PRE-MEETING AGENDA
MOUNTAIN BROOK CITY COUNCIL

CITY HALL COUNCIL CHAMBER (A108)
56 CHURCH STREET
MOUNTAIN BROOK, AL 35213

APRIL 27, 2020, 6:00 P.M.

As authorized by the Governor of the State of Alabama on March 18, 2020, elected officials may deliberate by means of telephone conference, video conference or other similar means of communication. Members of the public are also invited to listen, observe and participate in public meetings by such means as well.

Due to COVID-19 and the mandate that public gatherings of 10 or more are not permitted. Therefore, should anyone wish to listen, observe or participate in the City Council meetings of April 27, 2020 at 7 p.m. (pre-meeting at 6:00 p.m.), please join by way of the Zoom app (re: Meeting ID: 980 5272 9155, password 605756).

1. Chamber of Commerce's semi-annual report to the Mayor and City Council-Suzan Doidge https://vimeo.com/410349156/c78e4a17db
2. Overton Road traffic study presentation-Richard Caudle of Skipper Consultants (See attached information.)
3. Street light request at North Woodridge Road and Sedley Drive-Sam Gaston (See attached information.)
4. Smyer Road repair options-David Marsh of ECS (See attached information. This item may be added to the formal agenda.)
5. Recommendations on concrete options for the south roundabout in Mountain Brook Village from the Villages Design Review Committee-Dana Hazen (See attached information. This item may be added to the formal agenda.)
6. Consideration of a resolution appointing a member to the City of Mountain Brook Board of Education (See attached information. This item may be added to the formal agenda.)
7. Conditional Use for Lane Parke, phase 1, Built Capital office-Dana Hazen (See attached information. This item may be added to the formal agenda.)

DRAFT

OVERTON ROAD CORRIDOR STUDY

Mountain Brook and Vestavia Hills, Alabama

Advance Planning, Programming, and Logical Engineering (APPLE) Program

Prepared for:

THE CITY OF MOUNTAIN BROOK

THE CITY OF VESTAVIA HILLS

THE REGIONAL PLANNING COMMISSION OF GREATER BIRMINGHAM

Prepared by:

SKIPPER CONSULTING INC

March 5, 2020

OVERTON ROAD CORRIDOR STUDY
MOUNTAIN BROOK AND VESTAVIA HILLS, ALABAMA

Advance Planning, Programming, and Logical Engineering (APPLE) Program

Prepared for:

The City of Mountain Brook
56 Church Street
Mountain Brook, Alabama 35040

The City of Vestavia Hills
1302 Montgomery Highway
Vestavia Hills, Alabama 35216

The Regional Planning Commission of Greater Birmingham
2 20th Street North, Suite 1200
Birmingham, Alabama 35203

Prepared by:

Skipper Consulting, Inc.
3644 Vann Road, Suite 100
Birmingham, Alabama 35235

March 5, 2020

ALABAMA REGISTERED ENGINEER RICHARD LYN CALDWELL
DRAFT

SIGNED: _____

DATE: _____

TABLE OF CONTENTS

	Page
Introduction	1
Study Area and Study Roadways	1
Functional Classification	1
Existing Daily Traffic Volumes	1
Existing Daily Levels of Service	5
Existing Peak Hour Traffic Volumes	5
Existing Peak Hour Levels of Service	5
Existing Roadway Capacity Deficiencies	9
Existing Drive Times	9
Available Right-of-Way	11
Existing Sidewalk Inventory	11
Observations	11
Planned and Programmed Roadway Improvements	16
Liberty Park Socio-Economic Data	19
Liberty Park Development Information	21
Liberty Park Trip Generation	22
Liberty Park Trip Assignment	22
Regional Transportation Demand Model Assignment	22
Future Daily Traffic Volume Projections	22
Existing Daily Levels of Service	26
Future Peak Hour Traffic Volume Projections	28
Future Peak Hour Levels of Service	28
Future Roadway Capacity Deficiencies	28
Overton Road Cross Section to Alleviate Deficiencies	28
Potential Transportation Improvements	31

LIST OF ILLUSTRATIONS

Figure		Page
1	Study Area	2
2	Functional Classification	3
3	Existing Daily Traffic Volumes	4
4	Existing Daily Levels of Service	6
5	Existing Peak Hour Traffic Volumes	8
6	Available Right-of-Way	12
7	Existing Sidewalks	13
8	Existing Sidewalks	14
9	Existing Sidewalks	15
10	Historical Traffic Growth Rates	17
11	Programmed Roadway Improvements	18
12	Traffic Analysis Zone Map	20
13	Liberty Park Trip Assignment	23
14	Regional 2040 Model Assignment	24
15	Future 2040 Daily Traffic Volumes	25
16	Future Daily Levels of Service	27
17	Future 2040 Peak Hour Traffic Volumes	30
18	Overton Road at South Brookwood Road	32
19	Sidewalk – Briar Oak to South Brookwood Road	34
20	Crosswalk – Overton Road at Stoneridge Drive	35
21	Traffic Signal – Liberty Parkway at Overton Road	36

Table		
1	Existing Daily Traffic Volumes	1
2	Maximum Two-Way Service Flow Volumes and Levels of Service	5
3	Existing Daily Levels of Service	5
4	Existing Peak Hour Traffic Volumes and Levels of Service	7
5	Drive Times – Overton Road	9
6	Historical Traffic Growth	16
7	Liberty Park SociO-Economic Data	19
8	Liberty Park Development Data	21
9	Socio-Economic Growth Data Comparison	21
10	Liberty Park Trip Generation	22
11	Existing and Future 2040 Daily Traffic Volumes	26
12	Future 2040 Daily Levels of Service	26
13	Future 2040 Peak Hour Traffic Volumes and Levels of Service	29
14	Cost Estimate – Overton Road at South Brookwood Road	31

Introduction

This report documents a corridor study performed for Overton Road from Liberty Parkway to U.S. Highway 280 in the cities of Mountain Brook and Vestavia Hills, Alabama. The purposes of the study are to:

- Examine the existing conditions of the transportation system in the corridor
- Determine the impacts of future growth on the transportation system, especially the impact of continued developments in Liberty Park
- Examine the effects of current planned and programmed roadway improvements to traffic operations
- Discuss potential future transportation improvements in the corridor.

Study Area and Study Roadways

The study area for this report is shown in Figure 1. The roadways included in the study effort are:

- Overton Road, from Liberty Parkway to U.S. Highway 280
- Liberty Parkway, from River Run Lane to Overton Access Road
- Crosshaven Drive, from Overton Road to Cahaba Heights Road
- Cahaba Heights Road/Pump House Road, from the I-459 underpass to U.S. Highway 280
- Green Valley Road, from Crosshaven Drive to U.S. Highway 280
- Dolly Ridge Road, from Green Valley Road to U.S. Highway 280
- Knollwood Drive, from Overton Road to Green Valley Road

Functional Classification

The existing functional classification of roadways within and adjacent to the study area (as designated by the Birmingham Metropolitan Planning Organization and Alabama Department of Transportation) is depicted in Figure 2. The following is a description of existing functional classification of roadways within and adjacent to the study area:

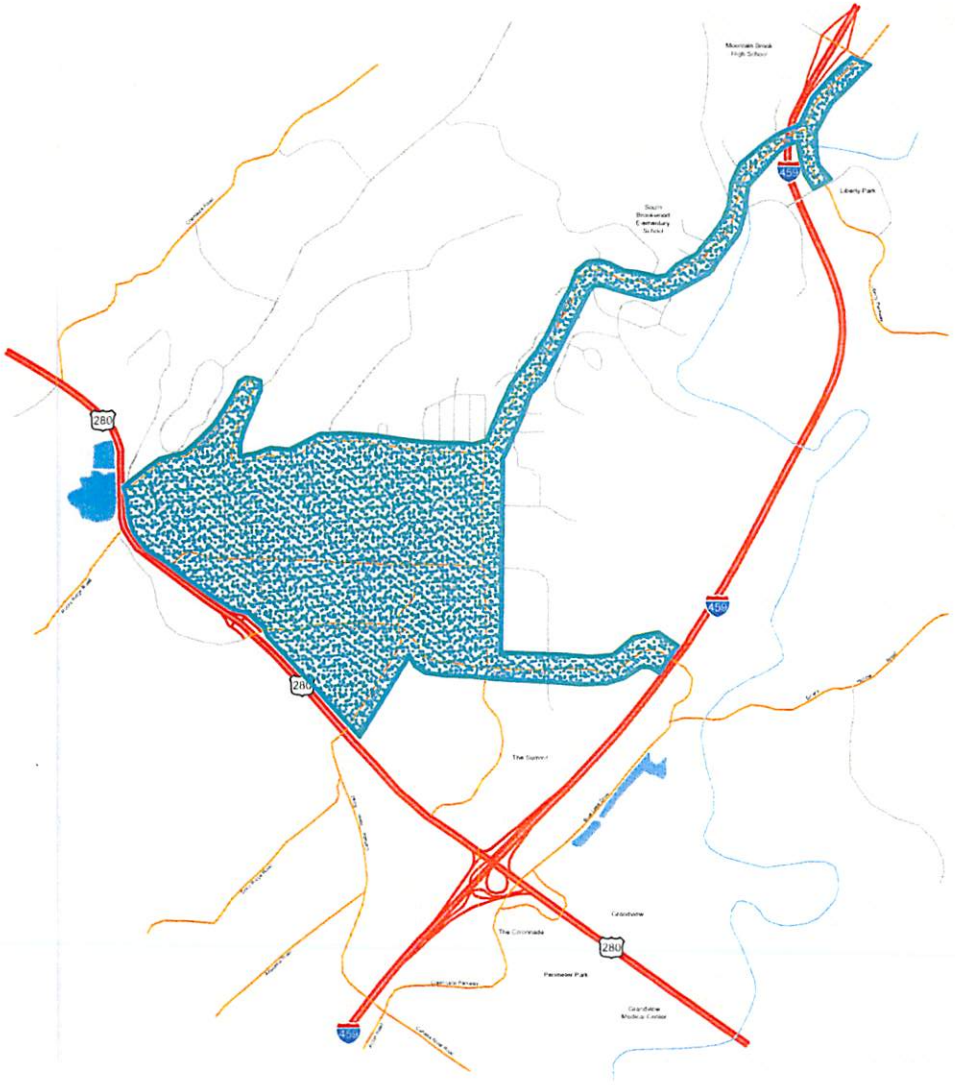
- Interstate 459 – Interstate
- U.S. Highway 280 – Principal Arterial
- Overton Road, from Liberty Parkway to Crosshaven Drive – Minor Arterial
- Crosshaven Drive, from Overton Road to Green Valley Road – Minor Arterial
- Green Valley Road, from Crosshaven Drive to U.S. Highway 280 – Minor Arterial
- Liberty Parkway – Collector
- Cahaba Heights Road/Pump House Road – Collector
- Crosshaven Drive, from Green Valley Road to Cahaba Heights Road – Collector
- Dolly Ridge Road, from U.S. Highway 280 to Cahaba Heights Road – Collector

Existing Daily Traffic Volumes

Existing machine traffic counts were performed on study area roadways in May, 2019. The daily traffic count volumes are depicted in Table 1 and Figure 3.

Table 1
Existing Daily Traffic Volumes

Roadway	*Segment*	*Classification*	*Cross Section*	*Volume*
Overton Road	Liberty Pkwy to Oakdale Dr	Minor Arterial	Two Lane	7,800
	Oakdale Dr to South Brookwood Rd	Minor Arterial	Two Lane	12,700
	South Brookwood Rd to Crosshaven Dr	Minor Arterial	Two Lane	14,800
	Crosshaven Dr to Locksley Dr	Local	Two Lane	10,400
	Locksley Dr to Knollwood Dr	Local	Two Lane	8,800
	Knollwood Dr to North Woodridge Rd	Local	Two Lane	8,100
	North Woodridge Rd to US-280	Local	Two Lane	8,800
Crosshaven Drive	Overton Rd to Green Valley Rd	Minor Arterial	Two Lane	11,200
	Green Valley Rd to Cahaba Heights Rd	Collector	Two Lane	10,500
Liberty Parkway	River Run Ln to Overton Rd	Collector	Four Lane Divided	12,000
	Overton Rd to Overton Access Rd	Collector	Four Lane Divided	17,600
Green Valley Road	Crosshaven Dr to Dolly Ridge Rd	Minor Arterial	Two Lane	7,100
	Dolly Ridge Rd to Knollwood Dr	Minor Arterial	Two Lane	7,200
Cahaba Heights Road/Pump House Road	Sicard Hollow Rd to Crosshaven Dr	Collector	Two Lane	10,000
	Crosshaven Dr to Dolly Ridge Rd	Collector	Two Lane	11,200
	Dolly Ridge Road to US-280	Collector	Two Lane	8,800
Dolly Ridge Road	Green Valley Rd to Cahaba Heights Rd	Local	Two Lane	5,000
	Cahaba Heights Rd to US-280	Local	Two Lane	7,600
Knollwood Drive	Green Valley Rd to Overton Rd	Local	Two Lane	2,400



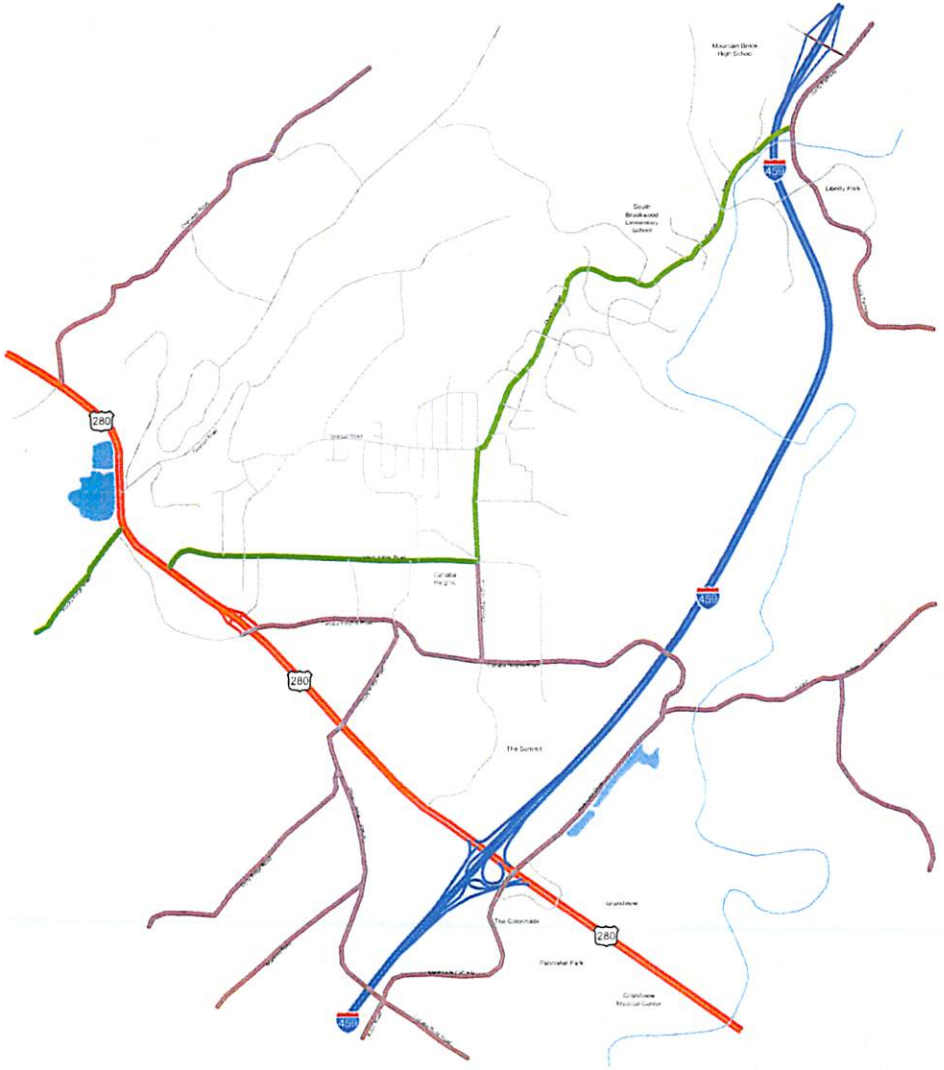
North
Scale: n.t.s

SKIPPER CONSULTING INC.

Figure 1 - Study Area

Overton Road APPLE

January 2020



LEGEND

- Interstate
- Principal Arterial
- Minor Arterial
- Collector
- Local Road

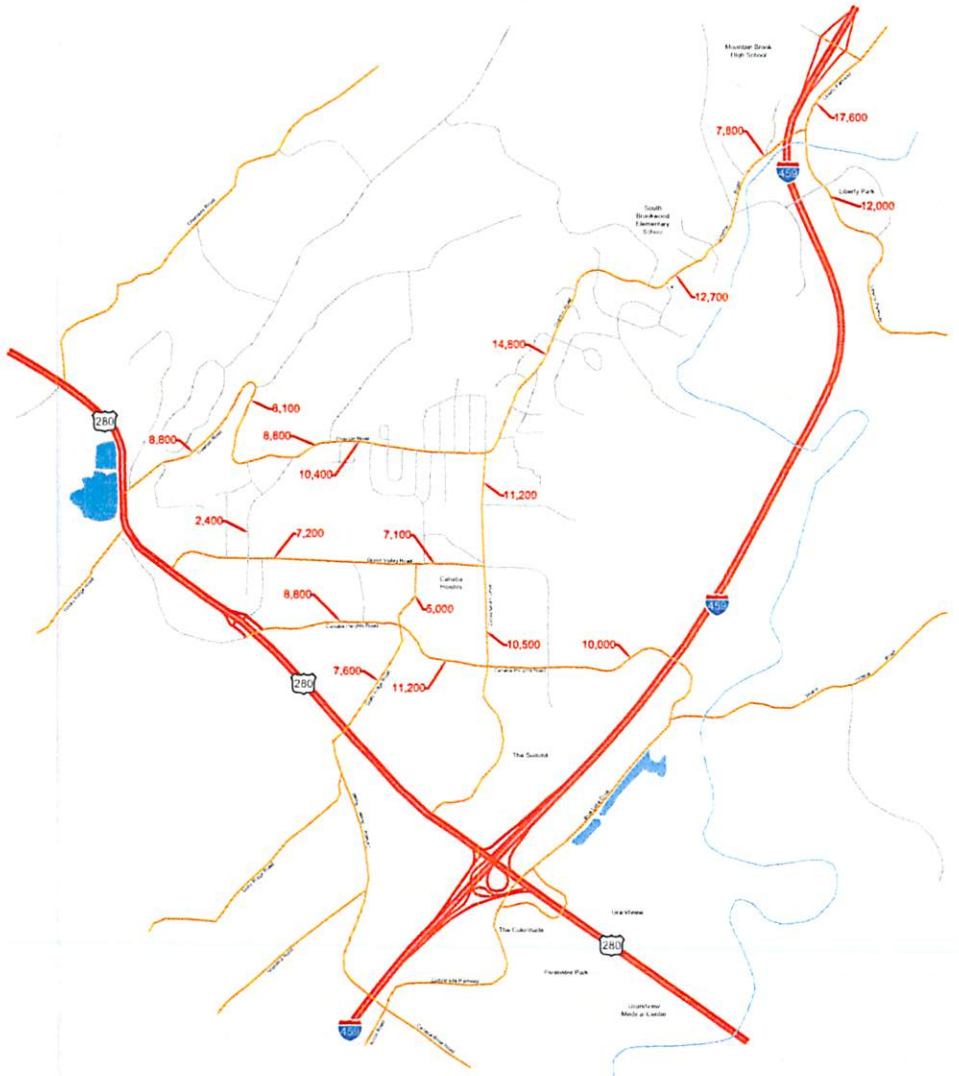
North
Scale: n.t.s

SKIPPER CONSULTING INC.

Figure 2 - Functional Classification

Overton Road APPLE

January 2020



SKIPPER CONSULTING INC.

Figure 3 - Existing Daily Traffic Volumes

Overton Road APPLE

January 2020

Existing Daily Levels of Service

Existing daily levels of service for roadways in the study area were calculated based on information contained in the *2012 Florida Department of Transportation (FDOT) Quality/Level of Service Handbook*. The service flow volumes for each level of service for each roadway cross section are shown in Table 2. This includes peak hour service flow volumes, which are used in a later section of this report. The existing daily roadway levels of service are shown in Table 3 and Figure 4.

Table 2
Maximum Two-Way Service Flow Volumes and Levels of Service

Cross Section		Level of Service					
		A	B	C	D	E	F
Two Lane Undivided	Daily	2,184	3,822	5,110	10,360	10,920	>10,920
	Peak Hour	197	345	462	931	987	>987
Two Lane Divided	Daily	2,290	4,010	5,370	10,880	11,470	>11,470
	Peak Hour	207	362	485	978	1,036	>1,036
Four Lane Undivided	Daily	7,480	10,690	13,250	16,030	21,380	>21,380
	Peak Hour	328	636	884	1,971	2,052	>2,052
Four Lane Divided	Daily	9,975	14,250	17,670	21,375	28,500	>28,500
	Peak Hour	438	848	1,179	2,628	2,736	>2,736

Existing Peak Hour Traffic Volumes

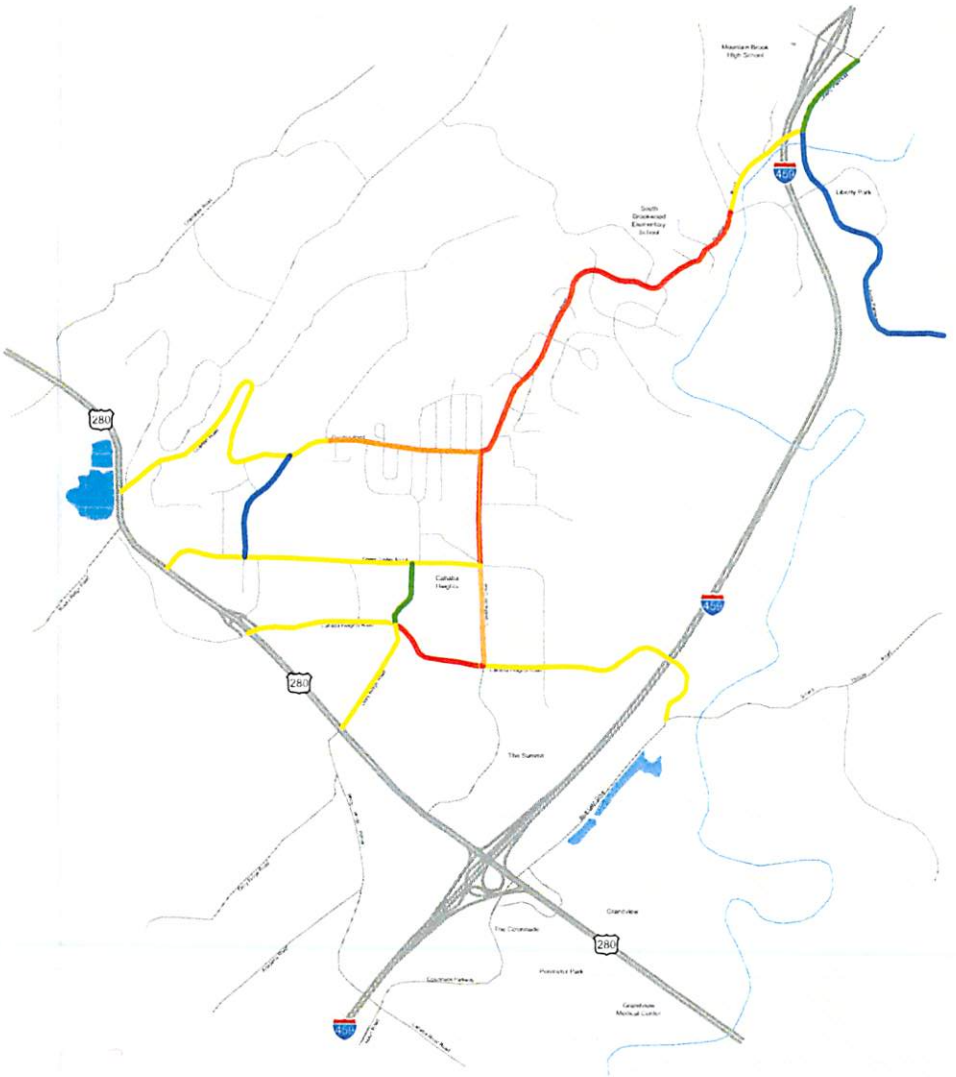
Existing machine traffic counts were performed on study area roadways in May, 2019. The a.m. and p.m. peak hour traffic count volumes are depicted in Table 4 and Figure 5. Table 4 also shows the K and D factors for each count, where K is the ratio of peak hour traffic to daily traffic and D is the percentage of peak hour traffic flowing in the peak direction.

Existing Peak Hour Levels of Service

Existing peak hour levels of service for roadways in the study area were calculated based on information contained in the 2012 FDOT Quality/Level of Service Handbook. The service flow volumes for each level of service for each roadway cross section are shown in Table 2. The existing peak hour roadway levels of service are shown in Table 4.

