



City of Franklin

109 3rd Ave S
Franklin, TN 37064
(615)791-3217

Meeting Agenda

Work Session

Tuesday, November 8, 2016

4:15 PM

Board Room

Call to Order

Citizen Comments

WORKSESSION DISCUSSION ITEMS

1. [16-0947](#) Review of Quarterly Development Activity and Update on the City of Franklin One-Stop Development Services Center.

Sponsors: Eric Stuckey, Vernon Gerth, Chris Bridgewater, Tom Marsh and Lynn Osland

Attachments: [Call in vs Online Inspections - Through 9.30.2016](#)
[One Stop Summaries - upd 10.1.2016](#)
[QUARTERLY DEVELOPMENT ACTIVITY SUMMARY - 10.1.2015 - 9.30.2016](#)
2. [16-0942](#) Consideration of Event Permit for Main Street BrewFest sponsored by the Downtown Franklin Association on March 11, 2017 in Downtown Franklin. (11/08/16 WS)

Sponsors: Deb Faulkner

Attachments: [Brewfest 2017 REVISED App](#)
3. [16-0928](#) *Consideration of procurement award to Truckers Lighthouse, Inc. of Nashville, Tennessee in the estimated total amount of \$125,270.88 for after-market up-fitting of a minimum of fifteen (15) police vehicles for the Police Department (Purchasing Office Procurement Solicitation No. 2017-003; Contract No. 2016-0317)

Sponsors: Deb Faulkner

Attachments: [2017-003 Tabulation of bids](#)
4. [16-0840](#) Consideration of Contract 2016-0264, a Contract with the Regional Transit Authority for the 91X Bus Service (Referred from 10/20/16 Budget & Finance; 11/08/16 WS)

Sponsors: Eric Stuckey and Russ Truell

Attachments: [RTA contract](#)

Legislative History

10/20/16	Budget & Finance Committee	referred to the Work Session
----------	----------------------------	------------------------------

5. [16-0872](#) Consideration of Ordinance 2016-40, To Be Entitled, "An Ordinance To Rezone 14.04 Acres From Agricultural (AG) District To Specific Development Residential (SD-R 1.14) District For The Property Located North Of Del Rio Pike And East Of Del Rio Court." (Rizer Point PUD). (10/27/16 FMPC 6-0; 11/08/16 WS and 1st Reading 8-0; 12/13/16 2nd Reading 6-1) THIRD AND FINAL READING

Sponsors: Ald. Ann Petersen and Josh King

Attachments: [MAP RizerPointRezoning.pdf](#)
[2016-40 ORD Rizer Point Rezoning_with Map Law Approved](#)
[RIZER POINT REZONING REQUEST REVISION 2 10.6.2016.pdf](#)
[Rizer Point Submission of Petitions](#)
[Petition in Opposition of Connecting Viola Lane Wedgewood Drive - 68 signatu](#)
[Petition in Opposition of Rizer Point HOA Receiving Undeveloped Land - 66 sign](#)

Legislative History

10/27/16	Franklin Municipal Planning Commission	recommended favorably to the Board of Alderman and to the Work Session
----------	--	--

6. [16-0871](#) PUBLIC HEARING: Consideration of Resolution 2016-66, To Be Entitled, "A Resolution To Approve A Revised Development Plan For Rizer Point PUD Subdivision, With Two Modifications Of Standards (MOS1-Connectivity; MOS2-Cul-De-Sac Length), For The Property Located North Of Del Rio Pike And East Of Del Rio Court." (10/27/16 FMPC 6-0; 11/08/16 WS)

Sponsors: Ald. Ann Petersen and Josh King

Attachments: [MAP_RizerPointDevPlan.pdf](#)
[RES 2016-66 RizerPointPUD Dev Plan revised with Map Law Approved](#)
[6251_RizerPoint_DevPlan_COA](#)
[Overall Layout.pdf](#)
[Proposed Arch.pdf](#)
[RIZER POINT DEV. PLAN REVISION 3 10.6.2016.pdf](#)
[Rizer Point Submission of Petitions](#)
[Petition in Opposition of Connecting Viola Lane Wedgewood Drive - 68 signatu](#)
[Petition in Opposition of Rizer Point HOA Receiving Undeveloped Land - 66 sign](#)
[Connectivity Handout](#)

Legislative History

10/27/16	Franklin Municipal Planning Commission	recommended favorably to the Board of Alderman and to the Work Session
----------	--	--

7. [16-0876](#) Consideration of Contract 2016-0304, a Software License Agreement with Multi-Bank Securities for an Investment Analysis Program. (Referred from 10/20/16 Budget & Finance; 11/08/16 WS)

Sponsors: Eric Stuckey and Russ Truell

Attachments: [2016-0304 ConnectDirect_COF Edited User Agreement.Law Approved.pdf](#)
[Multi Bank Securities software license agreement](#)
[City of Franklin TN - Edited eConnect User Agreement.pdf](#)

Legislative History

10/20/16 Budget & Finance referred to the Work Session
Committee

8. [16-0943](#) Consideration of Contract 2016-0322, an Engagement Agreement for Financial Services with PFM Financial (Referred from 10/20/16 Budget & Finance; 11/08/16 WS)

Sponsors: Eric Stuckey and Russ Truell

Attachments: [2016-0322 PFM Professional Services Agreement_with Attachment A.Law Appr](#)

Legislative History

10/20/16 Budget & Finance referred to the Work Session
Committee

9. [16-0973](#) Consideration of Resolution 2016-76, a Resolution Declaring the Intent of the City to Reimburse Itself for Expenditures Related to Public Works Projects from Bond Proceeds; 11/08/16 WS)

Sponsors: Eric Stuckey and Russ Truell

Attachments: [Reimbursement Resolution 2016-76](#)

10. [16-0993](#) Consideration Of Resolution 2016-81, A Resolution Authorizing Funding Of The City Of Franklin's Portion Of The County-Wide Public Safety Radio System Project And Support For The Contractual Agreement And Addendum Between The Williamson County Joint Communications Network Authority And Motorola Solutions, Inc. (11/08/16 WS)

Sponsors: Eric Stuckey

Attachments: [Countywide Radio - Resolution AUthorizing Funding and Support - 11-2016](#)
[WCJCA Recommendation letter](#)
[Radio project cost summary - October 2016](#)
[A 2016 11 04CSA Williamson County TN draft RC-DAB CV K#16-339 Clean \(00](#)
[B 2016#16-342 Exhibit C Addendum.pdf](#)

11. [16-0902](#) Consideration of a Professional Services Agreement (COF Contract No. 2016-0316) with Hazen and Sawyer for the 54-inch Harpeth River Interceptor Sewer Assessment Project in the Not-to-Exceed Amount of \$24,750.00 (Deferred from 10-27-16 Capital Investment Committee; 11/08/16 WS)
- Sponsors:** Paul Holzen, Mark Hilty and Patricia McNeese
- Attachments:** [COF 2016-0316 54-in Harpeth River Interceptor PSA with attachment Law App](#)
- Legislative History**
- | | | |
|----------|------------------------------|------------------------------|
| 10/27/16 | Capital Investment Committee | referred to the Work Session |
|----------|------------------------------|------------------------------|
12. [16-0903](#) Consideration of Amendment No. 2 to the Professional Services Agreement (COF Contract No. 2013-0182) with Neel-Schaffer, Inc. for the Figuers Drive Area Drainage Improvements Project at a Cost Increase of \$29,500.00 (Deferred from 10-27-16 Capital Investment Committee; 11/08/16 WS)
- Sponsors:** Paul Holzen and William Banks
- Attachments:** [COF 2013-0182 Figuers Drive Drainage PSA-AMEND 2 with scope.Law App](#)
- Legislative History**
- | | | |
|----------|------------------------------|------------------------------|
| 10/27/16 | Capital Investment Committee | referred to the Work Session |
|----------|------------------------------|------------------------------|
13. [16-0983](#) *Consideration of Resolution 2016-85, Authorizing the City of Franklin to Enter into an Agreement, Subject to Review and Approval by the Board of Mayor and Aldermen, With the Customers of the Goose Creek Sewage Treatment Plant (TN0060216) to Construct Sanitary Sewer Infrastructure to Connect to the City of Franklin Wastewater Collection System (11/22/16 WS)
- Sponsors:** Paul Holzen and Mark Hilty
- Attachments:** [GCI Sewer Lawsuit vs State of TN 9-28-16](#)
[20160413 REP Goose Creek Inn STP CEI letter report V1](#)
[20160414 REP Goose Creek Inn Photo CEI Photo Summary V1](#)
[COF 2016-0307 - Exhibit A and B](#)
[Cost Estimate 10-31-2016](#)
[Res 2016-85 GCI STP Agmnt Resolution](#)
14. [16-0982](#) *Consideration of Resolution 2016-77, a Resolution authorizing the City of Franklin to contribute \$400,000 to the Goose Creek Sanitary Sewer Extension Project as part of the Lampo Group Corporate Headquarters Project. (Deferred from 11/08/16 WS; 11/22/16 WS)
- Sponsors:** Eric Stuckey and Vernon Gerth
- Attachments:** [Lampo - Sanitary Sewer Resolution 2016-77 and Exhibits A and B Law Approve](#)

15. [16-0906](#) Consideration of Amendment No. 2 to the Professional Services Agreement (COF Contract No. 2014-0177) with Hethcoat & Davis Inc. for the Goose Creek Sanitary Sewer Extension Project, From West of I-65 to the East Side of I-65, in the Not-to-Exceed Amount of \$26,605.00 (Deferred from 10-27-16 Capital Investment Committee; 11/08/16 WS)
- Sponsors:** Paul Holzen, Mark Hilty and Patricia McNeese
- Attachments:** [COF 2014-0177 Amendment 2 Goose Creek Area Sewer H and D with Exhibit.](#)
- Legislative History**
- | | | |
|----------|------------------------------|------------------------------|
| 10/27/16 | Capital Investment Committee | referred to the Work Session |
|----------|------------------------------|------------------------------|
16. [16-0907](#) *Consideration of Resolution 2016-71 Awarding the Construction Contract (COF Contract No. 2014-0181) for the Curd Branch and Watson Branch Interceptor Sewer Improvements Project to Cleary Construction in the Amount of \$1,481,995.00 (Deferred from 10-27-16 Capital Investment Committee)
- Sponsors:** Paul Holzen, Mark Hilty and Patricia McNeese
- Attachments:** [Bid Tab Curd & Watson Branch Sewer](#)
[PMF 161017 Ltr Franklin Watson Branch Bid Award REVISED](#)
[Resolution 2016-71 to award bid Curd Branch and Watson Branch Interceptor S](#)
- Legislative History**
- | | | |
|----------|------------------------------|------------------------------|
| 10/27/16 | Capital Investment Committee | referred to the Work Session |
|----------|------------------------------|------------------------------|
17. [16-0908](#) *Consideration of Resolution 2016-72, Awarding the Construction Contract (COF Contract No. 2015-0070) for the Goose Creek Sanitary Sewer Extension Project, From West of I-65 to the East Side of I-65, to Dynamic Construction, LLC in the Amount of \$1,717,620.40. (Deferred from 10-27-16 Capital Investment Committee)
- Sponsors:** Paul Holzen, Mark Hilty and Patricia McNeese
- Attachments:** [AWARD REC LTR 092616](#)
[Resolution 2016-72 to award bid Goose Creek Sewer Project.Law Approved](#)
- Legislative History**
- | | | |
|----------|------------------------------|------------------------------|
| 10/27/16 | Capital Investment Committee | referred to the Work Session |
|----------|------------------------------|------------------------------|

18. [16-0912](#) *Consideration of Amendment No. 3 to the Tennessee Department of Transportation (TDOT) Agreement No. 110291 (COF Contract No. 2011-0129) for the Franklin ITS Extension (TDOT PIN 116144.00) and Adaptive Signal Control Technology (TDOT PIN 116144.01) Projects for a Time Extension and Correction of Typographical Errors (Deferred from 10-27-16 Capital Investment Committee)

Sponsors: Paul Holzen and Jonathan Marston

Attachments: [COF 2011-0129 Amendment 3 ITS Extension Project TDOT. Law Approved](#)

Legislative History

10/27/16 Capital Investment referred to the Work Session
Committee

19. [16-0913](#) Consideration of Professional Services Agreement (COF Contract No. 2016-0295) with Civil Infrastructure Associates for On-Call Survey Services. (Deferred from 10-27-16 Capital Investment Committee; 11/08/16 WS)

Sponsors: Paul Holzen and Jonathan Marston

Attachments: [COF 2016-0295 - CIA Oncall survey PSA with Scope.Law Approved 2](#)

Legislative History

10/27/16 Capital Investment referred to the Work Session
Committee

20. [16-0914](#) Consideration of Professional Services Agreement (COF 2016-0319) with Civil & Environmental Consultants, Inc. for On-Call Survey Services. (Deferred from 10-27-16 Capital Investment Committee; 11/08/16 WS)

Sponsors: Paul Holzen and Jonathan Marston

Attachments: [COF 2016-0319 - CEC Oncall survey PSA with Scope.Law Approved.pdf](#)

Legislative History

10/27/16 Capital Investment referred to the Work Session
Committee

21. [16-0915](#) Consideration of a Professional Services Agreement (COF Contract No. 2016-0320) with Civil Infrastructure Associates for the Watson Branch Culvert Rehabilitation Project in an Amount Not to Exceed \$30,640.00 (Deferred from 10-27-16 Capital Investment Committee; 11/08/16 WS)

Sponsors: Paul Holzen and Jonathan Marston

Attachments: [COF 2016-0320 CIA Watson Branch Culvert Rehabilitation-PSA with attachme](#)

Legislative History

10/27/16 Capital Investment referred to the Work Session
Committee

22. [16-0951](#) *Consideration of a Professional Services Agreement (COF Contract No. 2016-0325) with Alfred Benesch and Company for the SR-96W Multi-Use Trail Project (Vera Valley Dr. to 5th Ave North) for an Amount Not to Exceed \$121,311.00 (Deferred from 10-27-16 Capital Investment Committee)
- Sponsors:** Paul Holzen and Jonathan Marston
- Attachments:** [COF 2016-0325 SR96W TDOT Trail - PSA_with Scope.Law Approved.pdf](#)
- Legislative History**
- | | | |
|----------|------------------------------|------------------------------|
| 10/27/16 | Capital Investment Committee | referred to the Work Session |
|----------|------------------------------|------------------------------|
23. [16-0980](#) Discussion Concerning Road Impact Fees (Deferred from 11-08-16)
- Sponsors:** Vernon Gerth and Paul Holzen
- Attachments:** [Major Collector Impact Fee Draft - Final](#)
[RIF November 2016 BOMA Meeting2](#)
24. [16-0956](#) Consideration of Contract 2016-0244 Community Based Development Organization (CBDO) Grant Program with Hard Bargain Association Utilizing Community Development Block Grant (CDBG) Funds for Program Year 2016-2017 (11/08/16 WS)
- Sponsors:** Building and Neighborhood Services (BNS) and Chris Bridgewater
- Attachments:** [CONTRACT 2016-0244 CDBO to Hard Bargain from CDBG 2016-2017](#)
25. [16-0958](#) Consideration of Contract 2016-0245 Community Based Development Organization (CBDO) Grant Program with Community Housing Partnership Utilizing Community Development Block Grant (CDBG) funds. (11-08-16 WS)
- Sponsors:** Building and Neighborhood Services (BNS) and Chris Bridgewater
- Attachments:** [COF 2016-0245 Community Housing Partnership Funding Agreement \(002\) wit](#)
26. [16-0930](#) Consideration of procurement award to Monitoring & Management Services, LLC of Franklin, Tennessee in the total estimated annual amount of \$50,760 for sanitary sewer pretreatment program support services for up to five (5) years for the Water Management Department (Purchasing Office Procurement Solicitation No. 2017-004; \$40,000 budgeted in 431-82560-52219 for fiscal year 2017; Contract No. 2016-0312) (11-08-16 WS)
- Sponsors:** Mark Hilty
- Attachments:** [2017-004 Tabulation of proposals](#)

27. [15-1094](#) PUBLIC HEARING: Consideration Of Resolution 2016-42, To Be Entitled: "A Resolution Approving A Development Plan For Ashcroft Valley PUD Subdivision With 6 Modifications Of Development Standards (Character Area Lot Size, Warren Road Connection, Beacon Hill Drive Street Connection, Internal Street Connection, Cross Creek Drive Street Connection, And Biltmore Court Street Connection, For The Property Located South Of Murfreesboro Road And North Of South Carothers Drive." (09-22-16 FMPC 6-3; 10/11/16 WS, 11/08/16 WS; 11-22-16 BOMA Deferred to 12-13-16)

Sponsors:

Ald. Ann Petersen and Josh King

Attachments:[Letter to BOMA 12 2016 for Ashcroft Development plan WITHDRAWAL.pdf](#)[AshcroftValleyDevPlan.pdf](#)[Res2016-42 AshcroftValleyDevPlan with Map Law Approved 2..pdf](#)[Conditions of Approval_02.pdf](#)[AshcroftLayout.pdf](#)[AShcroftElevations.pdf](#)[Full PlanSet Ashcroft Valley Dev Plan Set Resubmittal 9.1.2016.pdf](#)[TIA_Ashcroft\(9.1.16\).pdf](#)[Ashcroft Valley Public Notice Affidavit 8.9.2016.pdf](#)[AshcroftValleyMOSMap.pdf](#)[Susan and Brian Caplen letter - 9-15-16](#)[citizen comment letter](#)[Connectivity Presentation - Ashcroft Valley 11-8-2016](#)[Ashcroft Valley Memo 11-15-2016](#)**Legislative History**

9/22/16	Franklin Municipal Planning Commission	recommended favorably to the Board of Alderman and to the Work Session
10/11/16	Work Session	referred as a Public Hearing Item to the Board of Mayor & Aldermen

28. [16-0948](#) Initial consideration and discussion of a request by Cheekwood Golf Club (formerly the Fairways on Spencer Creek) to lease an asset of the Water Management Department, an approximately 51-acre parcel located adjacent to the City's Wastewater Treatment Facility and Mack Hatcher Parkway for the purposes of constructing a new clubhouse, driving range, and up to three new golf holes. (11/08/16 WS)

Sponsors:

Eric Stuckey and Vernon Gerth

Attachments:[Cheekwood Exhibit A - Cover Letter-Request](#)[Cheekwood Exhibit B - Illustrations](#)

29. [16-0309](#) Consideration of Ordinance 2016-03, An Ordinance To Be Entitled, "An Ordinance Amending Title 8, Chapter 1 Of The Franklin Municipal Code Relative To Alcohol Other Than Beer To Provide Guidance For Retail Food Stores And Other General Housekeeping." (4-12-16 WS, 11/08/16; 11-22-16 BOMA 1st Reading 8-0) SECOND AND FINAL READING

Sponsors: Kristen Corn and Lanaii Benne

Attachments: [2016-03.Title 8 Chapter 1 1.Law Approved.11.08.16.pdf](#)

Legislative History

4/12/16 Work Session postponed

Other Business

Adjournment

Anyone requesting accommodations due to disabilities should contact ADA coordinator at 791-3277.

ONLINE INSPECTION SCHEDULING - 2016 - Infor								
Inspections - call date		Avg Total # Scheduled per day		Avg # Scheduled by Phone per day		Avg # Scheduled Online per day		% of Inspections Scheduled Online
2016								
January, 2016		137		79		58		42%
February, 2016		118		65		53		45%
March, 2016		119		56		63		53%
April, 2016		144		62		81		57%
May, 2016		135		50		85		63%
June, 2016		144		55		89		62%
July, 2016		131		46		85		65%
August, 2016		154		35		119		77%
September, 2016		153		32		121		79%
October, 2016								
November, 2016								
December, 2016								
YTD		Total # Scheduled		Total Scheduled by Phone		Total # Scheduled Online		% of Inspections Scheduled Online
2015 Totals		31439		19101		12392		39%
2016 Totals		25964		9989		15975		62%

One Stop Development Services Review Summary							
One Stop Data							
	Building Permit Applications	Final Plats	Site Plans	Development Plans	Meetings	Total # Projects	
2016							
Jan	34	3	3		2	42	
Feb	36	1	3		3	43	
Mar	48	7	5		5	65	
Apr	56	6	6		8	76	
May	84	4	5		8	101	
Jun	83	6	4		7	100	
Jul	46	1	5		5	57	
Aug	65	4	11		13	93	
Sep	53	4	10	1	8	76	
Oct							
Nov							
Dec							
Totals	505	36	52	1	59	653	
One Stop began in May, 2015, once a week for the review of Construction Permits. A second day per week was added in December, 2015. The review of Development Plan submittals (Site Plans & Final Plats) began in October, 2015. Preliminary Plats and Development Plans were added September 21, 2016.							
Hours of Operation							
Construction Permits	Monday	9:00 am - 11:00 am					
	Wednesday	8:30 am - 11:30 am					
Land Development (Site Plans & Final Plats)	1st & 3rd Wednesday	9:00 am - 11:00 am					
Menu of Services							
Construction Permits							
Non Residential							
Office renovation/ tenant build-out (open office layout) up to 10,000 sf							
Retail/ commercial renovation/ tenant build-out up to 5000 sf (no restaurants							
Review of plan corrections and field revisions							
Residential							
(excluding flood plain and critical lots)							
New							
Additions							
Renovation							
Homeowner Projects							
Land Development							
Submitted Final Plats, Site Plans, Preliminary Plats, and Development Plans will be reviewed by the DRT and recommended for One Stop to expedite review of any last remaining minor issues. After selection for One Stop, the submittal will be eligible to attend any future One Stop until							
Meetings							
(20 minute)							
Staff is available during this time to answer questions, disuss open issues, and discuss plan review comments for previously submitted plans.							

DEVELOPMENT ACTIVITY SUMMARY - by Quarter**PERMITS ISSUED & FEES RECEIVED**

Including Construction Valuation

From: 10/1/2015-9/30/2016


 HISTORIC
FRANKLIN
TENNESSEE

PERMIT FEES RECEIVED - Includes
Building, Electrical, Mechanical, Plumbing,
Demolition, Swimming Pool Permit Fees, &
Technology Fees

of PERMITS ISSUED*

*Permits without associated
fees are not included.

**FEES
RECEIVED**

<u>October - December 2015</u>	<u>1,753</u>	<u>\$508,496</u>
<u>Residential (inc Townhomes/ Duplexes)</u>	1,311	\$307,116
<u>Non-Residential (inc Multi-Family)</u>	442	\$201,380
<u>January - March 2016</u>	<u>2,034</u>	<u>\$593,130</u>
<u>Residential (inc Townhomes/ Duplexes)</u>	1,576	\$432,491
<u>Non-Residential (inc Multi-Family)</u>	458	\$160,639
<u>April - June 2016</u>	<u>2,972</u>	<u>\$691,024</u>
<u>Residential (inc Townhomes/ Duplexes)</u>	1,921	\$512,791
<u>Non-Residential (inc Multi-Family)</u>	1,051	\$178,233
<u>July - September 2016</u>	<u>2,258</u>	<u>\$529,318</u>
<u>Residential (inc Townhomes/ Duplexes)</u>	1,745	\$466,923
<u>Non-Residential (inc Multi-Family)</u>	513	\$62,395
<u>TOTAL PERMITS ISSUED</u>	<u>9,017</u>	<u>\$2,321,968</u>

ADDITIONAL FEES RECEIVED - Includes Plan
Review Fees, Reinspection Fees, Road Impact Fees,
Facilities Taxes, & Garbage Container Fees

<u>October - December 2015</u>	<u>\$4,456,022</u>
<u>Residential (inc Townhomes/ Duplexes)</u>	\$1,179,706
<u>Non-Residential (inc Multi-Family)</u>	\$3,276,316
<u>January - March 2016</u>	<u>\$4,186,470</u>
<u>Residential (inc Townhomes/ Duplexes)</u>	\$1,708,310
<u>Non-Residential (inc Multi-Family)</u>	\$2,478,160
<u>April - June 2016</u>	<u>\$4,082,957</u>
<u>Residential (inc Townhomes/ Duplexes)</u>	\$2,044,465
<u>Non-Residential (inc Multi-Family)</u>	\$2,038,492
<u>July - September 2016</u>	<u>\$1,758,091</u>
<u>Residential (inc Townhomes/ Duplexes)</u>	\$1,561,795
<u>Non-Residential (inc Multi-Family)</u>	\$196,296
<u>TOTAL ADDITIONAL FEES</u>	<u>\$14,483,540</u>

NEW DWELLING UNITS**# of UNITS****Building Permits Issued - Number of Units by Type**

<u>October - December 2015</u>	<u>666</u>
<u>Single Family (Detached) Dwellings</u>	131
<u>Multi-Family (Attached) Dwellings</u>	513
<u>Townhomes</u>	22
<u>January - March 2016</u>	<u>347</u>
<u>Single Family (Detached) Dwellings</u>	196
<u>Multi-Family (Attached) Dwellings</u>	102
<u>Townhomes</u>	49
<u>April - June 2016</u>	<u>315</u>
<u>Single Family (Detached) Dwellings</u>	203
<u>Multi-Family (Attached) Dwellings</u>	42
<u>Townhomes</u>	70
<u>July - September 2016</u>	<u>200</u>
<u>Single Family (Detached) Dwellings</u>	173
<u>Townhomes</u>	27

<u>TOTAL DWELLING UNITS</u>	<u>1,528</u>
-----------------------------	--------------

**STORMWATER, GRADING, & UTILITY
PERMITS ISSUED****# of PERMITS
ISSUED****FEES
RECEIVED****STORMWATER & GRADING PERMITS:**

<u>October - December 2015</u>	<u>8</u>	<u>\$6,040</u>
<u>January - March 2016</u>	<u>8</u>	<u>\$8,069</u>
<u>April - June 2016</u>	<u>15</u>	<u>\$3,000</u>
<u>July - September 2016</u>	<u>13</u>	<u>\$2,200</u>

**TOTAL STORMWATER &
GRADING PERMITS ISSUED:**

<u>44</u>	<u>\$19,309</u>
-----------	-----------------

GRADING ONLY PERMITS:

<u>October - December 2015</u>	<u>1</u>	<u>\$500</u>
<u>January - March 2016</u>	<u>3</u>	<u>\$1,300</u>
<u>April - June 2016</u>	<u>2</u>	<u>\$200</u>
<u>July - September 2016</u>	<u>1</u>	<u>\$100</u>

**TOTAL GRADING ONLY
PERMITS ISSUED**

<u>7</u>	<u>\$2,100</u>
----------	----------------

UTILITY CONSTRUCTION/ INFRASTRUCTURE PERMITS

<u>October - December 2015</u>	<u>4</u>	<u>\$1,900</u>
<u>January - March 2016</u>	<u>3</u>	<u>\$1,500</u>
<u>April - June 2016</u>	<u>7</u>	<u>\$2,500</u>
<u>July - September 2016</u>	<u>5</u>	<u>\$1,900</u>

**TOTAL UTILITY CONSTRUCTION/
INFRASTRUCTURE PERMITS ISSUED:**

<u>19</u>	<u>\$7,800</u>
-----------	----------------

**ESTIMATED VALUATION
OF BUILDING PERMITS*****# of BUILDING
PERMITS ISSUED****VALUATION**

<u>October - December 2015</u>		<u>\$108,932,958</u>
<u>Residential Valuation of Construction</u>	208	\$46,196,408
<u>Non-Residential Valuation of Construction</u>	92	\$62,736,550
<u>January - March 2016</u>		<u>\$275,907,783</u>
<u>Residential Valuation of Construction</u>	328	\$71,960,425
<u>Non-Residential Valuation of Construction</u>	96	\$203,947,358
<u>April - June 2016</u>		<u>\$171,566,737</u>
<u>Residential Valuation of Construction</u>	368	\$82,666,567
<u>Non-Residential Valuation of Construction</u>	96	\$88,900,170
<u>July - September 2016</u>		<u>\$99,378,550</u>
<u>Residential Valuation of Construction</u>	280	\$69,430,108
<u>Non-Residential Valuation of Construction</u>	76	\$29,948,442

TOTAL ESTIMATED VALUATION OF BUILDING PERMITS***\$655,786,028**

*Includes all new residential construction (single family detached dwellings and townhomes), new non-residential construction (including multi-family dwellings), accessory buildings, additions, tenant build-out, renovations, and miscellaneous construction. Estimated Valuations (Construction Costs) are provided by Applicants on Building Permit Applications only.

