clause of the Fourteenth Amendment to the Constitution of the United States. Any rezoning of the subject Property to the MU-R & RM-24 classifications, subject to conditions which are different from the conditions by which the Applicant may amend its applications, to the extent such different conditions would have the effect of further restricting the Applicant's and the Owner's utilization of the subject Property, would also constitute an arbitrary, capricious and discriminatory act in zoning the Property to an unconstitutional classification and would likewise violate each of the provisions of the State and Federal Constitutions set forth hereinabove.

Opponents to the request set forth in the Applications, or in any amendments to the Applications, have waived their rights to appeal any decision of the Gwinnett County Board of Commissioners because they lack standing, have failed to exhaust administrative remedies, and/or because they failed to assert any legal or constitutional objections.

Accordingly, the Applicant respectfully requests that the rezoning applications submitted by the Applicant relative to the Property be granted and that the Property be rezoned to the zoning classification as shown on the respective applications.

This 21st day of June, 2022.

Respectfully submitted,

MAHAFFEY PICKENS TUCKER, LLP

Shane M. Lanham
Attorneys for Applicant

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