Table 3
Existing Daily Levels of Service

Roadway	Segment	Classification	Cross Section	Capacity	Volume	v/c	LOS
Overton Road	Liberty Pkwy to Oakdale Dr	Minor Arterial	Two Lane	10,920	7,800	0.71	D
	Oakdale Dr to South Brookwood Rd	Minor Arterial	Two Lane	10,920	12,700	1.16	F
	South Brookwood Rd to Crosshaven Dr	Minor Arterial	Two Lane	10,920	14,800	1.36	F
	Crosshaven Dr to Locksley Dr	Local	Two Lane	10,920	10,400	0.95	E
	Locksley Dr to Knollwood Dr	Local	Two Lane	10,920	8,800	0.81	D
	Knollwood Dr to North Woodridge Rd	Local	Two Lane	10,920	8,100	0.74	D
	North Woodridge Rd to US-280	Local	Two Lane	10,920	8,800	0.81	D
Crosshaven Drive	Overton Rd to Green Valley Rd	Minor Arterial	Two Lane	10,920	11,200	1.03	F
	Green Valley Rd to Cahaba Heights Rd	Collector	Two Lane	10,920	10,500	0.96	E
Liberty Parkway	River Run Ln to Overton Rd	Collector	Four Lane Divided	28,500	12,000	0.42	B
	Overton Rd to Overton Access Rd	Collector	Four Lane Divided	28,500	17,600	0.62	C
Green Valley Road	Crosshaven Dr to Dolly Ridge Rd	Minor Arterial	Two Lane	10,920	7,100	0.65	D
	Dolly Ridge Rd to Knollwood Dr	Minor Arterial	Two Lane	10,920	7,200	0.66	D
Cahaba Heights Road/Pump House Road	Sicard Hollow Rd to Crosshaven Dr	Collector	Two Lane	10,920	10,000	0.92	D
	Crosshaven Dr to Dolly Ridge Rd	Collector	Two Lane	10,920	11,200	1.03	F
	Dolly Ridge Road to US-280	Collector	Two Lane	10,920	8,800	0.81	D
Dolly Ridge Road	Green Valley Rd to Cahaba Heights Rd	Local	Two Lane	10,920	5,000	0.46	C
	Cahaba Heights Rd to US-280	Local	Two Lane	10,920	7,600	0.70	D
Knollwood Drive	Green Valley Rd to Overton Rd	Local	Two Lane	10,920	2,400	0.22	B



LEGEND

- LOS A
- LOS B
- LOS C
- LOS D
- LOS E
- LOS F

North
Scale: n.t.s

SKIPPER CONSULTING INC.

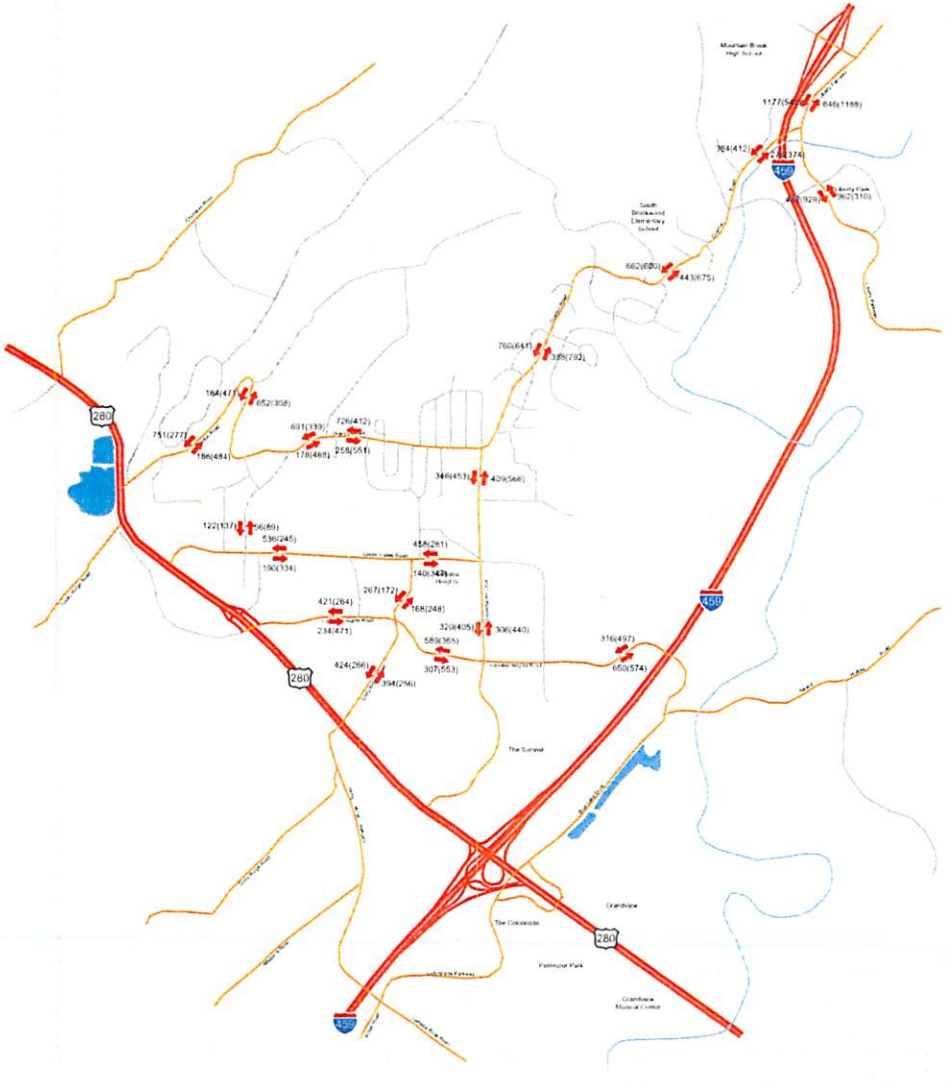
Figure 4 - Existing Daily Levels of Service

Overton Road APPLE

January 2020

Table 4
Existing Peak Hour Traffic Volumes and Levels of Service

Roadway	Segment	Daily Volume	AM Peak Hour						PM Peak Hour					
			EB/NB	WB/SB	Total	K	D	LOS	EB/NB	WB/SB	Total	K	D	LOS
Overton Road	Liberty Pkwy to Oakdale Dr	7,827	276	384	660	8.4	58%	D	374	412	786	10.0	52%	D
	Oakdale Dr to South Brookwood Rd	12,749	443	662	1,105	8.7	60%	F	675	600	1,275	10.0	53%	F
	South Brookwood Rd to Crosshaven Dr	14,765	388	760	1,148	7.8	66%	F	792	641	1,433	9.7	55%	F
	Crosshaven Dr to Locksley Dr	10,433	258	726	984	9.4	74%	E	551	412	963	9.2	57%	E
	Locksley Dr to Knollwood Dr	8,844	178	691	869	9.8	80%	D	468	339	807	9.1	58%	D
	Knollwood Dr to North Woodridge Rd	8,114	652	184	836	10.3	78%	D	308	471	779	9.6	60%	D
	North Woodridge Rd to US-280	8,775	186	751	937	10.7	80%	E	484	277	761	8.7	64%	D
Crosshaven Drive	Overton Rd to Green Valley Rd	11,246	409	346	755	6.7	54%	D	566	453	1,019	9.1	56%	F
	Green Valley Rd to Cahaba Heights Rd	10,500	306	320	626	6.0	51%	D	440	405	845	8.0	52%	D
Liberty Parkway	River Run Ln to Overton Rd	11,974	962	462	1,424	11.9	68%	D	310	929	1,239	10.3	75%	D
	Overton Rd to Overton Access Rd	17,636	646	1,177	1,823	10.3	65%	D	1,188	545	1,733	9.8	69%	D
Green Valley Road	Crosshaven Dr to Dolly Ridge Rd	7,082	140	458	598	8.4	77%	D	347	281	628	8.9	55%	D
	Dolly Ridge Rd to Knollwood Dr	7,176	190	536	726	10.1	74%	D	334	245	579	8.1	58%	D
Cahaba Heights Road/ Pump House Road	Sicard Hollow Rd to Crosshaven Dr	9,977	650	316	966	9.7	67%	E	574	497	1,071	10.7	54%	F
	Crosshaven Dr to Dolly Ridge Rd	11,248	307	589	896	8.0	66%	D	553	365	918	8.2	60%	D
	Dolly Ridge Road to US-280	8,822	234	421	655	7.4	64%	D	471	264	735	8.3	64%	D
Dolly Ridge Road	Green Valley Rd to Cahaba Heights Rd	4,996	168	267	435	8.7	61%	C	248	172	420	8.4	59%	C
	Cahaba Heights Rd to US-280	7,625	394	424	818	10.7	52%	D	256	266	522	6.8	51%	D
Knollwood Drive	Green Valley Rd to Overton Rd	2,394	56	122	178	7.4	69%	A	89	137	226	9.4	61%	B



North
Scale: n.t.s

SKIPPER CONSULTING INC.

Figure 5 - Existing Peak Hour Traffic Volumes

Overton Road APPLE

January 2020

Existing Roadway Capacity Deficiencies

Based on the results of the existing capacity analyses, the following roadway segments are currently operating at or over capacity:

- On a daily traffic volume basis:
  - Overton Road, from Oakdale Drive to Locksley Drive
  - Crosshaven Drive, from Overton Road to Cahaba Heights Road
  - Cahaba Heights Road, from Crosshaven Drive to Dolly Ridge Road

- On a peak hour traffic volume basis:
  - Overton Road, from Oakdale Drive to Locksley Drive
  - Overton Road, from North Woodridge Road to U.S. Highway 280
  - Crosshaven Drive, from Overton Road to Green Valley Road
  - Cahaba Heights Road, from Sicard Hollow Road to Crosshaven Drive

Existing Drive Times

Existing drive times were conducted on Overton Road between Liberty Parkway and U.S. Highway 280 on January 7-9, 2020. The results of the drive times are shown in Table 5 and are depicted graphically in the maps on the following page. The levels of service based on the drive times are derived from information contained in the *Highway Capacity Manual.*

The levels of service calculated based on the drive times on Overton Road are overall better than the levels of service calculated based on daily and peak hour traffic volumes. The difference lies in the fact that the traffic volume-based levels of service are calculated on a segment-by-segment basis. The drive time levels of service are for travel speeds for the entire corridor. Currently, traffic is significantly lower than free-flow speed only during the a.m. peak period, and only in two locations:

- approaching South Brookwood Road
- approaching U.S. Highway 280

As will be shown in the "Observations" section of this report, in these instances, travel speeds in these specific areas of Overton Road were less than 10 miles per hour, clearly level of service "F" in these locations.

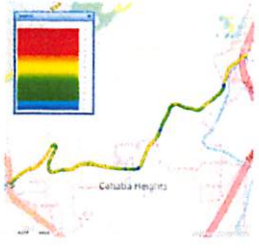
Table 5
Drive Times
Overton Road between Liberty Parkway and U.S. Highway 280

AM Peak Period									
Eastbound					*Westbound*				
Start Time	*Length (miles)*	*Duration*	*Speed (mph)*	*LOS*	*Start Time*	*Length (miles)*	*Duration*	*Speed (mph)*	*LOS*
7:16	4.34	9:48	27	B	7:21	4.47	10:17	26	B
7:40	4.44	12:32	21	C	7:40	4.28	10:22	25	B
8:05	4.37	8:23	31	A	7:53	4.43	18:45	14	D
PM Peak Period									
Eastbound					*Westbound*				
Start Time	*Length (miles)*	*Duration*	*Speed (mph)*	*LOS*	*Start Time*	*Length (miles)*	*Duration*	*Speed (mph)*	*LOS*
4:24	4:30	10:40	24	C	4:24	4.56	9:58	27	B
4:47	4.33	8:43	30	B	4:36	4.40	9:57	27	B
4:58	4.45	10:16	26	B	4:58	4.32	8:23	31	A

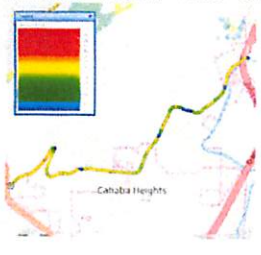
LOS	Speed
A	>30 mph
B	24-30 mph
C	18-24 mph
D	14-18 mph
E	10-14 mph
F	< 10 mph

Overton Road Drive Time Maps

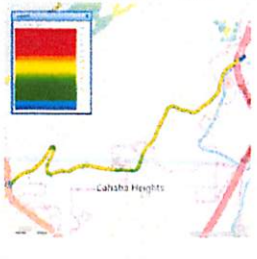
Eastbound 7:16 AM 9:48 21 mph



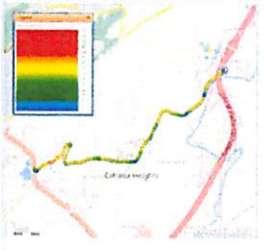
Eastbound 7:40 AM 12:32 27 mph



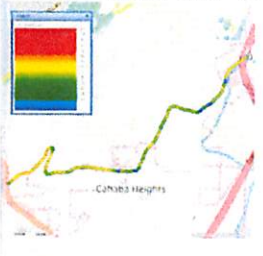
Eastbound 8:05 AM 8:23 31 mph



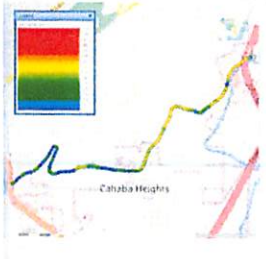
Westbound 7:21 AM 10:17 26 mph



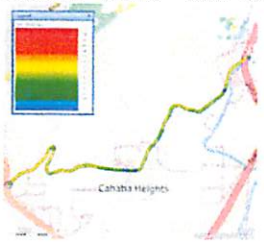
Westbound 7:40 AM 10:22 25 mph



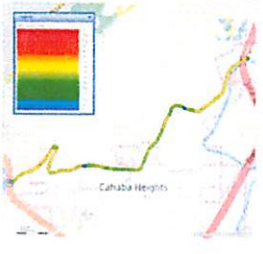
Westbound 7:53 AM 18:45 14 mph



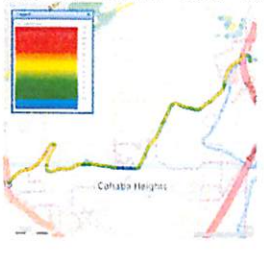
Eastbound 4:24 PM 10:40 24 mph



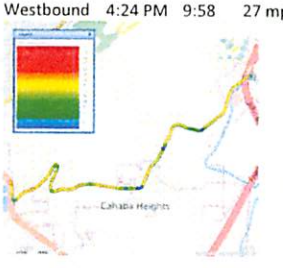
Eastbound 4:47 PM 8:43 30 mph



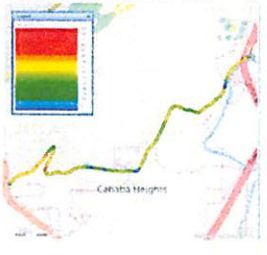
Eastbound 4:58 PM 10:16 26 mph



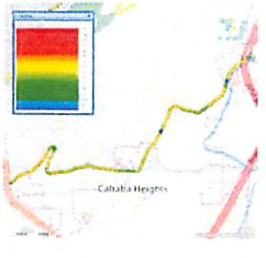
Westbound 4:24 PM 9:58 27 mph



Westbound 4:36 PM 9:57 27 mph



Westbound 4:58 PM 8:23 31 mph



Available Right-of-Way

Existing right-of-way on Overton Road varies from 40 feet to 80 feet in width. In general, the narrower rights-of-way extend from U.S. Highway 280 to east of Crosshaven Drive, while the wider rights-of-way extend from east of Crosshaven Drive to Liberty Parkway. A summary map of existing available right-of-way on Overton Road is shown in Figure 6.

Existing Sidewalk Inventory

An inventory of existing sidewalks on Overton Road and connecting roadways was performed. This inventory is depicted in Figures 7, 8, and 9.

Observations

AM Peak Period

- Queue on Overton Road westbound from South Brookwood Road to River Bend Lane. Queue length of 1,220 feet. Total time in queue 2 minutes 3 seconds. Average speed was 7 miles per hour.

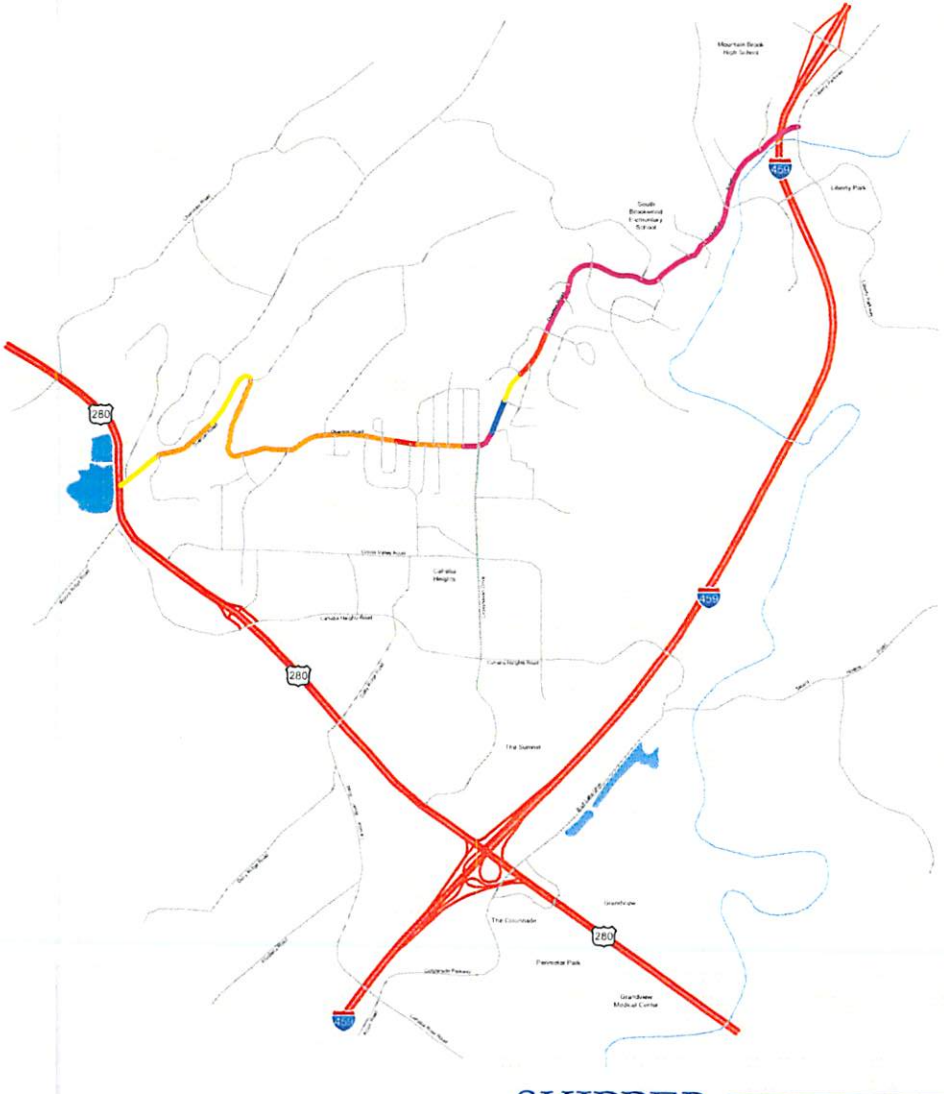
- Queue on Overton Road eastbound from South Brookwood Road to east of Briar Oak Drive. Queue length of 1,470 feet. Total time in queue 3 minutes 12 seconds. Average speed was 5 miles per hour.

- Queue in left turn from U.S. Highway 280 eastbound onto Overton Road. Queue length of 590 feet. Total time in queue 8 minutes 21 seconds.

- Slow traffic/rolling queue on Overton Road westbound from just west of Crosshaven Drive to U.S. Highway 280. Length of section is 2.04 miles. Total time to traverse section was 13 minutes 21 seconds. Average speed was 9 miles per hour.

PM Peak Period

No significant queues or delays were observed during the p.m. peak period of traffic.



LEGEND

- 40' ROW
- 50'-55' ROW
- 60' ROW
- 70' ROW
- 80' ROW

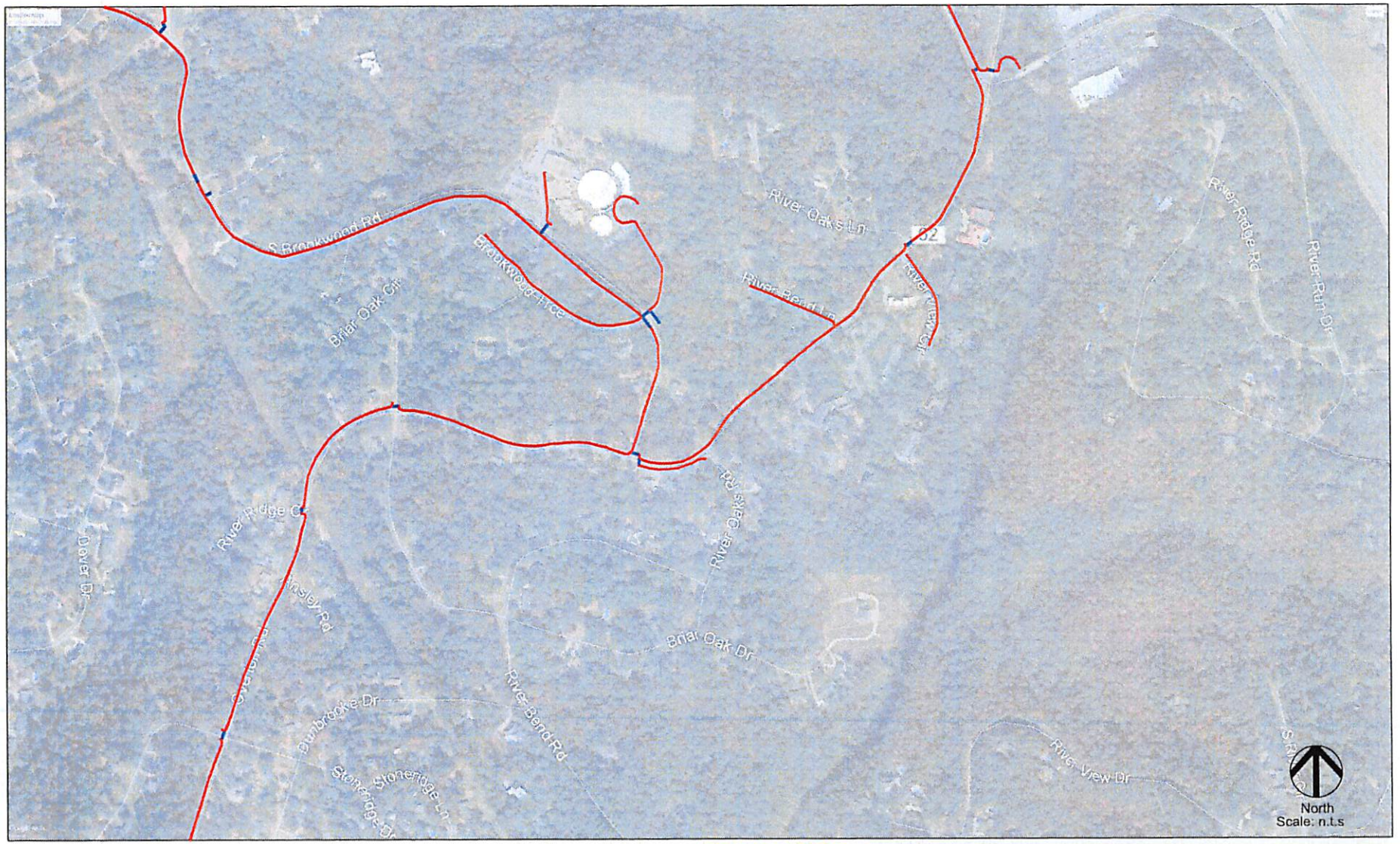
North
Scale: n.t.s

SKIPPER CONSULTING INC.

Figure 6 - Available Right-of-Way

Overton Road APPLE

January 2020



LEGEND

SIDEWALK

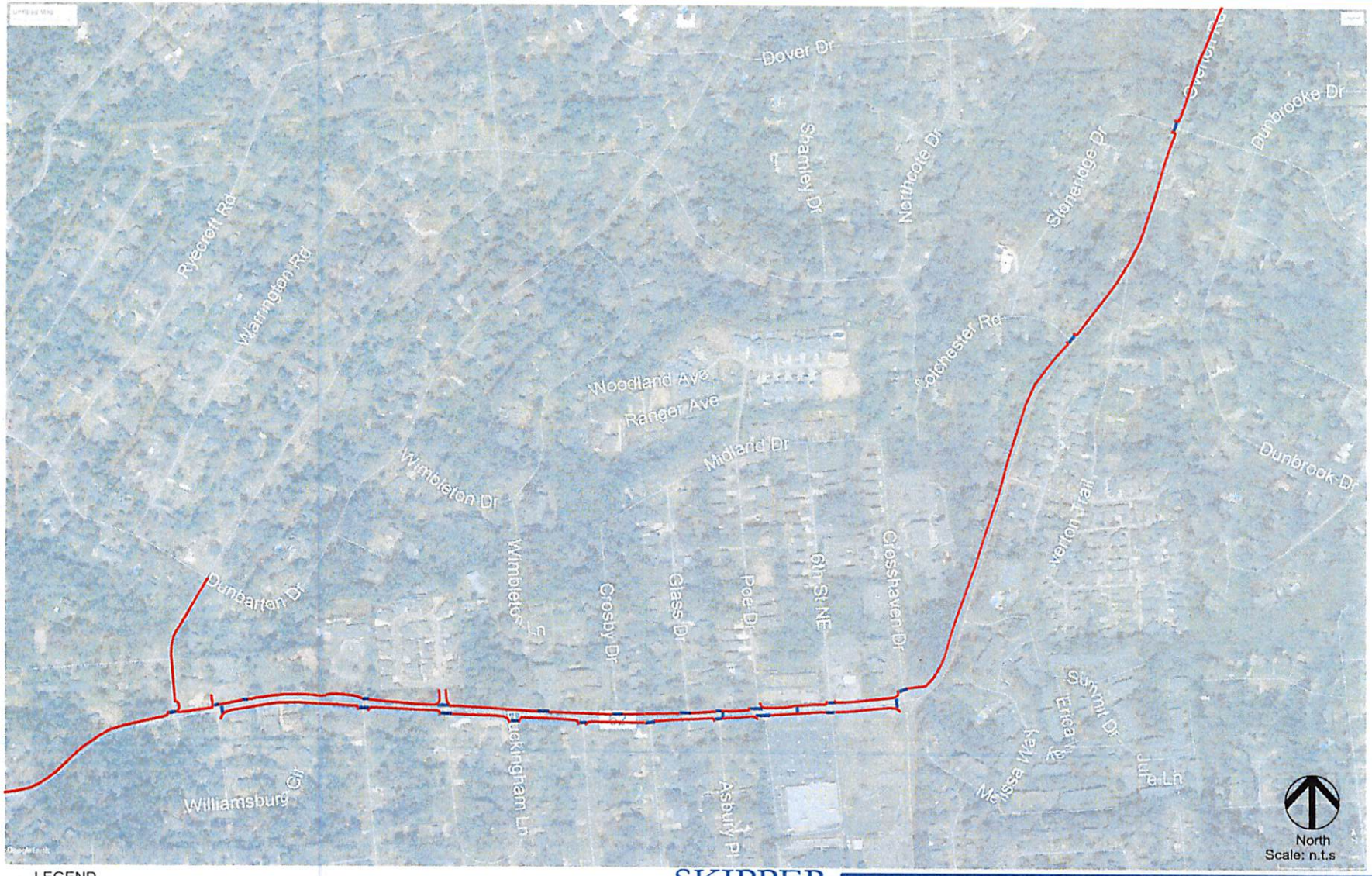
CROSSWALK

SKIPPER CONSULTING INC.