Permit values transacted during the month do not necessarily equal dollars collected because of the timing of the payment and actual issuance of the permits. Permit values are rounded up to the nearest dollar; therefore, totals may not match.



September 6, 2016

Ms. Monique McCullough
Public Outreach Specialist
City Administrator's Office
City Hall
109 Third Avenue South
Franklin, TN 37064

Dear Monique,

Attached is the City of Franklin Event Permit Application for the Franklin Main Street Brew Fest on March 11, 2017. As always, I appreciate your wonderful assistance with every event we put on in town!

As in the last two years, we would be most grateful for the opportunity to use the hallway inside City Hall for Check In again. Below are the reasons why this is so helpful to the event:

1. Being inside would allow our staff and volunteers to hear and communicate with each other and guests in a more efficient manner.
2. Should it rain, the guests would not need to stand in line exposed to the weather.
3. The supplies would not be exposed to weather.
4. We would have a very official environment for our guests to Check In and there are restrooms available.
5. We would not put up as large a tent blocking 4th Avenue North and Main Street.

Please let me know the next step of this Event Application process. Thank you again as it is always a pleasure to work with you and the many other City of Franklin staff members.

Sincerely,

Kristy Williams
Main Street Program

Board Members

Danny Anderson
Brian Beathard
Julian Bibb III
Angela Calhoun
Sean Carroll
Pam Chandler
Marianne DeMeyers
Josh Denton
Donna Douglas
Bryan Echols
David Garrett
Kelly Harwood
Kay Heller
Craig Holland
Pam Lewis
Emily A. Magid
Andy Marshall
Fred Reynolds
Marianne Schroer
Allen Sills
Nancy Smith
Jacob Thorington
Joe Walker

Executive Director

Mary Pearce

OFFICE USE ONLY:

Permit No:



HISTORIC
FRANKLIN
TENNESSEE

CITY OF FRANKLIN EVENT PERMIT APPLICATION

*Application is Due 90 Days Prior to Scheduled Event.
Please read application carefully and fully complete each section.
A non-refundable application fee of \$100 is due at time of filing.*

Note: Filing this application does not guarantee that your request will be granted.

Please check
all that apply:

☒ street closure

☐ parade

☐ other special event

☒ beer served (**separate permit required**)

Please supply the following information. For additional space, use separate sheets of paper and attach to the application.

1) Location requested (if Temporary Street Closure only, list major roads to be closed):

___ Aspen Grove Park

___ Liberty Park

___ Eastern Flank Battlefield Park

___ Fieldstone Farms

___ Pinkerton Park

___ Public Square

___ Jim Warren Park

___ Harlinsdale Farm

Other: Main Street from (East Main

2) Name/purpose of event: Franklin Main Street Brew Fest

3) Date or dates of event: Saturday, March 11, 2017

4) Time of Event: 5 p.m. to 8 p.m.

5) Time of Street Closure (if applicable): As early as possible 3/11/17.

Set-Up Date/Time: Early morning when streets close

Tear-down Date/Time: 10 p.m. 3/11/17

*Note: Two (2) hours will be added before set-up time and two hours (2) will be added after tear-down to allow time for clean-up. Event is responsible for payment of Franklin Police Officers during this time. Read Additional Requirements section for more information.

6) Name of Applicant and Organization Requesting Permit:

Downtown Franklin Association / Heritage Foundation of Franklin & Williamson County

a) Address: 112 Bridge Street, P.O. Box 807 Franklin, TN 37065

b) Phone: 615.591.8500 Ext 118 **c) Cell:** 615.305.3610 **d) Fax:** 615.591.8502

e) E-mail address: kwilliams@historicfranklin.com

7) Person in charge on day of event: Kristy Williams

Cell: 615.305.3610 **E-mail address:** kwilliams@historicfranklin.com



HISTORIC
FRANKLIN
TENNESSEE

8) Name and Cell Number of at least two others available on day of event:

Name: Linda Childs Cell: 615.678.2171 E-mail address: lchilds@historicfranklin.com
Name: Mary Pearce Cell: 615.300.7218 E-mail address: mpearce@historicfranklin.com

9) DETAILED description of event (use additional sheets):

Beer Tasting in approximately 25 tents in Street Mesure area.
A 2 oz. portion is served for each product type.

10) **ENCLOSE A DETAILED MAP** of event site, detailing any temporary or permanent structures, street closures, parking, etc. If applicable, list the location, blocks, streets, and/or intersections in which such event will occur. **For large-scale events, map should be obtained from the City's GIS division.** Also, please see Question #5

11) An estimated number of participants and an estimated number of attendees expected to attend during the course of the event:

2,500.-

12) **Please attach a list** containing the names, addresses, and phone numbers of the Chairperson of the organization and all other persons involved in the management or control of organization and/or committee.

13) Is your organization based in Williamson County? Circle Yes or No

(if no, please state where: _____)

14) Is your organization authorized to do business in Tennessee? Circle Yes or No

15) Is your organization a tax-exempt organization as described by the Internal Revenue Code Section 501(c)(3) or a not-for-profit organization? Circle Yes or No. If yes, please attach copy of IRS tax exemption letter providing proof of status. See Attached

16) Will you charge an admission/participation fee (including vendors)? If yes, please specify how much per person/vendor. Tasting Tickets \$45 to \$65 Sponsors \$500 to \$500.-
Food Vendors \$250 +

17) Will any charity, gratuity, or offers be solicited or accepted during the event? Circle Yes or No.

18) Is this event a fundraiser? Circle Yes or No. If yes, what organization will be benefactor of event? What percentage of funds will they receive? Downtown Franklin Association

100 %

19) Will parking in the area of the event need to be restricted or prohibited? Circle Yes or No.



HISTORIC
FRANKLIN
TENNESSEE

- 20) Will any sound amplification equipment be used during the event? Circle Yes or No. If no, please skip to Question #22.
- 21) For what purpose will sound amplification be used (i.e. announcements, entertainment, etc.)?
Music
- 22) What type of sound amplification will be provided (DJ, Band, etc.)? Please list all that apply.
Bands, Musicians
- 23) During what time period is sound amplification requested? 5pm. to 8pm
- 24) If for entertainment, give details of entertainment being provided (i.e. number of musicians, type of music, amp wattage, etc.). Music on the streets. No stages.
- 25) Will any stages, amusement attractions, or amusement rides, including inflatables, be erected for the event? Circle Yes or No. If yes, Applicant must give specific details as to the location and type of games/activities, i.e. inflatables, Horseshoes, relay races, etc. along with the name of the company providing the stages and/or activities. **Applicant must also include a copy of that company's insurance certificate indicating coverage and listing the City of Franklin as additional insured.** ***For stages, tents, inflatables, etc. constructed on site prior to the event, that date must be included on Certificate of Insurance provided to the City of Franklin. Stages MUST be removed from site at end of event. ***Rented inflatables/interactives that are set-up and manned by applicant must be included specifically in applicant's Certificate of Insurance.
- 26) What, if any, vendors will be present at event? (i.e. medical related, shirts, arts, etc.) **Please provide detailed list.** Use additional sheets. Approximately 10 to 15 Food, Sponsor, T-Shirt Vendor
- 27) Will food, beverages, or merchandise be sold or given away? Circle Yes or No. If yes, clean-up is required. Please provide name of clean-up provider, contact, and phone number of person on-site during event. See Question #28. City of Franklin Sanitation and Environmental Services
- 28) Events under 200 participants require a \$250 refundable security deposit at the time of approval. For events over 200, a \$1000 security deposit is required upon approval. If clean-up is not done properly, the organization requesting the permit will be fined (See Attachment A). Applicant's event coordinator or representative and a City of Franklin representative will conduct a Pre-Event meeting prior to event date for Pre-Event Check List Site Review. *At the end of the event, a Post-Event Check List shall be completed by the Applicant's event coordinator, or representative, and a City of Franklin representative to re-assess the site for trash and damage, and to secure with caution tape and signage (provided by event group) any tents left for removal.* Damage deposit will be refunded after a satisfactory Post Event Check List has been completed and signed off on by both the City of Franklin and organization requesting event.

X

We will pay the \$1,000³ Security Deposit if this application is approved.

Revised February 2014



HISTORIC
FRANKLIN
TENNESSEE

X 29) *NOTE: Events that include deep frying cooking oil operations are required to have a grease pit on-site and contract with a grease waste hauler to handle the grease waste and removal of the grease pit. A copy of this agreement shall be filed along with this application. The primary event sponsor is required to remove all cooking grease from the site immediately after the event. Illegal dumping of cooking grease will be prosecuted. Please read Additional Requirements section of this application for more information.

30) Will you require a temporary water tap? Circle Yes or No. If yes, please list exact locations:

Tap at 4th and Main Hydrant

Tap near City Hall

Y 31) Will alcohol, beer, and/or wine be given away or sold? Circle Yes or No. If yes, a permit from the relevant board is required. Please read Additional Requirements section of this application for more information.

X 32) Will your event include tents or other temporary structures, propane use, or open flames? Circle yes or no. Events using tents of size 20 x 10 or larger require permitting from Franklin Fire Department. Safety measures must be provided on all tents, especially those set-up prior to the actual event. Tents should be taken down the date the event has ended. Please read Additional Requirements section of this application for more information.

X 33) Attach Good Neighbor Letter and Mailing List used. Please read Additional Requirements section of this application for more information.

We will be using the Downtown Franklin Association and the Downtown Neighborhood Association email for notification

TITLE VI OF THE 1964 CIVIL RIGHTS ACT

"No person in the United States shall, on the ground of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance."

The City of Franklin does not discriminate based on race, color or national origin in federal or state sponsored programs, pursuant to Title VI of the Civil Rights Acts of 1964 (42 U.S.C. 2000d). For more information or to file a complaint against the City of Franklin under Title VI of the 1964 Civil Rights Act, contact the Title VI Coordinator:

Risk Manager
City of Franklin
109 Third Avenue South
Franklin, Tennessee 37064
615.791.3277

The City of Franklin is committed to providing reasonable access and accommodations upon request for people with disabilities. Please call the Risk Management Department at (615)791-3277 for specific requests.



HISTORIC
FRANKLIN
TENNESSEE

PLEASE READ ATTACHMENTS BEFORE SIGNING
APPLICATION.

- 1) I/We agree to abide by all ordinances and regulations of the City of Franklin and all conditions placed upon the event by the City Administrator and the Board of Mayor and Aldermen.
- 2) I/We do swear or affirm that all of the information given in this application is true and complete.
- 3) I/We do hereby agree to assume the defense of and indemnify and save harmless the City, its aldermen, boards, commissions, officers, employees and agents, from all suits, actions, damages or claims to which the City may be subjected of any kind or nature whatsoever resulting from, caused by, arising out of or as a consequence of such event and the activities permitted in connection there with, and to submit a certificate of insurance prior to the event in an amount acceptable to the City Administrator.
- 4) I/We agree to provide a copy of this signed Event Application to any vendors, planners, and related parties associated with the event to ensure they are familiar with the guidelines set forth herein.
- 5) I/We understand that I/we assume the responsibility of the actions of any vendors, planners, and related parties for this event.
- 6) I/We understand that granting of Special Event Permit does not imply granting of other permit that is separately required.
- 7) The application for an event permit shall be filed not less than 90 days nor more than 364 days prior to the scheduled date of such event. Suggested filing is at least 180 days prior to scheduled event. Events should not be advertised or promoted until an event permit has been obtained from the City. Failure to file in a timely manner may result in denial of a permit.
- 8) The City reserves the right to require one or more City of Franklin police officers or other emergency personnel be present at any and all events that occur within the city limits. Please budget for this request at a rate of \$30 per hour at a minimum of two (2) hours.

BY: May [Signature] Date: 9/6/16
(Signature and title – must be officer of organization)

Approved by the Board of Mayor and Aldermen on _____, 20____.

Dr. Ken Moore, Mayor

Eric S. Stuckey, City Administrator

If you have questions concerning your request, please call 615-550-6606.

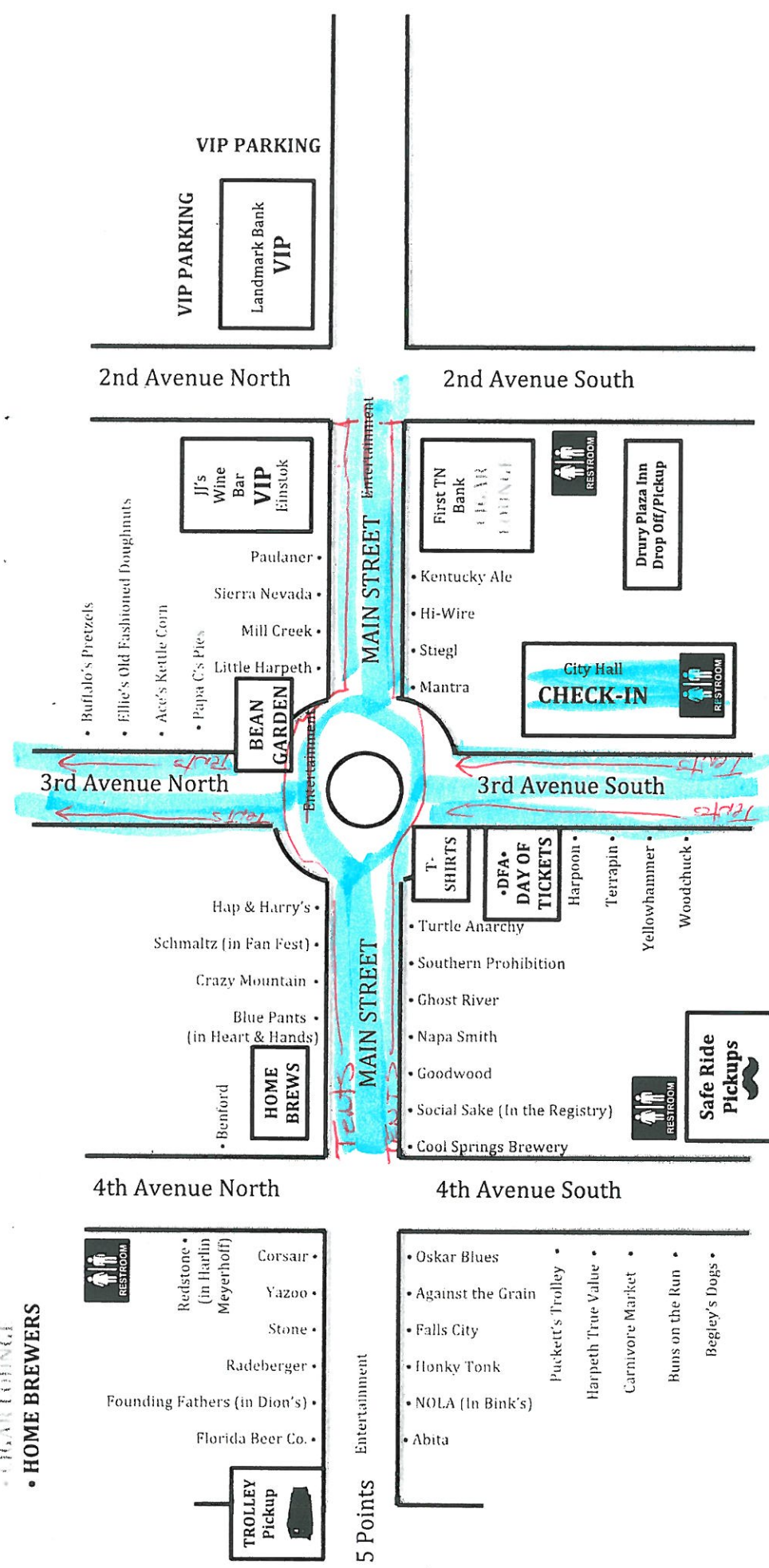
*
* **Return application to:** *
* City Administrator's Office *
* City Hall *
* 109 Third Ave South *
* Franklin, TN 37065 *
* 615-791-3217 *
* 615-790-0469 (FAX) *
*

INITIAL PLANS
 2016 Map
 With Blue Highlights
 for 2017 Event Area

MAIN STREET Brewfest

TAP INTO HISTORY

- BREWERIES
- FOOD VENDORS
- VIP
- BEAN GARDEN
- ENTERTAINMENT
- T-SHIRTS
- CIGARETTES
- HOME BREWERS



PRESENTED BY



Internal Revenue Service

Department of the Treasury

P. O. Box 2508
Cincinnati, OH 45201

Date: March 19, 2001

Person to Contact:
Richard Owens 31-00913
Customer Service Representative
Toll Free Telephone Number:
8:00 a.m. to 9:30 p.m. EST
877-829-5500
Fax Number:
513-263-3756
Federal Identification Number:
23-7042596

Heritage Foundation of Franklin and Williamson
County Tennessee
% Mary Shearer Pearce
PO Box 723
Franklin, TN 37065

Dear Sir or Madam:

This letter is in response to your request for a copy of your organization's determination letter. This letter will take the place of the copy you requested.

Our records indicate that a determination letter issued in April 1970, granted your organization exemption from federal income tax under section 501(c)(3) of the Internal Revenue Code. That letter is still in effect.

Based on information subsequently submitted, we classified your organization as one that is not a private foundation within the meaning of section 509(a) of the Code because it is an organization described in section 509(a)(2).

This classification was based on the assumption that your organization's operations would continue as stated in the application. If your organization's sources of support, or its character, method of operations, or purposes have changed, please let us know so we can consider the effect of the change on the exempt status and foundation status of your organization.

Your organization is required to file Form 990, Return of Organization Exempt from Income Tax, only if its gross receipts each year are normally more than \$25,000. If a return is required, it must be filed by the 15th day of the fifth month after the end of the organization's annual accounting period. The law imposes a penalty of \$20 a day, up to a maximum of \$10,000, when a return is filed late, unless there is reasonable cause for the delay.

All exempt organizations (unless specifically excluded) are liable for taxes under the Federal Insurance Contributions Act (social security taxes) on remuneration of \$100 or more paid to each employee during a calendar year. Your organization is not liable for the tax imposed under the Federal Unemployment Tax Act (FUTA).

Organizations that are not private foundations are not subject to the excise taxes under Chapter 42 of the Code. However, these organizations are not automatically exempt from other federal excise taxes.

Donors may deduct contributions to your organization as provided in section 170 of the Code. Bequests, legacies, devises, transfers, or gifts to your organization or for its use are deductible for federal estate and gift tax purposes if they meet the applicable provisions of sections 2055, 2106, and 2522 of the Code.

Heritage Foundation of Franklin and Williamson County Tennessee
23-7042596

Your organization is not required to file federal income tax returns unless it is subject to the tax on unrelated business income under section 511 of the Code. If your organization is subject to this tax, it must file an income tax return on the Form 990-T, Exempt Organization Business Income Tax Return. In this letter, we are not determining whether any of your organization's present or proposed activities are unrelated trade or business as defined in section 513 of the Code.

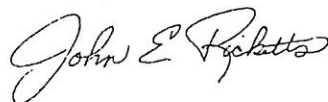
The law requires you to make your organization's annual return available for public inspection without charge for three years after the due date of the return. If your organization had a copy of its application for recognition of exemption on July 15, 1987, it is also required to make available for public inspection a copy of the exemption application, any supporting documents and the exemption letter to any individual who requests such documents in person or in writing. You can charge only a reasonable fee for reproduction and actual postage costs for the copied materials. The law does not require you to provide copies of public inspection documents that are widely available, such as by posting them on the Internet (World Wide Web). You may be liable for a penalty of \$20 a day for each day you do not make these documents available for public inspection (up to a maximum of \$10,000 in the case of an annual return).

Because this letter could help resolve any questions about your organization's exempt status and foundation status, you should keep it with the organization's permanent records.

If you have any questions, please call us at the telephone number shown in the heading of this letter.

This letter affirms your organization's exempt status.

Sincerely,

A handwritten signature in cursive script that reads "John E. Ricketts".

John E. Ricketts, Director, TE/GE
Customer Account Services

CITY OF FRANKLIN
EVENT PERMIT APPLICATION
Question #12

Mary Pearce, Executive Director
Heritage Foundation
P. O. Box 723
Franklin, TN 37065
Work: 615.591.8500, Ext. 115
Cell: 615.300.7218

Kristy Williams, Main Street
Heritage Foundation
P. O. Box 723
Franklin, TN 37065
Work: 615.591.8500, Ext. 118
Cell: 615.305.3610

Linda Childs
Heritage Foundation
P. O. Box 723
Franklin, TN 37065
Work: 615.591.8500, Ext. 116
Cell: 615.678.2171

Julie Walton Garland
Walton's Antique & Estate Jewelry
410 Main Street
Franklin, TN 37064
Work: 615.790.0244
Cell: 615.473.8823

Franklin Brewfest

Bridge St

4th Ave N

3rd Ave

2nd Ave N

1st Ave N

4th Ave S

2nd Ave S

1st Ave S

Parking Garage

Parking Garage

City Hall

Emily Ct

Church St

Main St

E Main St

Alley

Alley

Alley

Alley

Alley

FRANKLIN DISCLAIMER
This map was created by the City of Franklin's IT Department and was compiled from the most authentic information available. The City is not responsible for any errors or omissions contained hereon. All data and materials Copyright © 2017. All Rights Reserved.