Figure 7 - Existing Sidewalks

Overton Road APPLE

January 2020



LEGEND

SIDEWALK

CROSSWALK

SKIPPER CONSULTING INC.

Figure 8 - Existing Sidewalks

Overton Road APPLE

January 2020

LEGEND

SIDEWALK

CROSSWALK

North
Scale: n.t.s

SKIPPER CONSULTING INC.

Figure 9 - Existing Sidewalks

Overton Road APPLE

January 2020

Historical Traffic Growth

Historical traffic counts on area roadways were obtained from the Alabama Department of Transportation and were then subjected to an analysis to determine the yearly traffic growth rates. The data and analysis are shown in Table 6 and are graphically depicted in Figure 10.

Table 6
Historical Traffic Growth

Overton Road

	w. of Liberty Pkwy		w. of S. Brookwood Rd		e. of Crosshaven Dr		e. of Locksley Dr		e. of US-280	
2018	7,035	1.7%	11,597	-6.2%	13,920	0.0%	10,000	0.0%	8,420	5.0%
2017	6,920	-2.3%	12,370	-2.3%	13,920	-2.3%	10,000	-5.4%	8,020	2.6%
2016	7,080	2.5%	12,660	2.4%	14,250	2.4%	10,570	2.4%	7,820	2.5%
2015	6,910	2.1%	12,360	2.0%	13,910	2.0%	10,320	2.0%	7,630	7.2%
2014	6,770	9.2%	12,120		13,640	0.4%	10,120	9.3%	7,120	0.8%
2013	6,200				13,590	0.8%	9,260		7,060	
2012					13,480	4.0%				
2011					12,960	-1.0%				
2010					13,090	0.0%				
2009					13,090					
overall		***2.7%***		***-1.1%***		***0.7%***		***1.6%***		***3.9%***

Liberty Parkway

	s. of River Run Dr	
2018	11,161	10.4%
2017	10,110	-0.1%
2016	10,120	2.4%
2015	9,880	2.0%
2014	9,690	
overall		***3.8%***

Dolly Ridge Road

	s. of Cahaba Heights Rd	
2018	6,960	0.0%
2017	6,960	-0.6%
2016	7,000	2.5%
2015	6,830	
overall		***0.6%***

Crosshaven Drive

	n. of Green Valley Rd		s. of Green Valley Rd	
2018			11,071	
2017	14,250	1.9%	11,420	2.6%
2016	13,980	2.4%	11,130	2.5%
2015	13,650	-6.8%	10,860	-6.9%
2014	14,650	17.2%	11,670	0.8%
2013	12,500		11,580	
overall		***3.5%***		***-0.9%***

Green Valley Road

	w. of Crosshaven Dr		e. of Knollwood Dr	
2018	7,550	0.0%		
2017	7,550	-0.8%	8,580	-2.3%
2016	7,610	2.4%	8,780	2.5%
2015	7,430	0.0%	8,570	0.0%
2014	7,430	10.1%	8,570	9.5%
2013	6,750		7,830	
overall		***2.4%***		***2.4%***

Cahaba Heights Road/Pump House Road

	e. of Crosshaven Dr		w. of Crosshaven Dr		e. of US-280	
2018	9,080	-6.2%	11,560	-8.0%	8,230	1.2%
2017	9,680	-0.6%	12,560	-0.1%	8,130	-0.6%
2016	9,740	2.4%	12,570	2.4%	8,180	2.5%
2015	9,510	2.0%	12,270	2.0%	7,980	2.0%
2014	9,320		12,030		7,820	5.5%
2013					7,410	
overall		**-0.6%**		**-1.0%**		**2.2%**

Planned and Programmed Roadway Improvements

Current local and regional transportation plans were reviewed to determine any planned and/or programmed roadway improvements slated for roadways within the study area. The following sections address these projects. A map of the proposed projects is included in Figure 11.

Local Capital Improvements

The City of Vestavia Hills has a programmed project to widen Crosshaven Drive to a three lane cross section from Overton Road to Cahaba Heights Road. The project includes addition of a sidewalk on the east side of Crosshaven Drive for the length of the project. The project also includes a right turn lane from Overton Road eastbound onto Crosshaven Drive and a right turn lane from Cahaba Heights Road westbound onto Crosshaven Drive. The project is currently in right-of-way acquisition, and is scheduled for construction in 2020.

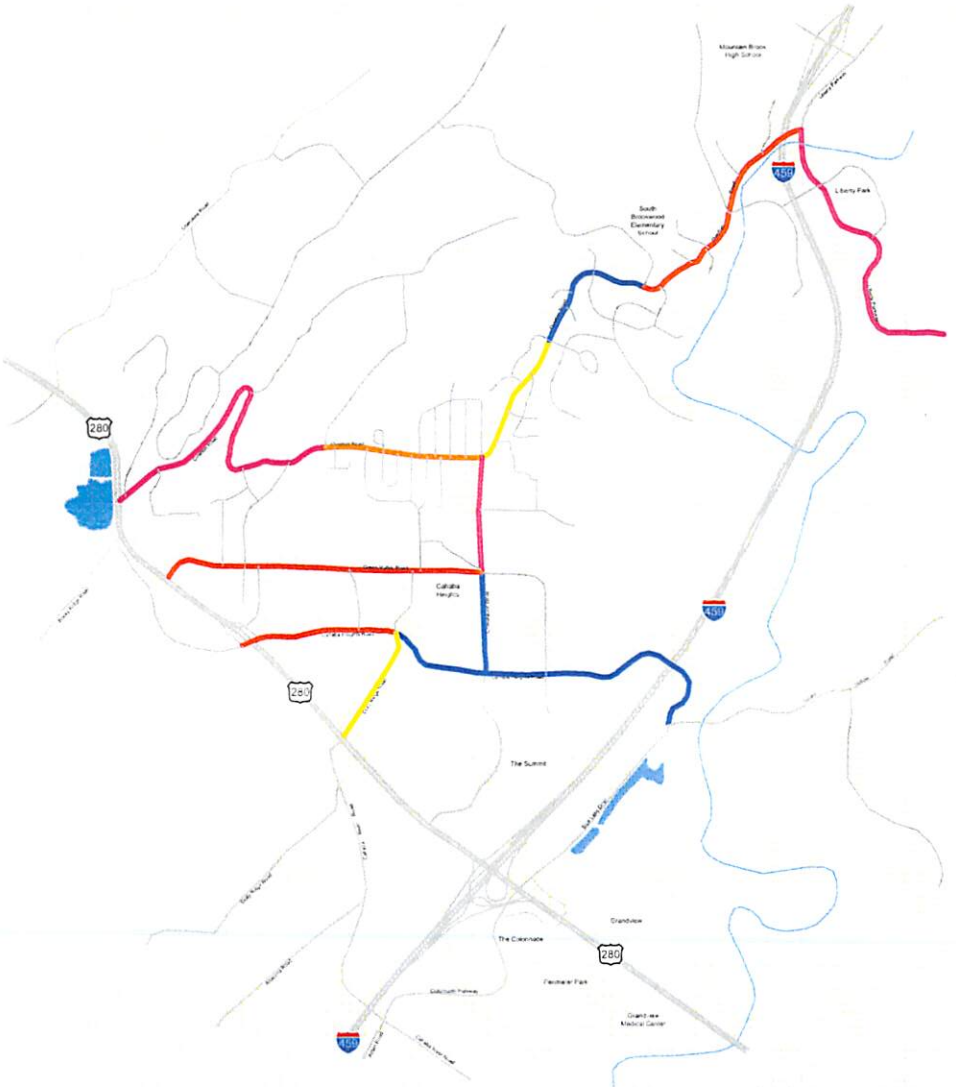
Transportation Improvement Program (TIP)

The FY 2020-2023 Transportation Improvement Program (TIP) has two projects within the study area. The first project is the Jefferson County TOPICS VIII project, which includes intersection improvements to the intersection of Crosshaven Drive at Green Valley Road. A conceptual improvement plan is shown as an inset on Figure 10 (provided by Neel-Schaffer, Inc.) Utility Relocation was scheduled for FY 2019, but has not yet been authorized. Construction is scheduled for FY 2020.

The second project in the FY 2020-2023 TIP is a Transportation Alternatives Program (TAP) grant for construction of a sidewalk on Dunbarton Drive from North Woodridge Drive to Locksley Drive. Construction was scheduled for FY 2019, but has not yet begun.

Regional Transportation Plan (RTP)

There are no projects in the study area in the current 2045 Regional Transportation Plan (RTP) of the Birmingham Metropolitan Organization (MPO).



LEGEND

- No Data/Not Analyzed
- Less than 0% (Negative Growth)
- 0% to 1% per year
- 1% to 2% per year
- 2% to 3% per year
- Greater than 3% per year

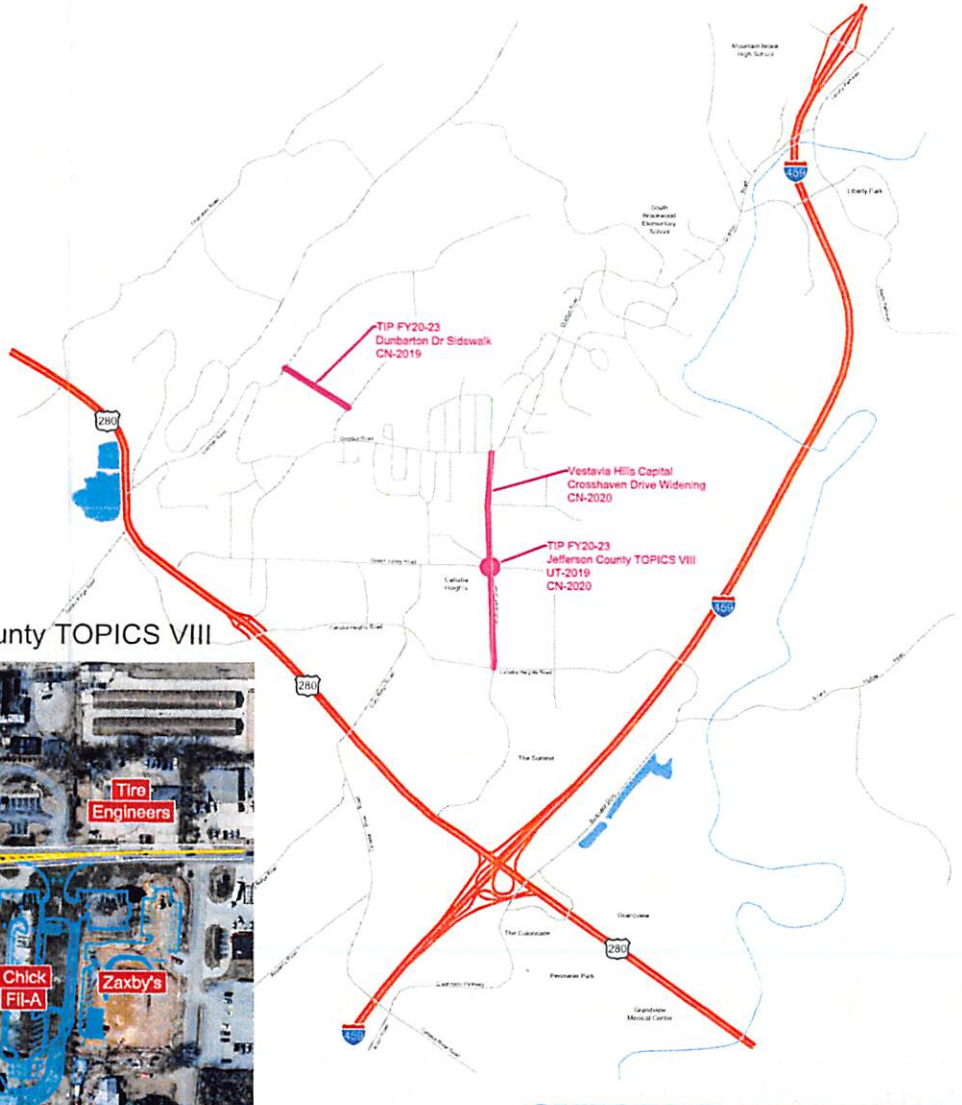
North
Scale: n.t.s

SKIPPER CONSULTING INC.

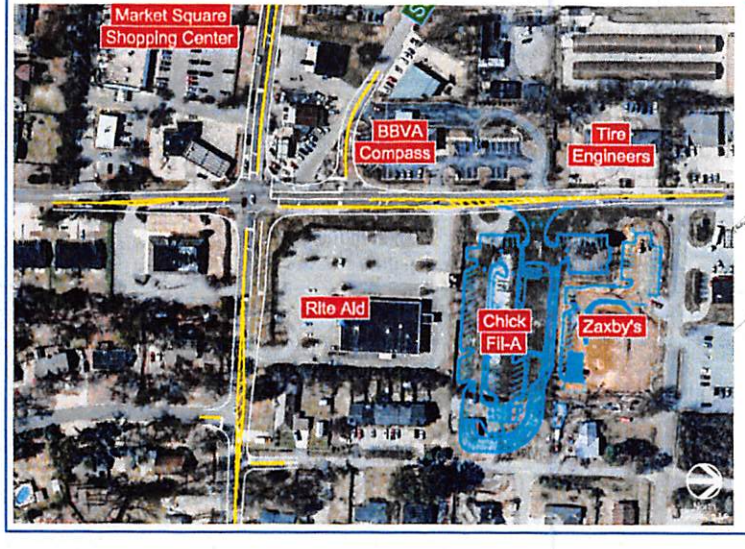
Figure 10 - Historical Traffic Growth Rates

Overton Road APPLE

January 2020



Conceptual Layout - Jefferson County TOPICS VIII



North
Scale: n.t.s

SKIPPER
CONSULTING INC.

Figure 11 - Programmed Roadway Improvements

Overton Road APPLE

January 2020

Liberty Park Socio-Economic Data

A major source of new traffic projected to use Overton Road and other roadways within the study area is continued development at Liberty Park. The regional transportation demand model maintained by the Regional Planning Commission of Greater Birmingham (RPCGB) includes significant growth for Liberty Park, but does not match current proposed developments in Liberty Park. This, and the following section of this report, compares projected socio-economic growth within Liberty Park to current development plans.

Liberty Park occupies the majority of land contained within the following traffic analysis zones (TAZs) used in the regional transportation demand model: TAZ 536, 538, 539, 1726, and 1727. The location of these TAZs is shown in Figure 12. The base year (2015) and future year 2045 socio-economic data and projections for these TAZs are shown in Table 7, along with a calculation of the projected growth within each TAZ.

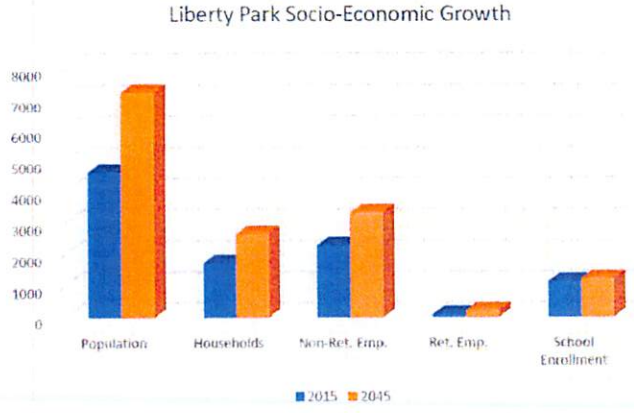
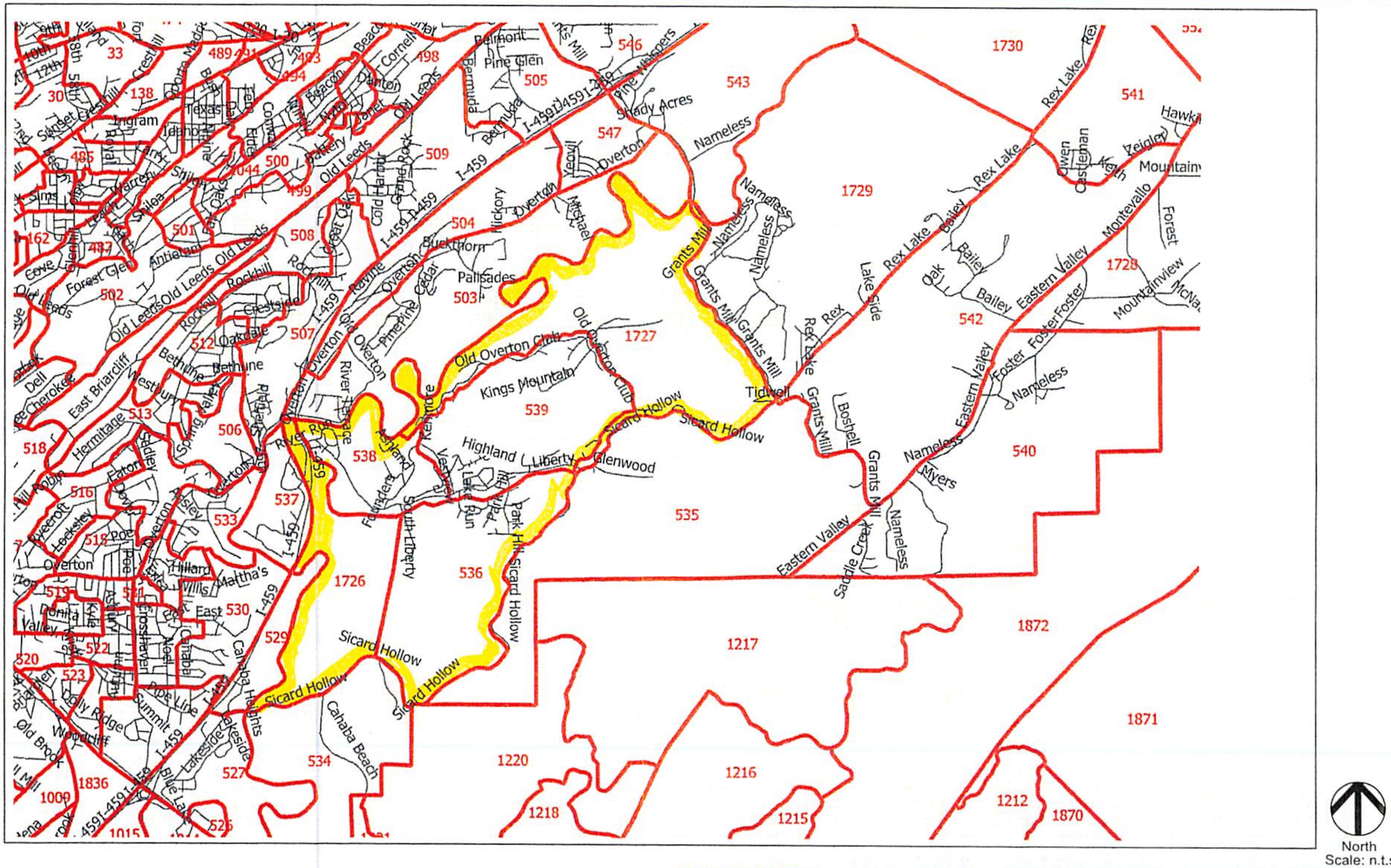


Table 7
Liberty Park Socio-Economic Data

TAZ	Population	Households	Vacant Households	Occupied Households	Non-Retail Employment	Retail Employment	School Enrollment	Median Income
Base Year 2015								
536	1,318	564	29	535	124	1	1,130	$51,406
538	259	124	5	119	1,888	54	0	$47,336
539	1,958	642	36	606	301	35	0	$47,336
1726	2	2	0	2	4	4	0	$51,406
1727	1,119	410	37	373	0	0	0	$47,336
Totals	*4,656*	*1,742*	*107*	*1,635*	*2,317*	*94*	*1,130*	
Future Year 2045								
536	1653	714	43	671	324	1	1,230	
538	259	124	5	119	1913	79	0	
539	1975	657	20	637	301	35	0	
1726	2	2	0	2	718	104	0	
1727	3341	1185	71	1114	96	0	0	
Totals	*7230*	*2682*	*139*	*2543*	*3352*	*219*	*1230*	
Growth 2015-2045								
536	335	150	14	136	200	0	100	
538	0	0	0	0	25	25	0	
539	17	15	-16	31	0	0	0	
1726	0	0	0	0	714	100	0	
1727	2,222	775	34	741	96	0	0	
Totals	*2,574*	*940*	*32*	*908*	*1,035*	*125*	*100*	



SKIPPER
CONSULTING INC.

Figure 12 - Traffic Analysis Zone Map

Overton Road APPLE

January 2020

Liberty Park Development Information

Information on planned and under construction developments within Liberty Park was obtained from the City of Vestavia Hills and an earlier traffic study performed for Liberty Park by Atkins. Table 8 is a listing of the planned/under construction developments, including land use, size, and estimated socio-economic data. Information on the employment per square foot of various land uses was derived from information contained in the U.S. Energy Information Administration publication *Commercial Buildings Energy Consumption Survey (2012)*.

Table 8
Liberty Park Development Data

Land Use	*Size*		*Population*	*Households*	*Non-Retail Employment*	*Retail Employment*
Assisted Living Facility	100	beds	100	100		
Retail	20,000	sq.ft.				44
The Bray						
Convenience Store/Gas Station*	8	pumps				15
Office (East)	15,000	sq.ft.			27	
Grocery Store	48,400	sq.ft.				116
Office (West)	35,000	sq.ft.			62	
Retail	100,000	sq.ft.				220
Townhouses	100	d.u.'s	270	100		
Single Family Residential	1,000	d.u.'s	2700	1,000		
Single Family Residential	400	d.u.'s	1,080	400		
Cahaba Station						
Retail	14,179	sq.ft.				31
Office	9983	sq.ft.			18	
Restaurant	4600	sq.ft.				24
Encompass Health						
2018	200,000	sq.ft.			527	
2040	200,000	sq.ft.			+133	
Totals			***4,150***	***1,500***	***767***	***450***

The socio-economic data shown in Table 8 was compared to RPCGB predicted growth in socio-economic data for the TAZ's encompassing Liberty Park. This review is summarized in Table 9.

Table 9
Socio-Economic Growth Data Comparison

	Population	*Households*	*Non-Retail Employment*	*Retail Employment*
RPCGB Predicted TAZ Growth	2,574	940	1,035	125
Liberty Park Predicted Growth	4,150	1,500	767	450

Liberty Park Trip Generation

The number of daily trips estimated to be generated by the planned developments at Liberty Park was calculated using information from the Institute of Transportation Engineers publications *Trip Generation* and *Trip Generation Handbook*. For certain land uses, particularly retail and customer-oriented uses, a portion of the trips will remain internal to Liberty Park (i.e., a person who lives in Liberty Park going to a restaurant in Liberty Park). This is expressed as the "Internal Capture Rate". "External Trips" are those trips which will impact regional roadways outside Liberty Park, such as I-459, Sicard Hollow Road, Overton Road, and other roadways within the study area. Of all external trips, it is estimated that approximately 20% will use Overton Road and other roadways in the study area. The daily trip generation estimate for planned developments in Liberty Park is shown in Table 10. As shown, the planned development in Liberty Park is anticipated to add approximately 4,000 vehicles per day to Overton Road and other roadways in the study area

Table 10
Liberty Park Trip Generation

Land Use	Size		Daily Trips	Internal Capture Rate	External Trips	% Assigned to Study Area	Trips Assigned to Study Area
Assisted Living Facility	100	beds	284	0%	284	20%	58
Retail	20,000	sq.ft.	894	62%	340	20%	68
The Bray							
Convenience Store/Gas	8	pumps	1,348	93%	94	20%	20
Office (East)	15,000	sq.ft.	304	0%	304	20%	62
Grocery Store	48,400	sq.ft.	4,472	49%	2,280	20%	456
Office (West)	35,000	sq.ft.	580	0%	580	20%	116
Retail	100,000	sq.ft.	4,316	62%	1,640	20%	328
Townhouses	100	d.u.'s	644	0%	644	20%	130
Single Family Residential	1,000	d.u.'s	8,736	0%	8,736	20%	1,748
Single Family Residential	400	d.u.'s	3,760	0%	3,760	20%	752
Cahaba Station							
Retail	14,179	sq.ft.	644	62%	246	20%	50
Office	9983	sq.ft.	224	0%	224	20%	46
Restaurant	4600	sq.ft.	414	62%	158	20%	32
Encompass Health							
2040	+133	emp.	440	0%	440	20%	88
Totals			***27,060***		***19,730***		***3,954***

Liberty Park Trip Assignment

As shown in the previous section of this report, planned development at Liberty Park is anticipated to add approximately 4,000 vehicles per day to Overton Road and other roadways in the study area. This traffic will be concentrated at the entry points from Liberty Park, specifically: 1) the intersection of Liberty Parkway at Overton Road, and 2) the intersection of River Run Drive at Overton Road. Traffic will disperse as it travels along Overton Road at major divergence points, specifically: 1) South Brookwood Road, 2) Crosshaven Drive, and 3) Knollwood Drive. The estimated assignment of trips generated by planned developments in Liberty Park is depicted in Figure 13.

Regional Transportation Demand Model Assignment

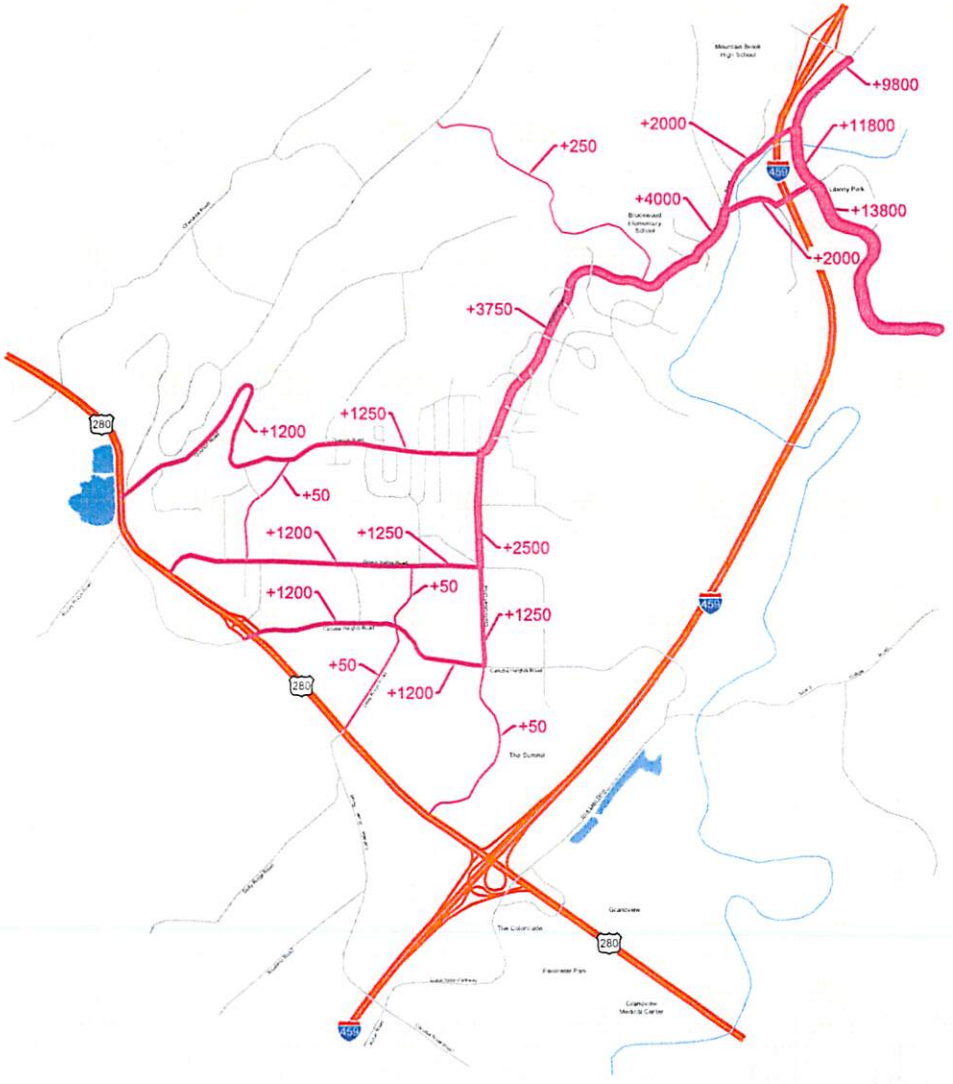
The regional transportation demand model for the Birmingham area was used to determine future 2040 traffic volume projections for the study area roadways. This information is presented in Figure 14.

Future Daily Traffic Volume Projections

Future 2040 daily traffic volume projections for study area roadways was projected by using a compilation of three different methods to project traffic growth:

- Applying the percent per year growth rates as determined based on historical traffic counts to the existing traffic counts
- Adding the projected traffic volumes generated by planned developments at Liberty Park to the existing traffic volumes
- The regional transportation demand model output

Generally, the results of the three methods were averaged, but in some cases anomalous values were rejected. The resultant projected 2040 traffic volumes in the study area are shown in Figure 15 and Table 11. Table 11 also compares the projected 2040 traffic volumes to existing 2019 traffic volumes.



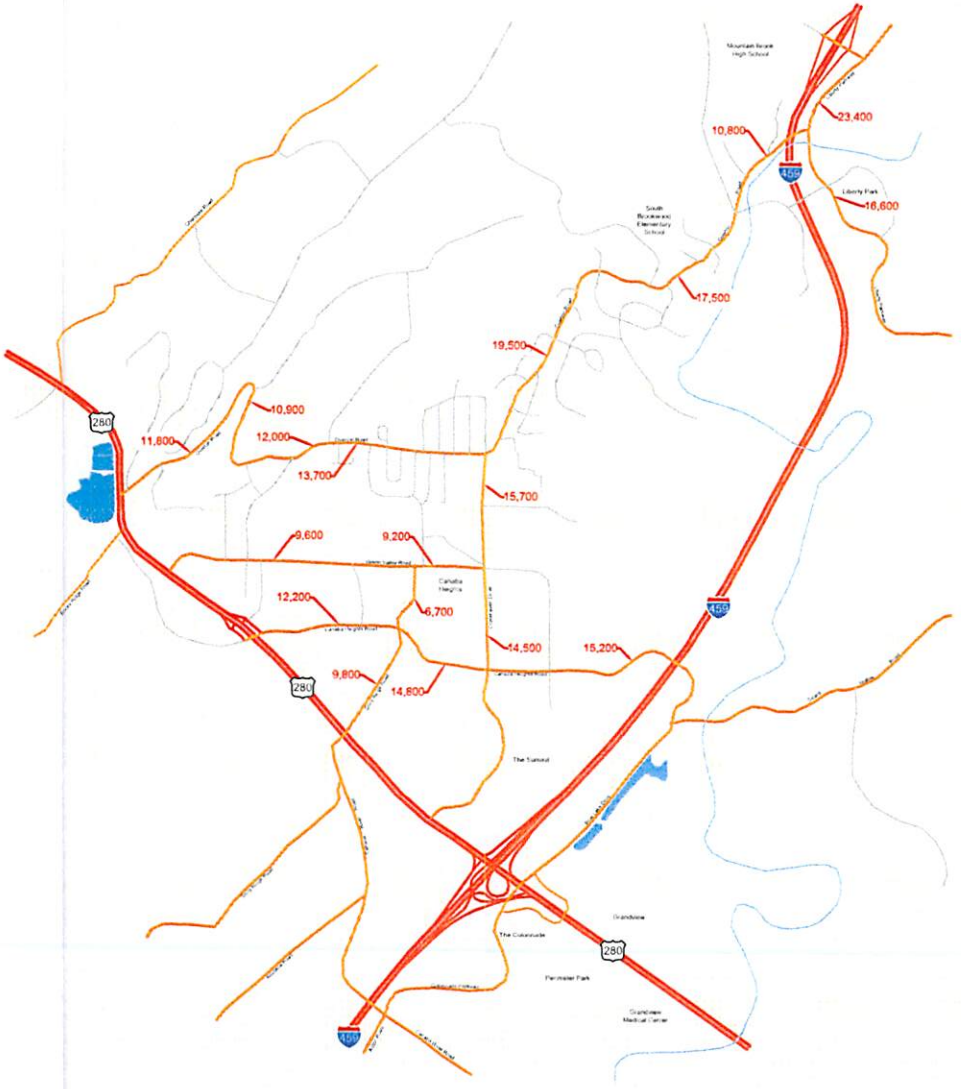
North
Scale: n.t.s

SKIPPER CONSULTING INC.

Figure 13 - Liberty Park Trip Assignment

Overton Road APPLE

January 2020



North
Scale: n.t.s

SKIPPER CONSULTING INC.

Figure 14 - Regional 2040 Model Assignment

Overton Road APPLE

January 2020

North
Scale: n.t.s

SKIPPER CONSULTING INC.

Figure 15 - Future 2040 Daily Traffic Volumes

Overton Road APPLE

January 2020

Table 11
Existing and Future 2040 Daily Traffic Volumes

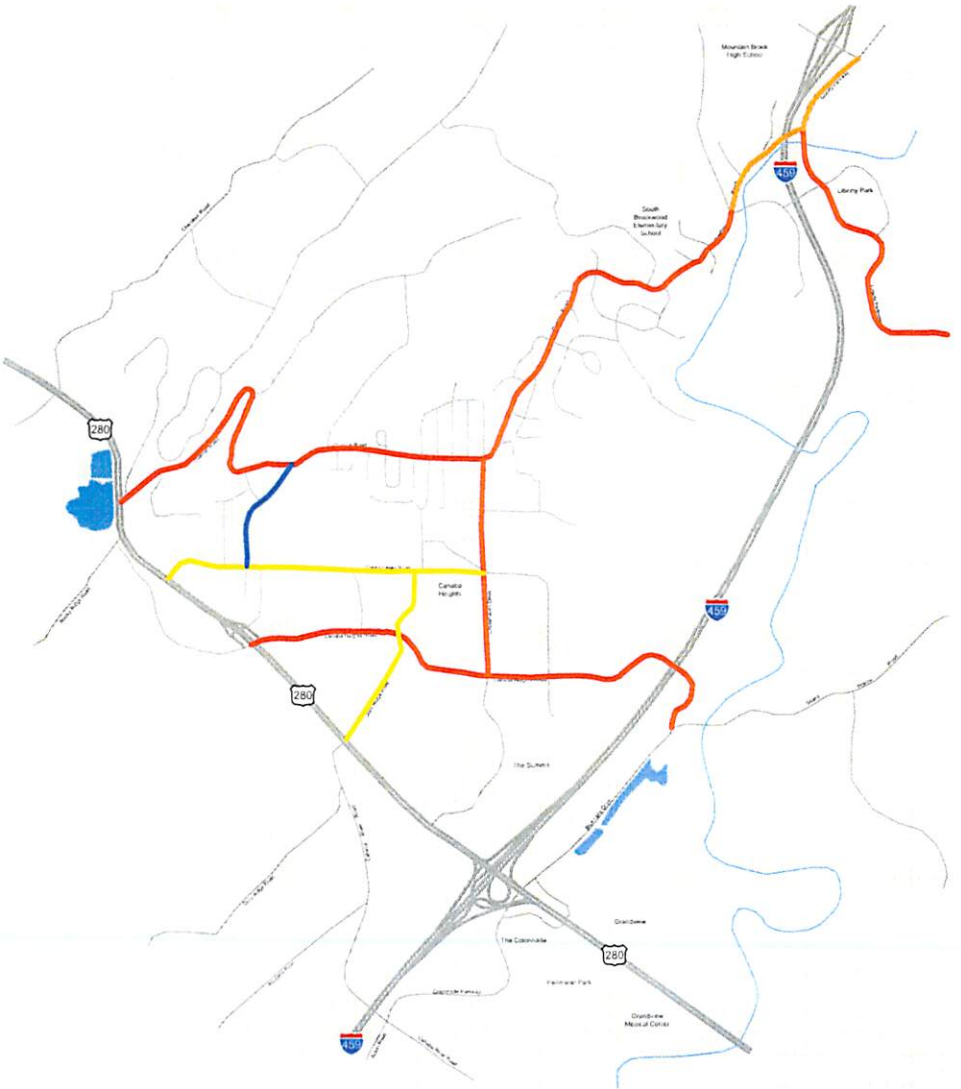
Roadway	Segment	Classification	Cross Section	Existing Volume	Projected 2040 Volume
Overton Road	Liberty Pkwy to Oakdale Dr	Minor Arterial	Two Lane	7,800	10,900
	Oakdale Dr to South Brookwood Rd	Minor Arterial	Two Lane	12,700	18,000
	S. Brookwood Rd to Crosshaven Dr	Minor Arterial	Two Lane	14,800	18,300
	Crosshaven Dr to Locksley Dr	Local	Two Lane	10,400	13,200
	Locksley Dr to Knollwood Dr	Local	Two Lane	8,800	12,500
	Knollwood Dr to North Woodridge Rd	Local	Two Lane	8,100	11,500
	North Woodridge Rd to US-280	Local	Two Lane	8,800	12,400
Crosshaven Drive	Overton Rd to Green Valley Rd	Minor Arterial	Two Lane	11,200	16,400
	Green Valley Rd to Cahaba Heights Rd	Collector	Two Lane	10,500	12,300
Liberty Parkway	River Run Ln to Overton Rd	Collector	Four Lane Divided	12,000	22,600
	Overton Rd to Overton Access Rd	Collector	Four Lane Divided	17,600	27,400
Green Valley Road	Crosshaven Dr to Dolly Ridge Rd	Minor Arterial	Two Lane	7,100	9,400
	Dolly Ridge Rd to Knollwood Dr	Minor Arterial	Two Lane	7,200	9,600
Cahaba Heights Road/Pump House Road	Sicard Hollow Rd to Crosshaven Dr	Collector	Two Lane	10,000	11,700
	Crosshaven Dr to Dolly Ridge Rd	Collector	Two Lane	11,200	12,800
	Dolly Ridge Road to US-280	Collector	Two Lane	8,800	11,600
Dolly Ridge Road	Green Valley Rd to Cahaba Heights Rd	Local	Two Lane	5,000	5,800
	Cahaba Heights Rd to US-280	Local	Two Lane	7,600	8,700
Knollwood Drive	Green Valley Rd to Overton Rd	Local	Two Lane	2,400	2,400

Future Daily Levels of Service

Future 2040 daily levels of service for roadways in the study area were calculated based on information contained in the *2012 FDOT Quality/Level of Service Handbook*. The service flow volumes for each level of service for each roadway cross section are shown in Table 2. The future daily roadway levels of service are shown in Table 12 and Figure 16.

Table 12
Future 2040 Daily Levels of Service

Roadway	Segment	Classification	Cross Section	Capacity	Volume	v/c	LOS
Overton Road	Liberty Pkwy to Oakdale Dr	Minor Arterial	Two Lane	10,920	10,900	1.00	E
	Oakdale Dr to South Brookwood Rd	Minor Arterial	Two Lane	10,920	18,000	1.65	F
	South Brookwood Rd to Crosshaven Dr	Minor Arterial	Two Lane	10,920	18,300	1.68	F
	Crosshaven Dr to Locksley Dr	Local	Two Lane	10,920	13,200	1.21	F
	Locksley Dr to Knollwood Dr	Local	Two Lane	10,920	12,500	1.14	F
	Knollwood Dr to North Woodridge Rd	Local	Two Lane	10,920	11,500	1.05	F
	North Woodridge Rd to US-280	Local	Two Lane	10,920	12,400	1.14	F
Crosshaven Drive	Overton Rd to Green Valley Rd	Minor Arterial	Two Lane	11,470	16,400	1.50	F
	Green Valley Rd to Cahaba Heights Rd	Collector	Two Lane	11,470	12,300	1.13	F
Liberty Parkway	River Run Ln to Overton Rd	Collector	Four Lane Divided	28,500	22,600	0.79	E
	Overton Rd to Overton Access Rd	Collector	Four Lane Divided	28,500	27,400	0.96	E
Green Valley Road	Crosshaven Dr to Dolly Ridge Rd	Minor Arterial	Two Lane	10,920	9,400	0.86	D
	Dolly Ridge Rd to Knollwood Dr	Minor Arterial	Two Lane	10,920	9,600	0.88	D
Cahaba Heights Road/Pump House Road	Sicard Hollow Rd to Crosshaven Dr	Collector	Two Lane	10,920	11,700	1.07	F
	Crosshaven Dr to Dolly Ridge Rd	Collector	Two Lane	10,920	12,800	1.17	F
	Dolly Ridge Road to US-280	Collector	Two Lane	10,920	11,600	1.06	F
Dolly Ridge Road	Green Valley Rd to Cahaba Heights Rd	Local	Two Lane	10,920	5,800	0.53	D
	Cahaba Heights Rd to US-280	Local	Two Lane	10,920	8,700	0.80	D
Knollwood Drive	Green Valley Rd to Overton Rd	Local	Two Lane	10,920	2,400	0.22	B



LEGEND

- LOS A
- LOS B
- LOS C
- LOS D
- LOS E
- LOS F

North
Scale: n.t.s

SKIPPER CONSULTING INC.

Figure 16 - Future Daily Levels of Service

Overton Road APPLE

January 2020

Future Peak Hour Traffic Volume Projections

Future 2040 peak hour traffic volumes were calculated for study area roadways using the projected future 2040 daily traffic volumes and the K and D factors developed earlier in this report. The future 2040 a.m. and p.m. peak hour traffic volumes are depicted in Table 13 and Figure 17.

Future Peak Hour Levels of Service

Future 2040 peak hour levels of service for roadways in the study area were calculated based on information contained in the 2012 FDOT Quality/Level of Service Handbook. The service flow volumes for each level of service for each roadway cross section are shown in Table 2. The future 2040 peak hour roadway levels of service are shown in Table 13.

Future Roadway Capacity Deficiencies

Based on the results of the future 2040 capacity analyses, the following roadway segments are currently operating at or over capacity:

- On a daily traffic volume basis:
  - Overton Road, from Oakdale Drive to U.S. Highway 280
  - Crosshaven Drive, from Overton Road to Cahaba Heights Road
  - Cahaba Heights Road/Pump House Road, from Sicard Hollow Road to U.S. Highway 280
- On a peak hour traffic volume basis:
  - Overton Road, from Liberty Parkway to U.S. Highway 280
  - Crosshaven Drive, from Overton Road to Cahaba Heights Road
  - Liberty Parkway, from Overton Road to Overton Access Road
  - Cahaba Heights Road, from Sicard Hollow Road to Dolly Ridge Road

Overton Road Cross Section to Alleviate Deficiencies

In order to bring all projected 2040 daily and peak hour levels of service on Overton Road, the cross sections would be required to be widened to four lane undivided cross section from Liberty Parkway to U.S. Highway 280.

The typical right-of-way to accommodate a four lane undivided cross section, including sidewalks on both sides, would be a minimum of 90 feet. The existing right-of-way varies from 40 feet to 80 feet. Widening of Overton Road to a four lane undivided cross section would require the acquisition of approximately 495,000 square feet of right-of-way. Using a typical cost of right-of-way acquisition of $15 per square foot, purchase of right-of-way alone to widen Overton Road to a four lane undivided cross section would be approximately $7.4 million dollars.

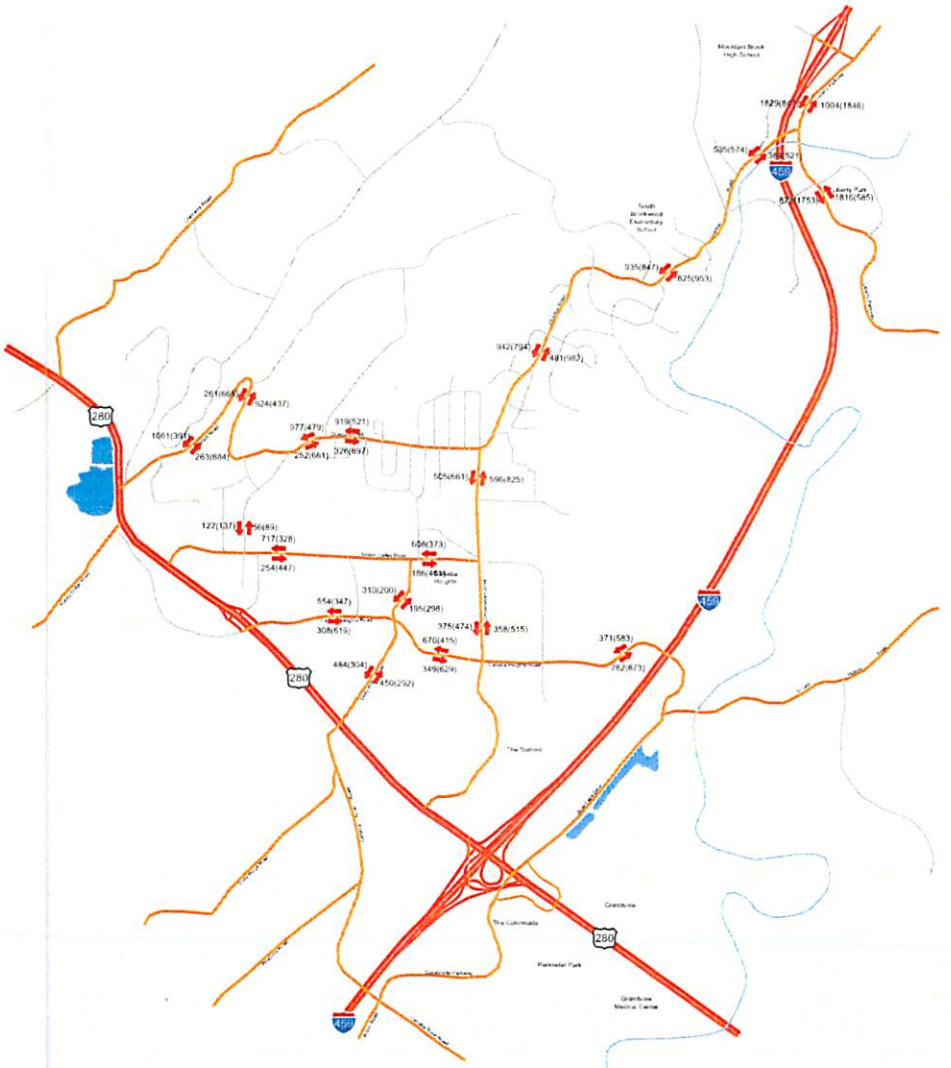
The total preliminary estimated project cost to widen Overton Road to a four lane undivided cross section from Liberty Parkway to U.S. Highway 280 is $53.7 million dollars, generally subdivided as follows:

Preliminary Engineering	$ 3.8 million
Right-of-Way	$ 7.4 million
Utilities	$13.5 million
Construction	$25.2 million
CE&I	$ 3.8 million
Total	$53.7 million

Note: This information is provided for information only and is not to be considered a recommended action.

Table 13
Future 2040 Peak Hour Traffic Volumes and Levels of Service

Roadway	Segment	Daily Volume	AM Peak Hour						PM Peak Hour					
			EB/NB	WB/SB	Total	K	D	LOS	EB/NB	WB/SB	Total	K	D	LOS
Overton Road	Liberty Pkwy to Oakdale Dr	10,900	384	535	919	8.4	58%	D	521	574	1,095	10.0	52%	F
	Oakdale Dr to South Brookwood Rd	18,000	625	935	1,560	8.7	60%	F	953	847	1,800	10.0	53%	F
	South Brookwood Rd to Crosshaven Dr	18,300	481	942	1,423	7.8	66%	F	982	794	1,776	9.7	55%	F
	Crosshaven Dr to Locksley Dr	13,200	326	919	1,245	9.4	74%	F	697	521	1,218	9.2	57%	F
	Locksley Dr to Knollwood Dr	12,500	252	977	1,228	9.8	80%	F	661	479	1,141	9.1	58%	F
	Knollwood Dr to North Woodridge Rd	11,500	924	261	1,185	10.3	78%	F	437	668	1,104	9.6	60%	F
	North Woodridge Rd to US-280	12,400	263	1,061	1,324	10.7	80%	F	684	391	1,075	8.7	64%	F
Crosshaven Drive	Overton Rd to Green Valley Rd	16,400	596	505	1,101	6.7	54%	F	825	661	1,486	9.1	56%	F
	Green Valley Rd to Cahaba Heights Rd	12,300	358	375	733	6.0	51%	D	515	474	990	8.0	52%	F
Liberty Parkway	River Run Ln to Overton Rd	22,600	1,816	872	2,688	11.9	68%	E	585	1,753	2,339	10.3	75%	D
	Overton Rd to Overton Access Rd	27,400	1,004	1,829	2,832	10.3	65%	F	1,846	847	2,692	9.8	69%	E
Green Valley Road	Crosshaven Dr to Dolly Ridge Rd	9,400	186	608	794	8.4	77%	D	461	373	834	8.9	55%	D
	Dolly Ridge Rd to Knollwood Dr	9,600	254	717	971	10.1	74%	E	447	328	775	8.1	58%	D
Cahaba Heights Road/ Pump House Road	Sicard Hollow Rd to Crosshaven Dr	11,700	762	371	1,133	9.7	67%	F	673	583	1,256	10.7	54%	F
	Crosshaven Dr to Dolly Ridge Rd	12,800	349	670	1,020	8.0	66%	F	629	415	1,045	8.2	60%	F
	Dolly Ridge Road to US-280	11,600	308	554	861	7.4	64%	D	619	347	966	8.3	64%	E
Dolly Ridge Road	Green Valley Rd to Cahaba Heights Rd	5,800	195	310	505	8.7	61%	D	288	200	488	8.4	59%	D
	Cahaba Heights Rd to US-280	8,700	450	484	933	10.7	52%	E	292	304	596	6.8	51%	D
Knollwood Drive	Green Valley Rd to Overton Rd	2,400	56	122	178	7.4	69%	A	89	137	227	9.4	61%	B



North
Scale: n.t.s

SKIPPER CONSULTING INC.

Figure 17 - Future 2040 Peak Hour Traffic Volumes

Overton Road APPLE

January 2020

Potential Transportation Improvements

Overton Road at South Brookwood Road

Solution to the traffic congestion during the a.m. peak period at the intersection of Overton Road at South Brookwood Road would require construction of a left turn lane on Overton Road eastbound turning onto South Brookwood Road. The turn lane would need to have 180 feet of storage to prevent the left turn queue from blocking the through lane.

This solution has been proposed and rejected by the City in the past due to the disruption to property along Overton Road which would be caused by the widening. However, there appears to be no other viable solution to reduce both the traffic congestion on Overton Road and mitigate the primary crash pattern at the intersection.

The proposed left turn lane could be built within the existing right-of-way, including relocation of the sidewalk on the north side of Overton Road. The existing pavement width is 30 feet from back of curb to back of curb. The proposed maximum pavement width is 38 feet back of curb, which would therefore require equal widening of approximately 4 feet on both sides of the roadway. The existing curb line (and sidewalk, where present) would be disturbed in front of twelve (12) homes on Overton Road.

The proposed left turn lane layout, developed in 2002 and updated to include existing and proposed sidewalks and crosswalks, is shown in Figure 18.

A construction cost estimate was prepared for construction of the proposed left turn lane on Overton Road at South Brookwood Road. The cost estimate is shown in Table 14. The estimated cost for construction, including all overhead activities, is approximately $550,000, including utility relocation. Preliminary engineering and surveying is expected to cost approximately $82,000. The total project cost is approximately $632,000.