-  Restrooms
-  Hydrants
-  Emergency Access
-  Road Closed

Tabulation of Bids*

Purchasing Office Solicitation No.:		2017-003 (after-market up-fitting of a minimum of fifteen (15) police vehicles)							
Notice to Bidders published in the <i>Williamson Herald</i> on:		9/15/16							
Number of vendors that were notified of / that responded to this solicitation for bids:		7 / 2							
Date and time bids due and publicly opened:		10/11/16 2:00 PM							
Present at opening of bids:		Jeff Lux of Truckers Lighthouse Inc.; and Natalie Keene, Suzanne Ward and Brian Wilcox of the City of Franklin Purchasing Office							
Target meeting of BOMA at which recommendation is scheduled to be considered:		11/8/16							
Bids received from:	Bid No. / Facility at which services would be rendered:	Does the bid include all required documents?	Duration of installer's guarantee of workmanship:	Does the bid MOES ¹ ? / If not, how many exceptions do not MOES ¹ ?	Price per marked vehicle:	Estimated total quoted bid price for specified estimated quantities (12 marked; 3 unmarked):	Payment terms:	Estimated time of completion of project, including delivery of the last vehicle back to the City after receipt of notice to proceed	Bid and bid pricing is valid through:
					Price per unmarked vehicle:				
Law Enforcement Supply 12574 Kennestone Circle Marietta, GA 30066 Thomas Boulanger, Director of Technical Services 800/522-8949 ext.4305 tboulanger@lawsupply.com	1 of 1 / City facility t.b.d.	No (missing CoF specifications revised per Add. No. 1)	2 years	Bidder takes no exceptions; however, CoF unable to confirm inasmuch as CoF specifications revised per Add. No. 1 were not submitted by bidder	\$11,487.03	\$150,795.32	net 30 days	80 days	2/1/2017
					\$4,317.00				
Truckers Lighthouse, Inc. 1213-A Foster Ave. Nashville, TN 37210 Andy Stoll 615/255-5868 andy@truckerslighthouse.com	1 of 1 / up-fitter's facility (1213-A Foster Ave., Nashville, TN 37210)	Yes	5 years	Bidder takes no exceptions	\$9,299.99	\$125,270.88	net 30 days	60 days	6/30/2017
					\$4,557.00				

¹MOES indicates "meet(s) or exceed(s) specifications"

*Shaded bid is apparent lowest best bid

**CONTRACT NO 2011274-C
BETWEEN
REGIONAL TRANSPORTATION AUTHORITY
AND
CITY OF FRANKLIN**

This Contract, entered into on the 1st Day of July, 2016, by and between the Regional Transportation Authority, located at 430 Myatt Drive, Nashville TN 37115, (hereinafter "RTA"), and the City of Franklin, located at 109 3rd Avenue South, Franklin, TN 37064, (hereinafter "the City"). This contract is for the provision of Regional Bus Service (hereinafter "the Service") between Nashville/Davidson County and the City of Franklin.

The RTA was established pursuant to statutory law enacted by the Tennessee General Assembly, T.C.A. 64-8-101 et seq.

A. SCOPE OF SERVICES

The RTA shall provide regional bus service between Nashville/Davidson County, and City of Franklin, Tennessee. The City shall have no obligation for services rendered by the RTA which are not performed within the specified period or between the specified route terminus.

B. TERM

The Contract term start date shall be July 1, 2016; the Contract end date shall be June 30, 2017.

C. PAYMENT

In consideration for RTA's provision of regional bus services, the City shall provide RTA the amount of fifty six thousand one hundred eighty five and no/100 dollars (\$56,185.00).

The RTA shall invoice the City its route subsidy share as stated above and shown in Attachment 1. RTA will send the City a lump sum invoice in the amount of fifty six thousand one hundred eighty five and no/100 dollars (\$56,185.00) to be paid directly to RTA. The amount represents the full amount owed to RTA by the City.

The City shall send payment to RTA, 430 Myatt Drive, Nashville, TN 37115, Attn: Accounting Department.

D. STANDARD TERMS AND CONDITIONS

1. The RTA nor the City are bound by this Contract until it is executed by the parties.
2. This Contract may be modified only by a written amendment executed by all parties hereto.
3. The RTA may terminate this Contract and the Service obligations if adequate Grant Funds are not available to continue the Service. In the event of termination the City shall receive a share of any of their route subsidy that remains. The reimbursement will be determined by dividing fifty six thousand one hundred eighty five and no/100 dollars (\$56,185.00) by 12 and multiplying that amount by the number of months the City did not receive Service.
4. The RTA warrants that no person shall be excluded from participation in, be denied benefits of, or be otherwise subjected to discrimination in the performance of this Contract or in the employment practices of the RTA on the grounds of handicap and/or disability, age, race, color, religion, sex, national origin, or any other classification protected by Federal, Tennessee State constitutional, or statutory law. The RTA shall, upon request, show proof of such nondiscrimination and shall post in conspicuous places, available to all employees and applicants, notices of nondiscrimination.
5. The RTA warrants that no part of the Contract amount shall be paid directly or indirectly to an employee or official of City as wages, compensation, or gifts in exchange for acting as an officer, agent, employee, or consultant to the RTA in connection with any work contemplated or performed relative to this Contract.
6. This Contract shall be governed by and construed in accordance with the laws of the State of Tennessee.
7. As part of the RTA yearly audit, a full audit of this project will be conducted by an outside auditing firm and made available to the City. All financial records will be consistent with internal accounting procedures.

IN WITNESS WHEREOF, as of the date written above the parties have caused this Contract to be signed by their duly authorized representatives.

Regional Transportation Authority

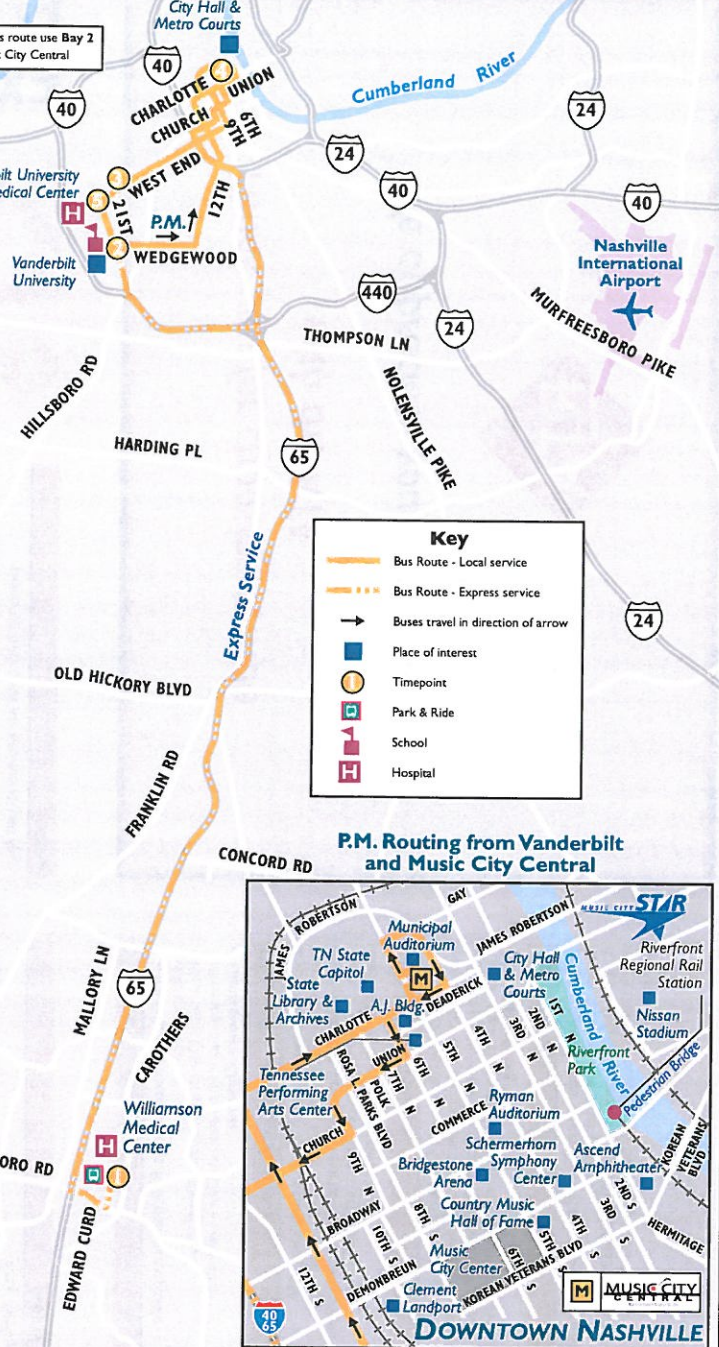
City of Franklin, Tennessee

Stephen G. Bland, CEO

Date

Date

91X Franklin Express



WEEKDAYS to Nashville					
Williamson Medical Center	21st & Children's Way	20th & West End	Music City Central Bay 2	21st & West End	21st & Children's Way
1	2	3	4	5	2
6:33	EXPRESS	7:04	7:16	7:20	
6:58	7:36	7:44	8:04		
7:11	EXPRESS	7:50	8:03	8:08	

WEEKDAYS from Nashville					
21st & West End	21st & Children's Way	Music City Central Bay 2	21st & West End	21st & Children's Way	Williamson Medical Center
5	2	4	3	2	1
3:45	3:52	4:15	EXPRESS	4:54	
4:08	4:15	4:40	EXPRESS	5:27	
		4:55	5:11	5:15	6:04

NO SERVICE SATURDAYS, SUNDAYS OR HOLIDAYS

a.m. trips p.m. trips



**Thank you for choosing to ride
with the RTA.**

We appreciate your business!

Ridesharing

If the Franklin Express route does not meet your commute needs, there may be other options. Call the Rideshare program at (615) 862-8833 to find out if there is a potential car pool or van pool for your work trip.

Multi-Ride Tickets

The 20-Ride Express Bus is a fare card designed to offer convenience and savings over single cash fares. It is valid for 20 rides on this route and all other RTA and MTA routes. Tickets are available at all MTA ticket locations and online at nashvillemta.org.

Other Connecting Routes

If your trip requires you to board a connecting MTA bus from an RTA express bus, you must pay the appropriate MTA fare for that portion of your trip unless you have been issued a proximity card. Call Customer Care at (615) 862-5950 for details.

Holiday Service

On the following major holidays, RTA does not operate weekday service:

- New Year's Day • Martin Luther King Jr. Day • Memorial Day • Independence Day • Labor Day • Thanksgiving • Christmas

Emergency Ride Home

Regular RTA riders? Join the Emergency Ride Home Program and have a free ride home in case of an emergency, illness, or unexpected overtime. Call the RTA at (615) 862-8833 for details.

Park & Ride

A Park and Ride lot is available at the Williamson Medical Center in Franklin. The owners of this location have agreed to designate a portion of their parking lot for commuter's use. Remember, these spots are designated for your convenience and you park at your own risk.

Franklin Express

You work hard. Your schedule is tight. Money is even tighter. It's time someone did something to make your life a little easier.

So we did. Welcome to Route 91X – Franklin Express – a convenient bus route serving Nashville and Williamson County.

Enjoy fast, comfortable service to work, shopping and entertainment.

Have time to read ... organize your day ... or just sit back and take a break.

Fares

Regular Fare
1-Ride Express Bus \$4.25
(All travel between Nashville and Franklin)

Reduced Fare
1-Ride Express Bus \$2.00
(Youth age 19 and younger, active & retired military, seniors age 65 and older, people with disabilities, and Medicare cardholders. Valid ID required)

Children age 4 and younger No Charge

Multi-Ride Pass
20-Ride Express Bus \$73.50

Please Note: MTA Passes are not valid on this route.

For more information or to purchase passes, please call Customer Care at (615) 862-5950 or see RTA's website at rtare laxandride.com.

♿ All buses are accessible.



Customer Care and
ADA Coordinator
(615) 862-5950
rtare laxandride.com
@MiddleTN_RTAT



Service operated by



Regional Transportation Authority
430 Myatt Drive, Nashville, TN 37115
designed by CH2M America - ch2m-america.com

Effective March 28, 2016

91X

Franklin, TN
Music City Central - Bay 2
Vanderbilt University
Vanderbilt University
Medical Center

EXPRESS

Attachment 1

FY17 v. 3 (StMch CMAQ)



Franklin (91X) Relax & Ride Budget
July 1, 2015-June 30, 2018

	2015-16 Budget	2016-17 Budget	2017-18 Budget
Number of Daily Trips	6	6	6
Days of Service	254	254	254
Ridership	37,133	29,206	30,082
Operating Hours per Day (including deadhead)	15.00	15.00	15.00
Cost per hour of Service	\$111.85	\$116.33	\$119.83
Daily Cost of Service	\$1,677.75	\$1,744.95	\$1,797.45
<u>Cost of Service</u>			
Cost of Runs	426,149	443,217	456,552
Fuel Contingency (n/a)	0	0	0
Board-Initiated R&R RESERVE	0	475	0
<i>Total Costs</i>	426,149	443,692	456,552
<u>Estimated Revenues</u>			
Estimated Cash Fares - including State Easy Ride	95,010	56,900	57,469
ADD: Subsidy from SIR Account			
ADD: Bus Seat Guarantee (covering 3rd year of original service)			
ADD: CMAQ Funding			
FED (80%)	127,200	127,200	127,200
ST (10%)	15,900	15,900	15,900
CAPITAL LOCAL MATCH (partial)			
\$5307 CCoC Funding (100% dollars-- Fed/St/Loc)			
ADD: RTA \$5307 Operating Funding			
Federal (50%)			0
Local Match (50%)			0
<i>Total Estimated Revenues</i>	238,110	200,000	200,569
<i>Estimated Net Cost</i>	188,039	243,692	255,983
<u>Route Subsidy</u>			
TDOT Operating Subsidy	60,308	76,087	55,741
Davidson County	42,577	55,710	66,748
Franklin	42,577	56,185	66,747
Thompson Station	0	0	0
Brentwood	0	0	0
Williamson County	42,577	55,710	66,747
<i>Total Subsidy (100%)</i>	188,039	243,692	255,983
<u>Balance</u>	0	0	0

H:\2-123-EXCEL\RTA\BUDGET PLANNING BDGT FY17\FY17 - 3 (St Mch for CMAQ) 7-13-16\R&R FY17 - 3 (St Mch CMAQ)\Jr91X Franklin FY2017-3 (StMch CMAQ).xlsx -91X Franklin

Shelly McElhoney
8/3/2016

RIZER POINT PUD SUBDIVISION, REZONING,
(ORDINANCE 2016-40)
FRANKLIN MUNICIPAL PLANNING COMMISSION
10/27/2016



- | | |
|--|---------------------------------------|
| Rizer Point PUD Subdivision | SD-R Specific Development-Residential |
| Harpeth River (Polygon) | SD-X Specific Development-Variety |
| AG Agricultural District | OR Office Residential District |
| ER Estate Residential | GO General Office District |
| R-1 Residential District | CC Central Commercial District |
| R-2 Residential District | NC Neighborhood Commercial District |
| R-3 Residential District | GC General Commercial District |
| R-6 Residential District | LI Light Industrial District |
| RM-10 Attached 10 Residential District | HI Heavy Industrial District |
| RM-15 Attached 15 Residential District | CI Civic and Institutional District |
| RM-20 Attached 20 Residential District | |



0 250 500 1,000
Feet

This map was created by the Franklin Planning Department.
 It was compiled from the most authentic information available.
 The City is not responsible for any errors or omissions contained hereon.
 All data and materials (c) copyright 2016. All rights reserved.

ORDINANCE 2016-40

TO BE ENTITLED, "AN ORDINANCE TO REZONE 14.04 ACRES FROM AGRICULTURAL (AG) DISTRICT TO SPECIFIC DEVELOPMENT RESIDENTIAL (SD-R 1.14) DISTRICT FOR THE PROPERTY LOCATED NORTH OF DEL RIO PIKE AND EAST OF DEL RIO COURT."

WHEREAS, the City of Franklin, Tennessee, encourages responsible growth and the sensible transition of land uses and densities; and

WHEREAS, the Specific Development Residential (SD-R) district provides zoning for land uses compatible with both the Franklin Land Use Plan and surrounding development; and

WHEREAS, the Board of Mayor and Aldermen (BOMA) of the City of Franklin, Tennessee, adopted Resolution 2016-66, approving a Revised Plan Unit Development (PUD) Development Plan as required by the Franklin Zoning Ordinance; and

WHEREAS, the zoning has been reviewed and approved by BOMA after a public hearing and a recommendation by the Franklin Municipal Planning Commission.

NOW THEREFORE BE IT ORDAINED BY THE BOARD OF MAYOR AND ALDERMEN OF THE CITY OF FRANKLIN, TENNESSEE, AS FOLLOWS:

SECTION I. That the following described property shall be, and is hereby, rezoned from its present zoning classification of Agriculture (AG) District to Specific Development Residential (SD-R 1.14) District:

PREMISES CONSIDERED

Map-Parcel	Acres
portion of 63 3.01	14.04
Total	14.04

Commencing at a point along the west right-of-way of Viola Lane, the same point being on the southern line of the property of F-L Farms LLC, of record on Tax Map 63 Parcel 3.01 in the Register's Office of Williamson County Tennessee; said point being the point of beginning of the following land:

Thence, N 75° 28' 11" W for a distance of 228.99 feet to a point;

Thence, N 75° 28' 09" W for a distance of 32.25 feet to a point;

Thence, N 00° 30' 49" E for a distance of 418.10 feet to a point;

Thence S 89° 29' 11" E a distance of 831.09 feet to the point;

Thence N 02° 50' 33" E a distance of 670.00 feet to a point;

Thence S 87° 09' 27" E a distance of 155.00 feet to a point;

Thence S 02° 50' 33" W a distance of 1252.57 feet to a point;

Thence N 83° 36' 11" W a distance of 479.60 feet to a point;

Thence, N 75° 28' 11" W for a distance of 238.86 feet to the point of beginning and containing 14.04 acres of land.

SECTION II. That the attached Location Map shall serve the purpose of further delimiting the geographical boundaries as described by this Ordinance.

SECTION III. BE IT FINALLY ORDAINED by the Board of Mayor and Aldermen of the City of Franklin, Tennessee, that this Ordinance shall take effect from and after its passage on third and final reading, the health, safety, and welfare of the citizens requiring it.

ATTEST:

CITY OF FRANKLIN, TENNESSEE:

By: _____
Eric Stuckey
City Administrator/Recorder

By: _____
Dr. Ken Moore
Mayor

Approved as to form by:

Shauna R. Billingsley
City Attorney

PLANNING COMMISSION RECOMMENDED:

PASSED FIRST READING:

PUBLIC HEARING HELD:

PASSED SECOND READING:

PASSED THIRD READING:

RIZER POINT PUD SUBDIVISION, REZONING,
(ORDINANCE 2016-40)
FRANKLIN MUNICIPAL PLANNING COMMISSION
10/27/2016



- | | |
|--|---------------------------------------|
| Rizer Point PUD Subdivision | SD-R Specific Development-Residential |
| Harpeth River (Polygon) | SD-X Specific Development-Variety |
| AG Agricultural District | OR Office Residential District |
| ER Estate Residential | GO General Office District |
| R-1 Residential District | CC Central Commercial District |
| R-2 Residential District | NC Neighborhood Commercial District |
| R-3 Residential District | GC General Commercial District |
| R-6 Residential District | LI Light Industrial District |
| RM-10 Attached 10 Residential District | HI Heavy Industrial District |
| RM-15 Attached 15 Residential District | CI Civic and Institutional District |
| RM-20 Attached 20 Residential District | |



0 250 500 1,000
Feet

This map was created by the Franklin Planning Department.
 It was compiled from the most authentic information available.
 The City is not responsible for any errors or omissions contained hereon.
 All data and materials (c) copyright 2016. All rights reserved.

RIZER POINT PUD SUBDIVISION REZONING REQUEST

REVISION 2

ADDITION OF PROPERTY IDENTIFIED AS MAP 63, PARCEL 3.01 TO THE RIZER POINT PUD
FRANKLIN, TENNESSEE

OWNER/APPLICANT:

GOODALL INC, BUILDERS
393 MAPLE STREET, SUITE 100
GALLATIN, TN 37066
JACK LUDINGTON
615.451.5029

PLANNER/LANDSCAPE ARCHITECT

GAMBLE DESIGN COLLABORATIVE
GREG GAMBLE
greggamble209@gmail.com
615.975.5765
144 SOUTHEAST PARKWAY
SUITE 200
FRANKLIN TN 37064

CIVIL ENGINEER:

DEWEY ENGINEERING
MICHEAL DEWEY
2925 BERRY HILL DRIVE
NASHVILLE, TENNESSEE 37204
615.401.9956
mdewey@dewey-engineering.com

SURVEYOR (NEW TRACT):

GREG TERRY
JAMES TERRY & ASSOCIATES
211 DONELSON PIKE
SUITE 6
NASHVILLE, TENNESSEE 37214
615.490.6920
greg.jta@comcast.net



REVISION 2 SUMMARY:

This Rezoning Request is to include a new Section, Section 5 to the overall PUD. Section 5 is an additional parcel (+/-14.04 AC) and 16 new single family detached homes. The other four sections of the original Rizer Point PUD have approved Site Plans and are either in construction or complete. No change is proposed to Sections 1 - 4. New parcel to be rezoned from AG to SD-R (1.14).

INDEX OF SHEETS

SHEET	DESCRIPTION
C 0.0	COVER SHEET AND LOCATION MAP
C 1.0	OVERALL EXISTING CONDITIONS
C 1.1	EXISTING CONDITIONS

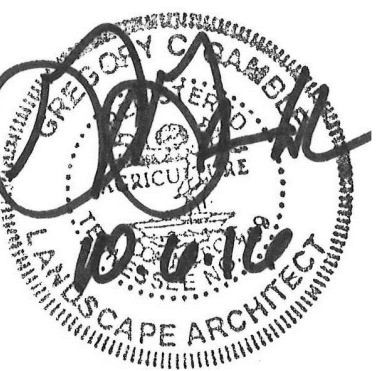


COF # 6250
INITIAL SUBMITAL: SEPTEMBER 12, 2016
REVISED: OCT. 6, 2016

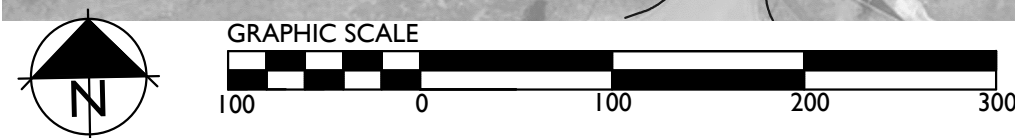


MAP_PARCEL	PROF_STREET	OWNER1	OWNER2
0303000001	2370 DEL RIV	Owens Rose Renee	
0303010100	DEL RIV DR NW	Flowers Thomas HCA	
03040105	DEL RIV HWY	Franklin Special Dist	
03040106	1100 Del RIV NW	James Rickard Jr	
03040240	500 NEW HWY NW	Zarling Homes Inc	
03040241	500 NEW HWY NW	James Rickard Jr	
03040242	545 Bancroft Way	Robert E Bright	
03040243	545 Bancroft Way	Joe Lee Lanes	
03040244	545 Bancroft Way	Walter M McCaskey	
03040245	540 Bancroft Way	Theresa J Parker	
03040246	540 Bancroft Way	Nancy G. Calhoun	
03040247	540 Bancroft Way	Theresa J Parker	
03040248	540 Bancroft Way	Angie M. Calhoun	
03040249	540 Bancroft Way	Angie M. Calhoun	
03040250	356 Astor Way	Charles V Garrett	
03040251	356 Astor Way	Charles V Garrett	
03040252	356 Astor Way	Charles V Garrett	
03040253	356 Astor Way	Charles V Garrett	
03040254	356 Astor Way	Charles V Garrett	
03040255	356 Astor Way	Charles V Garrett	
03040256	356 Astor Way	Charles V Garrett	
03040257	356 Astor Way	Charles V Garrett	
03040258	356 Astor Way	Charles V Garrett	
03040259	356 Astor Way	Charles V Garrett	
03040260	356 Astor Way	Charles V Garrett	
03040261	356 Astor Way	Charles V Garrett	
03040262	356 Astor Way	Charles V Garrett	
03040263	356 Astor Way	Charles V Garrett	
03040264	356 Astor Way	Charles V Garrett	
03040265	356 Astor Way	Charles V Garrett	
03040266	356 Astor Way	Charles V Garrett	
03040267	356 Astor Way	Charles V Garrett	
03040268	356 Astor Way	Charles V Garrett	
03040269	356 Astor Way	Charles V Garrett	
03040270	356 Astor Way	Charles V Garrett	
03040271	356 Astor Way	Charles V Garrett	
03040272	356 Astor Way	Charles V Garrett	
03040273	356 Astor Way	Charles V Garrett	
03040274	356 Astor Way	Charles V Garrett	
03040275	356 Astor Way	Charles V Garrett	
03040276	356 Astor Way	Charles V Garrett	
03040277	356 Astor Way	Charles V Garrett	
03040278	356 Astor Way	Charles V Garrett	
03040279	356 Astor Way	Charles V Garrett	
03040280	356 Astor Way	Charles V Garrett	
03040281	356 Astor Way	Charles V Garrett	
03040282	356 Astor Way	Charles V Garrett	
03040283	356 Astor Way	Charles V Garrett	
03040284	356 Astor Way	Charles V Garrett	
03040285	356 Astor Way	Charles V Garrett	
03040286	356 Astor Way	Charles V Garrett	
03040287	356 Astor Way	Charles V Garrett	
03040288	356 Astor Way	Charles V Garrett	
03040289	356 Astor Way	Charles V Garrett	
03040290	356 Astor Way	Charles V Garrett	
03040291	356 Astor Way	Charles V Garrett	
03040292	356 Astor Way	Charles V Garrett	
03040293	356 Astor Way	Charles V Garrett	
03040294	356 Astor Way	Charles V Garrett	
03040295	356 Astor Way	Charles V Garrett	
03040296	356 Astor Way	Charles V Garrett	
03040297	356 Astor Way	Charles V Garrett	
03040298	356 Astor Way	Charles V Garrett	
03040299	356 Astor Way	Charles V Garrett	
03040300	356 Astor Way	Charles V Garrett	
03040301	356 Astor Way	Charles V Garrett	
03040302	356 Astor Way	Charles V Garrett	
03040303	356 Astor Way	Charles V Garrett	
03040304	356 Astor Way	Charles V Garrett	
03040305	356 Astor Way	Charles V Garrett	
03040306	356 Astor Way	Charles V Garrett	
03040307	356 Astor Way	Charles V Garrett	
03040308	356 Astor Way	Charles V Garrett	
03040309	356 Astor Way	Charles V Garrett	
03040310	356 Astor Way	Charles V Garrett	
03040311	356 Astor Way	Charles V Garrett	
03040312	356 Astor Way	Charles V Garrett	
03040313	356 Astor Way	Charles V Garrett	
03040314	356 Astor Way	Charles V Garrett	
03040315	356 Astor Way	Charles V Garrett	
03040316	356 Astor Way	Charles V Garrett	
03040317	356 Astor Way	Charles V Garrett	
03040318	356 Astor Way	Charles V Garrett	
03040319	356 Astor Way	Charles V Garrett	
03040320	356 Astor Way	Charles V Garrett	
03040321	356 Astor Way	Charles V Garrett	
03040322	356 Astor Way	Charles V Garrett	
03040323	356 Astor Way	Charles V Garrett	
03040324	356 Astor Way	Charles V Garrett	
03040325	356 Astor Way	Charles V Garrett	
03040326	356 Astor Way	Charles V Garrett	
03040327	356 Astor Way	Charles V Garrett	
03040328	356 Astor Way	Charles V Garrett	
03040329	356 Astor Way	Charles V Garrett	
03040330	356 Astor Way	Charles V Garrett	
03040331	356 Astor Way	Charles V Garrett	
03040332	356 Astor Way	Charles V Garrett	
03040333	356 Astor Way	Charles V Garrett	
03040334	356 Astor Way	Charles V Garrett	
03040335	356 Astor Way	Charles V Garrett	
03040336	356 Astor Way	Charles V Garrett	
03040337	356 Astor Way	Charles V Garrett	
03040338	356 Astor Way	Charles V Garrett	
03040339	356 Astor Way	Charles V Garrett	
03040340	356 Astor Way	Charles V Garrett	
03040341	356 Astor Way	Charles V Garrett	
03040342	356 Astor Way	Charles V Garrett	
03040343	356 Astor Way	Charles V Garrett	
03040344	356 Astor Way	Charles V Garrett	
03040345	356 Astor Way	Charles V Garrett	
03040346	356 Astor Way	Charles V Garrett	
03040347	356 Astor Way	Charles V Garrett	
03040348	356 Astor Way	Charles V Garrett	
03040349	356 Astor Way	Charles V Garrett	
03040350	356 Astor Way	Charles V Garrett	
03040351	356 Astor Way	Charles V Garrett	
03040352	356 Astor Way	Charles V Garrett	
03040353	356 Astor Way	Charles V Garrett	
03040354	356 Astor Way	Charles V Garrett	
03040355	356 Astor Way	Charles V Garrett	
03040356	356 Astor Way	Charles V Garrett	
03040357	356 Astor Way	Charles V Garrett	
03040358	356 Astor Way	Charles V Garrett	
03040359	356 Astor Way	Charles V Garrett	
03040360	356 Astor Way	Charles V Garrett	
03040361	356 Astor Way	Charles V Garrett	
03040362	356 Astor Way	Charles V Garrett	
03040363	356 Astor Way	Charles V Garrett	
03040364	356 Astor Way	Charles V Garrett	
03040365	356 Astor Way	Charles V Garrett	
03040366	356 Astor Way	Charles V Garrett	
03040367	356 Astor Way	Charles V Garrett	
03040368	356 Astor Way	Charles V Garrett	
03040369	356 Astor Way	Charles V Garrett	
03040370	356 Astor Way	Charles V Garrett	
03040371	356 Astor Way	Charles V Garrett	
03040372	356 Astor Way	Charles V Garrett	
03040373	356 Astor Way	Charles V Garrett	
03040374	356 Astor Way	Charles V Garrett	
03040375	356 Astor Way	Charles V Garrett	
03040376	356 Astor Way	Charles V Garrett	
03040377	356 Astor Way	Charles V Garrett	
03040378	356 Astor Way	Charles V Garrett	
03040379	356 Astor Way	Charles V Garrett	
03040380	356 Astor Way	Charles V Garrett	
03040381	356 Astor Way	Charles V Garrett	
03040382	356 Astor Way	Charles V Garrett	
03040383	356 Astor Way	Charles V Garrett	
03040384	356 Astor Way	Charles V Garrett	
03040385	356 Astor Way	Charles V Garrett	
03040386	356 Astor Way	Charles V Garrett	
03040387	356 Astor Way	Charles V Garrett	
03040388	356 Astor Way	Charles V Garrett	
03040389	356 Astor Way	Charles V Garrett	
03040390	356 Astor Way	Charles V Garrett	
03040391	356 Astor Way	Charles V Garrett	
03040392	356 Astor Way	Charles V Garrett	
03040393	356 Astor Way	Charles V Garrett	
03040394	356 Astor Way	Charles V Garrett	
03040395	356 Astor Way	Charles V Garrett	
03040396	356 Astor Way	Charles V Garrett	
03040397	356 Astor Way	Charles V Garrett	
03040398	356 Astor Way	Charles V Garrett	
03040399	356 Astor Way	Charles V Garrett	
03040400	356 Astor Way	Charles V Garrett	
03040401	356 Astor Way	Charles V Garrett	
03040402	356 Astor Way	Charles V Garrett	
03040403	356 Astor Way	Charles V Garrett	
03040404	356 Astor Way	Charles V Garrett	
03040405	356 Astor Way	Charles V Garrett	
03040406	356 Astor Way	Charles V Garrett	
03040407	356 Astor Way	Charles V Garrett	
03040408	356 Astor Way	Charles V Garrett	
03040409	356 Astor Way	Charles V Garrett	
03040410	356 Astor Way	Charles V Garrett	
03040411	356 Astor Way	Charles V Garrett	
03040412	356 Astor Way	Charles V Garrett	
03040413	356 Astor Way	Charles V Garrett	
03040414	356 Astor Way	Charles V Garrett	
03040415	356 Astor Way	Charles V Garrett	
03040416	356 Astor Way	Charles V Garrett	
03040417	356 Astor Way	Charles V Garrett	
03040418	356 Astor Way	Charles V Garrett	
03040419	356 Astor Way	Charles V Garrett	
03040420	356 Astor Way	Charles V Garrett	
03040421	356 Astor Way	Charles V Garrett	
03040422	356 Astor Way	Charles V Garrett	
03040423	356 Astor Way	Charles V Garrett	
03040424	356 Astor Way	Charles V Garrett	
03040425	356 Astor Way	Charles V Garrett	
03040426	356 Astor Way	Charles V Garrett	
03040427	356 Astor Way	Charles V Garrett	
03040428	356 Astor Way	Charles V Garrett	
03040429	356 Astor Way	Charles V Garrett	
03040430	356 Astor Way	Charles V Garrett	
03040431	356 Astor Way	Charles V Garrett	
03040432	356 Astor Way	Charles V Garrett	
03040433	356 Astor Way	Charles V Garrett	
03040434	356 Astor Way	Charles V Garrett	
03040435	356 Astor Way	Charles V Garrett	
03040436	356 Astor Way	Charles V Garrett	
03040437	356 Astor Way	Charles V Garrett	
03040438	356 Astor Way	Charles V Garrett	
03040439	356 Astor Way	Charles V Garrett	
03040440	356 Astor Way	Charles V Garrett	
03040441	356 Astor Way	Charles V Garrett	
03040442	356 Astor Way	Charles V Garrett	
03040443	356 Astor Way	Charles V Garrett	
03040444	356 Astor Way	Charles V Garrett	
03040445	356 Astor Way	Charles V Garrett	
03040446	356 Astor Way	Charles V Garrett	
03040447	356 Astor Way	Charles V Garrett	
03040448	356 Astor Way	Charles V Garrett	
03040449	356 Astor Way	Charles V Garrett	
03040450	356 Astor Way	Charles V Garrett	
03040451	356 Astor Way	Charles V Garrett	
03040452	356 Astor Way	Charles V Garrett	
03040453	356 Astor Way	Charles V Garrett	
03040454	356 Astor Way	Charles V Garrett	
03040455	356 Astor Way	Charles V Garrett	
03040456	356 Astor Way	Charles V Garrett	
03040457	356 Astor Way	Charles V Garrett	
03040458	356 Astor Way	Charles V Garrett	
03040459	356 Astor Way	Charles V Garrett	
03040460	356 Astor Way	Charles V Garrett	
03040461	356 Astor Way	Charles V Garrett	
03040462	356 Astor Way	Charles V Garrett	
03040463	356 Astor Way	Charles V Garrett	
03040464	356 Astor Way	Charles V Garrett	
03040465	356 Astor Way	Charles V Garrett	
03040466	356 Astor Way	Charles V Garrett	
03040467	356 Astor Way	Charles V Garrett	
03040468	356 Astor Way	Charles V Garrett	
03040469	356 Astor Way	Charles V Garrett	
03040470	356 Astor Way	Charles V Garrett	
03040471	356 Astor Way	Charles V Garrett	
03040472	356 Astor Way	Charles V Garrett	
03040473	356 Astor Way	Charles V Garrett	
03040474	356 Astor Way	Charles V Garrett	
03040475	356 Astor Way	Charles V Garrett	
03040476	356 Astor Way	Charles V Garrett	
03040477	356 Astor Way	Charles V Garrett	
03040478	356 Astor Way	Charles V Garrett	
03040479	356 Astor Way	Charles V Garrett	
03040480	356 Astor Way	Charles V Garrett	
03040481	356 Astor Way	Charles V Garrett	
03040482	356 Astor Way	Charles V Garrett	
03040483	356 Astor Way	Charles V Garrett	
03040484	356 Astor Way	Charles V Garrett	
03040485	356 Astor Way	Charles V Garrett	
03040486	356 Astor Way	Charles V Garrett	
03040487	356 Astor Way	Charles V Garrett	
03040488	356 Astor Way	Charles V Garrett	
03040489	356 Astor Way	Charles V Garrett	
03040490	356 Astor Way	Charles V Garrett	
03040491	356 Astor Way	Charles V Garrett	
03040492	356 Astor Way	Charles V Garrett	
03040493	356 Astor Way	Charles V Garrett	
03040494	356 Astor Way	Charles V Garrett	
03040495	356 Astor Way	Charles V Garrett	
03040496	356 Astor Way	Charles V Garrett	
03040497	356 Astor Way	Charles V Garrett	
03040498	356 Astor Way	Charles V Garrett	
03040499	356 Astor Way	Charles V Garrett	
03040500	356 Astor Way	Charles V Garrett	
03040501	356 Astor Way	Charles V Garrett	
03040502	356 Astor Way	Charles V Garrett	
03040503	356 Astor Way	Charles V Garrett	
03040504	356 Astor Way	Charles V Garrett	
03040505	356 Astor Way	Charles V Garrett	
03040506	356 Astor Way	Charles V Garrett	
03040507	356 Astor Way	Charles V Garrett	
03040508	356 Astor Way	Charles V Garrett	
03040509	356 Astor Way	Charles V Garrett	
03040510	356 Astor Way	Charles V Garrett	
03040511	356 Astor Way	Charles V Garrett	
03040512	356 Astor Way	Charles V Garrett	
03040513	356 Astor Way	Charles V Garrett	
03040514	356 Astor Way	Charles V Garrett	
03040515	356 Astor Way	Charles V Garrett	
03040516	356 Astor Way	Charles V Garrett	
03040517	356 Astor Way	Charles V Garrett	
03040518	356 Astor Way	Charles V Garrett	
03040519	356 Astor Way	Charles V Garrett	
03040520	356 Astor Way	Charles V Garrett	
03040521	356 Astor Way	Charles V Garrett	
03040522	356 Astor Way	Charles V Garrett	
03040523	356 Astor Way	Charles V Garrett	
03040524	356 Astor Way	Charles V Garrett	
03040525	356 Astor Way	Charles V Garrett	
03040526	356 Astor Way	Charles V Garrett	
03040527	356 Astor Way	Charles V Garrett	
03040528	356 Astor Way	Charles V Garrett	
03040529	356 Astor Way	Charles V Garrett	
03040530	356 Astor Way	Charles V Garrett	
03040531	356 Astor Way	Charles V Garrett	
03040532	356 Astor Way	Charles V Garrett	
03040533	356 Astor Way	Charles V Garrett	
03040534	356 Astor Way	Charles V Garrett	
03040535	356 Astor Way	Charles V Garrett	
03040536	356 Astor Way	Charles V Garrett	
03040537	356 Astor Way	Charles V Garrett	
03040538	356 Astor Way	Charles V Garrett	
03040539	356 Astor Way	Charles V Garrett	
03040540	356 Astor Way	Charles V Garrett	
03040541	356 Astor Way	Charles V Garrett	
03040542	356 Astor Way	Charles V Garrett	
03040543	356 Astor Way		

ARMOUR SILT LOAM	2-5% SLOPES
ARMOUR SILT LOAM (ERODED)	5-12% SLOPES
BRAXTON CHERTY SILT LOAM (ERODED)	5-12% SLOPES
BRAXTON CHERTY SILT LOAM (ERODED)	12-20% SLOPES
HUNTINGTON SILT LOAM (PHOSPHATIC)	N/A
MAURY SILT LOAM (ERODED)	2-5%
MAURY SILT LOAM (ERODED)	5-12%



OVERALL EXISTING CONDITIONS



EXISTING CONDITIONS

Charles Edward Saffell
5013 Rizer Point Drive
Franklin, TN 37069

September 15, 2016

Mr. Josh King, AICP

City Hall

109 Third Avenue South

Franklin, TN 37064

Dear Mr. King,

In conjunction with Goodall Homes' proposed expansion of Rizer Point to include 16 additional homes, I'm submitting two petitions signed by residents of Rizer Point. I believe that most, if not all, Rizer Point residents are against any expansion of Rizer Point. That has always been our first priority. However, if Goodall is allowed to expand Rizer Point, these petitions represent two requests.

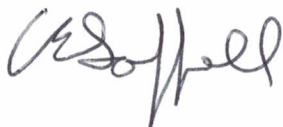
The first petition states our opposition to connecting Viola Lane and Wedgewood Drive. The reasons for this opposition have been stated by numerous residents of Rizer Point, Wedgewood and the surrounding area in previous meetings. If Goodall's expansion is granted, we would like for Viola Lane to end in a cul-de-sac and not connect to Wedgewood Drive. We understand that these two roads might contain a locked gate the end of each road that can be opened by emergency personnel.

I'm submitting a petition signed by 68 residents voicing our opposition to connecting Viola and Wedgewood. Please note that different people were circulating these petitions so the lines and pages aren't numbered. There will be an additional petition submitted soon that is signed by residents of Wedgewood.

The second petition states our opposition to having Goodall burden the Rizer Point HOA with the excess land that will not be developed. This land is in the floodway or flood plain. If Goodall's expansion is granted, the expansion of Rizer Point should only include the minimum land required for Goodall to build the 16 additional homes. It is not appropriate or fair for the Rizer Point HOA to incur the additional annual cost of maintaining this land and paying property taxes on this land. Goodall will profit from acquiring this land and then they will burden the Rizer Point HOA with all future costs.

Please distribute this letter and the two petitions to the members of the Franklin Municipal Planning Commission, BOMA and any other appropriate person. We appreciate your assistance.

Sincerely,



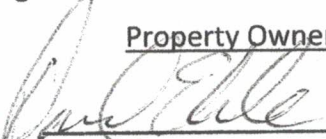
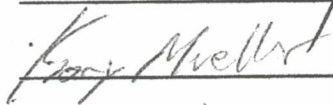
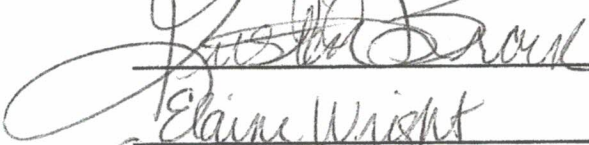
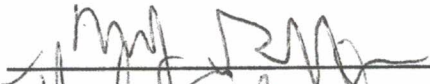
Petition in Opposition of Connecting Viola Lane & Wedgewood Drive

Neighborhood: Rizer Point

Contact Person: Ed Saffell 5013 Rizer Point Drive (615) 628-8030 cesaffell@gmail.com

Request: If Goodall Homes receives approval to revise the Rizer Point PUD to add 16 additional homes in a new section 5 development, then the extension of Viola Lane end in a cul-de-sac instead of connecting to Wedgewood Drive.

Signatures:

<u>Property Owner Name</u>	<u>Address</u>	<u>Telephone #</u>
	3009 Nine Bark Ln.	662-397-6116
 (Milk Clothing)	4029 Viola Lane	269 615-5674
David Vantasky	4019 VIOLA LANE	(954) 651-4293
	4015 Viola Lane	(847) 902-9181
Tom Kozlowski	3002 Nine Bark Ln	615-957-7899
Gloria Moncada	3006 Nine Bark Ln.	615 481-5509
James D. Berry	3008 Nine Bark Ln	615-390-8214
	3014 Nine Bark Ln	615 504-0614
	3001 Nine Bark Ln	615-579-7351
Elaine Wright	3009 Nine Bark Ln	615-944-6856
Susan Giffin	3011 Nine Bark Ln	615-905-8667
	3011 Nine Bark Ln	"
	3004 Nine Bark Ln	726-616-6175
Sandy Knight	3000 Nine Bark Ln	615 456-2646
	4027 Viola Ln	615-708-0729

<u>Property Owner Name</u>	<u>Address</u>	<u>Telephone #</u>
James M. 72	1003 Reese Dr.	813-786-5317
Kathy E. Zant	1003 Reese Dr.	813-786-5317
Linda A. Cleveland	1204 Reese Dr.	615-456-8499
Walter F. Cleveland	1204 Reese Dr.	615-330-0288
Ruthy [Signature]	5015 Rizer Pt Dr.	615-376-9153
[Signature]	5015 Rizer Pt	615-478-692
Chris [Signature]	5004 Rizer Pt. Dr.	615-397-9417
Donella Fantoni	5004 Rizer Pt. Dr.	615-686-6011
Larry L. [Signature]	1205 Reese Dr.	615-905-1516
Bonnie J. [Signature]	1205 Reese Dr.	615-905-1516
John Stihly	1203 Reese Dr.	727-902-2286
[Signature]	1201 Reese Dr.	469-667-0100
[Signature]	1200 Reese Dr.	203-273-7576
[Signature]	1206 Reese Dr.	203-253-8111
[Signature]	1208 Reese Dr.	615-579-1514
Rachel [Signature]	1208 Reese Dr.	615-579-9644
DX Camby	1211 Reese Dr.	949-701-1390
[Signature]	1213 Reese Dr.	858-776-2119
[Signature]	1213 Reese Dr.	858-603-6877
Rebecca [Signature]	1216 Reese Dr.	615-415-8681
[Signature]	1217 Reese Dr.	615-969-5268

Petition in Opposition of Connecting Viola Lane & Wedgewood Drive

Neighborhood: Rizer Point

Contact Person: Ed Saffell 5013 Rizer Point Drive (615) 628-8030 cesaffell@gmail.com

Request: If Goodall Homes receives approval to revise the Rizer Point PUD to add 16 additional homes in a new section 5 development, then the extension of Viola Lane end in a cul-de-sac instead of connecting to Wedgewood Drive.

Signatures:

<u>Property Owner Name</u>	<u>Address</u>	<u>Telephone #</u>
<u>Susan R. Phelps</u>	<u>5019 Rizer Point Dr.</u>	<u>615-567-7805</u>
<u>Gherard Hoobasean</u>	<u>5014 Rizer Point Dr</u>	<u>615-522-4302</u>
<u>Wana Han</u>	<u>5011 Rizer Point Dr.</u>	<u>703-966-4631</u>
<u>Ed Saffell</u>	<u>5013 Rizer Point Dr</u>	<u>615-628-8030</u>
<u>Jim A. Asher</u>	<u>5017 Rizer Point Dr</u>	<u>919-602-7458</u>
<u>Sybil</u>	<u>5017 Rizer Point Dr</u>	<u>919-801-6415</u>
<u>Lori Evans</u>	<u>5010 Rizer Point Dr</u>	<u>334-728-1520</u>
<u>Bill Kell</u>	<u>5008 Rizer Point Dr</u>	<u>615-336-9813</u>
<u>Alvin Livett</u>	<u>5009 Rizer Point Dr</u>	<u>615-336-8376</u>
<u>Maris Harvett</u>	<u>5009 Rizer Pt. Dr.</u>	<u>662-286-8803</u>
<u>Jeff Barr</u>	<u>5006 Rizer Point Dr.</u>	<u>818 693 6521</u>
<u>Emily Bonomo</u>	<u>5006 Rizer Point Dr.</u>	<u>818-481-4122</u>
<u>Frank Saffell</u>	<u>5013 Rizer Point Dr.</u>	<u>615-628-8030</u>
<u>Ed Saffell</u>	<u>5013 Rizer Point Dr</u>	<u>205 616 5256</u>
<u>Tom Springman</u>	<u>1015 REESE DR</u>	<u>615-513-8685</u>
<u>Lisa Springman</u>	<u>1015 Reese Dr</u>	<u>615-419-3581</u>

[illegible]

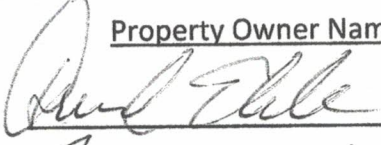
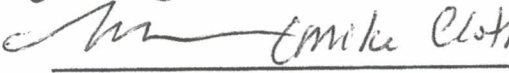
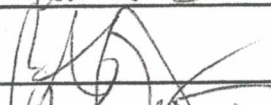
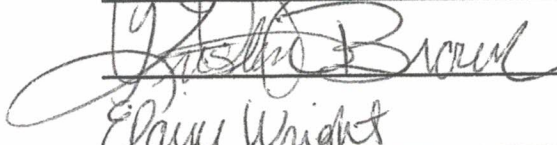
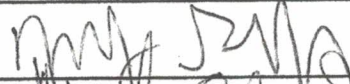
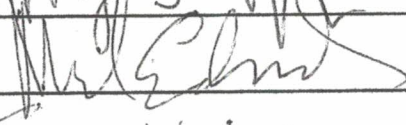
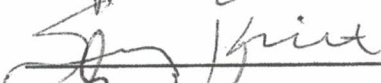
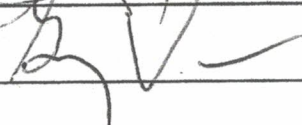
Petition in Opposition of Rizer Point HOA Receiving Undeveloped Land

Neighborhood: Rizer Point

Contact Person: Ed Saffell 5013 Rizer Point Drive (615) 628-8030 cesaffell@gmail.com

Request: If Goodall Homes receives approval to revise the Rizer Point PUD to add 16 additional homes in a new section 5 development, then the additional land added to Rizer Point HOA be limited to just the amount necessary to build the additional homes and not include the excess land that is mainly in the floodway.

Signatures:

<u>Property Owner Name</u>	<u>Address</u>	<u>Telephone #</u>
	3009 Nine Bark Ln.	662-397-6110
 (Mike Clothier)	4029 Viola Lane	269 615 5674
David Vautsky	4019 VIOLA LANE	(954) 651-4293
Kory Mueller	4015 Viola Lane	(947) 902-9187
Tom Kozlowski	3002 Nine Bark Ln	615-957-7899
Gloria Mercado	3006 Nine Bark Ln	615-481-5507
Jamie Berry	3008 Nine Bark Ln	615-390-8214
	3014 Nine Bark Ln	65 504-0647
 Justin Brown	3001 Nine Bark Ln	615-574-7351
Elaine Wright	3007 Nine Bark Ln	615-944-6856
Susan Grifei	3011 Nine Bark Ln	615-905-8667
	3011 Nine Bark Ln	" "
	3001 Nine Bark Ln	720-616-0175
	3000 Nine Bark Lane	615-456-2666
	4027 Viola Ln	615-708-0729

Property Owner Name

Address

Telephone #

James M. Z	1003 Reese Dr.	813-786-5317
Kathy E. J.	1003 Reese Dr.	813-786-5317
Wally F. G.	1204 Reese Dr.	615-338-0298
Rinda A. Cleveland	1204 Reese Dr.	615-456-8499
Toby J.	5015 Rizer Pt. Dr.	615-376-9155
B. J.	5015 Rizer Pt. Dr.	615-498-6922
Chris M.	5004 Rizer Pt. Dr.	615-397-9417
Dionela T.	5004 Rizer Pt. Dr.	615-686-6011
Marcella Sepanski	1207 Reese Dr.	217-971-2544
M. J.	1207 Reese Dr.	217-741-7118
Larry R. G.	1205 Reese Dr.	615-905-5146
Sonja J. G.	1205 Reese Dr.	615-905-5146
Mike S.	1203 Reese Dr.	727-902-2276
Pam M.	1201 Reese Dr.	469-669-0100
J. J.	1206 Reese Dr.	203-213-7570
J. J.	1206 Reese Dr.	203-253-8110
Paul J.	1208 Reese Dr.	615-579-1514
Rachel S.	1208 Reese Dr.	615-579-9644
D. C.	1211 Reese Dr.	949-701-1390
J. J.	1213 Reese Dr.	858-776-0119
J. J.	1213 Reese Dr.	858-603-6877
R. J.	1216 Reese Dr.	615-456-5599

Petition in Opposition of Rizer Point HOA Receiving Undeveloped Land

Neighborhood: Rizer Point

Contact Person: Ed Saffell 5013 Rizer Point Drive (615) 628-8030 cesaffell@gmail.com

Request: If Goodall Homes receives approval to revise the Rizer Point PUD to add 16 additional homes in a new section 5 development, then the additional land added to Rizer Point HOA be limited to just the amount necessary to build the additional homes and not include the excess land that is mainly in the floodway.