Table 14
Cost Estimate – Overton Road at South Brookwood Road

	Quantity	Unit	Unit Cost	Extended Cost
REMOVALS				
Removal of existing traffic control markings	346	sq.ft.	$ 2.60	$ 899.60
Removal of existing traffic stripe	431	sq.ft.	$ 2.60	$ 1,120.60
Remove existing traffic signal	1	l.s.	$ 5,000.00	$ 5,000.00
Removal of 30" valley gutter	338	sq.yd.	$ 12.00	$ 4,056.00
Removal of existing sidewalk	432	sq.yd.	$ 12.00	$ 5,184.00
Removal of exisitng driveway apron	120	sq.yd.	$ 12.00	$ 1,440.00
removal of existing sidewalk/stairs	20	sq.yd.	$ 12.00	$ 240.00
remove existing drainage structures	2	each	$ 2,000.00	$ 4,000.00
subtotal - removals				$ 22,940.20
INSTALLATIONS				
Unclassified excavation	390	cu.yd.	$ 25.00	$ 9,750.00
Sawcut existing paving	1314	lf	$ 3.00	$ 3,942.00
Base and pave	584	sq.yd.	$ 30.00	$ 17,520.00
Overlay	1818	sq.yd.	$ 13.00	$ 23,634.00
Sidewalk, 6'	383	sq.yd.	$ 35.00	$ 13,405.00
ADA ramp	4	each	$ 2,000.00	$ 8,000.00
Valley gutter	370	sq.yd.	$ 35.00	$ 12,950.00
Driveway apron	120	sq.yd.	$ 60.00	$ 7,200.00
6" solid white edge line	1331	lf	$ 3.00	$ 3,993.00
6" solid white channelizing line	187	lf	$ 3.00	$ 561.00
6: solid white crosswalk line	124	lf	$ 3.00	$ 372.00
6" dotted white line	241	lf	$ 2.00	$ 482.00
6" double yellow line	935	lf	$ 6.00	$ 5,610.00
2' solid yellow diagonal line	676	sq.ft.	$ 4.00	$ 2,704.00
2' solid white stop line	88	sq.ft.	$ 4.00	$ 352.00
2' solid white crosswalk line	180	sq.ft.	$ 4.00	$ 720.00
traffic control markings	32.92	sq.ft.	$ 4.00	$ 131.68
traffic control legends	44.82	sq.ft.	$ 4.00	$ 179.28
traffic signal, mast arm	1	l.s.	$120,000.00	$ 120,000.00
mailbox reset	9	each	$ 250.00	$ 2,250.00
sign reset	5	each	$ 100.00	$ 500.00
drainage structures	2	each	$ 3,500.00	$ 7,000.00
retaining wall	600	sq.ft.	$ 75.00	$ 45,000.00
utility pole relocation	2	each	$ 16,000.00	$ 32,000.00
Water meter reset	12	each	$ 660.00	$ 7,920.00
subtotal - installations				$ 326,479.96
total construction cost without overhead				$ 349,419.15
OVERHEAD				
Mobilization (9%)				$ 31,390.45
Geometric controls (1%)				$ 3,481.16
Erosion control (2%)				$ 6,962.32
Traffic handling (5%)				$ 17,405.81
Clearing and grubbing (2%)				$ 6,962.32
Landscaping (2%)				$ 6,962.32
Construciton fuel (1%)				$ 3,481.16
Construction engineering and inspection (15%)				$ 52,217.42
total construction cost estimate without contingencies				$ 476,919.14
Contingencies (15%)				$ 71,537.87
total construction cost estimate with contingencies				$ 548,457.01
PRELIMINARY ENGINEERING				
Survey (5%)				$ 27,422.85
Preliminary engineering (10%)				$ 54,845.70
total - preliminary engineering				$ 82,268.55
TOTAL PROJECT COST				$ 630,725.56

SKIPPER CONSULTING INC.

Figure 18 - Overton Road at South Brookwood Road

Overton Road APPLE

January 2020

Sidewalk - Overton Road from Briar Oak Drive to South Brookwood Road

The Briar Oak Drive/River Bend Road neighborhood generates pedestrian traffic bound for Brookwood Forest Elementary School. Access to the existing sidewalks on Overton Road would require an unsignalized crosswalk crossing Overton Road at the intersection of Overton Road at Briar Oak Drive/Briar Oak Circle. The area which would potentially use a crosswalk at this location contains approximately 62 homes, as shown in the adjacent diagram.

A previous study conducted by the City of Mountain Brook in April, 2012 found that traffic signal or a multi-way stop is not warranted at the intersection of Overton Road at Briar Oak Drive/Briar Oak Circle, and recommended no change in intersection traffic control. All existing crosswalks crossing Overton Road between Liberty Parkway and Crosshaven Drive are located at signalized intersections. Another previous study conducted in 2018 recommended against striping a crosswalk crossing Overton Road at Briar Oak Drive/Briar Oak Circle due to sight distance limitations.

The City of Mountain Brook sidewalk master plan includes construction of a sidewalk on Briar Oak Drive and River Oaks Road (excerpt is shown in Figure in the adjacent diagram). The sidewalk is part of Phase 4 construction, which does not have an anticipated date of construction at this time. This sidewalk would provide access for pedestrians to the sidewalk on the south side of Overton Road between South Brookwood Road and River Oaks Road, and also to the crosswalk crossing Overton Road at the intersection of South Brookwood Road. However, where the proposed sidewalk ties to Overton Road at the intersection of Overton Road at Briar Oak Drive, it will be a dead-end sidewalk.

A significant portion (if not all) of the pedestrian traffic crossing Overton Road at the intersection of Briar Oak Drive/Briar Oak Circle is bound for Brookwood Forest Elementary School. These pedestrians could use the existing crosswalk crossing Overton Road at the intersection of Overton Road at South Brookwood Road. Constructing a sidewalk between Briar Oak Drive and South Brookwood Drive would encourage this pedestrian flow.

The estimated cost to construct this sidewalk is $145,000, including surveying and engineering. A map showing the location of the proposed sidewalk is shown in Figure 19.

Crosswalk - Overton Road at Stoneridge Drive

Observations indicate a demand for pedestrians to cross Overton Road from Stoneridge Drive to the existing sidewalks on the west side of Overton Road. It is recommended that a marked crosswalk be added to accommodate this crossing. In order to make the crossing ADA-compliant, ADA ramps will need to be constructed on both sides of Overton Road. It is also recommended that the existing traffic signal be modified to provide Walk-Don't Walk indications and pushbuttons to actuate the crosswalk signals. The proposed project is depicted in Figure 20.

The cost estimate to install the signalized pedestrian crossing of Overton Road at Stoneridge Drive is approximately $35,000, including engineering and construction.

Traffic Signal – Liberty Parkway at Overton Road

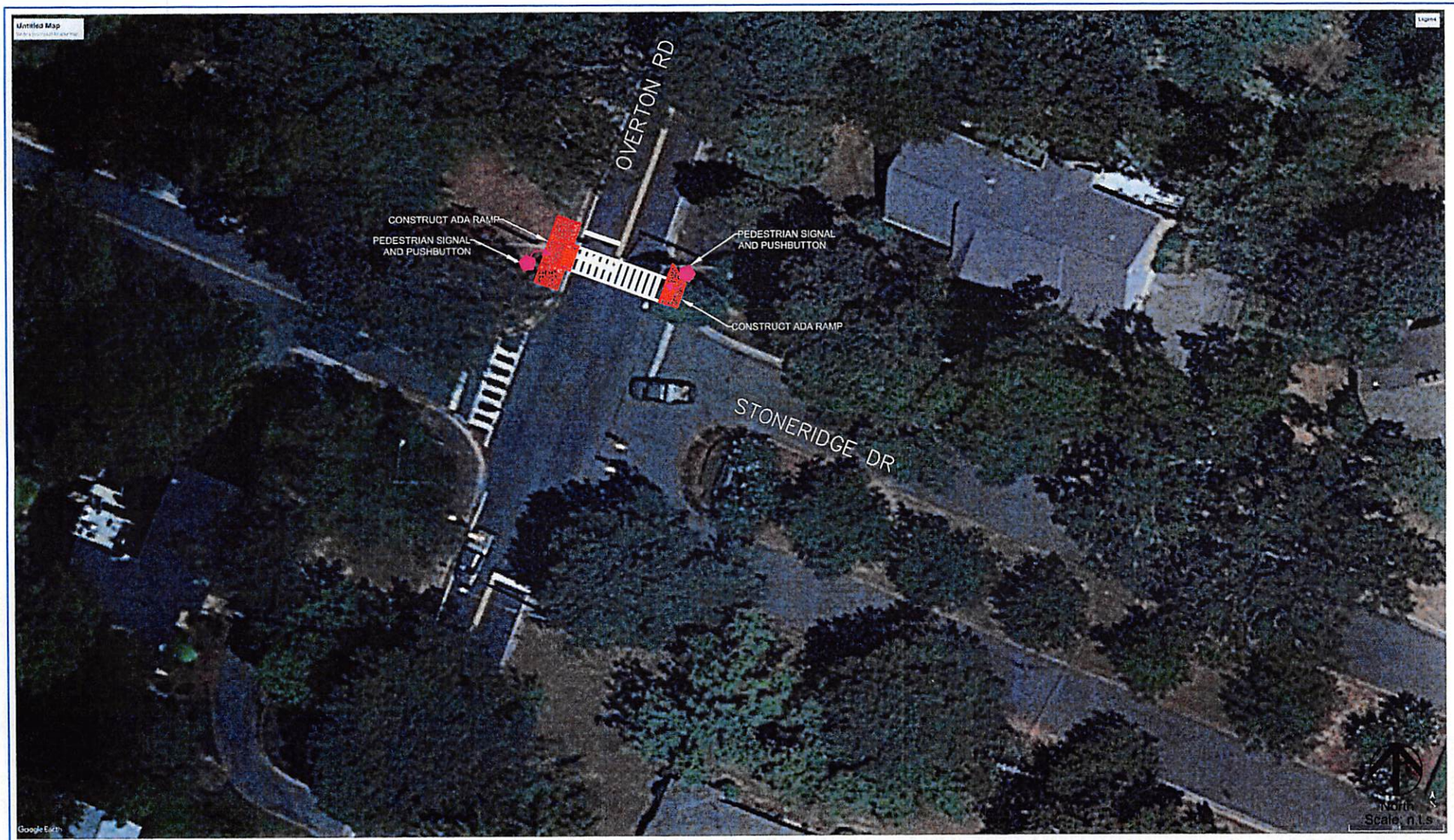
As traffic continues to grow due to development in Liberty Park, it should be anticipated that the existing three-way stop at the intersection of Liberty Parkway at Overton Road will fail and will need to be replaced with a traffic signal. An example layout of a traffic signal at this intersection is shown in Figure 21. The estimated cost for engineering and construction of the traffic signal is $200,000.

SKIPPER CONSULTING INC.

Figure 19 - Sidewalk - Briar Oak to South Brookwood Road

Overton Road APPLE

January 2020

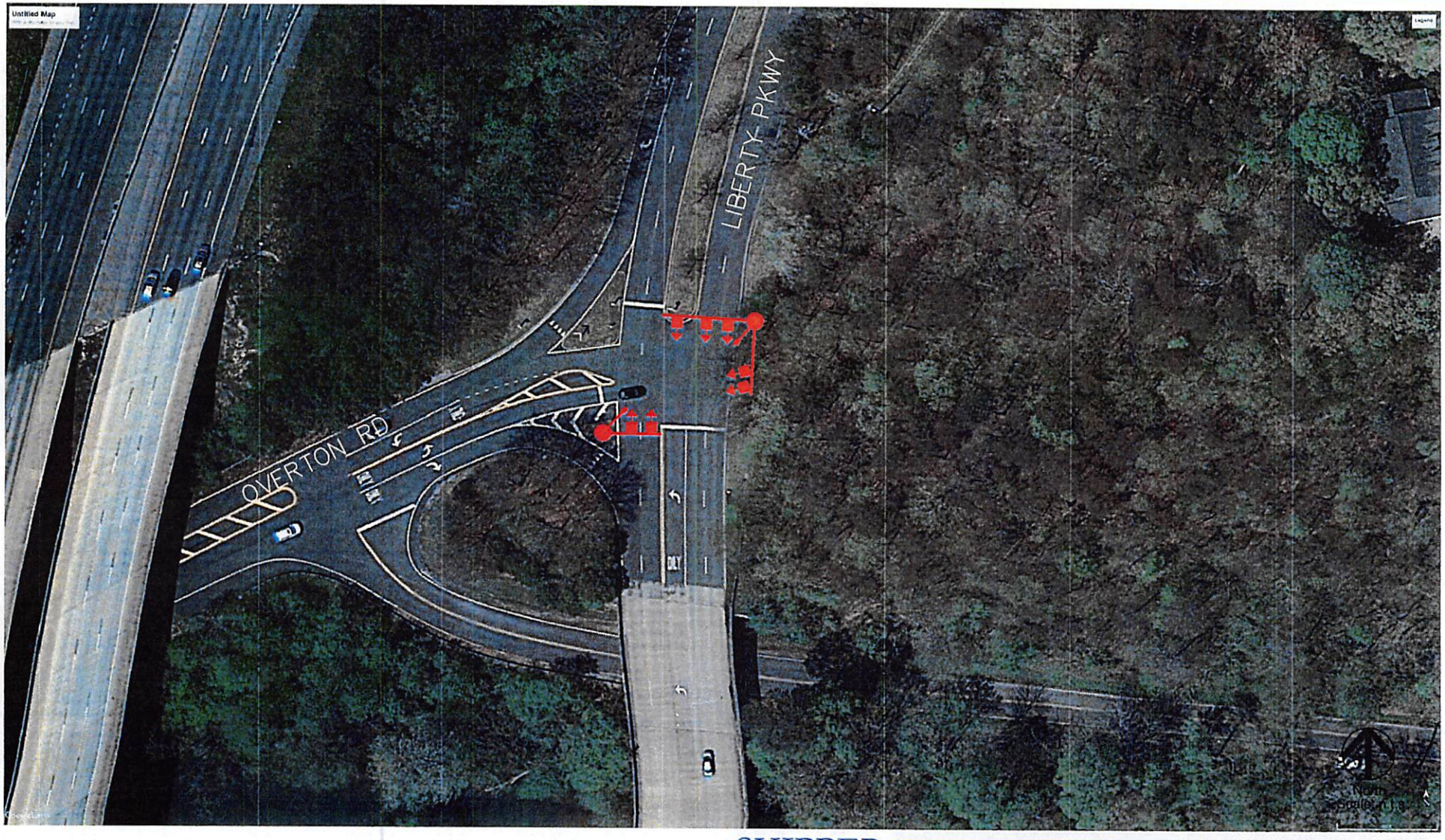


SKIPPER CONSULTING INC.

Figure 20 - Crosswalk - Overton Road at Stoneridge Drive

Overton Road APPLE

January 2020

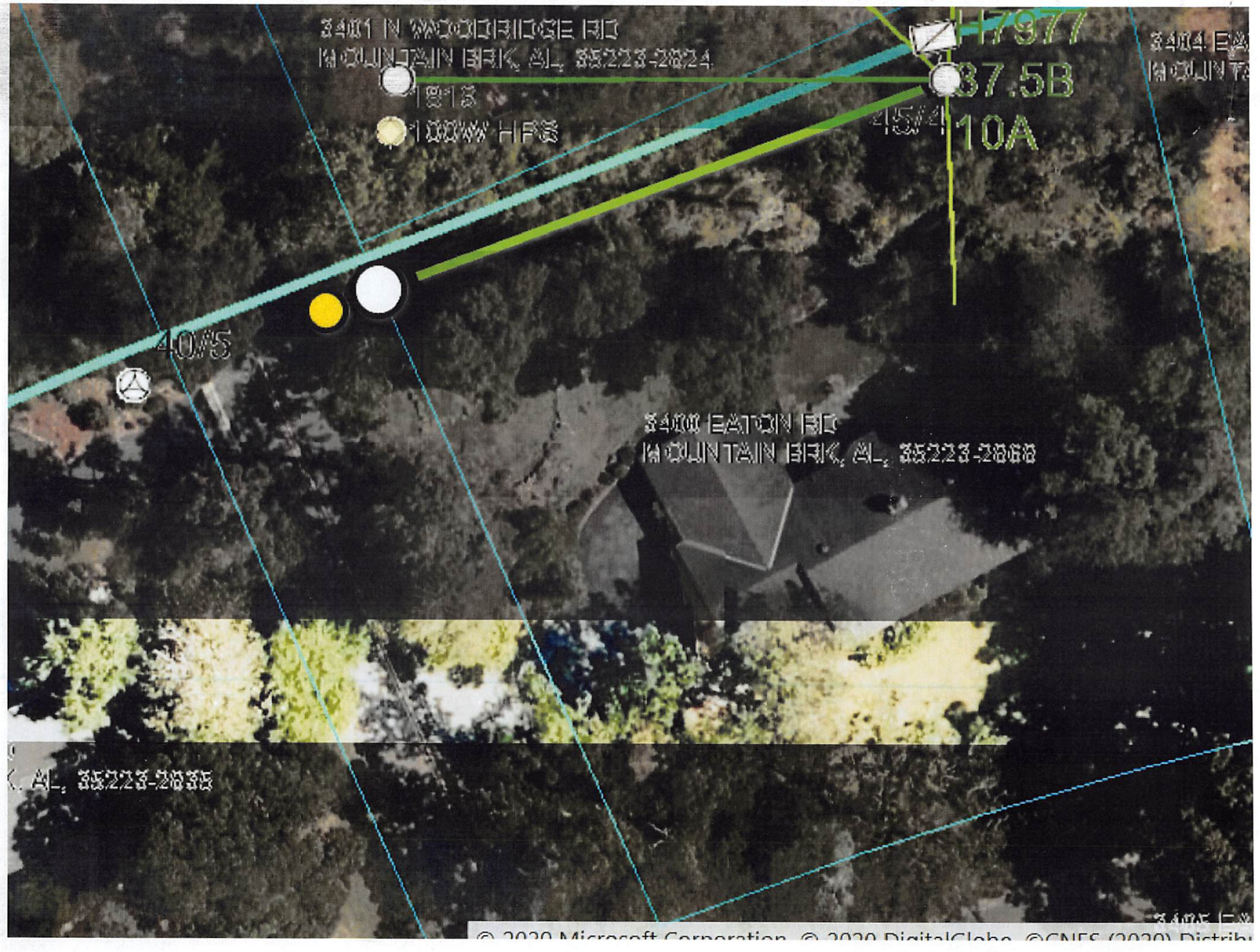


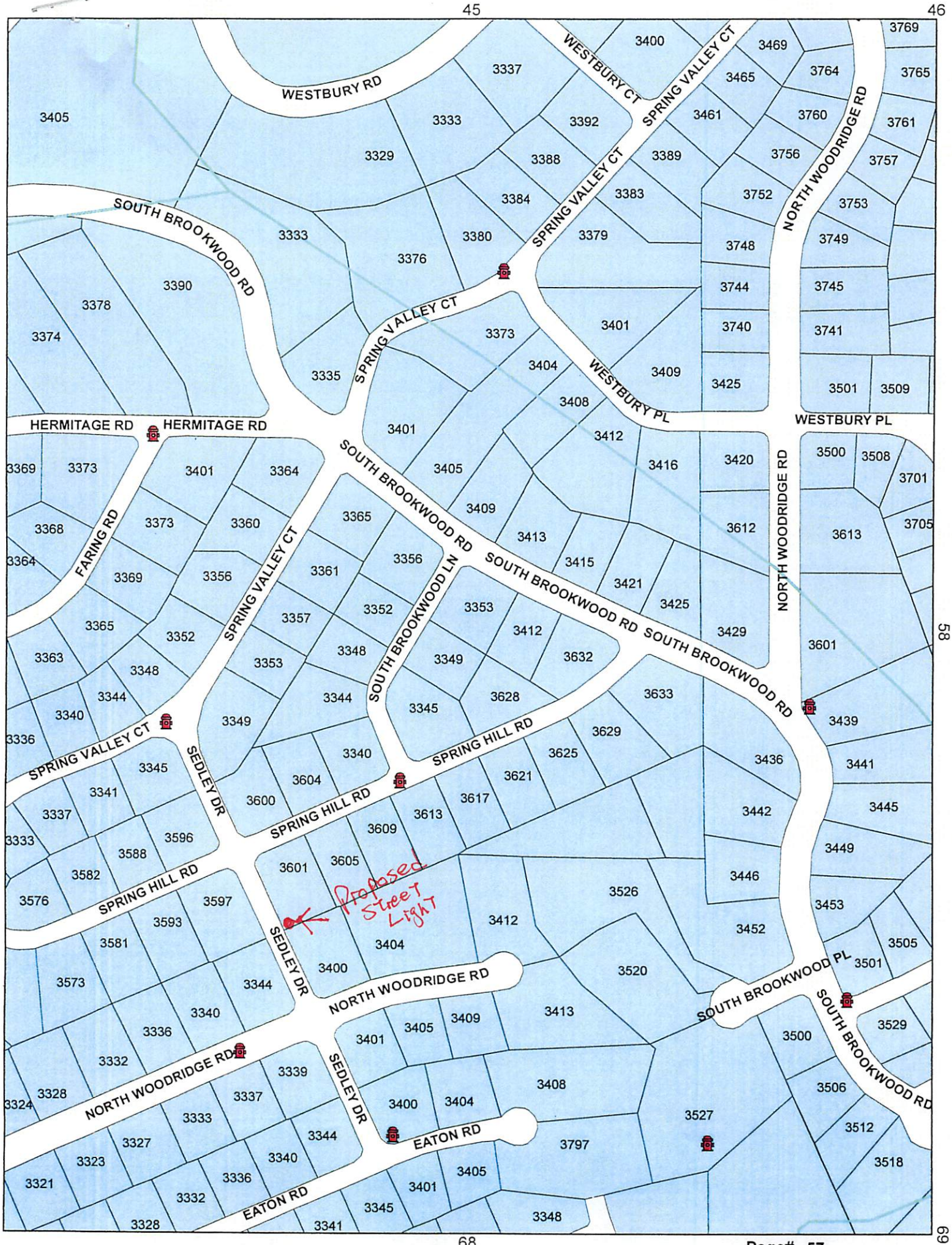
SKIPPER CONSULTING INC.

Figure 21 - Traffic Signal - Liberty Parkway at Overton Road

Overton Road APPLE

January 2020


3401 N WOODRIDGE RD
MOUNTAIN BRK, AL, 35223-2824
1813
100W HFS
H7977
37.5B
10A
4574
40/5
3400 EATON RD
MOUNTAIN BRK, AL, 35223-2868
© 2020 Microsoft Corporation © 2020 DigitalGlobe ©CNES (2020) Distrib


45
46
58
69
68
WESTBURY RD
WESTBURY CT
SPRING VALLEY CT
NORTH WOODRIDGE RD
SOUTH BROOKWOOD RD
HERMITAGE RD
WESTBURY PL
FARING RD
SOUTH BROOKWOOD LN
SPRING HILL RD
SEDLEY DR
NORTH WOODRIDGE RD
SOUTH BROOKWOOD PL
EATON RD
Proposed Street Light

Sam Gaston

From: Richardson, Robert Edward <ROBERICH@SOUTHERNCO.COM> on behalf of Richardson, Robert Edward
Sent: Friday, March 27, 2020 3:38 PM
To: Sam Gaston
Subject: RE: N Woodridge and Sedley
Attachments: Field notes - N Woodridge and Sedley.png

Attached is a sketch. 3008 N Woodridge should be worked next week. We still have not gotten the fixture for Vogue Cleaners yet.

Thanks.

From: Sam Gaston <gastons@mtnbrook.org>
Sent: Friday, March 27, 2020 3:17 PM
To: Richardson, Robert Edward <ROBERICH@SOUTHERNCO.COM>
Subject: RE: N Woodridge and Sedley

EXTERNAL MAIL: Caution Opening Links or Files

Can you send me a map or location?

Sam S.Gaston
City Manager
City of Mountain Brook, AL.
56 Church Street
P.O. Box 130009
Mountain Brook AL. 35213
(205) 802-3803 Phone
(205) 870-3577 Fax

From: Richardson, Robert Edward [mailto:ROBERICH@SOUTHERNCO.COM]
Sent: Friday, March 27, 2020 1:58 PM
To: Sam Gaston
Subject: N Woodridge and Sedley

Sam,

We could put a light on the existing pole mid block on Sedley near N Woodridge. There are some limbs that may obstruct some of the light, but it would be better than nothing. We would have to run 1 span of wire from the transformer pole to this primary pole to install the light. Please let me know if you have any questions.

Thanks,

Robert Richardson
Municipal Account Manager
Lighting Services
Cell: (205) 438-0612
Desk: (205) 257-0116

Lighting Services NESC® Lease Agreement (Governmental)

ALABAMA POWER
A SOUTHERN COMPANY

Customer Legal Name City of Mountain Brook DBA N Woodridge Rd and Sedley

Service Address SHANNON LANE, BIRMINGHAM AL 35213 County Jefferson

Mailing Address P.O. Box 130009, Birmingham, AL 35213

Email Gastons@mtnbrook.org Tel # 205-802-3803 Alt Tel

Tax ID Business Description Municipal

Existing Customer? Yes ☑ No ☐ If Yes (and if possible), does Customer want Equipment added to an existing account? Yes ☑ No ☐ Existing Account 36128-68008
For informational purposes only

Equipment

	Qty	Wattage	Type	Description	OH/ UG	M/ UM	Equipment Amount ($)	Estimated Regulated Charge ($)*	Estimated Monthly Charge ($)*
(1)	1	108	LED	LED Cobra - 4000k - gray - 8500 to 14000 Lumens	OH	UM	$17.22	$2.53	$19.75
(2)									
(3)									
(4)									
(5)									
(6)									
(7)									
(8)									
(9)									
(10)									
						Monthly Total *			$19.75

Project Notes: To install light and wire on existing pole near Sedley and N Woodridge

Initial Term	36 **months**	**Prepaid Amount**	$ 0.00

** The Regulated Charge is subject to change at any time as dictated by the Alabama Public Service Commission. The amount shown is an estimate based on the Unmetered Outdoor Lighting (ODL) rate in effect at time of Agreement proposal; actual charges may vary.*

Customer agrees to lease the Equipment referenced above from Alabama Power Company on the attached terms and conditions and authorizes all actions noted above.

Customer Authorized Signature	**Date**	**Alabama Power Company**	**Date**
Sign Here		Sign Here	
Print Name		Print Name	
Print Title		Print Title	

APC Internal Use Only - APC Reference Number (if applicable):

TERMS and CONDITIONS *(NESC Governmental)*

1. **Lighting Equipment Lease.** This Lease Agreement (**"Agreement"**) states the agreed terms and conditions upon which **Alabama Power Company (**"APC"**)** will: (i) lease to **"Customer"** (identified on Page 1) the **"Equipment"** referenced on Page 1 for use at the stated "Service Address" (the **"Premises"**); and (ii) provide electric service to operate the Equipment. The **"Equipment"** includes all poles, bases, wiring, conduit, fixtures, controls, and related items necessary to provide lighting service through the listed fixtures, unless expressly noted otherwise in "*Project Notes.*" Customer acknowledges that regulatory change during the Agreement term may require APC to modify or replace some Equipment.