Signatures:

Property Owner Name

Address

Telephone #

Sherry Penner 4031 Viola Lane 615-828-8388

Dean Foster 4.

2003 HEFLIN / N ⁷⁰⁹ 615-1932

Kona Manor 2003 Heflin Ln 909-G15-1017

[Return to Table of Contents](#)

[illegible]

.....

[illegible]

Petition in Opposition of Rizer Point HOA Receiving Undeveloped Land

Neighborhood: Rizer Point

Contact Person: Ed Saffell 5013 Rizer Point Drive (615) 628-8030 cesaffell@gmail.com

Request: If Goodall Homes receives approval to revise the Rizer Point PUD to add 16 additional homes in a new section 5 development, then the additional land added to Rizer Point HOA be limited to just the amount necessary to build the additional homes and not include the excess land that is mainly in the floodway.

Signatures:

<u>Property Owner Name</u>	<u>Address</u>	<u>Telephone #</u>
<u>Susan R Phelps</u>	<u>5019 Rizer Point Dr.</u>	<u>615-567-7805</u>
<u>Shad Hoossein</u>	<u>5014 Rizer Point Dr.</u>	<u>615-522-4302</u>
<u>Wana Horn</u>	<u>5014 Rizer Point Dr.</u>	<u>703-966-4658</u>
<u>Ed Saffell</u>	<u>5013 Rizer Point Dr</u>	<u>615-628-8030</u>
<u>Jason A. Allen</u>	<u>5017 Rizer Pt. Dr</u>	<u>919-602-7458</u>
<u>Bye Ole</u>	<u>5017 Rizer Pt. Dr</u>	<u>919-801-6415</u>
<u>Lori Evans</u>	<u>5010 Rizer Point Dr</u>	<u>334-728-1520</u>
<u>Donna Garrett</u>	<u>5008 Rizer Point Dr</u>	<u>615-336-9813</u>
<u>Donna Garrett</u>	<u>5009 Rizer Pt. Dr.</u>	<u>662-286-8883</u>
<u>Stephen Lovell</u>	<u>5007 Rizer Point Dr</u>	<u>662-284-8376</u>
<u>T. P. P.</u>	<u>5006 Rizer Point Dr</u>	<u>818-693-6521</u>
<u>Andi Saffell</u>	<u>5013 Rizer Point Dr</u>	<u>615-628-8030</u>
<u>Ed Saffell</u>	<u>5013 Rizer Point Dr</u>	<u>205-616-5256</u>
<u>Tom Frigman</u>	<u>1015 REESE DR</u>	<u>615-513-8685</u>
<u>Lisa Frigman</u>	<u>1015 Reese Dr.</u>	<u>615-419-3581</u>

Property Owner Name

Address

Telephone #

Rebecca S Gause

1216 Reese Drive

(615) 415-8681

~~12~~

1217 Reese Dr

(615) 969-5268

Wayne Jarro

2017 HEFLIN LN

615-584-7856

Julie Jarro

2017 Heflin Ln.

615-351-3179

Sandra Tidmarsh

2013 Heflin Ln

440-773-1801

Randall Wilson

2011 Heflin Lane

615-364-8178

Debra DeLong

2011 Heflin Lane

615-982-1333

RIZER POINT PUD SUBDIVISION, DEVELOPMENT PLAN, REVISION 3
RESOLUTION 2016-66
FRANKLIN MUNICIPAL PLANNING COMMISSION
10/27/2016

Site

Project Information

Existing Zoning: Agricultural (AG)

Proposed Zoning: SD-R 1.14

Existing Land Use: Vacant

Proposed Land Use: Detached Residential

Character Area: WHCO-2 & WHCO - 3

Development Standard: Conventional

Other Overlays: FFO, FWO

Site Acreage: 14.04 acres

Proposed Number of Dwelling Units: 16

Proposed Building Height: 2 stories

- | | |
|---|---|
|  Rizer Point PUD Subdivision |  SD-R Specific Development-Residential |
|  Harpeth River (Polygon) |  SD-X Specific Development-Variety |
|  AG Agricultural District |  OR Office Residential District |
|  ER Estate Residential |  GO General Office District |
|  R-1 Residential District |  CC Central Commercial District |
|  R-2 Residential District |  NC Neighborhood Commercial District |
|  R-3 Residential District |  GC General Commercial District |
|  R-6 Residential District |  LI Light Industrial District |
|  RM-10 Attached 10 Residential District |  HI Heavy Industrial District |
|  RM-15 Attached 15 Residential District |  CI Civic and Institutional District |
|  RM-20 Attached 20 Residential District | |



0 500 1,000 2,000
 Feet

This map was created by the Franklin Planning Department. It was compiled from the most authentic information available. The City is not responsible for any errors or omissions contained hereon. All data and materials (c) copyright 2016. All rights reserved.

RESOLUTION 2016-66

TO BE ENTITLED: "A RESOLUTION APPROVING A REVISED DEVELOPMENT PLAN FOR RIZER POINT PUD SUBDIVISION WITH TWO MODIFICATION OF STANDARDS (MOS#1 CONNECTIVITY, MOS #2 CUL-DE-SAC LENGTH), FOR THE PROPERTY LOCATED NORTH OF DEL RIO PIKE AND EAST OF DEL RIO COURT."

WHEREAS, the Board of Mayor and Aldermen (BOMA) of the City of Franklin, Tennessee, has, or will, approve the zoning for the property as part of Ordinance 2016-40; and

WHEREAS, the Planned Unit Development (PUD) process is a review procedure that is intended to encourage innovative land planning and design and avoid the monotony sometimes associated with large developments by:

- (a) Reducing or eliminating the inflexibility that sometimes results from strict application of zoning standards that were designed primarily for individual lots;
- (b) Allowing greater freedom in selecting the means to provide access, light, open space, and design amenities;
- (c) Encouraging a sensitive design that respects the surrounding established land use character and natural or man-made features of the site including, but not limited to, trees, historic features, streams, hillsides, and floodplains;
- (d) Promoting quality design and environmentally sensitive development by allowing development to take advantage of special site characteristics, locations, and land uses; and
- (e) Allowing deviations from certain zoning standards that would otherwise apply if not contrary to the general spirit and intent of this ordinance; and

WHEREAS, the PUD process requires the approval of a Development Plan that is reviewed and approved by BOMA, after a public hearing and a recommendation by the Franklin Municipal Planning Commission.

WHEREAS, in accordance with the provisions of Tennessee Code Annotated § 13-4-310, as amended, and subject to the exceptions set forth in said statute, the approval of the Development Plan by the BOMA will initiate a vesting period during which the development standards adopted by the City and in effect on the date of approval shall remain the standards applicable to the approved Development Plan.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF MAYOR AND ALDERMEN OF THE CITY OF FRANKLIN, TENNESSEE, AS FOLLOWS:

SECTION I. That the legal description of the property being added to the Development Plan, as amended, is as follows:

PREMISES CONSIDERED	
Map-Parcel	Acres
Portion of 63 3.01	14.04
Total	14.04

Commencing at a point along the west right-of-way of Viola Lane, the same point being on the southern line of the property of F-L Farms LLC, of record on Tax Map 63 Parcel 3.01 in the

Register's Office of Williamson County Tennessee; said point being the point of beginning of the following land:

Thence, N 75° 28' 11" W for a distance of 228.99 feet to a point;

Thence, N 75° 28' 09" W for a distance of 32.25 feet to a point;

Thence, N 00° 30' 49" E for a distance of 418.10 feet to a point;

Thence S 89° 29' 11" E a distance of 831.09 feet to the point;

Thence N 02° 50' 33" E a distance of 670.00 feet to a point;

Thence S 87° 09' 27" E a distance of 155.00 feet to a point;

Thence S 02° 50' 33" W a distance of 1252.57 feet to a point;

Thence N 83° 36' 11" W a distance of 479.60 feet to a point;

Thence, N 75° 28' 11" W for a distance of 238.86 feet to the point of beginning and containing 14.04 acres of land.

SECTION II. That the attached Location Map shall serve the purpose of further delimiting the geographical boundaries as described by this Resolution.

SECTION III. That the overall entitlements for the Rizer Point PUD Subdivision, as amended, are as follows:

Entitlements	Rizer Point
Base Zone District	SD-R (1.14) and SD-R (2.64)
Character Area Overlay	WHCO-2 and WHCO-3
Other Zoning Overlays	FFO, FWO
Development Standard	Conventional
Number of Dwelling Units	87 Detached (71 existing, 16 new) 24 Attached
Original Concept Plan Approval	Ordinance No. 2007-113 Date of Approval: 02/12/2008
Number of Phases in Development	5

SECTION IV. That the Development Plan, as amended, the exhibits accompanying the Development Plan, and all conditions and restrictions placed upon the Development Plan by the Franklin Municipal Planning Commission and this Board shall be made a part of this Resolution as though copied verbatim herein, and that a permanent record of the Development Plan, the exhibits accompanying the Development Plan, and all such conditions and restrictions shall be kept in the Franklin Planning and Sustainability Department.

SECTION V. That the following Modifications of Development Standards (MOS) were requested and acted upon by the Board of Mayor and Aldermen, after review and recommendation by the Franklin Municipal Planning Commission:

MOS 1: Elimination of the Viola Lane and Wedgewood Drive Connection Approved: _____ Denied: _____	Request to approve. <i>Staff recommended disapproval.</i>
MOS 2: Cul-De-Sac Length to exceed 500 feet Approved: _____ Denied: _____	Request to approve. <i>Staff recommended disapproval.</i>

SECTION VI. That this Resolution shall take effect from and after its passage on its first and final reading, the health, safety, and welfare of the citizens requiring it.

ERIC S. STUCKEY
City Administrator

DR. KEN MOORE
Mayor

Approved as to form by:

Shauna R. Billingsley
City Attorney

PREAPPLICATION CONFERENCE: 8/24/2016

BOMA/FMPC JOINT CONCEPTUAL WORKSHOP: 8/25/2016

NEIGHBORHOOD MEETING: 8/24/2016

PLANNING COMMISSION RECOMMENDED APPROVAL: _____

PUBLIC HEARING AND BOMA APPROVAL: _____

RIZER POINT PUD SUBDIVISION, DEVELOPMENT PLAN, REVISION 3
RESOLUTION 2016-66
FRANKLIN MUNICIPAL PLANNING COMMISSION
10/27/2016

Site

Project Information

Existing Zoning: Agricultural (AG)
 Proposed Zoning: SD-R 1.15
 Existing Land Use: Vacant
 Proposed Land Use: Detached Residential
 Character Area: WHCO-2 & WHCO - 3
 Development Standard: Conventional
 Other Overlays: FFO, FWO
 Site Acreage: 13.86 acres
 Proposed Number of Dwelling Units: 16
 Proposed Building Height: 2 stories

- | | |
|---|---|
|  Rizer Point PUD Subdivision |  SD-R Specific Development-Residential |
|  Harpeth River (Polygon) |  SD-X Specific Development-Variety |
|  AG Agricultural District |  OR Office Residential District |
|  ER Estate Residential |  GO General Office District |
|  R-1 Residential District |  CC Central Commercial District |
|  R-2 Residential District |  NC Neighborhood Commercial District |
|  R-3 Residential District |  GC General Commercial District |
|  R-6 Residential District |  LI Light Industrial District |
|  RM-10 Attached 10 Residential District |  HI Heavy Industrial District |
|  RM-15 Attached 15 Residential District |  CI Civic and Institutional District |
|  RM-20 Attached 20 Residential District | |



0 500 1,000 2,000
 Feet

This map was created by the Franklin Planning Department. It was compiled from the most authentic information available. The City is not responsible for any errors or omissions contained hereon. All data and materials (c) copyright 2016. All rights reserved.

CONDITIONS OF APPROVAL:

Engineering - PUD Plan Checklist

General Comments

1. F. Development Plan

- In the event that MOS #1 is not approved, the applicant shall revise the development plan to show a full access connection with 50' right-of-way from Viola Lane to Wedgewood Drive.

2. A. Preliminary Information

- Applicant shall provide documentation of the overall parcel 063---00301 being subdivided into Tracts 1 and 2, and the reflect the revised parcel numbers on the Existing Conditions plan.

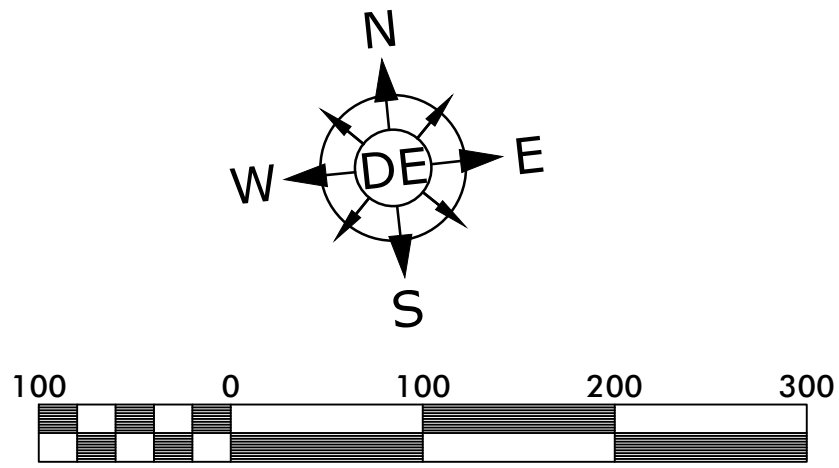
Parks

General Comments

3. Parkland information

- Parks-Parkland dedication is applicable on this development. Remove the language that reflects (if applicable) that appear on several pages.

Applicant shall also state that the 16 units or 9600sf needed to meet ordinance will be directed toward the extension of the 25' multi use trail easement along the river that will be field located for the best possible location extending north toward the property line.



Scale 1" = 100'
Total Site Area = 68.79 ac
Section 5 Area = 14.04 ac

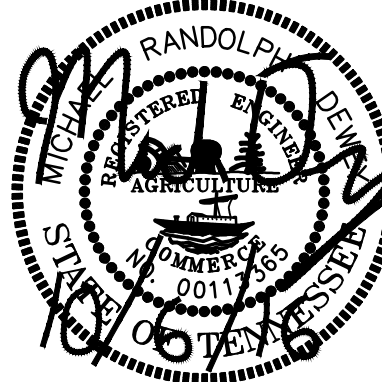
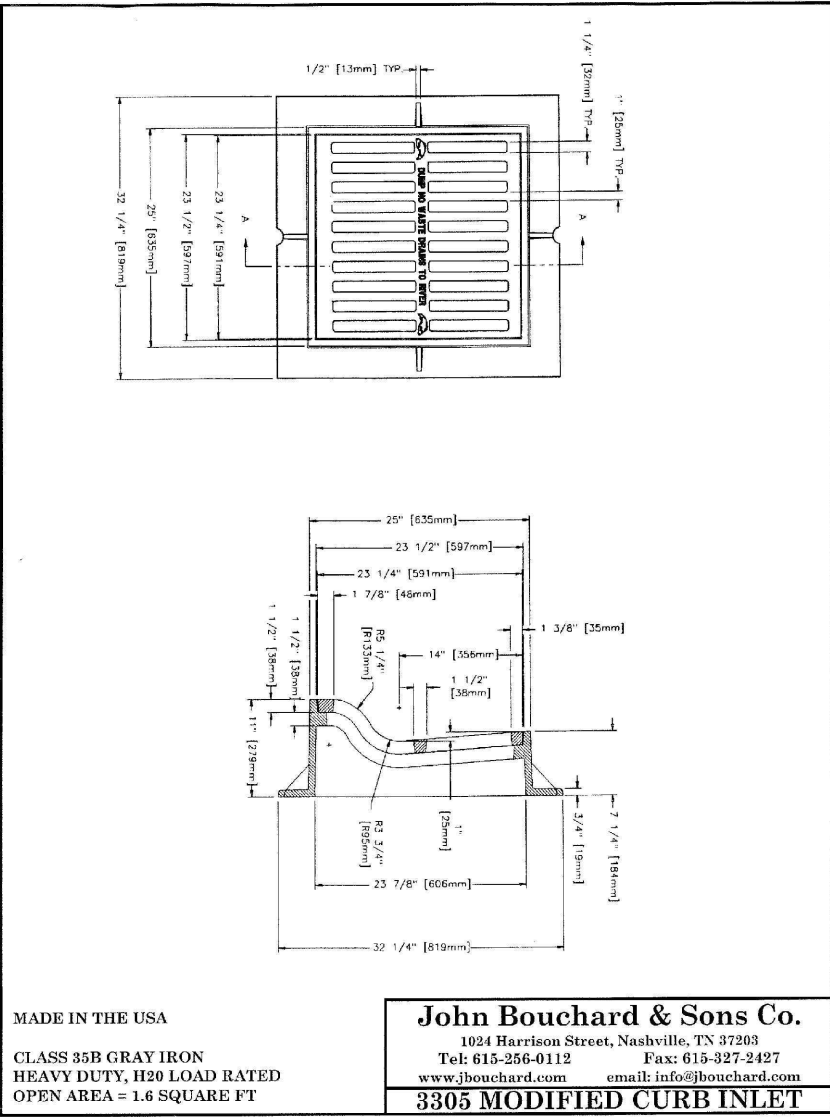
Engineer
Dewey Engineering
Contact: Michael Dewey, PE
2925 Berry Hill Drive
Nashville, TN 37204
Phone: (615) 401-9956
E-mail: mdewey@dewey-engineering.com

Developer
CMH Parks, Inc. dba Goodall Homes
Contact: Jack Ludington
393 Maple Street #100
Gallatin, TN 37066
Phone: (615) 451-5029
Fax: (615) 451-4029

Flood Note
A Portion of this Property is Located Within a Flood Hazard Area, Zone AE, As Shown on Map Panel Number 47187C0184F & 47187C0192F.
Dated Sept. 29, 2006.
Elev. Varies: 625.3-625.6
*Note: Preliminary FIRM
Dated: December 22, 2016
100 Year Floodplain Elevation 625.0

Site Benchmark
Tag Bolt of Existing Fire Hydrant Located Near the Southeast Corner of the Subject Property, Approximately 100 feet West of the Terminus of Del Rio Court. NGVD Elevation 651.12.

- Notes:**
- 1) All residential lots as shown will be located 100% out of the floodplain. A portion of the Open Space lots is in the floodplain and floodway. The floodplain shall be balanced at a minimum of a 1:1 ratio.
 - 2) Floodplain alteration will not decrease storage capacity. This section of the Harpeth River is not located in a damage reach.
 - 3) Alterations of the floodplain are to occur in a method that will provide improved water quality, recreational value, and a natural habitat. This alteration will be an improvement upon existing agricultural use and fallow conditions.
 - 4) The applicant shall obtain a floodplain development permit and complete floodplain alteration prior to the submittal of a site plan. Once a final letter of map revision has been issued from FEMA, the applicant shall go to the BZA to have the FFO Zoning boundary revised. After BZA has revised the FFO, the applicant may submit a site plan for any lots not within the newly delineated FFO.
 - 5) Drainage Easements shall be provided between lots to convey stormwater runoff where necessary. The easements shall be provided in the Site Plan and Final Plat.



Revisions:

Drawing Notes:
COF Project # 6145

Date: October 6, 2016

Rizer Point PUD
Section 5 Development Plan
Being Parcel 1.09 on Tax Map 63
Franklin, Williamson County, Tennessee

DEWEY
ENGINEERING

Overall Grading
& Drainage Plan

C3.0



rev.	date
1	OCT. 6, 2016

SEPTEMBER 12, 2016

S H E E T

C2.1

TYPICAL
ARCHITECTURE

- TYPICAL ARCHITECTURE NOTES:
1. SINGLE FAMILY DETACHED HOMES DESIGNED FOR LOTS WITH GARAGE ACCESSED FROM THE FRONT-FACING STREET WITH GARAGE ATTACHED.
 2. ONE TO TWO STORIES IN HEIGHT.
 3. MATERIALS INCLUDE BRICK, SIMULATED STONE, CEMENTATIOUS SIDING, AND ARCHITECTURAL SHINGLES.
 4. GARAGE IS SETBACK 10 FEET FROM THE FRONT FASCAD.
 5. DRIVEWAY IS A MINIMUM OF 22' FROM THE SIDEWALK TO THE GARAGE DOORS.
 6. ALL TWO CAR GARAGES SHALL HAVE TWO GARAGE DOORS WITH A MAXIMUM WIDTH OF 9' WIDE WITH A 2 FOOT MINIMUM SEPARATION BETWEEN.
 7. DRIVEWAYS SHALL BE A MINIMUM OF 5' FROM ANY PROPERTY LINE.

COF# 6251

RIZER POINT PUD SUBDIVISION DEVELOPMENT PLAN

REVISION 3

ADDITION OF PROPERTY IDENTIFIED AS MAP 63, PARCEL 3.01 TO THE RIZER POINT PUD
FRANKLIN, TENNESSEE

OWNER/APPLICANT:

GOODALL INC, BUILDERS
393 MAPLE STREET, SUITE 100
GALLATIN, TN 37066
JACK LUDINGTON
615.451.5029

PLANNER/LANDSCAPE ARCHITECT

GAMBLE DESIGN COLLABORATIVE
GREG GAMBLE
greggamble209@gmail.com
615.975.5765
144 SOUTHEAST PARKWAY
SUITE 200
FRANKLIN, TN 37064

CIVIL ENGINEER:

DEWEY ENGINEERING
MICHEAL DEWEY
2925 BERRY HILL DRIVE
NASHVILLE, TENNESSEE 37204
615.401.9956
mdewey@dewey-engineering.com

SURVEYOR (NEW TRACT):

GREG TERRY
JAMES TERRY & ASSOCIATES
211 DONELSON PIKE
SUITE 6
NASHVILLE, TENNESSEE 37214
615.490.6920
greg.jta@comcast.net

REVISION 3 SUMMARY:

THIS DEVELOPMENT PLAN REVISION IS TO INCLUDE A NEW SECTION, SECTION 5, TO THE OVERALL PUD. SECTION 5 IS AN ADDITIONAL PARCEL (+/- 14.04 AC) AND 16 NEW SINGLE FAMILY DETACHED HOMES. THE OTHER FOUR SECTIONS OF THE ORIGINAL RIZER POINT PUD HAVE APPROVED SITE PLANS AND ARE EITHER IN CONSTRUCTION OR COMPLETE. NO CHANGE IS PROPOSED TO SECTIONS 1-4.

MODIFICATION OF STANDARDS REQUEST:

- EXTERNAL STREET CONNECTIVITY. THE APPLICANT REQUESTS A MODIFICATION OF STANDARDS FOR ZONING ORDINANCE 5.10.4 (2) (d) WHICH REQUIRES STREET CONNECTIONS TO THE ADJACENT WEDGWOOD DRIVE.
- CUL-DE-SAC LENGTH. THE APPLICANT REQUESTS A MODIFICATION OF STANDARDS FOR ZONING ORDINANCE 5.10.8 (1) (d) WHICH STATES THAT THE MAXIMUM LENGTH OF A CUL-DE-SAC IS 500. THE LENGTH OF THE CUL-DE-SAC PROPOSED IS 703.



INDEX OF SHEETS

SHEET	DESCRIPTION
C0.0	COVER SHEET AND LOCATION MAP
C 1.0	OVERALL EXISTING CONDITIONS
C 1.1	EXISTING CONDITIONS
C 2.0	OVERALL DEVELOPMENT PLAN
C 2.1	TYPICAL ARCHITECTURE
C 3.0	OVERALL GRADING & DRAINAGE
C 4.0	OVERALL ROW & ACCESS PLAN
C 4.1	AUTO-TURN EXHIBIT
C 5.0	OVERALL UTILITY PLAN



COF # 6251
INITIAL SUBMITAL: SEPTEMBER 12, 2016
REVISED: OCT. 6, 2016



SITE DATA:	
PROJECT NAME:	RIZER POINT PUD SUBDIVISION DEVELOPMENT PLAN, REV. 3
PROJECT NUMBER:	6251
SUBDIVISION:	RIZER POINT
LOT NUMBER:	N/A
ADDRESS:	DEL RIO PIKE, FRANKLIN, TN
CITY:	WILLIAMSON
COUNTY:	TENNESSEE
STATE:	14TH CIVIL DISTRICT
CIVIL DISTRICT:	MAP 63, PARCEL 3.01 (NEW PARCEL)
MAP, GROUP, PARCEL NUMBERS:	SD-R & AG
EXISTING ZONING:	SD-R (1.14)
PROPOSED ZONING NEW PARCEL:	WHCO 2 & 3
CHARACTER AREA OVERLAY:	FFO, FWO
OTHER APPLICABLE OVERLAYS:	CONVENTIONAL
APPLICABLE DEVELOPMENT STANDARD:	ORIGINAL RIZER POINT AREA: 35.94 AC
TOTAL AREA:	63-000301 (NEW PARCEL) AREA: 14.04 AC
	TOTAL AREA: 49.98 AC
	2.23 UNITS/AC TOTAL SITE
	2.64 UNITS/AC ORIGINAL PUD AREA
	1.14 UNITS/AC NEW PROPERTY
OVERALL DENSITY:	
MINIMUM REQUIRED SETBACK LINES:	
SEE LOT DIAGRAMS	
OWNER (RIZER POINT MASTER DEVELOPER)	
CONTACT ADDRESS	GOODALL INC BUILDERS JACK LUDINGTON 393 MAPLE STREET, SUITE 100 GALLATIN, TN 37066
PHONE EMAIL	615-451-5029 judington@goodallhomes.com
OWNER (PARCEL 3.01)	
ADDRESS	F-L FARMS 4720 HARPETH PEYTONSVILLE RD THOMPSON STATION, TN 37179
APPLICANT:	
ADDRESS	GOODALL HOMES 393 MAPLE STREET, SUITE 100 GALLATIN, TN 37066
OFFICE PHONE CONTACT EMAIL ADDRESS	615-451-5029 JACK LUDINGTON judington@goodallhomes.com
BUILDING SQUARE FOOTAGE:	
BUILDING HEIGHT:	1,700 SF - 4,200 SF
LANDSCAPE SURFACE RATIO:	2 STORIES
MINIMUM LANDSCAPE SURFACE RATIO:	.48
MINIMUM PARKING REQUIREMENT:	.20
MAXIMUM PARKING LIMIT:	2 PER SINGLE FAMILY HOME
PARKING PROVIDED:	N/A
RESIDENTIAL DENSITY:	2 PER SINGLE FAMILY HOME
TREE CANOPY:	2.23 DUA (TOTAL SITE)
PARKLAND (IF APPLICABLE):	4.20 AC (8.4%) EXISTING (35 x 1200 SF) + (76 x 600 SF) = 87,600 SF 78,000 SF ORIGINAL PUD 9,600 SF REVISION 3
OPEN SPACE:	
OPEN SPACE ACREAGE REQUIRED:	23.77 AC (47.7% PUD SITE)
FORMAL OPEN SPACE REQUIRED:	15% (7.47 AC)
INFORMAL OPEN SPACE REQUIRED:	33% (2.49 AC)
	66% (4.98 AC)

EXISTING TREE CANOPY:
TOTAL EXISTING CANOPY: 3.86 AC (7.7%)
REQUIRED PRESERVATION: 54%, 2.08 AC
TREE CANOPY AREA A: 3.06 AC (ORIGINAL RIZER POINT PROPERTY)
TREE CANOPY AREA B: 80 AC (NEW PROPERTY)

LEGAL DESCRIPTION OF NEW PROPERTY, TO BE ZONED
Commencing at a point along the west right-of-way of Viola Lane, the same point being on the southern line of the property of F-L Farms LLC, of record on Tax Map 63 Parcel 3.01 in the Register's Office of Williamson County Tennessee; said point being the point of beginning of the following land:
Thence, N 75° 28' 11" W for a distance of 228.99 feet to a point;
Thence, N 75° 28' 09" W for a distance of 32.25 feet to a point;
Thence, N 00° 30' 49" E for a distance of 418.10 feet to a point;
Thence S 89° 29' 11" E a distance of 831.09 feet to the point; Thence N 02° 50' 33" E a distance of 670.00 feet to a point;
Thence S 87° 09' 27" E a distance of 155.00 feet to a point;
Thence S 02° 50' 33" W a distance of 1252.57 feet to a point;
Thence N 83° 36' 11" W a distance of 479.60 feet to a point;
Thence, N 75° 28' 11" W for a distance of 238.86 feet to the point of beginning and containing 14.04 acres of land.

NOTES
1. FLOODWAY AND FLOODPLAIN DELINEATED FROM FIRM (PANEL NUMBER 47187C0184G) EFFECTIVE DATE DECEMBER 22, 2016.
2. NO MINERAL RIGHTS ARE HELD BY PARTIES OUTSIDE OF THE OWNER.



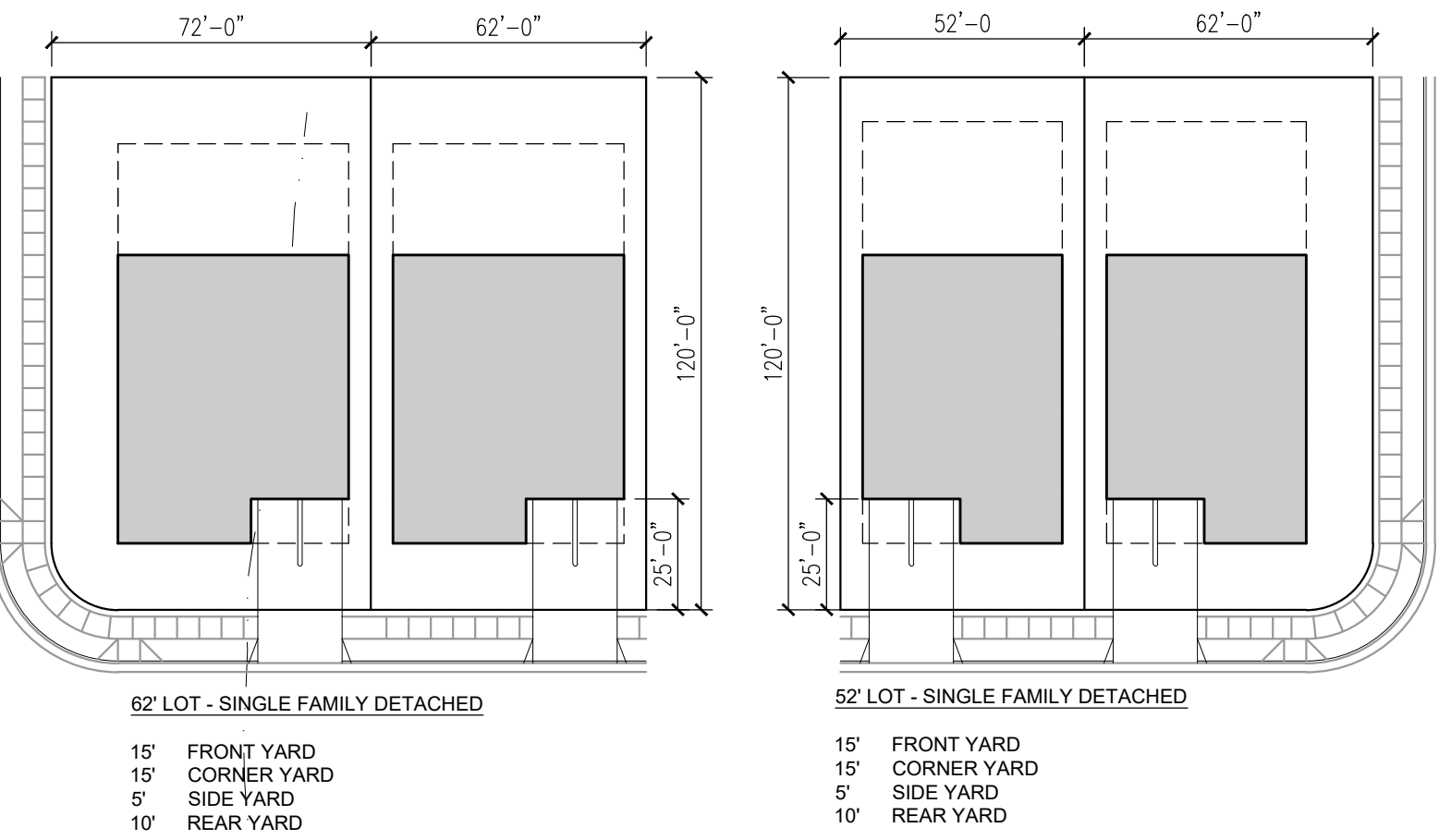
rev.	date
△	OCT. 6, 2016
△	
△	
△	

SEPTEMBER 12, 2016

SHEET

C1.1
EXISTING
CONDITIONS

LOT STANDARDS



OPEN SPACE REQUIREMENT CHART

MINIMUM OPEN SPACE REQUIREMENT: 15%
 SITE ACREAGE: 49.80 AC
 OPEN SPACE ACREAGE REQUIRED: 15% (7.47 AC)
 FORMAL OPEN SPACE REQUIRED: 33% (2.49 AC)
 INFORMAL OPEN SPACE REQUIRED: 66% (4.98 AC)

KEY CLASSIFICATION	TYPE	AREA	ORIGINAL RIZER POINT PUD
98	FORMAL PASSIVE PARK	0.12 AC	ORIGINAL RIZER POINT PUD
99	FORMAL PASSIVE PARK	1.48 AC	ORIGINAL RIZER POINT PUD
100	FORMAL POCKET PARK	0.17 AC	ORIGINAL RIZER POINT PUD
99B	INFORMAL 20' LANDSCAPE BUFFER	0.49 AC	ORIGINAL RIZER POINT PUD
96	INFORMAL RIVERSIDE PARK	0.06 AC	ORIGINAL RIZER POINT PUD
97	INFORMAL OPEN SPACE	10.44 AC	ORIGINAL RIZER POINT PUD
121	INFORMAL RIVERSIDE PARK	0.94 AC	ORIGINAL RIZER POINT PUD
122	FORMAL TRAIL HEAD PARK	9.77 AC	NEW PROPERTY
		0.30 AC	NEW PROPERTY
TOTAL FORMAL PROVIDED:		2.56 AC	
TOTAL INFORMAL PROVIDED:		21.21 AC	
TOTAL OPEN SPACE PROVIDED:		23.77 AC (47.7% PUD SITE)	

EXISTING TREE CANOPY:

TOTAL EXISTING CANOPY: 3.86 AC (7.7%)
 REQUIRED PRESERVATION: 54%, 2.08 AC
 TREE CANOPY AREA A: 3.06 AC (ORIGINAL RIZER POINT PROPERTY)
 TREE CANOPY AREA B: .80 AC (NEW PROPERTY)
 TREE REMOVAL PROPOSED (NEW PROPERTY): 1,637 SF (0.04 AC)
 NO TREE REMOVAL IS PROPOSED FOR ORIGINAL RIZER POINT PROPERTY.
 PROPOSED TREE PRESERVATION (TOTAL SITE): 3.82 AC (99%)
 THERE ARE NO SPECIMEN TREES ON NEW PROPERTY.

DEVELOPMENT PLAN REVISION SUMMARY:

REVISION 3 - SUBMITTED SEPTEMBER 12, 2016
 • ADDITION OF 14.04 AC AND 16 NEW HOMES
 REVISION 2 - APPROVED FEBRUARY 2014
 • MODIFIES THE WIDTH OF THE TYPICAL LOT DIAGRAM FROM 55' WIDTH TO 52' WIDTH
 REVISION 1 - APPROVED JUNE 2012
 • NEW PLAN FOR GOODALL HOMES

MODIFICATION OF STANDARDS REQUEST:

1. EXTERNAL STREET CONNECTIVITY. THE APPLICANT REQUESTS A MODIFICATION OF STANDARDS FOR ZONING ORDINANCE 5.10.4 (2) (d) WHICH REQUIRES STREET CONNECTIONS TO THE ADJACENT WEDGEWOOD DRIVE.
 2. CUL-DE-SAC LENGTH. THE APPLICANT REQUESTS A MODIFICATION OF STANDARDS FOR ZONING ORDINANCE 5.10.8 (1) (d) WHICH STATES THAT THE MAXIMUM LENGTH OF A CUL-DE-SAC IS 500'. THE LENGTH OF THE CUL-DE-SAC PROPOSED IS 703'.

SITE DATA:

PROJECT NAME: RIZER POINT PUD SUBDIVISION
 DEVELOPMENT PLAN, REV. 3
 PROJECT NUMBER: 6251
 SUBDIVISION: RIZER POINT
 LOT NUMBER: N/A
 ADDRESS: DEL RIO PIKE
 CITY: FRANKLIN, TN
 COUNTY: WILLIAMSON
 STATE: TENNESSEE
 CIVIL DISTRICT: 14TH CIVIL DISTRICT
 MAP, GROUP, PARCEL NUMBERS: MAP 63, PARCEL 3.01 (NEW PARCEL)
 EXISTING ZONING: SD-R & AG
 PROPOSED ZONING NEW PARCEL: SD-R (1.14)
 CHARACTER AREA OVERLAY: WHCO 2 & 3
 OTHER APPLICABLE OVERLAYS: FFO, FWO, CONVENTIONAL
 APPLICABLE DEVELOPMENT STANDARD: CONVENTIONAL
 TOTAL AREA: ORIGINAL RIZER POINT AREA: 35.94 AC
 63-000301 (NEW PARCEL) AREA: 14.04 AC
 TOTAL AREA: 49.98 AC
 2.23 UNITS/AC TOTAL SITE
 2.64 UNITS/AC ORIGINAL PUD AREA
 1.14 UNITS/AC NEW PROPERTY
 2.66 UNITS/AC

OVERALL DENSITY:

NET DENSITY (MINUS 8.06 AC ROW):
 NET DENSITY (MINUS ROW AND 6.50 AC FWO OVERLAY): 3.15 UNITS/AC
 NUMBER OF RESIDENTIAL UNITS BY USE TYPE:
 24 TOWN HOME (CURRENT RIZER POINT PUD)
 71 SINGLE FAMILY HOME (CURRENT RIZER POINT PUD)
 16 SINGLE FAMILY HOME (NEW PROPERTY)

NONRESIDENTIAL SQUARE FOOTAGE:

TOTAL ACREAGE BY USE, ENTIRE SITE:
 23.77 AC OPEN SPACE
 8.06 AC ROW
 16.47 AC RESIDENTIAL LOTS

TOTAL ACREAGE BY USE, PER SECTION:

SECTION	RESIDENTIAL LOTS	OPEN SPACE	TOTAL
1	3.08 AC	10.57 AC	14.82 AC
2	4.35 AC	0.81 AC	9.24 AC
3	3.30 AC	→ AC	4.10 AC
4	3.11 AC	0.93 AC	4.89 AC
5	2.63 AC	10.07 AC	14.04 AC

MINIMUM REQUIRED SETBACK LINES:

SEE LOT DIAGRAMS

OWNER (RIZER POINT MASTER DEVELOPER):

CONTACT: GOODALL INC BUILDERS
 ADDRESS: JACK LUDINGTON
 353 MAPLE STREET, SUITE 100
 GALLATIN, TN 37066
 615-451-5029
 jljudington@goodallhomes.com
 PHONE: 615-451-5029
 EMAIL: jljudington@goodallhomes.com

OWNER (PARCEL 3.01):

ADDRESS: F-I FARMS
 4720 HARPETH PEYTONSVILLE RD
 THOMPSON STATION, TN 37179

APPLICANT:

ADDRESS: GOODALL HOMES
 353 MAPLE STREET, SUITE 100
 GALLATIN, TN 37066
 615-451-5029
 JACK LUDINGTON
 jljudington@goodallhomes.com

OFFICE PHONE:

CONTACT: 1,700 SF - 4,200 SF
 EMAIL ADDRESS: 2 STORIES
 48
 20
 2 PER SINGLE FAMILY HOME
 2 PER SINGLE FAMILY HOME
 2.23 DUA (TOTAL SITE)
 3.86 AC (7.7%) EXISTING
 (35 x 1200 SF) + (76 x 800 SF) = 87,600 SF
 76,000 SF ORIGINAL PUD
 9,600 SF REVISION 3

BUILDING SQUARE FOOTAGE:

LANDSCAPE SURFACE RATIO:
 MINIMUM LANDSCAPE SURFACE RATIO:
 MINIMUM PARKING REQUIREMENT:
 MAXIMUM PARKING LIMIT:
 PARKING PROVIDED:
 RESIDENTIAL DENSITY:
 TREE CANOPY:
 PARKLAND (IF APPLICABLE):

OPEN SPACE:

OPEN SPACE ACREAGE REQUIRED:
 FORMAL OPEN SPACE REQUIRED:
 INFORMAL OPEN SPACE REQUIRED:

LAND USE PLAN COMPLIANCE:

CHARACTER AREA OVERLAY: WHCO 2 & 3
 APPLICABLE DEVELOPMENT STANDARD: CONVENTIONAL

RIZER POINT PUD WAS APPROVED IN AUGUST 2007. THE PROPERTY HAS BOTH SPECIAL AREA 2 AND 3 ON THE PROPERTY. THIS DEVELOPMENT PLAN MAKES NO CHANGE TO THE ORIGINALLY APPROVED RIZER POINT PUD; IT ADDS AN ADDITIONAL PROPERTY TO THE NORTH WITH 16 NEW SINGLE FAMILY LOTS AND OPEN SPACE.

1. THE PROPOSED DEVELOPMENT PLAN IS DESIGNED WITH LOT SIZES CONSISTENT WITH THE APPROVED RIZER POINT PUD AND ADJACENT NEIGHBORHOOD EAST AND SOUTH OF THE PROPOSED NEW PARCEL.
2. NO RETAIL IS PLANNED FOR THIS PROPERTY.

DESIGN CONCEPT

THE ADDITION OF THE NEW PROPERTY TO THE RIZER POINT PUD ALLOWS FOR VIOLA LANE TO EXTEND AND TERMINATE INTO THE ADJOINING PROPERTY. NO CONNECTION IS PROPOSED TO WEDGEWOOD DRIVE TO ALLEVIATE CONCERNS FOR AN INCREASE OF TRAFFIC ON DEL RIO COURT AND THROUGH REBEL MEADOWS. ADDITIONALLY, LOT LINES FOR THE PROPOSED ADDITION HAVE BEEN PROPOSED TO BE SIMILAR TO THEIR EXISTING, ADJACENT LOTS.

LOCAL COMPATIBILITY

NO CHANGE IS PROPOSED FOR THE EXISTING PUD AREA. THIS REVISION IS TO INCLUDE ADDITIONAL PROPERTY TO THE NORTH EAST. THIS PROPERTY ADDITION IS DESIGNED WITH LOTS CONSISTENT WITH NEIGHBORHOODS ALONG THE DEL RIO PIKE CORRIDOR.

STATEMENT OF IMPACTS

WATER
 WATER SERVICE WILL BE PROVIDED BY THE CITY OF FRANKLIN WATER SERVICES. WATER MAIN IS LOCATED ON DEL RIO PIKE.
 111 SFLU - 350 GPD = 38,950 GPD

SEWER
 SEWER SERVICE WILL BE PROVIDED BY THE CITY OF FRANKLIN. SEWER MAIN WILL CONNECT INTO PUMP STATION LOCATED ON DEL RIO PIKE.

REPURIFIED (REUSE) WATER FACILITIES
 REUSE WATER IS AVAILABLE, AND WILL BE UTILIZED FOR COMMON AREAS OWNED AND MAINTAINED BY THE RIZER POINT HOMEOWNERS ASSOCIATION.

STREET NETWORK
 THE MAJOR THROUGHFARE PLAN INDICATES THE FUTURE DEVELOPMENT MACK HATCHER PARKWAY NORTH OF RIZER POINT.

DRAINAGE FACILITIES
 THE PROPERTY DRAINS NORTH INTO THE HARPETH RIVER AND WEST INTO THE RETENTION AREA CREATED WITH THE ORIGINAL RIZER POINT PUD.

POLICE AND FIRE
 FIRE STATION: HWY 96 - 3.6 MILES DRIVING DISTANCE
 COLUMBIA AVE. POLICE STATION - 2.06 MILES DRIVING DISTANCE

RECREATION FACILITIES
 WILLIAMSON COUNTY RECREATION FACILITY - 1.8 MILES FROM THE PROPERTY

PROJECTED STUDENT POPULATION
 THE STUDENT POPULATION IS PROJECTED AT A RATE OF ONE STUDENT PER 64 HOMES.
 111 X .64 = 71.04 STUDENTS

REFUSE COLLECTION
 REFUSE COLLECTION SERVICE WILL BE PROVIDED BY THE CITY OF FRANKLIN SOLID WASTE

RESTRICTIVE COVENANTS
 THE RIZER POINT HOME OWNERS' ASSOCIATION WILL BE ESTABLISHED PRIOR TO THE FIRST OCCUPANCY OF RESIDENTS. THE HOME OWNERS' ASSOCIATION WILL REGULATE ARCHITECTURAL STANDARDS AND MAINTENANCE OF THE COMMUNITY. THE HOA WILL MAINTAIN ALL COMMON OPEN SPACE, RECREATION AREAS, AND TOWN HOME YARDS.

NOTES

1. FLOODWAY AND FLOODPLAIN DELINEATED FROM FRM (PANEL NUMBER 47187C0184G) EFFECTIVE DATE DECEMBER 22, 2016.

2. NO MINERAL RIGHTS ARE HELD BY PARTIES OUTSIDE OF THE OWNER.



GAMBLE

DESIGN COLLABORATIVE

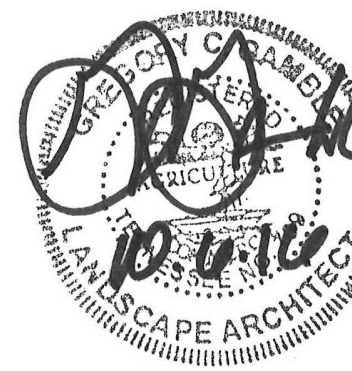
DEVELOPMENT PLANNING AND
 LANDSCAPE ARCHITECTURE

RIZER POINT PUD SUBDIVISION

DEVELOPMENT PLAN, REVISION 3

FRANKLIN, WILLIAMSON COUNTY, TENNESSEE 37064

COF PROJECT NO. xxx



rev. date

△ OCT. 6, 2016

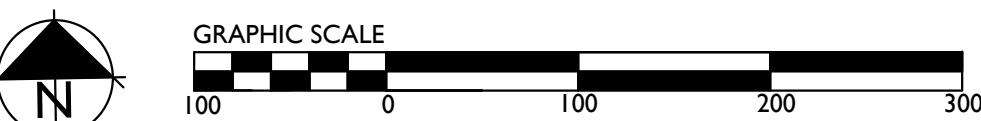
△
 △
 △
 △

SEPTEMBER 12, 2016

SHEET

C2.0

OVERALL
 DEVELOPMENT PLAN



TRIP GENERATION CALCULATIONS - ORIGINALLY APPROVED PUD			
- LAND USE: 24 CONDOS/TOWNHOMES			
AVERAGE DAILY TRAFFIC:	192		
DAILY ENTER:	96		
DAILY EXIT:	96		
AM PEAK HOUR TOTAL:	17		
AM PEAK HOUR ENTER:	3		
AM PEAK HOUR EXIT:	14		
PM PEAK HOUR TOTAL:	19		
PM PEAK HOUR ENTER:	13		
PM PEAK HOUR EXIT:	6		

TRIP GENERATION CALCULATIONS - 71 SINGLE FAMILY			
- LAND USE: 71 SINGLE FAMILY			
AVERAGE DAILY TRAFFIC:	780		
DAILY ENTER:	380		
DAILY EXIT:	380		
AM PEAK HOUR TOTAL:	60		
AM PEAK HOUR ENTER:	15		
AM PEAK HOUR EXIT:	45		
PM PEAK HOUR TOTAL:	78		
PM PEAK HOUR ENTER:	49		
PM PEAK HOUR EXIT:	29		

KEY
 60' STREAM BUFFER
 APPROVED & IN CONSTRUCTION PUD
 PRESERVED TREE CANOPY



rev.	date
1	OCT. 6, 2016

SEPTEMBER 12, 2016

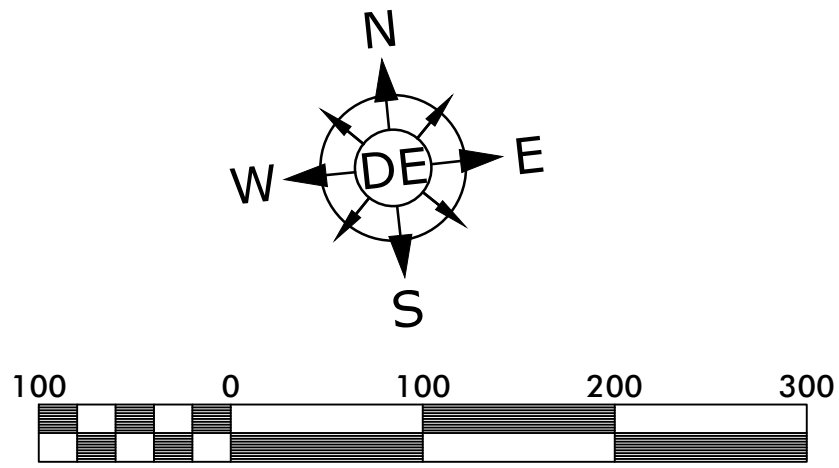
S H E E T

C2.1

TYPICAL
ARCHITECTURE

- TYPICAL ARCHITECTURE NOTES:
1. SINGLE FAMILY DETACHED HOMES DESIGNED FOR LOTS WITH GARAGE ACCESSED FROM THE FRONT-FACING STREET WITH GARAGE ATTACHED.
 2. ONE TO TWO STORIES IN HEIGHT.
 3. MATERIALS INCLUDE BRICK, SIMULATED STONE, CEMENTATIOUS SIDING, AND ARCHITECTURAL SHINGLES.
 4. GARAGE IS SETBACK 10 FEET FROM THE FRONT FASCAD.
 5. DRIVEWAY IS A MINIMUM OF 22' FROM THE SIDEWALK TO THE GARAGE DOORS.
 6. ALL TWO CAR GARAGES SHALL HAVE TWO GARAGE DOORS WITH A MAXIMUM WIDTH OF 9' WIDE WITH A 2 FOOT MINIMUM SEPARATION BETWEEN.
 7. DRIVEWAYS SHALL BE A MINIMUM OF 5' FROM ANY PROPERTY LINE.