2. **Intent and Title.** This Agreement is not a sale of the Equipment to Customer. **Customer expressly acknowledges that APC retains title to the Equipment** and agrees that this Agreement only gives Customer the right to use the Equipment during the Agreement term, so long as Customer complies with all terms and conditions. Customer acknowledges that the Equipment, although attached to real property, always will remain the exclusive personal property of APC and that APC may remove the Equipment when this Agreement ends. Customer authorizes APC, without further consent or action, to file any UCC financing statement or security agreement relating to the Equipment and agrees that APC may record those documents. **APC makes no representation or warranty regarding treatment of this transaction by the Internal Revenue Service or the status of this Agreement under any federal or state tax law; Customer enters into this Agreement in sole reliance upon Customer's own advisors.**

3. **Term.** The initial Agreement term is stated on Page 1, calculated from the date of the first monthly bill. After the initial term, this Agreement automatically renews on a month-to-month basis until terminated by either party by providing written notice of intent to terminate to the other party at least 30 days before the desired termination date. APC's address for notice is P.O. Box 2641, Birmingham, Alabama 35203; Customer's mailing address is noted on Page 1.

4. **Payment.** APC will invoice Customer per the terms stated on Page 1, subject to any change in the electric service charge dictated by the Alabama Public Service Commission. Customer agrees to pay the amount billed by the due date (20 days after billing date). Applicable taxes included in the Equipment price are subject to change at any time. If a balance is outstanding past the due date, Customer agrees to pay the greater of 1.5% of the unpaid balance or $2.00 and acknowledges that APC may require Customer to pay a deposit of up to two times the Estimated Monthly Charge in order to continue service. If applicable, Customer must provide a copy of its Alabama sales tax exemption certificate.

5. **Premises Activity.** Customer grants a license and right of access to APC, and its contractors and representatives, to enter the Premises with vehicles and equipment to: (i) install and connect the Equipment and, if applicable, remove or disconnect existing equipment (collectively, the **"Installation"**); (ii) inspect, maintain, test, replace, repair, or remove the Equipment; (iii) provide electric service for the Equipment; or (iv) conduct any other Agreement-related activity (items–(iv) collectively, the **"APC Activity"**). Customer will not cause or permit any obstruction that may interfere with APC's access to the Equipment. Customer represents that the individual signing this Agreement on its behalf has authority to do so and that it has express authority from all Premises owners (and any other party with rights in the Premises) to enter into this Agreement and to authorize the APC Activity. **Customer is solely responsible for safety of the Premises and agrees that APC has no obligation to ensure the safety of the Premises or persons or property entering onto Customer's Premises.**

6. **Installation.** Customer represents that: (i) the Premises' final grade will vary no more than 6 inches from the grade existing at the time of Installation; and (ii) if applicable and required for proper Installation, Premises property lines will be clearly marked before Installation.
   - A. **Customer Work.** If APC, upon Customer's request, allows Customer to perform any part of the Installation (including trenching) itself or through a third party, Customer warrants that the work will meet APC's installation specifications (which APC will provide to Customer and are incorporated by this reference). Customer is responsible for all reasonable additional costs arising from Customer's non-compliance with APC's specifications or lack of timely (i.e., 10 days') notice to APC that APC's Installation activity can commence.
   - B. **Underground Facility/Obstruction Not Subject to Dig Law.** Because APC Activity may require excavation not subject to the Alabama's Underground Prevention Legislation (Ala. Code §§ 37-15-1 - 37-15-11) (**"Dig Law"**), **Customer must mark any private utility or facility (e.g., gas/ water/sewer line; irrigation facility; low voltage data/communication line) or other underground obstruction at the Premises that is not subject to the Dig Law.** If APC causes or incurs damage due to Customer's failure to mark a private facility or obstruction before APC commences Installation, Customer is responsible for all damages and any resulting delay.
   - C. **Unforeseen Condition.** The estimated charges shown on Page 1 include no allowance for any subsurface rock, wetland, underground stream, buried waste, unsuitable soil, underground obstruction, archeological artifact, burial ground, threatened or endangered species, hazardous substance, etc. not properly marked or identified (**"Unforeseen Condition"**). If APC encounters an Unforeseen Condition, APC, in its sole discretion, may stop all APC Activity until Customer either remedies the condition or agrees to reimburse all APC costs arising from the condition. Customer is responsible for all costs of Equipment modification or change requested by Customer or dictated by an Unforeseen Condition or circumstance outside APC's control.

7. **Equipment Protection and Damage.** After Installation and throughout this Agreement's term, in the event of any work or digging near the Equipment, Customer (or any person or entity working on Customer's behalf) must: (i) provide notices and locate requests by calling Alabama 811 or 1-800-292-8525; and (ii) provide notices to other utilities or operators as required by the Dig Law.. As between Customer and APC, Customer is responsible for all damages arising from failure to comply with applicable law or for Equipment damage caused by anyone other than APC (or an APC contractor or representative).

8. **Maintenance.** During this Agreement's term, APC will maintain the Equipment and will bear the cost of routine repair or replacement. **Customer must notify APC of any need for Equipment repair by calling the Business Service Center at 1-888-430-5787.**

9. **Disclaimer; Damages. APC makes no covenant, warranty, or representation of any kind (including warranty of fitness for a particular purpose or of merchantability) regarding the Equipment or any APC Activity.** Customer also acknowledges that, due to the unique characteristics of the Premises, Customer's needs, or Equipment choice, the Equipment may not follow IESNA guidelines. **Customer waives any right to consequential, special, indirect, treble, exemplary, incidental, punitive, loss of business reputation, or loss of use (including loss of revenue, profits, or capital costs) damages in connection with the Equipment or this Agreement, or arising from damage, hindrance, or delay involving the Equipment or this Agreement, whether or not reasonable, foreseeable, contemplated, or avoidable.**

10. **Indemnity.** To the fullest extent allowed by law, Customer agrees to indemnify, release, hold harmless, and, at APC's request, defend APC and its affiliates and contractors (and their officers, directors, employees, representatives, and agents) from or against any loss, damage, cost, expense, or liability (including actual attorneys' fees reasonably incurred and all expenses of investigation and defense) for any damage or claim for personal or bodily injury (including death), property damage (including loss of use), monetary damage, or equitable relief caused by or arising out of any misrepresentation or act or omission of Customer involving this Agreement, the Equipment, or the Premises, whether or not caused by or arising out of the joint, concurrent, or contributory (but not sole) negligence of APC.

11. **Default.** Customer is in default if Customer does not pay the entire amount owed within 45 days of billing. APC's waiver of any past default will not waive any other default. If default occurs, APC, at its discretion, may immediately terminate this Agreement, collect all past due amounts (including late fees) and all amounts due for the Equipment during the remaining Agreement term, remove the Equipment from the Premises, and seek any other available remedy.

12. **Miscellaneous.** This Agreement contains the parties' entire agreement relating to the Equipment and replaces any prior agreement, written or oral. Only a written amendment signed by each party can modify this Agreement, except that either party may update administrative or contact information (e.g., address, phone, website) at any time by written notice to the other party. Customer will not assign, in whole or in part, this Agreement or its Agreement rights or obligations without APC's prior written consent. No assignment, whether with or without consent, relieves Customer of its Agreement obligations. Customer must provide advance notice of a change in control of all, or substantially all, of Customer's ownership or interest in the Premises. In this Agreement, **"including"** means "including, but not limited to." Alabama law governs this Agreement. If a court rules an Agreement provision unenforceable to any extent, the rest of that provision and all other provisions remain effective.

April 24, 2020

Mr. Ronnie Vaughn
City of Mountain Brook Alabama
56 Church Street
Mountain Brook, Alabama 35213

Re: Smyer Road Slope Repair Feasibility
Mountain Brook, Alabama
ECS Project No. 30-1857-A

Dear Mr. Vaugh,

As you are aware, pavement distress and slope instability are present on Smyer Road behind the Macy's-Colonial Brookwood Village in Mountain Brook, Alabama. ECS Southeast, LLP (ECS) recently completed a subsurface exploration at the project site, the results of which were transmitted in our Geotechnical Engineering Report titled "Smyer Road Evaluation" (ECS Project Number 30:1857), dated November 21, 2019. That report provided several methods to repair the distressed pavement for temporary roadway serviceability. We understand the City of Mountain Brook is considering a long term repair solution. This report provides three possible slope instability repair methods. Once the slope stabilization method is in place the pavements may be repaired or replaced.

Slope Geometry

ECS evaluated slope stability and the repair options based on topographic map provided by Jefferson County GIS, and photos available on Google Earth. Therefore, the sections displayed in the attached analysis and drawings should be considered preliminary. Final slope repair design should be based on a physical land survey that defines slope geometry and topography.

Shear Strength Parameters

ECS estimated the soil shear strength parameters based on the soil borings, laboratory testing, and our experience with similar soils. The soil shear strengths are based on correlations or experience. Advanced laboratory and/or in-situ testing such as triaxial shear strength testing, field vane shear or pressuremeter testing may demonstrate higher strength values which may provide a more economic repair. The following table summarizes the shear strength parameters used in the analysis.

Soil Type	Unit Weight (pcf)	Cohesion (psf)	Friction Angle
Clay (CL/CH)	115	20	22
Gravel (GW)	120	0	32
PWR	130	500	30
Bed Rock	130	5000	40

Slope Stability Analysis

ECS developed slope stability models using the computer program Slide by Rocsciece to evaluate the stability of the existing roadway and the stabilization options. The global stability of the existing slope and planned stabilization options were estimated using limit equilibrium

methods and comparing the ratio of driving and resisting forces (factor of safety) to industry established standards. In general a factor of safety of 1.0, or unity, is considered to be on the verge of instability. An embankment with a factor of safety of greater than 1.0 is stable, and an embankment with a factor of safety less than 1.0 is unstable. However, it must be noted with any engineering analysis there is some level of uncertainty with soil layer strengths and loading used in the analysis. Although a factor of safety of 1.0 is considered nominally stable, a small change in shear strength or loading may result in slope instability. In addition, it has been our experience that slopes with a factor of safety between 1.0 and 1.2 may experience long term creep movement. For this reason, industry standards generally recommend factors of safety on the order of 1.3 to 1.5 to account for these potential unanticipated changes in loading conditions or soil strength. For this project, we have targeted a minimum factor of safety of 1.3 for the repair option.

Conclusions and Recommendations

Based on the available subsurface information and known site geometry ECS estimated the stability of the existing slope at less than 1.1 as shown on Figure 1. As such, slope stabilization is recommended to repair the slope. We anticipate the primary failure mode of the slope is a relatively shallow slide occurring at the interface between the weathered rock and overlying overburden soils. We have developed three repair options. Please note with each of these options, we anticipate there may be shallow slides and failures of surficial soils below the repair; however, the repair will maintain the serviceability of the roadway.

- Option 1: Shored Mechanically Stabilized Earth (SMSE) Wall – consisting SMSE wall is a combination of a soil nail wall with shotcrete facing and Mechanically Stabilized Earth (MSE) wall constructed in front of the soil nail wall. The SMSE limits the excavation into an existing slope that would generally be required to install an MSE wall. In addition, the soil nail component simultaneously creates an excavation support system to stabilize the uphill slope during wall construction. The major limitation of soil nail walls is they can only be constructed in a "cut" situation. As such, where the planned roadway is wider than allowed by the site geometry, a MSE Wall is constructed in front of the soil nail wall. Figure 2 shows a preliminary cross section for a SMSE Wall at this site, and Figure 3 shows the associated slope stability model and estimated factor of safety of 1.50. At this site, if geometry allows, and road widening isn't required, a soil nail wall alone may be possible to stabilize the roadway.

- Option 2: Anchored Soldier Pile and Panel Wall – This system includes vertical soldier piles with reinforced concrete panels set between the piles. Earth or rock anchors are installed near the top of the wall to provide additional lateral stability and restraint. At this site, we anticipate the soldier piles would extend into the weather rock strata. This repair method is very common for landside repair and allows the widening of a roadway with a single system. One major drawback is relatively large equipment is required to install the soldier piles and this tends to be a more expensive repair method. Figure 4 shows this conceptual repair option and Figure 5 shows the associated slope stability model and estimated factor of safety of 1.3.

- Option 3: Soil Nailed Slope –This option consist of soil nails reinforcing the existing soil mass in place without modify the existing slope geometry. For this project recommend the soil nails be installed through the overburden soils and into the underlying rock stratum. Where the soil nails reinforce the soil mass, the slope face is reinforced with

either shotcrete facing or can allow vegetation with various erosion control and reinforcing methods. While this is an option to stabilize the roadway, this option will not allow widening the roadway. In addition, this option may not allow a full depth repair of the distressed pavement. However, we anticipate this option will be the least expensive of the three proposed stabilization methods. Figure 6 shows this conceptual repair option and Figure 7 shows the associated slope stability model and estimated factor of safety of 1.44.

Closing

The stabilization methods recommended in this letter are based on limited subsurface and survey information and should be considered preliminary. Prior to the final design, a comprehensive physical survey of the repair area and surrounding topography will be required. This survey should include a mapping exposed rock surfaces above and below the repair area. In addition, soil test borings extending into rock are recommended. Additional soil borings above and below the roadway should also be performed. If the slope above and below the roadway is not accessible by drill rig, hand augers and dynamic cone penetrometer (DCP) tests can be performed. A laboratory testing program including natural moisture contents, Atterberg limits, percent fines and potentially advance laboratory testing such as Triaxial Shear or Direct Shear shall be implemented. Upon completion of the survey, additional subsurface exploration, and laboratory testing program, final repair recommendations can be provided.

If you have any questions concerning the information in this letter, please do not hesitate to contact us.

Respectfully,

ECS SOUTHEAST, LLP

Efrem W. Emhatsion, E.I.T.
Geotechnical Staff Project Manager
EEmhatsion@ecslimited.com

Morgan E. Carden, P.E.[1]
Senior Project Manager
MEHansen@ecslimited.com
(1) NC, SC

Marc F. Plotkin, P.E., D.GE
Principal Engineer
AL Registration No. 36797
MPlotkin@ecslimited.com

ALABAMA LICENSED No. 36797 PROFESSIONAL ENGINEER MARC FRANKLIN PLOTKIN

04-24-20

Enclosure: Figure A: Approximate area of Repair

Figure B: Assumed Geometry

Figure 1: Preliminary Slope Stability Analysis

Figure 2: Option 1 - Preliminary Cross Section for SMSE Wall

Figure 4: Option 2 - Preliminary Cross Section for Anchored Soldier Pile and Panel Wall

Figure 5: Option 2 - Preliminary Slope Stability Model for Anchored Soldier Pile and Panel Wall

Figure 6: Option 3 - Preliminary Cross Section for Soil Nailed Slope

Figure 7: Option 3 - Preliminary Slope Stability Model for Soil Nailed Slope

SMYER ROAD
SLOPE REPAIR
MOUNTAIN BROOK, ALABAMA

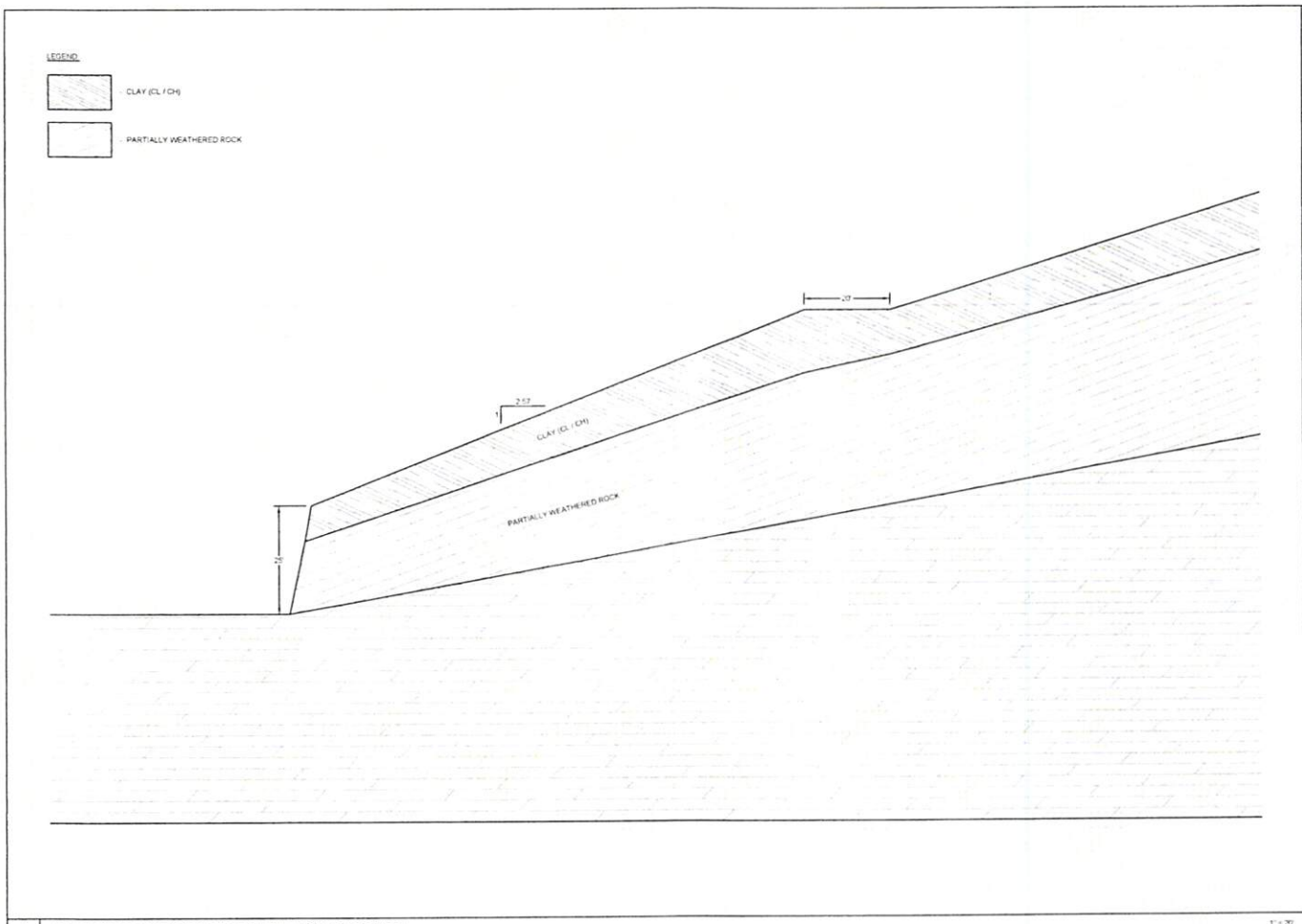
APPROXIMATE AREA OF REPAIR

ECS REVISIONS

DESIGNER MEC	DRAFTING DFA
SCALE	AS SHOWN
PROJECT NO.	30-1857-A
FIGURE	A
DATE	04-23-2020

"SETTING THE STANDARD FOR SERVICE"

1 APPROXIMATE AREA OF REPAIR



1 ASSUMED GEOMETRY AND STRATIGRAPHY BASED ON PROVIDED AND AVAILABLE INFORMATION

1" = 20'

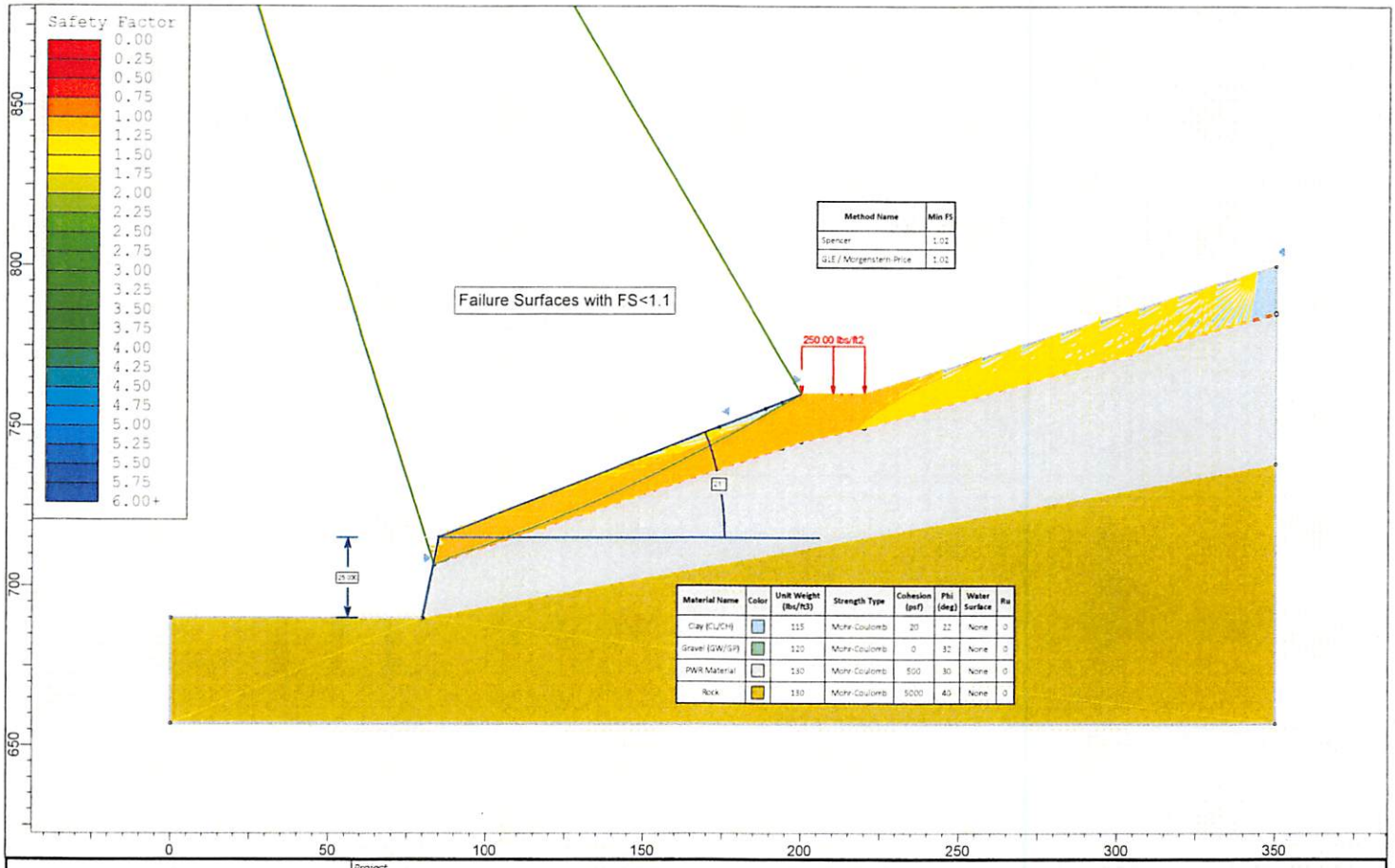
"SETTING THE STANDARD FOR SERVICE"

SMYER ROAD
SLOPE REPAIR
MOUNTAIN BROOK, ALABAMA

ASSUMED GEOMETRY

ECS REVISIONS

DESIGNER MEC	DRAFTING DFA
SCALE	AS SHOWN
PROJECT NO.	30-1857-A
FIGURE	B
DATE	04-23-2020



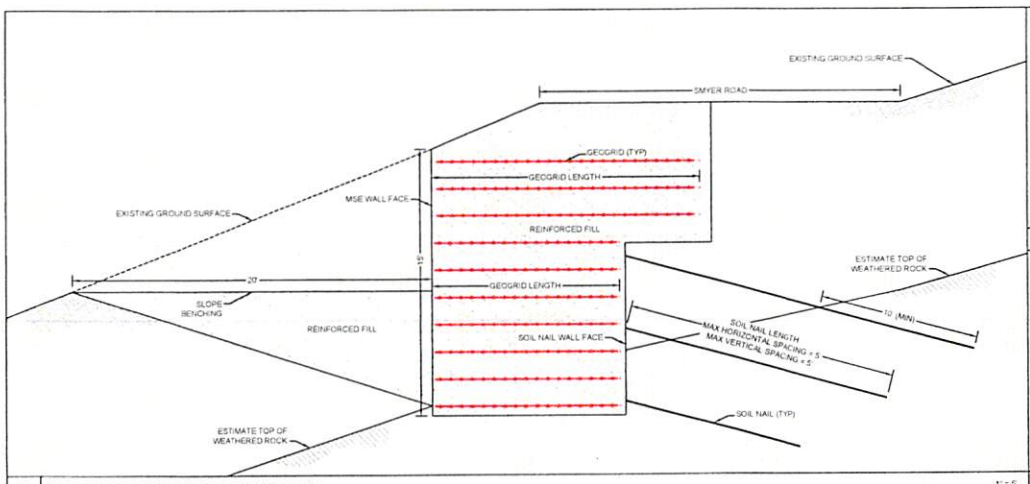
Method Name	Min FS
Spencer	1.02
GLE / Morgenstern-Price	1.02

Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
Clay (CL/CH)		115	Mohr-Coulomb	20	22	None	0
Gravel (GW/SP)		120	Mohr-Coulomb	0	32	None	0
PWR Material		130	Mohr-Coulomb	500	30	None	0
Rock		130	Mohr-Coulomb	5000	45	None	0

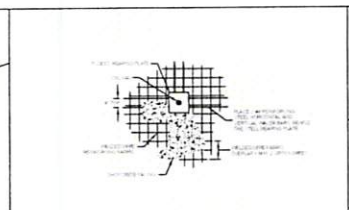
rocscience

SLIDEINTERPRET 8.029

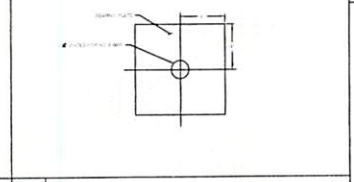
Project	30:1857-A _ Smyer Road Slope Feasilbility		
Analysis Description	Figure 1: Preliminary Slope Stability Analysis		
Drawn By	EWE	Scale	1:500
Company	ECS Southeast, LLP		
Date	04/20/2020	File Name	Preliminary Analysis.slmd