COF# 6251



Scale 1" = 100'
Total Site Area = 68.79 ac
Section 5 Area = 14.04 ac

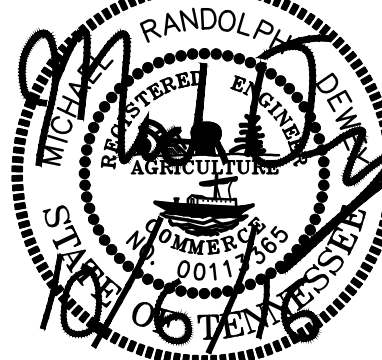
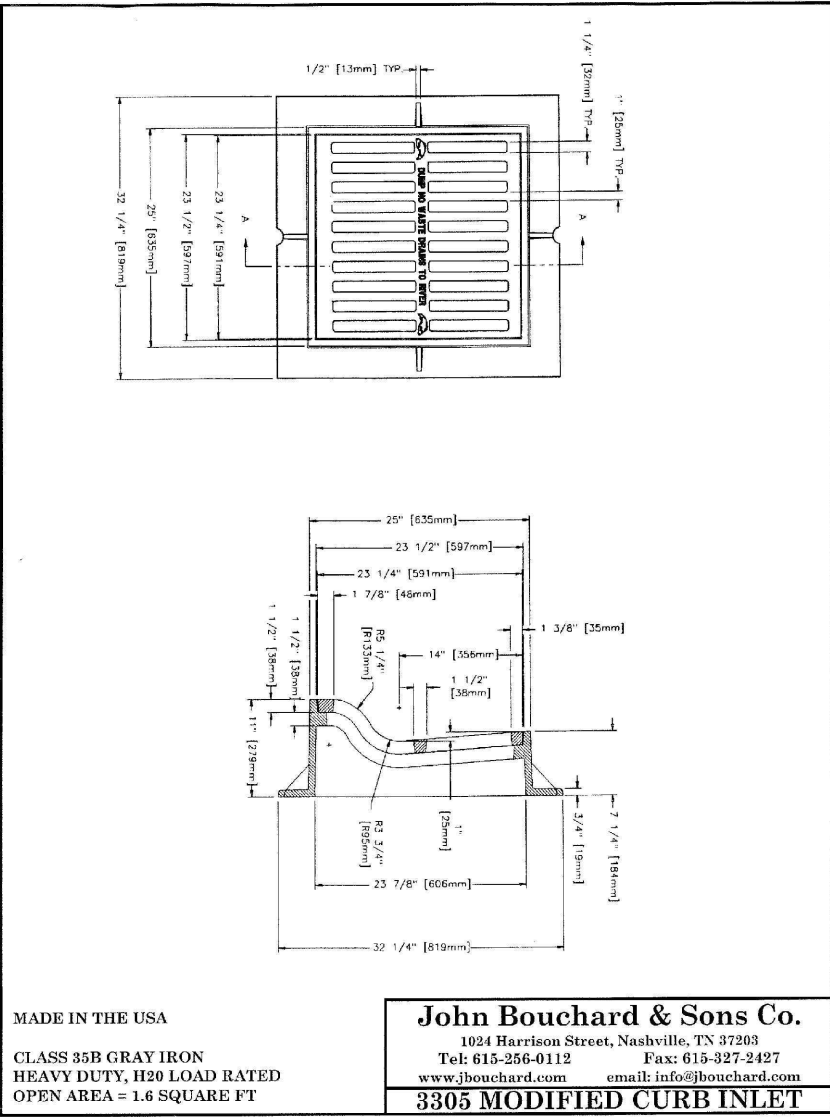
Engineer
Dewey Engineering
Contact: Michael Dewey, PE
2925 Berry Hill Drive
Nashville, TN 37204
Phone: (615) 401-9956
E-mail: mdewey@dewey-engineering.com

Developer
CMH Parks, Inc. dba Goodall Homes
Contact: Jack Ludington
393 Maple Street #100
Gallatin, TN 37066
Phone: (615) 451-5029
Fax: (615) 451-4029

Flood Note
A Portion of this Property is Located Within a Flood Hazard Area, Zone AE, As Shown on Map Panel Number 47187C0184F & 47187C0192F.
Dated Sept. 29, 2006.
Elev. Varies: 625.3-625.6
*Note: Preliminary FIRM
Dated: December 22, 2016
100 Year Floodplain Elevation 625.0

Site Benchmark
Tag Bolt of Existing Fire Hydrant Located Near the Southeast Corner of the Subject Property, Approximately 100 feet West of the Terminus of Del Rio Court. NGVD Elevation 651.12.

- Notes:**
- 1) All residential lots as shown will be located 100% out of the floodplain. A portion of the Open Space lots is in the floodplain and floodway. The floodplain shall be balanced at a minimum of a 1:1 ratio.
 - 2) Floodplain alteration will not decrease storage capacity. This section of the Harpeth River is not located in a damage reach.
 - 3) Alterations of the floodplain are to occur in a method that will provide improved water quality, recreational value, and a natural habitat. This alteration will be an improvement upon existing agricultural use and fallow conditions.
 - 4) The applicant shall obtain a floodplain development permit and complete floodplain alteration prior to the submittal of a site plan. Once a final letter of map revision has been issued from FEMA, the applicant shall go to the BZA to have the FFO Zoning boundary revised. After BZA has revised the FFO, the applicant may submit a site plan for any lots not within the newly delineated FFO.
 - 5) Drainage Easements shall be provided between lots to convey stormwater runoff where necessary. The easements shall be provided in the Site Plan and Final Plat.



Revisions:

Drawing Notes:
COF Project # 6145

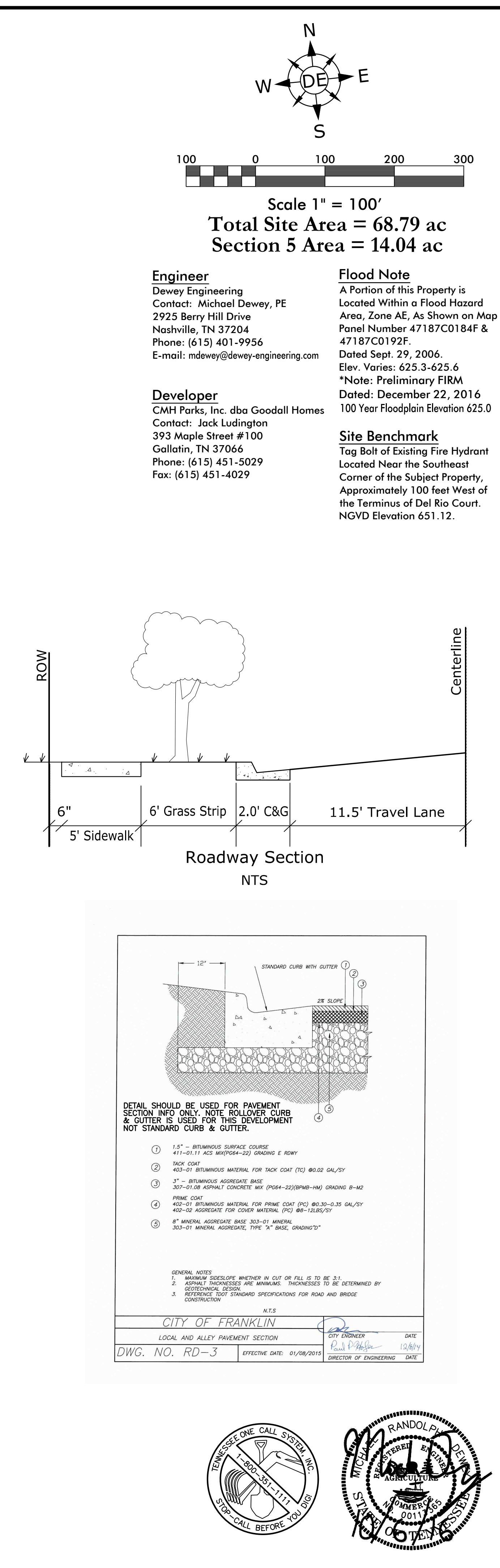
Date: October 6, 2016

Rizer Point PUD
Section 5 Development Plan
Being Parcel 1.09 on Tax Map 63
Franklin, Williamson County, Tennessee

DEWEY
ENGINEERING

Overall Grading
& Drainage Plan

C3.0



Revisions:
Drawing Notes: COF Project # 6145
Date: October 6, 2016

Rizer Point PUD

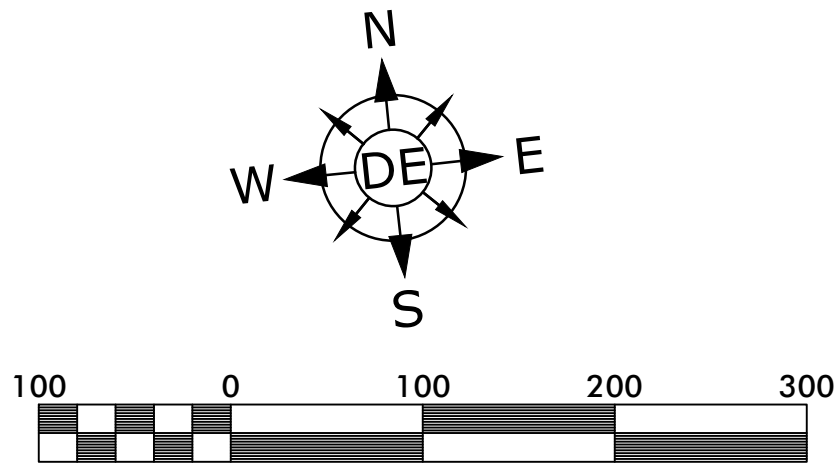
Section 5 Development Plan

Being Parcel 1.09 on Tax Map 63
Franklin, Williamson County, Tennessee



Overall ROW & Access Plan

C4.0



Scale 1" = 100'
Total Site Area = 68.79 ac
Section 5 Area = 14.04 ac

Engineer
Dewey Engineering
Contact: Michael Dewey, PE
2925 Berry Hill Drive
Nashville, TN 37204
Phone: (615) 401-9956
E-mail: mdewey@dewey-engineering.com

Developer
CMH Parks, Inc. dba Goodall Homes
Contact: Jack Ludington
393 Maple Street #100
Gallatin, TN 37066
Phone: (615) 451-5029
Fax: (615) 451-4029

Flood Note
A Portion of this Property is
Located Within a Flood Hazard
Area, Zone AE, As Shown on Map
Panel Number 47187C0184F &
47187C0192F.
Dated Sept. 29, 2006.
Elev. Varies: 625.3-625.6
*Note: Preliminary FIRM
Dated: December 22, 2016
100 Year Floodplain Elevation 625.0

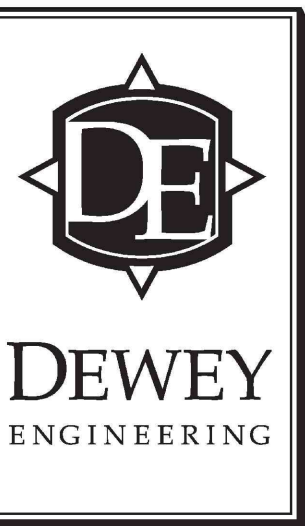
Site Benchmark
Tag Bolt of Existing Fire Hydrant
Located Near the Southeast
Corner of the Subject Property,
Approximately 100 feet West of
the Terminus of Del Rio Court.
NGVD Elevation 651.12.

Revisions:

Drawing Notes:
COF Project # 6145

Date: October 6, 2016

Rizer Point PUD
Section 5 Development Plan
Being Parcel 1.09 on Tax Map 63
Franklin, Williamson County, Tennessee



AutoTurn
Exhibit

C4.1





Charles Edward Saffell
5013 Rizer Point Drive
Franklin, TN 37069

September 15, 2016

Mr. Josh King, AICP

City Hall

109 Third Avenue South

Franklin, TN 37064

Dear Mr. King,

In conjunction with Goodall Homes' proposed expansion of Rizer Point to include 16 additional homes, I'm submitting two petitions signed by residents of Rizer Point. I believe that most, if not all, Rizer Point residents are against any expansion of Rizer Point. That has always been our first priority. However, if Goodall is allowed to expand Rizer Point, these petitions represent two requests.

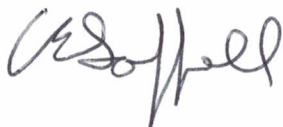
The first petition states our opposition to connecting Viola Lane and Wedgewood Drive. The reasons for this opposition have been stated by numerous residents of Rizer Point, Wedgewood and the surrounding area in previous meetings. If Goodall's expansion is granted, we would like for Viola Lane to end in a cul-de-sac and not connect to Wedgewood Drive. We understand that these two roads might contain a locked gate the end of each road that can be opened by emergency personnel.

I'm submitting a petition signed by 68 residents voicing our opposition to connecting Viola and Wedgewood. Please note that different people were circulating these petitions so the lines and pages aren't numbered. There will be an additional petition submitted soon that is signed by residents of Wedgewood.

The second petition states our opposition to having Goodall burden the Rizer Point HOA with the excess land that will not be developed. This land is in the floodway or flood plain. If Goodall's expansion is granted, the expansion of Rizer Point should only include the minimum land required for Goodall to build the 16 additional homes. It is not appropriate or fair for the Rizer Point HOA to incur the additional annual cost of maintaining this land and paying property taxes on this land. Goodall will profit from acquiring this land and then they will burden the Rizer Point HOA with all future costs.

Please distribute this letter and the two petitions to the members of the Franklin Municipal Planning Commission, BOMA and any other appropriate person. We appreciate your assistance.

Sincerely,



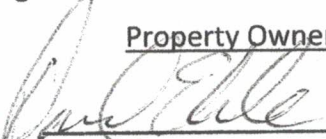
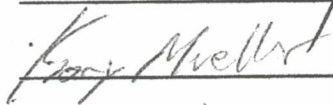
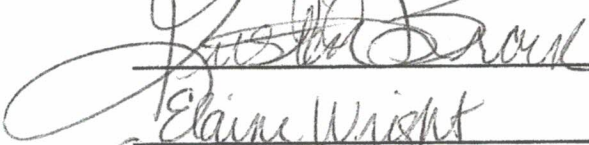
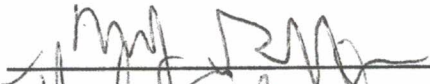
Petition in Opposition of Connecting Viola Lane & Wedgewood Drive

Neighborhood: Rizer Point

Contact Person: Ed Saffell 5013 Rizer Point Drive (615) 628-8030 cesaffell@gmail.com

Request: If Goodall Homes receives approval to revise the Rizer Point PUD to add 16 additional homes in a new section 5 development, then the extension of Viola Lane end in a cul-de-sac instead of connecting to Wedgewood Drive.

Signatures:

<u>Property Owner Name</u>	<u>Address</u>	<u>Telephone #</u>
	3009 Nine Bark Ln.	662-397-6116
 (Milk Clothing)	4029 Viola Lane	269 615-5674
David Vantasky	4019 VIOLA LANE	(954) 651-4293
	4015 Viola Lane	(847) 902-9181
Tom Kozlowski	3002 Nine Bark Ln	615-957-7899
Gloria Moncada	3006 Nine Bark Ln.	615 481-5509
James D. Berry	3008 Nine Bark Ln	615-390-8214
	3014 Nine Bark Ln	615 504-0614
	3001 Nine Bark Ln	615-579-7351
Elaine Wright	3009 Nine Bark Ln	615-944-6856
Susan Giffin	3011 Nine Bark Ln	615-905-8667
	3011 Nine Bark Ln	"
	3004 Nine Bark Ln	726-616-6175
Suzzy Knight	3000 Nine Bark Ln	615 456-2646
	4027 Viola Ln	615-708-0729

Property Owner Name	Address	Telephone #
James M. 72	1003 Reese Dr.	813-786-5317
Kathy E. Zant	1003 Reese Dr.	813-786-5317
Linda A. Cleveland	1204 Reese Dr.	615-456-8499
Wynne F. Cleveland	1204 Reese Dr.	615-330-0288
Ruth J. Jantz	5015 Rizer Pt Dr.	615-376-9153
Ruth J. Jantz	5015 Rizer Pt	615-478-692
Chris Jantz	5004 Rizer Pt. Dr.	615-397-9417
Donella Jantz	5004 Rizer Pt. Dr.	615-686-6011
Larry L. Lanthorn	1205 Reese Dr.	615-905-1516
Bonnie J. Lanthorn	1205 Reese Dr.	615-905-1516
John Stihly	1203 Reese Dr.	727-902-2286
Pat M.	1201 Reese Dr.	469-667-0100
Pat M.	1200 Reese Dr.	203-273-7576
Pat M.	1206 Reese Dr.	203-253-8111
Pat M.	1208 Reese Dr.	615-579-1514
Rachel J. Jantz	1208 Reese Dr.	615-579-9644
DX Camby	1211 Reese Dr.	949-701-1390
Pat M.	1213 Reese Dr.	858-776-2119
Pat M.	1213 Reese Dr.	858-603-6877
Rebecca Jantz	1216 Reese Dr.	615-415-8681
Pat M.	1217 Reese Dr.	615-969-5268

Petition in Opposition of Connecting Viola Lane & Wedgewood Drive

Neighborhood: Rizer Point

Contact Person: Ed Saffell 5013 Rizer Point Drive (615) 628-8030 cesaffell@gmail.com

Request: If Goodall Homes receives approval to revise the Rizer Point PUD to add 16 additional homes in a new section 5 development, then the extension of Viola Lane end in a cul-de-sac instead of connecting to Wedgewood Drive.

Signatures:

<u>Property Owner Name</u>	<u>Address</u>	<u>Telephone #</u>
<u>Susan R. Phelps</u>	<u>5019 Rizer Point Dr.</u>	<u>615-567-7805</u>
<u>Gherard Hoobasean</u>	<u>5014 Rizer Point Dr</u>	<u>615-522-4302</u>
<u>Wana Han</u>	<u>5011 Rizer Point Dr.</u>	<u>703-966-4631</u>
<u>Ed Saffell</u>	<u>5013 Rizer Point Dr</u>	<u>615-628-8030</u>
<u>Jim A. Asher</u>	<u>5017 Rizer Point Dr</u>	<u>919-602-7458</u>
<u>Sybil</u>	<u>5017 Rizer Point Dr</u>	<u>919-801-6415</u>
<u>Lori Evans</u>	<u>5010 Rizer Point Dr</u>	<u>334-728-1520</u>
<u>Bill Kell</u>	<u>5008 Rizer Point Dr</u>	<u>615-336-9813</u>
<u>Alvin Livett</u>	<u>5009 Rizer Point Dr</u>	<u>615-336-8376</u>
<u>Maris Harvett</u>	<u>5009 Rizer Pt. Dr.</u>	<u>662-286-8803</u>
<u>Jeff Barr</u>	<u>5006 Rizer Point Dr.</u>	<u>818-693-6521</u>
<u>Emily Bonomo</u>	<u>5006 Rizer Point Dr.</u>	<u>818-481-4122</u>
<u>Frank Saffell</u>	<u>5013 Rizer Point Dr.</u>	<u>615-628-8030</u>
<u>Ed Saffell</u>	<u>5013 Rizer Point Dr</u>	<u>205-616-5256</u>
<u>Tom Springman</u>	<u>1015 REESE DR</u>	<u>615-513-8685</u>
<u>Lisa Springman</u>	<u>1015 Reese Dr</u>	<u>615-419-3581</u>

[illegible]

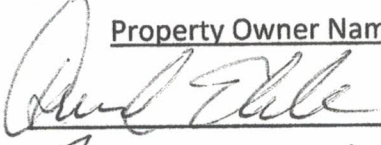
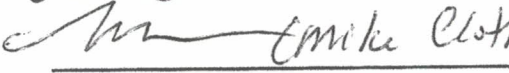
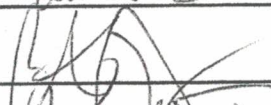
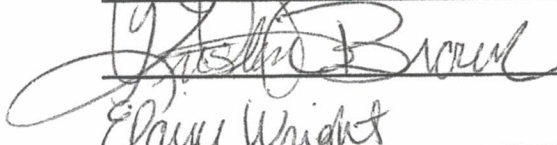
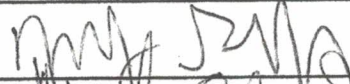
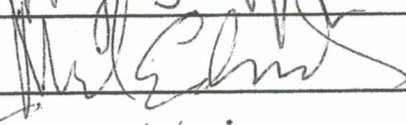
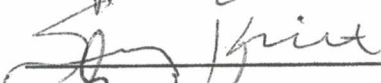
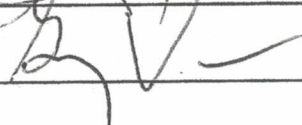
Petition in Opposition of Rizer Point HOA Receiving Undeveloped Land

Neighborhood: Rizer Point

Contact Person: Ed Saffell 5013 Rizer Point Drive (615) 628-8030 cesaffell@gmail.com

Request: If Goodall Homes receives approval to revise the Rizer Point PUD to add 16 additional homes in a new section 5 development, then the additional land added to Rizer Point HOA be limited to just the amount necessary to build the additional homes and not include the excess land that is mainly in the floodway.

Signatures:

<u>Property Owner Name</u>	<u>Address</u>	<u>Telephone #</u>
	3009 Nine Bark Ln.	662-397-6110
 (Mike Clothier)	4029 Viola Lane	269 615 5674
David Vautovsky	4019 VIOLA LANE	(954) 651-4293
Kory Mueller	4015 Viola Lane	(947) 902-9187
Tom Kozlowski	3002 Nine Bark Ln	615-957-7899
Gloria Mercado	3006 Nine Bark Ln	615-481-5507
Jamie Berry	3008 Nine Bark Ln	615-390-8214
	3014 Nine Bark Ln	65 504-0647
 Justin Brown	3001 Nine Bark Ln	615-574-7351
Elaine Wright	3007 Nine Bark Ln	615-944-6856
Susan Griffl	3011 Nine Bark Ln	615-905-8667
	3011 Nine Bark Ln	" "
	3001 Nine Bark Ln	720-616-0175
	3000 Nine Bark Lane	615-456-2666
	4027 Viola Ln	615-708-0729

Property Owner Name

Address

Telephone #

James M. Z	1003 Reese Dr.	813-786-5317
Kathy E. J.	1003 Reese Dr.	813-786-5317
Wally F. G.	1204 Reese Dr.	615-338-0298
Rinda A. Cleveland	1204 Reese Dr.	615-456-8499
Toby J.	5015 Rizer Pt. Dr.	615-376-9155
B. J.	5015 Rizer Pt. Dr.	615-498-6922
Chris M.	5004 Rizer Pt. Dr.	615-397-9417
Dionela T.	5004 Rizer Pt. Dr.	615-686-6011
Marcella Sepanski	1207 Reese Dr.	217-971-2544
M. J.	1207 Reese Dr.	217-741-7118
Larry R. G.	1205 Reese Dr.	615-905-5146
Sonja J. G.	1205 Reese Dr.	615-905-5146
M. H. S.	1203 Reese Dr.	727-902-2276
P. M.	1201 Reese Dr.	469-669-0100
J. J.	1206 Reese Dr.	203-213-7570
J. J.	1206 Reese Dr.	203-253-8110
J. J.	1208 Reese Dr.	615-579-1514
Rachel S.	1208 Reese Dr.	615-579-9644
D. C.	1211 Reese Dr.	949-701-1390
J. J.	1213 Reese Dr.	858-776-0119
J. J.	1213 Reese Dr.	858-603-6877
R. J.	1216 Reese Dr.	615-456-5599

Petition in Opposition of Rizer Point HOA Receiving Undeveloped Land

Neighborhood: Rizer Point

Contact Person: Ed Saffell 5013 Rizer Point Drive (615) 628-8030 cesaffell@gmail.com

Request: If Goodall Homes receives approval to revise the Rizer Point PUD to add 16 additional homes in a new section 5 development, then the additional land added to Rizer Point HOA be limited to just the amount necessary to build the additional homes and not include the excess land that is mainly in the floodway.

Signatures:

Property Owner Name

AddressTelephone #

Sherry Penner 4031 Viola Lane 615-828-8388

Leafy Flylarva 4.

2003 HEFLIN LN ¹⁰⁹ 615-1932

Kona Manor 2003 Heflin Ln 909-615-1017

.....

.....

.....

[illegible]

Petition in Opposition of Rizer Point HOA Receiving Undeveloped Land

Neighborhood: Rizer Point

Contact Person: Ed Saffell 5013 Rizer Point Drive (615) 628-8030 cesaffell@gmail.com

Request: If Goodall Homes receives approval to revise the Rizer Point PUD to add 16 additional homes in a new section 5 development, then the additional land added to Rizer Point HOA be limited to just the amount necessary to build the additional homes and not include the excess land that is mainly in the floodway.