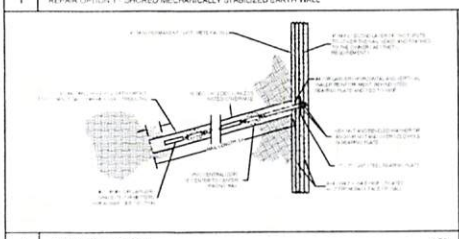
1 REPAIR OPTION 1 - SHORED MECHANICALLY STABILIZED EARTH WALL 1" = 5'



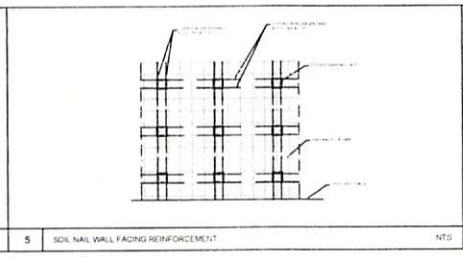
2 TYPICAL SHOTCRETE REINFORCING DETAIL NTS



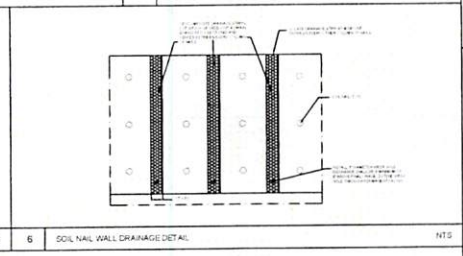
3 TYPICAL PLATE DETAIL NTS



4 TYPICAL SOIL NAIL DETAIL NTS



5 SOIL NAIL WALL FACING REINFORCEMENT NTS



6 SOIL NAIL WALL DRAINAGE DETAIL NTS

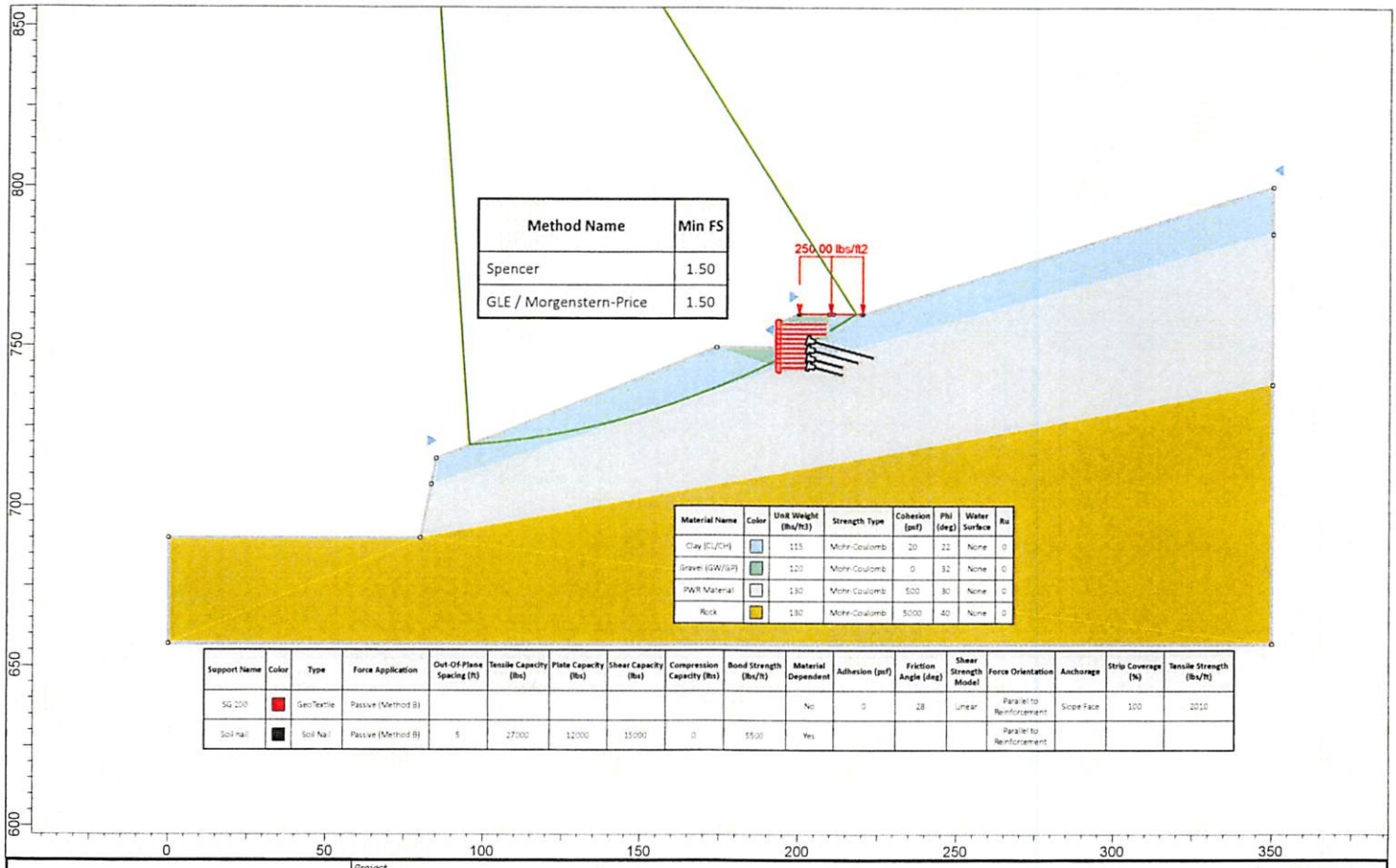
ECS SOUTHEAST, LLP
MOBILE, ALABAMA
"SETTING THE STANDARD FOR SERVICE"

SMYER ROAD
SLOPE REPAIR
MOUNTAIN BROOK, ALABAMA

REPAIR OPTION 1

ECS REVISIONS

DESIGNER MEC	DRAFTING DFA
SCALE	AS SHOWN
PROJECT NO.	30-1857-A
FIGURE	2
DATE	04-23-2020



Method Name	Min FS
Spencer	1.50
GLE / Morgenstern-Price	1.50

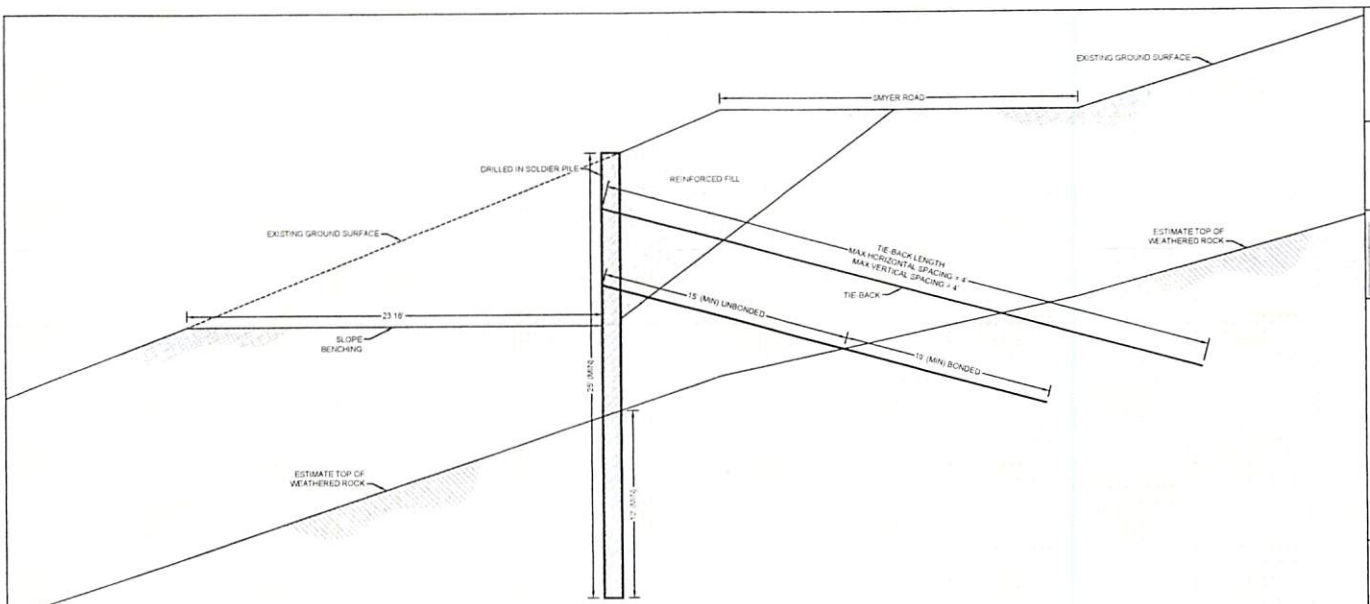
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
Clay (CL/CH)		115	Mohr-Coulomb	20	22	None	0
Gravel (GW/GP)		120	Mohr-Coulomb	0	32	None	0
PWR Material		130	Mohr-Coulomb	500	30	None	0
Rock		130	Mohr-Coulomb	5000	40	None	0

Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (ft)	Tensile Capacity (lbs)	Plate Capacity (lbs)	Shear Capacity (lbs)	Compression Capacity (lbs)	Bond Strength (lbs/ft)	Material Dependent	Adhesion (psf)	Friction Angle (deg)	Shear Strength Model	Force Orientation	Anchorage	Strip Coverage (%)	Tensile Strength (lbs/ft)
SG 200		GeoTextile	Passive (Method B)							No	0	28	Linear	Parallel to Reinforcement	Slope Face	100	2010
Soil nail		Soil Nail	Passive (Method B)	5	27000	12000	15000	0	5500	Yes				Parallel to Reinforcement			

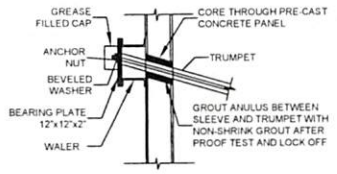
rocscience

SLIDEINTERPRET 8.029

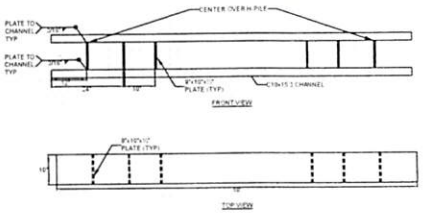
Project	30:1857-A _ Smyer Road Slope Feasilbility
Analysis Description	Figure 3: Option 1- Preliminary Slope Stability Model for SMSE Wall
Drawn By	EWE
Scale	1:500
Company	ECS Southeast, LLP
Date	04/20/2020
File Name	Preliminary Analysis.slmd



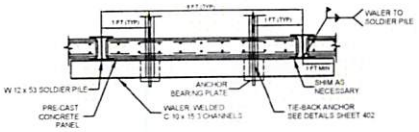
1 REPAIR OPTION 2 - SOLDIER PILE AND PANEL WALL WITH TIE BACKS 1" = 5'



2 TYPICAL ANCHOR HEAD CONNECTION DETAIL - SECTION VIEW NTS



3 TYPICAL WALER DETAIL NTS



4 TYPICAL LAGGING DETAIL - PLAN VIEW NTS

ECS

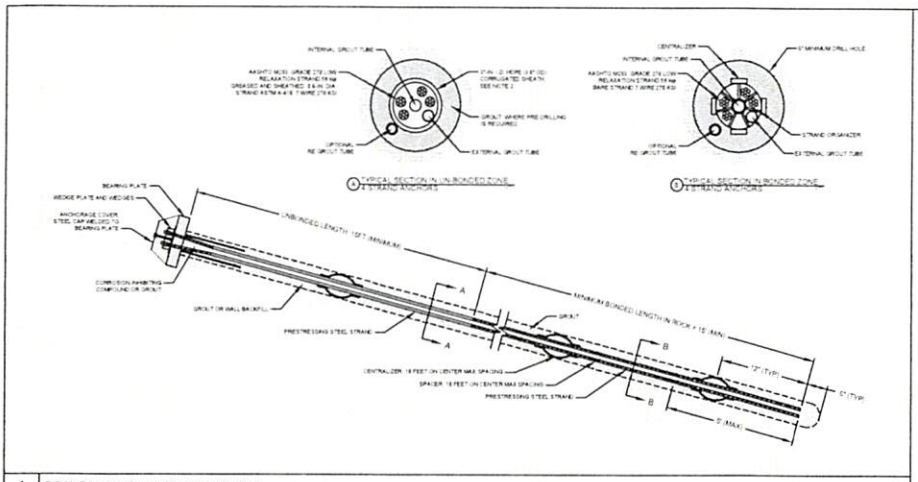
"SETTING THE STANDARD FOR SERVICE"

SMYER ROAD
SLOPE REPAIR
MOUNTAIN BROOK, ALABAMA

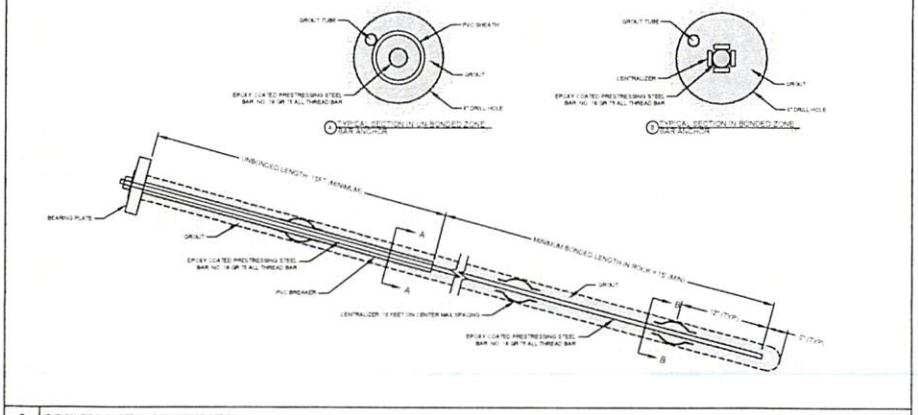
REPAIR OPTION 2

ECS REVISIONS

DESIGNER MEC	DRAFTING DFA
SCALE	AS SHOWN
PROJECT NO.	30-1857-A
FIGURE	4
DATE	04-23-2020



1 TYPICAL TIE BACK DETAIL - 4 STRAND ANCHOR OPTION NTS



2 TYPICAL TIE BACK DETAIL - BAR ANCHOR OPTION NTS

ECS

"SETTING THE STANDARD FOR SERVICE"

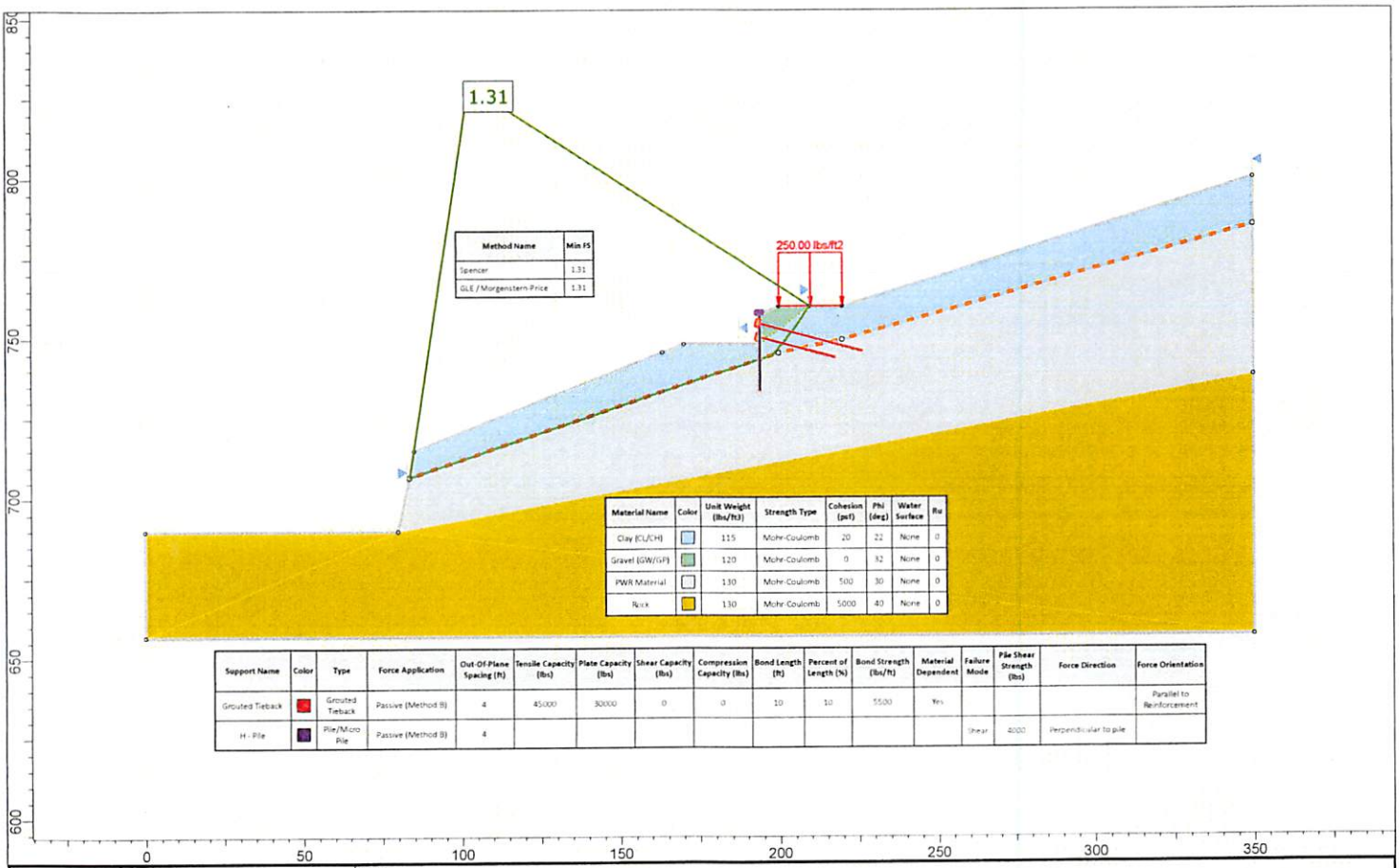
SMYER ROAD
SLOPE REPAIR
MOUNTAIN BROOK, ALABAMA

REPAIR OPTION 2

ECS REVISIONS

DESIGNER	DRAFTING
MEC	DFA

SCALE: AS SHOWN
PROJECT NO: 30-1857-A
FIGURE: 4A
DATE: 04-23-2020



Method Name	Min FS
Spencer	1.31
GLE / Morgenstern-Price	1.31

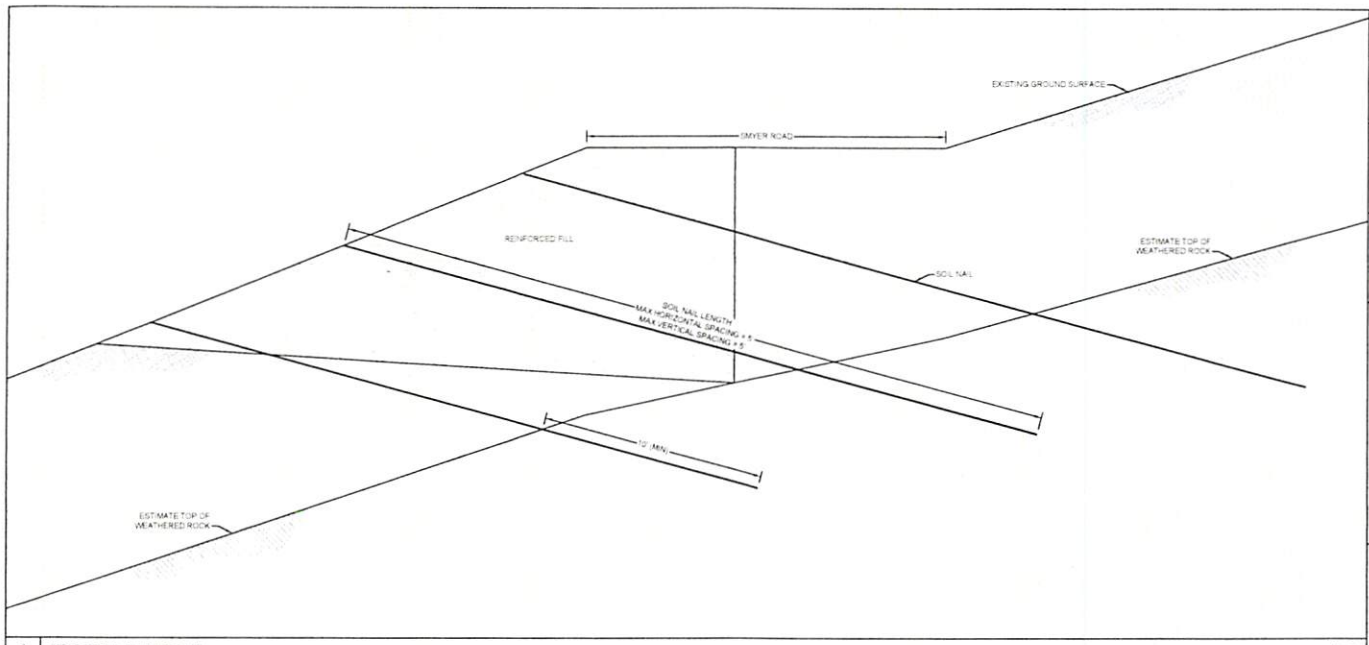
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
Clay (CL/CH)		115	Mohr-Coulomb	20	22	None	0
Gravel (GW/GP)		120	Mohr-Coulomb	0	32	None	0
PWR Material		130	Mohr-Coulomb	500	30	None	0
Rock		130	Mohr-Coulomb	5000	40	None	0

Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (ft)	Tensile Capacity (lbs)	Plate Capacity (lbs)	Shear Capacity (lbs)	Compression Capacity (lbs)	Bond Length (ft)	Percent of Length (%)	Bond Strength (lbs/ft)	Material Dependent	Failure Mode	Pile Shear Strength (lbs)	Force Direction	Force Orientation
Grouted Tieback		Grouted Tieback	Passive (Method B)	4	45000	30000	0	0	10	10	5500	Yes				Parallel to Reinforcement
H - Pile		Pile/Micro Pile	Passive (Method B)	4									Shear	4000	Perpendicular to pile	

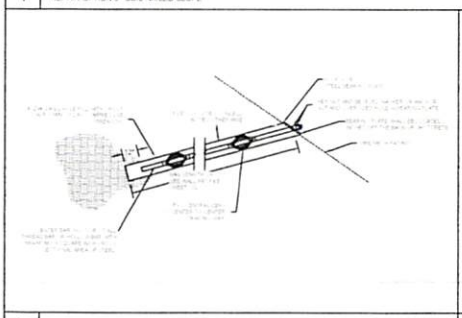
rocscience

SLIDEINTERPRET 8.029

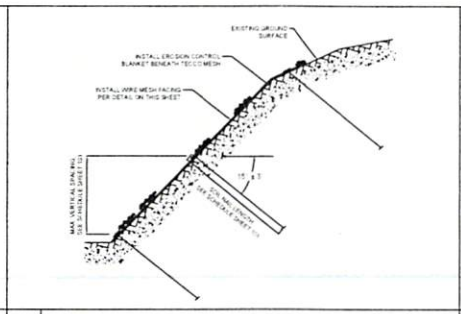
Project	30:1857-A _ Smyer Road Slope Feasilbility		
Analysis Description	Figure 5: Option 2 - Preliminary Slope Stability Model for Anchored Soldier Pile and Panel Walll		
Drawn By	EWE	Scale	1:500
Company	ECS Southeast, LLP		
Date	04/20/2020	File Name	Preliminary Analysis.slmd



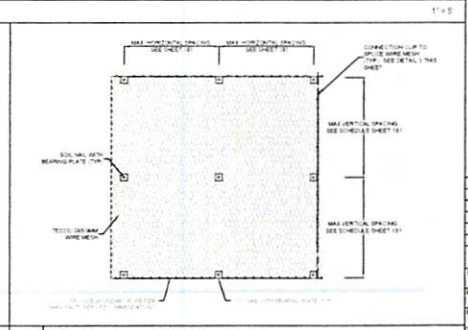
1 REPAIR OPTION 3 - SOIL NAILED SLOPE 1" = 5'



2 TYPICAL SOIL NAIL DETAIL NTS



3 TYPICAL STABILIZED EMBANKMENT WITH WIRE MESH FACING NTS



4 TYPICAL WIRE MESH FACING DETAIL NTS

ECS ENGINEERING OF MOUNTAIN BROOK, LLC DBA ECS SOUTH (FOR EARTH PHASE) 2000 CAHABA RIVER DRIVE, SUITE B 205-871-8222 ECS ENGINEERING OF MOUNTAIN BROOK, LLC DBA ECS SOUTH (FOR MATERIALS PHASE) PROJECT 4-14

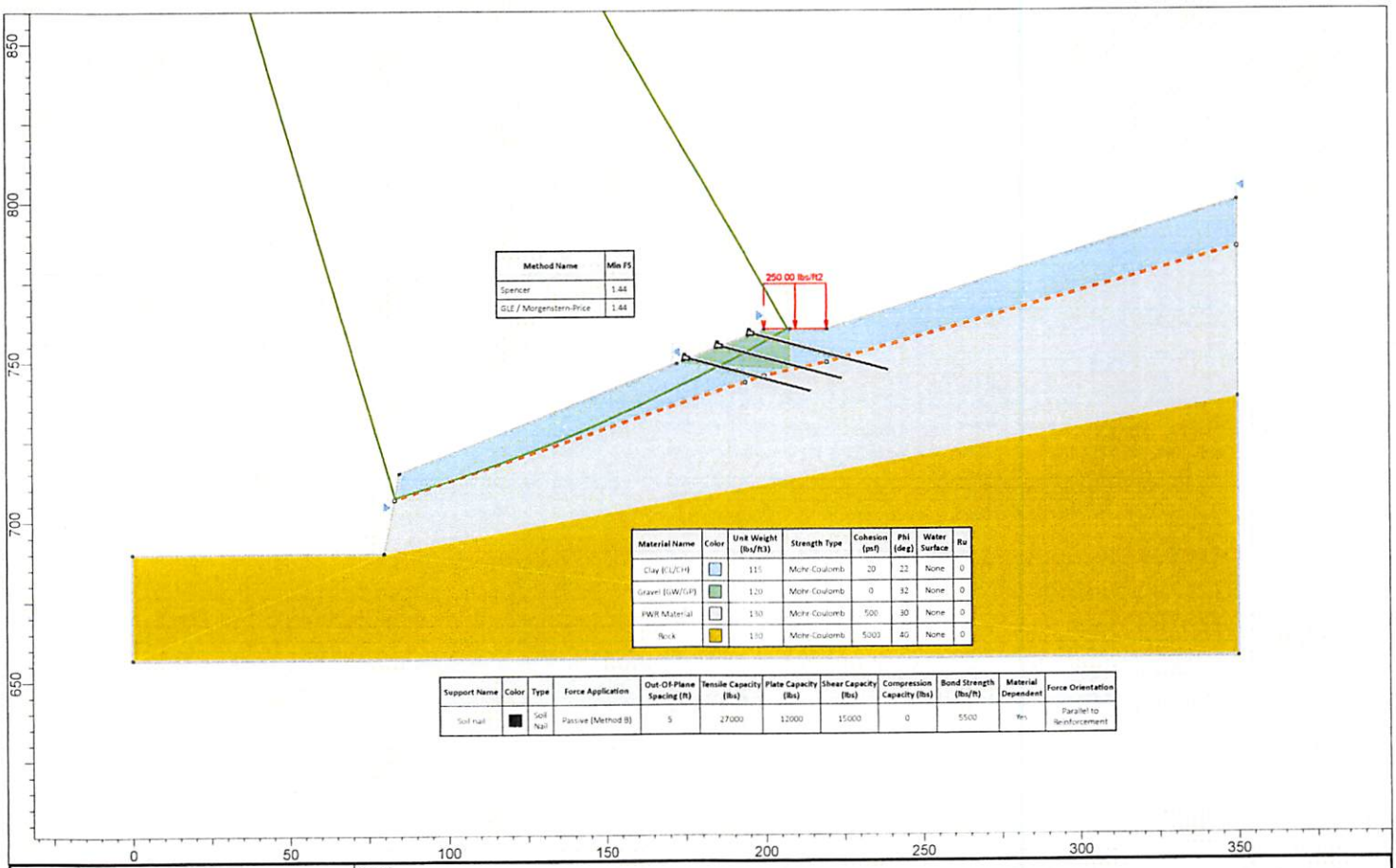
"SETTING THE STANDARD FOR SERVICE"

SMYER ROAD
SLOPE REPAIR
MOUNTAIN BROOK, ALABAMA

REPAIR OPTION 3

ECS REVISIONS

DESIGNER MEC	DRAFTING DFA
SCALE	AS SHOWN
PROJECT NO.	30-1857-A
FIGURE	6
DATE	04-23-2020



Method Name	Min FS
Spencer	1.44
GLE / Morgenstern-Price	1.44

Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
Clay (CL/CH)		115	Mohr-Coulomb	20	22	None	0
Gravel (GW/GP)		120	Mohr-Coulomb	0	32	None	0
PWR Material		130	Mohr-Coulomb	500	30	None	0
Rock		130	Mohr-Coulomb	5000	40	None	0

Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (ft)	Tensile Capacity (lbs)	Plate Capacity (lbs)	Shear Capacity (lbs)	Compression Capacity (lbs)	Bond Strength (lbs/ft)	Material Dependent	Force Orientation
Soil nail		Soil Nail	Passive (Method B)	5	27000	12000	15000	0	5500	Yes	Parallel to Reinforcement

rocscience

SLIDEINTERPRET 8.029

Project	30:1857-A _ Smyer Road Slope Feasilbility		
Analysis Description	Figure 7: Option 3 - Preliminary Slope Stability Model for Soil Nailed Slope		
Drawn By	EWE	Scale 1:500	Company ECS Southeast, LLP
Date	04/20/2020		File Name Preliminary Analysis.slmd

CITY OF MOUNTAIN BROOK

Department of Planning, Building & Sustainability
56 Church Street
Mountain Brook, Alabama 35213
Telephone: 205.802.3810
www.mtnbrook.org

V-20-16

VILLAGE DESIGN REVIEW COMMITTEE
CASE SUMMARY LETTER

Case:	V-20-16
Meeting Date:	April 15, 2020
Location:	Intersection of Cahaba Road and Culver Road City of Mountain Brook Right-of-Way
Property Owner:	City of Mountain Brook
Applicant:	Nathan Currie, Sain Associates ncurrie@sain.com

The Village Design Review Committee recommends to the City Council the following hardscape details for the south roundabout:

- The center of the roundabout to be a sandstone color of stamped concrete, stone pattern. (Color presented in images attached.)
- The circle surrounding the center to be a deep red/brown color of stamped concrete, brick herringbone pattern. (Color presented in images attached.)

Tyler Slaten
Planner
City of Mountain Brook
56 Church St
Mountain Brook, AL 35213
Office 205-802-3811

V-20-16

DESIGN REVIEW/ SIGN APPLICATION
City of Mountain Brook
Building, Planning, & Sustainability
56 Church St, Mountain Brook, AL 35213
(205) 802-3830 ◆ Fax (205) 879-6913

Review by the Mountain Brook Village Design Review Committee is mandatory. Application and all supplemental documentation must be received no later than fourteen (14) business days prior to scheduled meeting to be placed on agenda. Applicants, owners, and/or tenants are strongly encouraged to appear before the Committee on behalf of their application.

1. Job Site Location:

Business Name: City of Mountain Brook right-of-way

Address: Intersection of Cahaba Road and Culver Road

2. Property Owner:

Name: City of Mountain Brook

Email:

Phone:

3. Applicant:

Name: Nathan Currie, Sain Associates (design engineer)

Mailing Address: Two Perimeter Park South, Suite 500 East

City/State/Zip: Birmingham, AL 35243

Phone: 205-263-2129

Email: ncurrie@sain.com

Signature: Nathan Currie

4. Contractor Information:

Company Name: TBD

Mailing Address:

City/State/Zip:

Phone:

Bus. License No:
(for the City of Mountain Brook)

Print Name:

Email:

Office Use Only - Permits
Permit No:
Date Issued:
Permitted Amount:
Office Use Only - Design Review
☐ Approved
☐ Approved w/ Conditions
☐ Denied
Clerk:
Date:

Category of Construction		
☐ Awning	☐ Facade	☐ Window
■ Ground	☐ Directory	☐ Roof
☐ Projecting	☐ Door	☐ Directional

Sign Information

Job Description: Proposed concrete truck apron is to be constructed as part of a proposed roundabout at the above intersection; multiple options for concrete stamping and coloring are under consideration and the City Council has requested the VDR Committee review and recommend the preferred option

Permit fees are based on the value of the work performed. Indicate the value (round to the nearest dollar) of all equipment, materials, labor, overhead, and the profit for the work indicated on this application.
Valuation: $

Number of Proposed Sign(s): NA

Existing Sign Information

Please calculate the total square footage of all existing signs on site. Refer to our sign ordinance for categorical clarification.

Square feet of Signs: NA

Square feet of Incidental Signs: NA

Property Owner Signature

This installation is being made on commercial property owned by me or a member of my immediate family.
Signature:

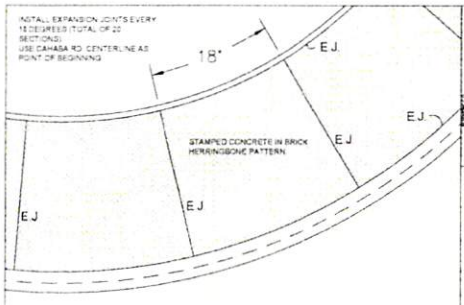
Is this property subject to a master sign plan, which has been approved by the Design Review Committee?

☐ Yes

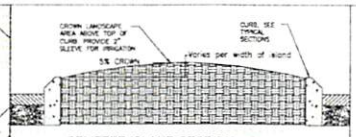
☐ No

Applications may be obtained online at www.mtnbrook.org/bc-vdrc.

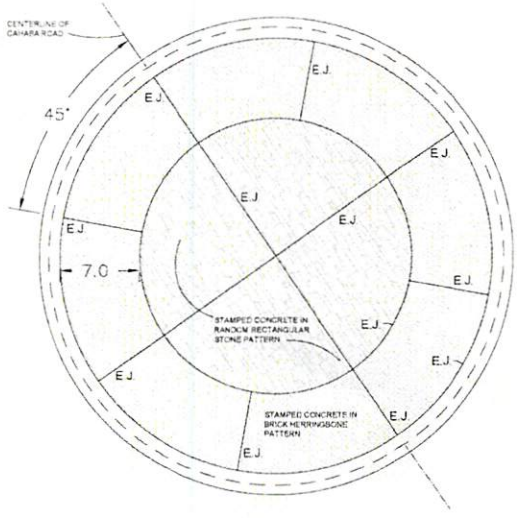
REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
CMAQ-3715(266)	2020	33



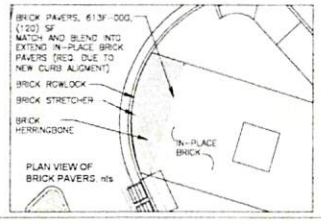
PARTIAL PLAN - PAVING PATTERN AT NORTH ROUNDABOUT, nts

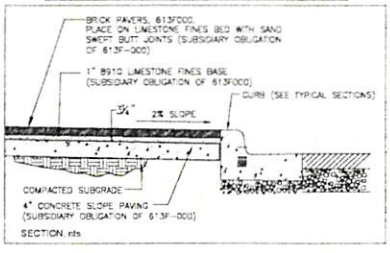


SPLITTER ISLAND SECTION, nts

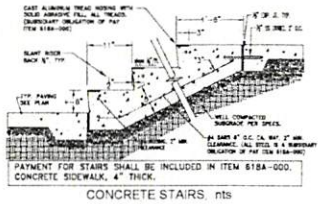


PLAN - PAVING PATTERN AT SOUTH ROUNDABOUT, nts

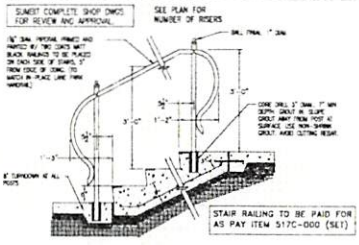




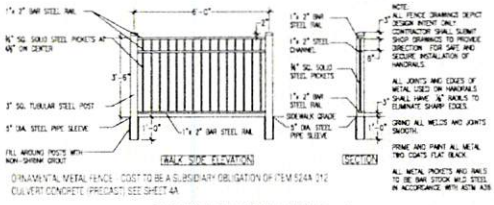
BRICK PAVERS, nts



CONCRETE STAIRS, nts



STAIR RAILING, nts

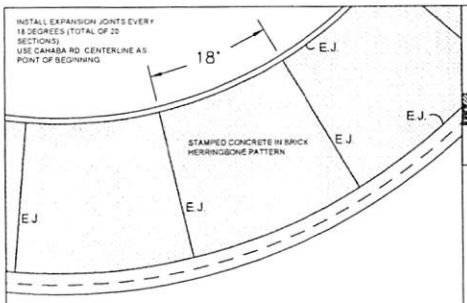


ORNAMENTAL METAL FENCE. COST TO BE A SUBSIDIARY OBLIGATION OF ITEM 524A 212 CULVERT CONCRETE (PRECAST) SEE SHEET 4A

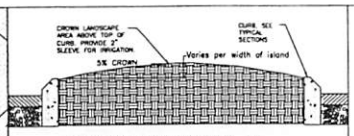
ORNAMENTAL METAL FENCE, nts

RESPONSIBLE PE: ANB	SUPERVISOR: JAM	DESIGNER: JDE, DEG	PLAN SUBMITTAL	ALABAMA DEPARTMENT OF TRANSPORTATION	PRELIMINARY DRAFT NOT TO SCALE	SHEET TITLE	ROUTE
DATE:	DATE:	DATE:	PS&E			HARDSCAPE DETAILS	CAHABA ROAD

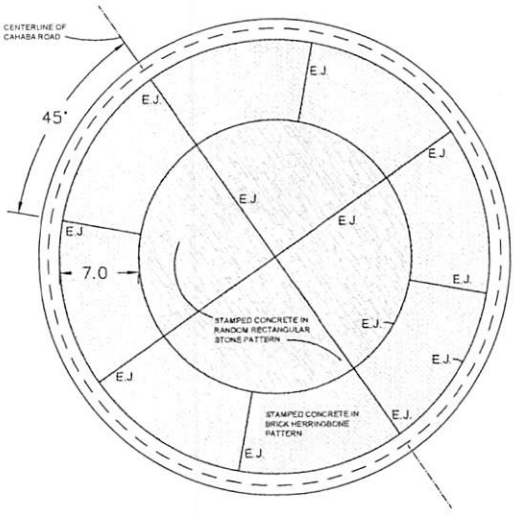
REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
CMAQ-3715(266)	2020	33



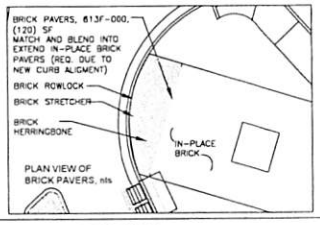
PARTIAL PLAN - PAVING PATTERN AT NORTH ROUNDABOUT, nts

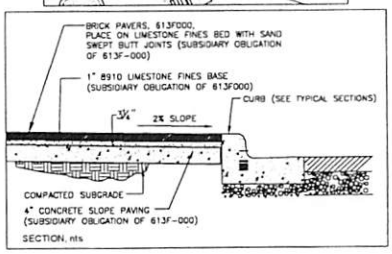


SPLITTER ISLAND SECTION, nts

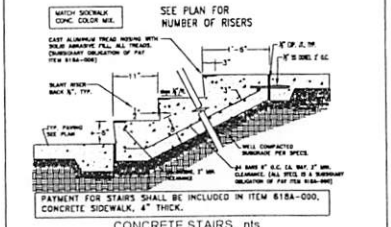


PLAN - PAVING PATTERN AT SOUTH ROUNDABOUT, nts

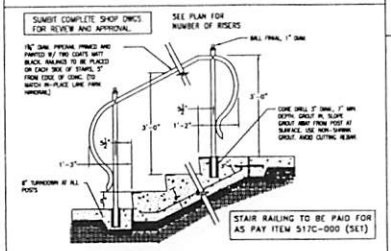




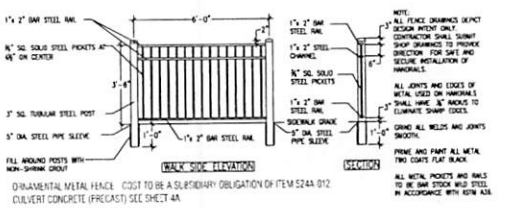
BRICK PAVERS, nts



CONCRETE STAIRS, nts



STAIR RAILING, nts



ORNAMENTAL METAL FENCE COST TO BE A SUBSIDIARY OBLIGATION OF ITEM 524A-012
CULVERT CONCRETE (PRECAST) SEE SHEET 4A

ORNAMENTAL METAL FENCE, nts

RESPONSIBLE PE: ANB	SUPERVISOR: JAM	DESIGNER: JOE, DEG	PLAN SUBMITTAL	ALABAMA DEPARTMENT OF TRANSPORTATION	PRELIMINARY DRAFT NOT TO SCALE	SHEET TITLE	ROUTE
DATE:	DATE:	DATE:	PS&E			HARDSCAPE DETAILS	CAHABA ROAD

MOUNTAIN BROOK
SCHOOLS

Tommy Luckie
Direct Dial: (205) 879-2121
Email: Tom.Luckie@luckie.com

April 13, 2020

Honorable Stewart Welch, Mayor
Virginia C. Smith, President
Alice Womack
Lloyd Shelton
William S. Pritchard, III
Philip Black
Mountain Brook City Council
56 Church Street
Mountain Brook, Alabama 35213

Re: Mountain Brook Board of Education Member Recommendation

Dear Mayor and Council Members:

Nicky Barnes' first term on the School Board will expire in June of this year. She has been a tremendous asset to the School Board during her tenure and currently serves as Board President. We appreciate the time and consideration that you take in appointing members to the Board. We also appreciate the voice that you give us in those decisions. We unanimously recommend that Mrs. Barnes be reappointed to the Board for a second term (2020-2025).

Mrs. Barnes is smart, capable and enthusiastic in her support of our schools. She has been very active in the PTO, serving as PTO president at both Crestline Elementary and Mountain Brook High School. She has also served on the Board of the Mountain Brook City Schools Foundation and on the PTO Council. In addition, she is very civically minded and gives generously of her time and talents to our community. She also has a personal interest in the success of the school system in that she and her husband, Mack, have four children – three of whom have graduated from Mountain Brook High School, and the youngest is in the 12th grade at the high school.

We are excited about the opportunity for Mrs. Barnes to continue her work with the Board of Education and have attached her biographical profile. Thank you for your consideration of the Board's recommendation. If you should have any questions, please contact me or Superintendent Barlow.

Very truly yours,

Tommy Luckie

TL/ch
Enclosure
cc: Board of Education
Dr. Dicky Barlow

Nicky Barnes

204 Nash Circle
Mountain Brook, AL 35213
Phone: 205-807-5821
Email: barnesboys4@me.com

Personal

Born Milford, Michigan 12/20/1968
Husband: Mack N. Barnes, III, MD
Children: Mack Barnes, IV (1994)
Cooper Barnes (1996)
Camden Barnes (1998)
Elijah Barnes (2001)

Education

University of Michigan 1987-1991
Bachelor of Science (RN)
Sigma Theta Tau Honor Society

American College of Nursing Board Certified 1991

University of Illinois Chicago 1993-1995
Master of Science/Nurse Midwifery

American College of Nurse Midwives National Board Certified 1995

Work Experience

Northwestern University Medical Center 1991-1995
RN, Labor and Delivery Unit

University of Alabama Birmingham - Health Services Foundation 1995-1998
Certified Nurse Midwife

Volunteer Experience

Parent Teacher Organization

- PTO volunteer, classroom level 1999-Present
- PTO President - Crestline Elementary 2009-2010
- Mountain Brook Schools Math Curriculum Adoption parent representative 2009-2010
- Mountain Brook PTO Council Secretary/Treasurer 2010-2011
- PTO Parliamentarian Mountain Brook Junior High 2010-2011
- PTO 2nd Vice President of Fundraising - Mountain Brook High School 2012-2013
- PTO President - Mountain Brook High School 2013-2014
- PTO Parliamentarian - Mountain Brook High School 2014-Present

Mountain Brook City Schools Foundation

- Mountain Brook City Schools Foundation Board Member 2009-Present
- "Fashions for the Foundation" Chairperson benefiting Mountain Brook City Schools Foundation 2014

Emmet O'Neal Library

- Emmet O'Neal Library Women's Committee of 100, 2000-2005
- Friends of Emmet O'Neal Library 2010-Present
- Friends of Emmet O'Neal Library Annual Book Sale Chairperson 2012

Other

- Service Guild Volunteer for Bell Center 1999-2006
- Sunday School Teacher St. Francis Xavier Catholic Church 2000-2004

MEMO

To: Mayor, Council, and City Manager

From: Dana Hazen, City Planner

Date April 27, 2020

Conditional Office Use: Built Capital, Lane Parke Phase I

Proposed is a conditional office use to be located in Phase One of Lane Parke (see attached site plan for specific location). The Lane Parke PUD allows office uses in this "retail/commercial" block with city council approval.

Please see attached letter from John Evans for specifics about business type and operations.

Proposed business hours are 8 to 5 Monday through Friday.

Built Capital would occupy only 1,000 square feet, and would generally have anywhere from 5 to 8 visitors a day with 2 people in the location on a daily basis.

Built Capital

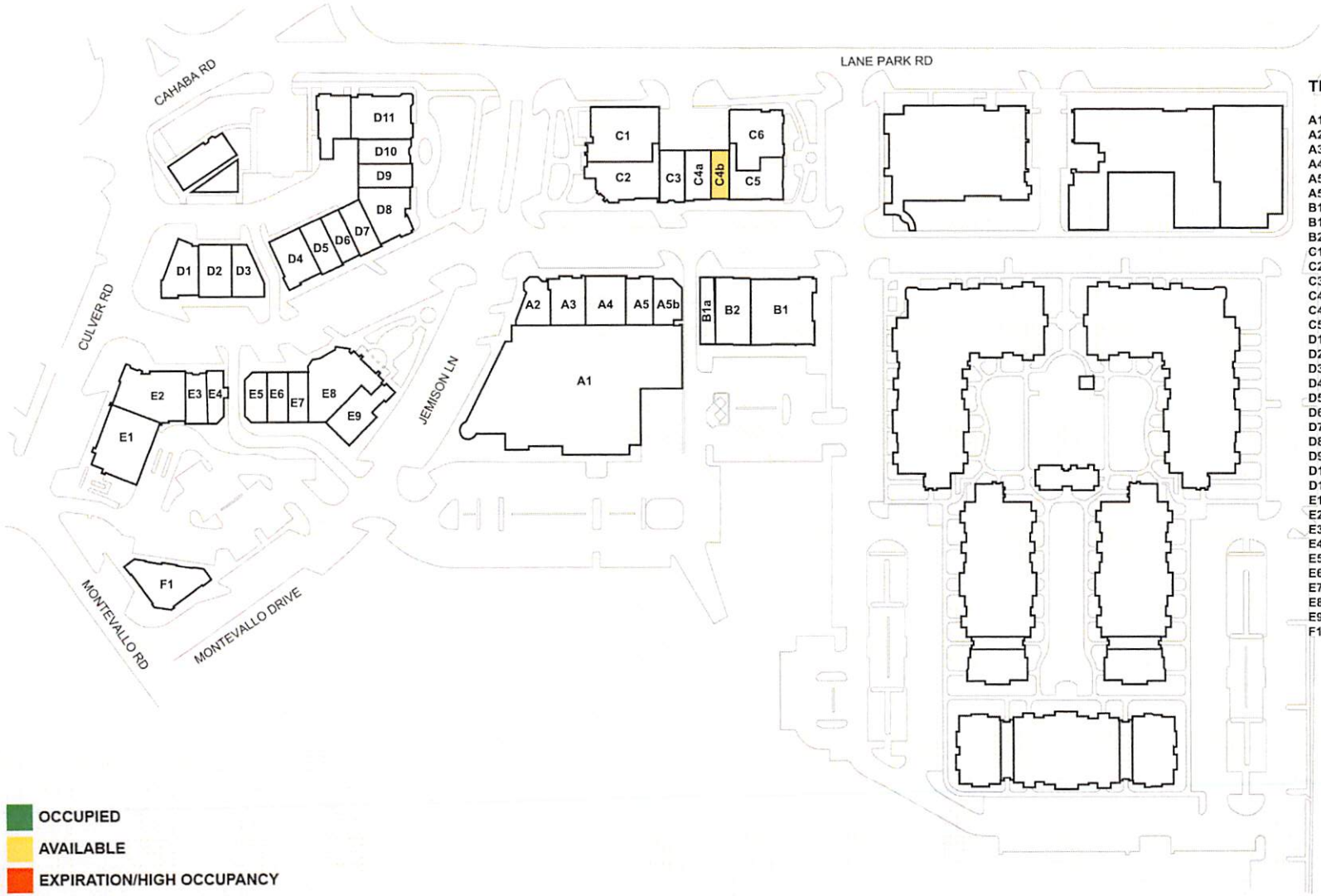
Lane Parke – Mountain Brook, Alabama

Built Capital is proposing to open a location in Lane Parke. Built Capital services clients who are production home builders seeking services related to funding their developments. Production home builders typically build large tract developments with upwards of 600 homes. While traditional funding is used, which Built Capital assists its clients in structuring, there is a gap left between the capital required and what leveraged debt can provide. Built Capital assists production home builders in bridging this gap through fund raising via private high net worth individuals.

Built Capital business hours would be 8 to 5 Monday through Friday. During business hours, Built Capital would conduct meetings in the space in Lane Parke with home builders and high net worth individuals. While some investors will be located in the Birmingham area, many investors will be from out of town – Lane Parke serves as a great location offering amenities such as hotel, restaurants and shops for these high net worth individuals who are in town to meet with Built Capital. Many investors will bring their spouse and add leisure to the business trip - being located where the spouse can shop and dine is an amenity that is important to Built Capital.

Built Capital would occupy only 1,000sf and would generally have anywhere from 5 to 8 visitors a day with 2 people in the location on a daily basis.

Built Capital would like to be in a high-end environment which offers convenient dining options to entertain its clients and well as surrounding shopping and hotel options. Lane Parke would benefit from the clients that would be visiting Built Capital by exposing them to Mountain Brook who may not have stayed in the city otherwise.



TENANT INDEX

A1	Greenwise Supermarket	28,684 SF
A2	Revelator Coffee Company	1,750 SF
A3	A'Mano	1,339 SF
A4	Betsy Prince	2,632 SF
A5a	The Happy Olive	2,433 SF
A5b	Swoop	1,643 SF
B1	ABC Select Spirits	5,600 SF
B1a	Carriage House	1,386 SF
B2	United State Postal Service	3,200 SF
C1	Char Bar	5,000 SF
C2	Post Office Pies	3,444 SF
C3	Platinum Pilates	1,706 SF
C4a	Tulipano	1,792 SF
C4b	Annabelle's	1,000 SF
C5	Sol Y Luna	2,499 SF
D1	Available Phase II	2,300 SF
D2	Available Phase II	2,212 SF
D3	Available Phase II	2,182 SF
D4	Available Phase II	2,472 SF
D5	Available Phase II	1,500 SF
D6	Available Phase II	1,500 SF
D7	Available Phase II	1,500 SF
D8	Available Phase II	3,245 SF
D9	Available Phase II	1,560 SF
D10	Available Phase II	1,800 SF
D11	Available Phase II	3,454 SF
E1	Regions Bank	4,441 SF
E2	Available Phase II	4,303 SF
E3	Available Phase II	1,472 SF
E4	Available Phase II	1,500 SF
E5	Available Phase II	1,435 SF
E6	Available Phase II	1,450 SF
E7	Available Phase II	1,500 SF
E8	Available Phase II	4,238 SF
E9	Available Phase II	2,904 SF
F1	Available Phase II	3,450 SF

- OCCUPIED
- AVAILABLE
- EXPIRATION/HIGH OCCUPANCY
- LEASE IN NEGOTIATION
- LOI

LANE PARKE PHASE II

CRAWFORD SQUARE
REAL ESTATE ADVISORS