Signatures:

<u>Property Owner Name</u>	<u>Address</u>	<u>Telephone #</u>
<u>Susan R Phelps</u>	<u>5019 Rizer Point Dr.</u>	<u>615-567-7805</u>
<u>Shad Hoossein</u>	<u>5014 Rizer Point Dr.</u>	<u>615-522-4302</u>
<u>Wana Horn</u>	<u>5014 Rizer Point Dr.</u>	<u>703-966-4658</u>
<u>Ed Saffell</u>	<u>5013 Rizer Point Dr</u>	<u>615-628-8030</u>
<u>Jason A. Allen</u>	<u>5017 Rizer Pt. Dr</u>	<u>919-602-7458</u>
<u>Bye Ole</u>	<u>5017 Rizer Pt. Dr</u>	<u>919-801-6415</u>
<u>Lori Evans</u>	<u>5010 Rizer Point Dr</u>	<u>334-728-1520</u>
<u>Donna Garrett</u>	<u>5008 Rizer Point Dr</u>	<u>615-336-9813</u>
<u>Donna Garrett</u>	<u>5009 Rizer Pt. Dr.</u>	<u>662-286-8883</u>
<u>Stephen Lovell</u>	<u>5007 Rizer Point Dr</u>	<u>662-284-8376</u>
<u>T. P. P.</u>	<u>5006 Rizer Point Dr</u>	<u>818-693-6521</u>
<u>Ed Saffell</u>	<u>5013 Rizer Point Dr</u>	<u>615-628-8030</u>
<u>Ed Saffell</u>	<u>5013 Rizer Point Dr</u>	<u>205-616-5256</u>
<u>Tom Frigman</u>	<u>1015 REESE DR</u>	<u>615-513-8685</u>
<u>Lisa Frigman</u>	<u>1015 Reese Dr.</u>	<u>615-419-3581</u>

Property Owner Name

Address

Telephone #

Rebecca S Gause

1216 Reese Drive

(615) 415-8681

12

1217 Reese Dr

(615) 969-5268

Wayne Jarro

2017 HEFLIN LN

615-584-7856

Julie Jarro

2017 Heflin Ln.

615-351-3179

Sandra Tidmarsh

2013 Heflin Ln

440-773-1801

Randall Wilson

2011 Heflin Lane

615-364-8178

Debra DeLong

2011 Heflin Lane

615-982-1333



CONNECTIVITY: BEYOND POLICY

October 27, 2016

COMMON PRACTICE

- Supports the creation of a highly connected transportation system within the City, in order to provide choices for drivers, bicyclists and pedestrians
- Connects neighborhoods to each other and to local destinations such as schools, parks and shopping centers
- Distributes traffic throughout the network and provides options for routes of travel
- Free up arterial road capacity to better serve regional long distance travel needs.
- Improves routing for transit and delivery vehicles (solid waste, recycling, mail, etc.)
- Reduces vehicles miles of travel, fuel usage and travel times
- Improves air quality
- Promote higher levels of physical activity (walking and cycling)



CONNECTIVITY: BEYOND POLICY

October 27, 2016



LIFE SAFETY

- Connectivity is needed for fire, police and EMS responses. Without connectivity, response times increase having negative consequences upon patient outcome and quality of life, property damage, and impact on the community.
- Redundancy is the ability to respond along multiple paths to a location. A single route or multiple routes in close proximity, increases the chance of a roadway becoming blocked by an accident or natural disaster.
- Efficient road networks also improve travel times for emergency response, solid waste pickup, and school bus routes.
- Where topography limits connectivity, other features need to be incorporated for protection of the public, like home fire sprinklers, limiting road segment length, and reducing the encroachment into the wildland/urban interface.
- Without connectivity, emergency operations are impacted. Streets quickly become obstructed other responding emergency vehicles causing equipment to be carried to the scene. Ingress into an area is as important as being able to have residents leave the area. This can be especially critical after a tornado or hazardous material incidents, and wildfires.



User Agreement

Contact Information

Primary Point of Contact	Steve LoGrasso	slograsso@mbssecurities.com	(866) 330-0861
Technical Point of Contact	Marti Raymus	mraymus@mbssecurities.com	(888) 857-3956
Senior Vice President	Tim Peacock	tpeacock@mbssecurities.com	(800) 967-9041

Powered by Multi-Bank Securities, Inc.
1000 Town Center, Suite 2300
Southfield, MI 48075
800-967-9052

LICENSING AGREEMENT

This Agreement is between:

Multi-Bank Securities, Inc. (MBS)
1000 Town Center, Suite 2300
Southfield, Michigan 48075

and

City of Franklin

ACCOUNT HOLDER

Finance Dept. City Hall - 109 3rd Ave South (PO BOX 305)

STREET ADDRESS

Franklin, TN 37065

CITY, STATE, ZIP

This contract governs your use of services, ability to post deposit rates, and access to inventory offered by eConnectDirect®, a registered trademark of Multi-Bank Securities, Inc. and related commerce, products and services corresponding to your access to eConnectDirect.com. You may need to execute additional agreements or provide MBS account numbers if you request additional Opt-in Services in conjunction with your unique eConnectDirect® user name and password. "Opt-in Services" refers to additional trading functionality and supportive services provided through eConnectDirect® or Multi-Bank Securities, Inc.

The terms "MBS," "we," "us" and "our" refer to Multi-Bank Securities, Inc. The terms "Subscriber," "you" and "your" refer to the undersigned Account Holder and additional users identified in Schedule A. The term "eConnectDirect® CD" (also known as "Physical CD" or "Listing Service" Deposits) refers to CDs which are transacted directly between the issuing institution and investing entity through eConnectDirect®. The term "Securities," generally refers to all other assets purchased or viewed on eConnectDirect® that are NOT eConnectDirect® CDs. All Securities (ie: Bonds, DTC Eligible CDs) will have a corresponding CUSIP number and funds will be settled into a user selected Securities account (Cash or Delivery Versus Payment "DVP"). If your preferred safekeeping agent, is something other than a Pershing LLC account, originated through Multi-Bank Securities, Inc., delivery and settlement instructions ("DVP Instructions"), must be provided prior to gaining access to security's inventory monitors.

User Access Start Date

Start Date: ____/____/ 2016

Your user access and all other rights under this eConnectDirect® Licensing Agreement will commence on the "Start Date" listed above if we have received from you a signed copy of this agreement and a complete set of all duly executed settlement documents required to purchase or issue a CD or security.

Modification/Cancellation

MBS reserves the right to:

- modify or cancel any feature of eConnectDirect® at any time.
- discontinue user access at anytime for any reason, without penalty, with 30 days written notice, or
- immediately suspend user access at anytime as provided below.

Subscriber reserves the right to:

- discontinue any or all eConnectDirect® services at anytime for any reason, without penalty, by providing written notice to MBS.

All changes to the terms, conditions, fees, representations and warranties related to this agreement will be distributed in writing for signature, email consent or online confirmation. If at any time you find these terms unacceptable and do not agree with them, you can let us know that you would like to discontinue your user access without penalty.

ACCOUNT ADMINISTRATION:

The Account Administrator is responsible for maintaining the account profile and approving/assigning additional users and account access. The additional users need to be identified on Schedule A – Authorized User List. All users will be assigned a unique user name and password and will be required to acknowledge and accept the terms, conditions and licensing agreement pertaining to the use of eConnectDirect® upon initial login.

Account Administrator Name: Russ Truell
 Title: Finance Director
 Phone: (615) 791-1457
 Email: russ.truell@franklintn.gov

Secondary Contact Name: _____
 Title: _____
 Phone: _____
 Email: _____

Licensing/User Fees:

Any applicable licensing fees will be disclosed per Schedule B -Licensing Fee Schedule of this agreement and will be billed annually, payable on the anniversary of the user access start date and are NON-REFUNDABLE. You will not be liable for any increase in licensing fees or new fees related to your access to eConnectDirect® unless you agree to such change in writing or other authenticated means.

MBS is not responsible for any fees incurred or charged in relationship to an eConnectDirect® CD transaction by the issuing bank, settlement/wire fees, safekeeping charges by your securities' custodian or any other fees related to the purchase, issuance, settlement, or safekeeping of products offered through eConnectDirect®. You are responsible for all such fees. Any applicable fees or selling concessions related to the issuance of DTC eligible CDs are disclosed at the time of trade and per the terms of an executed terms agreement and related Brokerage Agreement.

Account Classification and user access: (Additional documentation may need to be submitted depending on your user access request(s))

Institution Classification City _____

User Access

- ☒ Investor
- ☒ Securities
- ☐ Listing Service Deposits (eConnectDirect® CDs) (Exhibit C Required)
- ☐ Issuer
- ☐ DTC Eligible CDs (Brokerage Agreement Required)
- ☐ Listing Service Offerings (eConnectDirect® CDs) (Exhibit C Required)
- ☒ Securities Safekeeping Agent
- ☐ Pershing LLC (Only to be used if originated by Multi-Bank Securities)
- ☒ DVP (Delivery-versus-Payment) (Delivery instructions Required)

Proprietary Rights in the eConnectDirect Software and Database:

Restrictions on Use: SUBSCRIBER AGREES THAT IT WILL NOT PERMIT ANY OTHER PERSON INCLUDING, BUT NOT LIMITED TO, ANY INSTITUTION, BROKER OR BUSINESS OF ANY TYPE, ACCESS TO THE SOFTWARE AND DATABASE.

License Limitations:

This eConnectDirect® Licensing Agreement allows access to eConnectDirect® using a computer and/or web access by a user from any approved browser. Subscriber agrees not to modify, adapt or translate, disassemble, decompile, reverse engineer or otherwise attempt to discover the source code of the software. Subscriber further agrees not to sublicense, assign, transfer, distribute, pledge, lease, rent or share any rights under this license except with prior written permission from MBS.

Transaction Settlements:

Subscriber agrees to pay for, settle on, deliver or make whole on any approved transaction(s) processed through eConnectDirect® or Multi-Bank Securities, Inc. Failure to pay for a purchase, delivery on a sell or settle on an approved and accepted CD issuance, may result in an IMMEDIATE suspension or cancellation of this user agreement.

Immediate Suspension:

MBS may immediately suspend user access and all rights under this agreement if MBS has not received payment of the applicable License Fee within 30 days of invoice or MBS believes the Subscriber has or may violate MBS' proprietary rights or has or may breach any other provision of this agreement.

Warranty Disclaimer / Liability:

Only to the extent permitted by Tennessee law, if applicable - MBS makes no warranty of any kind, express or implied, regarding the timeliness, sequence, accuracy or completeness of data provided on eConnectDirect®. MBS will not be liable for any damages whatsoever, whether direct, indirect, general, special, compensatory, consequential and/or incidental, arising out of or relating to your use of eConnectDirect®.

City of Franklin	Multi-Bank Securities, Inc.
Account Holder	Company
Signature	Signature
Russ Truell	Tim Peacock
Name	Name
Finance Director	Senior Vice President
Title	Title

SCHEDULES, EXHIBITS & SUPPORTING DOCUMENTS

SCHEDULE A: AUTHORIZED USERS** (NOTE: The Administrator must be listed)

NAME	TITLE	PHONE	EMAIL
Russ Truell	Finance Director	(615) 791-1457	russ.truell@franklintn.gov

**Permissions, notifications and account access are set and maintained by the administrator upon login. Securities' trading authorization is only permitted to those approved by the account administrator or in confirmation with a submitted resolution of authorized signers

SCHEDULE B: LICENSING FEE(S)

Applicable licensing fees will apply

ALL FEES ARE PAYABLE WITHIN 30 DAYS OF INVOICE AND ARE NON REFUNDABLE;

eConnectDirect® Account Access (Including Securities): \$ 0.00 per year

eConnectDirect® CD Listing Services \$ N/A per year

Special Notes / Instructions:



**Institutional Suitability Certificate
FINRA RULE 2111
Affirmative Indication by Institution – Exercising Independent Judgment**

In connection with any recommended transaction or investment strategy by a registered broker-dealer, the undersigned acknowledges on behalf of the Institution named below that:

1. *It is an “Institutional Account” as defined in FINRA Rule 4512(c);*

PLEASE CHECK THE APPROPRIATE BOX BELOW

- ☐ (1) a Credit Union with total assets of \$50 Million or more (or any other entity with total assets in excess of \$50 Million). If a Credit Union (or any other entity) has total assets LESS THAN \$50 Million, check Box 4, and provide your most recent Investment Policy;
- ☐ (2) a bank, savings and loan association, insurance company or registered investment company;
- ☐ (3) an investment adviser registered either with the SEC under Section 203 of the Investment Advisers Act or with a state securities commission (or any agency or office performing like functions);
- ☒ (4) MBS will determine suitability (Please provide your most recent Investment Policy)

2. *It (1) is capable of evaluating investment risks independently, both in general and with regard to all transactions and investment strategies involving a security or securities; and (2) will exercise independent judgment in evaluating the recommendations of any broker-dealer or its associated persons, unless it has otherwise notified the broker-dealer in writing;*

3. *MBS will be notified by the Institutional Account if anything in this Certificate ceases to be true;*

4. *He or she is authorized to sign on behalf of the Institutional Account named below.*

By signing this Certificate, the undersigned affirms that the above statements are accurate but does not waive any rights afforded under U.S. federal or state securities laws, including without limitation, any rights under Section 10(b) of the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

This Certificate shall apply with respect to all recommended transactions and investment strategies involving securities that are entered into by the “Institutional Account” named in this Certificate, whether for the account(s) of such Institutional Account or for the account of any beneficial owner that has delegated decision making authority to such Institutional Account.

City of Franklin

Institutional Account Name

City Hall - 109 3rd Ave. South (PO Box 305)

Address

Franklin, TN 37065

City, State, ZIP

62-6000290

U.S. Tax ID / EIN If applicable)

russ.truell@franklinTN.gov

Email Address

Signature of Authorized Signatory

Russ Truell

Name of Authorized Signatory

Finance Director

Title of Authorized Signatory

Date

(615) 791-1457

Phone

ADDRESS 1000 Town Center, Suite 2300
Southfield, Michigan 48075

PHONES 800.967.9045
248.291.1100

FAX 248.291.1101

2400 East Commercial Boulevard, Suite 812
Ft. Lauderdale, Florida 33308

800.967.9045
954.351.6930
954.351.9197

Member of FINRA & SIPC; MSRB
A Veteran-Owned Business



User Agreement

Contact Information

Primary Point of Contact	Steve LoGrasso	slograsso@mbssecurities.com	(866) 330-0861
Technical Point of Contact	Marti Raymus	mraymus@mbssecurities.com	(888) 857-3956
Senior Vice President	Tim Peacock	tpeacock@mbssecurities.com	(800) 967-9041

Powered by Multi-Bank Securities, Inc.
1000 Town Center, Suite 2300
Southfield, MI 48075
800-967-9052



LICENSING AGREEMENT

This Agreement is between:

Multi-Bank Securities, Inc. (MBS)
1000 Town Center, Suite 2300
Southfield, Michigan 48075

and

ACCOUNT HOLDER

STREET ADDRESS

CITY, STATE, ZIP

This contract governs your use of services, ability to post deposit rates, and access to inventory offered by eConnectDirect®, a registered trademark of Multi-Bank Securities, Inc. and related commerce, products and services corresponding to your access to eConnectDirect.com. You may need to execute additional agreements or provide MBS account numbers if you request additional Opt-in Services in conjunction with your unique eConnectDirect® user name and password. "Opt-in Services" refers to additional trading functionality and supportive services provided through eConnectDirect® or Multi-Bank Securities, Inc.

The terms "MBS," "we," "us" and "our" refer to Multi-Bank Securities, Inc. The terms "Subscriber," "you" and "your" refer to the undersigned Account Holder and additional users identified in Schedule A. The term "eConnectDirect® CD" (also known as "Physical CD" or "Listing Service" Deposits) refers to CDs which are transacted directly between the issuing institution and investing entity through eConnectDirect®. The term "Securities," generally refers to all other assets purchased or viewed on eConnectDirect® that are NOT eConnectDirect® CDs. All Securities (ie: Bonds, DTC Eligible CDs) will have a corresponding CUSIP number and funds will be settled into a user selected Securities account (Cash or Delivery Versus Payment "DVP"). If your preferred safekeeping agent, is something other than a Pershing LLC account, originated through Multi-Bank Securities, Inc., delivery and settlement instructions ("DVP Instructions"), must be provided prior to gaining access to security's inventory monitors.

User Access Start Date

Start Date: ____/____/ 2016

Your user access and all other rights under this eConnectDirect® Licensing Agreement will commence on the "Start Date" listed above if we have received from you a signed copy of this agreement and a complete set of all duly executed settlement documents required to purchase or issue a CD or security.

Modification/Cancellation

MBS reserves the right to:

- modify or cancel any feature of eConnectDirect® at any time.
- discontinue user access at anytime for any reason, without penalty, with 30 days written notice, or
- immediately suspend user access at anytime as provided below.

Subscriber reserves the right to:

- discontinue any or all eConnectDirect® services at anytime for any reason, without penalty, by providing written notice to MBS.

All changes to the terms, conditions, fees, representations and warranties related to this agreement will be distributed in writing for signature, email consent or online confirmation. If at any time you find these terms unacceptable and do not agree with them, you can let us know that you would like to discontinue your user access without penalty.

ACCOUNT ADMINISTRATION:

The Account Administrator is responsible for maintaining the account profile and approving/assigning additional users and account access. The additional users need to be identified on Schedule A – Authorized User List. All users will be assigned a unique user name and password and will be required to acknowledge and accept the terms, conditions and licensing agreement pertaining to the use of eConnectDirect® upon initial login.

Account Administrator Name: _____
 Title: _____
 Phone: _____
 Email: _____

Secondary Contact Name: _____
 Title: _____
 Phone: _____
 Email: _____

Licensing/User Fees:

Any applicable licensing fees will be disclosed per Schedule B -Licensing Fee Schedule of this agreement and will be billed annually, payable on the anniversary of the user access start date and are NON-REFUNDABLE. You will not be liable for any increase in licensing fees or new fees related to your access to eConnectDirect® unless you agree to such change in writing or other authenticated means.

MBS is not responsible for any fees incurred or charged in relationship to an eConnectDirect® CD transaction by the issuing bank, settlement/wire fees, safekeeping charges by your securities' custodian or any other fees related to the purchase, issuance, settlement, or safekeeping of products offered through eConnectDirect®. You are responsible for all such fees. Any applicable fees or selling concessions related to the issuance of DTC eligible CDs are disclosed at the time of trade and per the terms of an executed terms agreement and related Brokerage Agreement.

Account Classification and user access: (Additional documentation may need to be submitted depending on your user access request(s))

Institution Classification City

User Access

- ☒ Investor
- ☒ Securities
- ☐ Listing Service Deposits (eConnectDirect® CDs) (Exhibit C Required)
- ☐ Issuer
- ☐ DTC Eligible CDs (Brokerage Agreement Required)
- ☐ Listing Service Offerings (eConnectDirect® CDs) (Exhibit C Required)
- ☒ Securities Safekeeping Agent
- ☐ Pershing LLC (Only to be used if originated by Multi-Bank Securities)
- ☒ DVP (Delivery-versus-Payment) (Delivery instructions Required)

Proprietary Rights in the eConnectDirect Software and Database:

Restrictions on Use: SUBSCRIBER AGREES THAT IT WILL NOT PERMIT ANY OTHER PERSON INCLUDING, BUT NOT LIMITED TO, ANY INSTITUTION, BROKER OR BUSINESS OF ANY TYPE, ACCESS TO THE SOFTWARE AND DATABASE.

License Limitations:

This eConnectDirect® Licensing Agreement allows access to eConnectDirect® using a computer and/or web access by a user from any approved browser. Subscriber agrees not to modify, adapt or translate, disassemble, decompile, reverse engineer or otherwise attempt to discover the source code of the software. Subscriber further agrees not to sublicense, assign, transfer, distribute, pledge, lease, rent or share any rights under this license except with prior written permission from MBS.

Transaction Settlements:

Subscriber agrees to pay for, settle on, deliver or make whole on any approved transaction(s) processed through eConnectDirect® or Multi-Bank Securities, Inc. Failure to pay for a purchase, delivery on a sell or settle on an approved and accepted CD issuance, may result in an IMMEDIATE suspension or cancellation of this user agreement.

Immediate Suspension:

MBS may immediately suspend user access and all rights under this agreement if MBS has not received payment of the applicable License Fee within 30 days of invoice or MBS believes the Subscriber has or may violate MBS' proprietary rights or has or may breach any other provision of this agreement.

Warranty Disclaimer / Liability:

MBS makes no warranty of any kind, express or implied, regarding the timeliness, sequence, accuracy or completeness of data provided on eConnectDirect®. MBS will not be liable for any damages whatsoever, whether direct, indirect, general, special, compensatory, consequential and/or incidental, arising out of or relating to your use of eConnectDirect®.

_____	Multi-Bank Securities, Inc.
Account Holder	Company
_____	_____
Signature	Signature
_____	Tim Peacock
Name	Name
_____	Senior Vice President
Title	Title

SCHEDULES, EXHIBITS & SUPPORTING DOCUMENTS

SCHEDULE A: AUTHORIZED USERS** (NOTE: The Administrator must be listed)

NAME	TITLE	PHONE	EMAIL

**Permissions, notifications and account access are set and maintained by the administrator upon login. Securities' trading authorization is only permitted to those approved by the account administrator and in confirmation with a submitted resolution of authorized signers

SCHEDULE B: LICENSING FEE(S)

Applicable licensing fees will apply

ALL FEES ARE PAYABLE WITHIN 30 DAYS OF INVOICE AND ARE NON REFUNDABLE;

eConnectDirect® Account Access (Including Securities): \$0 per year

eConnectDirect® CD Listing Services \$Waived per year

Special Notes / Instructions:

You may cancel this service at any time.



**Institutional Suitability Certificate
FINRA RULE 2111
Affirmative Indication by Institution – Exercising Independent Judgment**

In connection with any recommended transaction or investment strategy by a registered broker-dealer, the undersigned acknowledges on behalf of the Institution named below that:

1. *It is an “Institutional Account” as defined in FINRA Rule 4512(c);*

PLEASE CHECK THE APPROPRIATE BOX BELOW

- ☐ (1) a Credit Union with total assets of \$50 Million or more (or any other entity with total assets in excess of \$50 Million). If a Credit Union (or any other entity) has total assets LESS THAN \$50 Million, check Box 4, and provide your most recent Investment Policy;
- ☐ (2) a bank, savings and loan association, insurance company or registered investment company;
- ☐ (3) an investment adviser registered either with the SEC under Section 203 of the Investment Advisers Act or with a state securities commission (or any agency or office performing like functions);
- ☐ (4) MBS will determine suitability (Please provide your most recent Investment Policy)

2. *It (1) is capable of evaluating investment risks independently, both in general and with regard to all transactions and investment strategies involving a security or securities; and (2) will exercise independent judgment in evaluating the recommendations of any broker-dealer or its associated persons, unless it has otherwise notified the broker-dealer in writing;*

3. *MBS will be notified by the Institutional Account if anything in this Certificate ceases to be true;*

4. *He or she is authorized to sign on behalf of the Institutional Account named below.*

By signing this Certificate, the undersigned affirms that the above statements are accurate but does not waive any rights afforded under U.S. federal or state securities laws, including without limitation, any rights under Section 10(b) of the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

This Certificate shall apply with respect to all recommended transactions and investment strategies involving securities that are entered into by the “Institutional Account” named in this Certificate, whether for the account(s) of such Institutional Account or for the account of any beneficial owner that has delegated decision making authority to such Institutional Account.

Institutional Account Name

Signature of Authorized Signatory

Address

Name of Authorized Signatory

City, State, ZIP

Title of Authorized Signatory

U.S. Tax ID / EIN If applicable)

Date

Email Address

Phone

ADDRESS 1000 Town Center, Suite 2300
Southfield, Michigan 48075

2400 East Commercial Boulevard, Suite 812
Ft. Lauderdale, Florida 33308

PHONES 800.967.9045
248.291.1100

800.967.9045

954.351.6930

FAX 248.291.1101

954.351.9197

**Member of FINRA & SIPC; MSRB
REGISTERED A Veteran-Owned
Business**



User Agreement

Contact Information

Primary Point of Contact	Steve LoGrasso	slograsso@mbssecurities.com	(866) 330-0861
Technical Point of Contact	Marti Raymus	mraymus@mbssecurities.com	(888) 857-3956
Senior Vice President	Tim Peacock	tpeacock@mbssecurities.com	(800) 967-9041

Powered by Multi-Bank Securities, Inc.
1000 Town Center, Suite 2300
Southfield, MI 48075
800-967-9052

LICENSING AGREEMENT

This Agreement is between:

Multi-Bank Securities, Inc. (MBS)
1000 Town Center, Suite 2300
Southfield, Michigan 48075

and

City of Franklin

ACCOUNT HOLDER

Finance Dept. City Hall - 109 3rd Ave South (PO BOX 305)

STREET ADDRESS

Franklin, TN 37065

CITY, STATE, ZIP

This contract governs your use of services, ability to post deposit rates, and access to inventory offered by eConnectDirect®, a registered trademark of Multi-Bank Securities, Inc. and related commerce, products and services corresponding to your access to eConnectDirect.com. You may need to execute additional agreements or provide MBS account numbers if you request additional Opt-in Services in conjunction with your unique eConnectDirect® user name and password. "Opt-in Services" refers to additional trading functionality and supportive services provided through eConnectDirect® or Multi-Bank Securities, Inc.

The terms "MBS," "we," "us" and "our" refer to Multi-Bank Securities, Inc. The terms "Subscriber," "you" and "your" refer to the undersigned Account Holder and additional users identified in Schedule A. The term "eConnectDirect® CD" (also known as "Physical CD" or "Listing Service" Deposits) refers to CDs which are transacted directly between the issuing institution and investing entity through eConnectDirect®. The term "Securities," generally refers to all other assets purchased or viewed on eConnectDirect® that are NOT eConnectDirect® CDs. All Securities (ie: Bonds, DTC Eligible CDs) will have a corresponding CUSIP number and funds will be settled into a user selected Securities account (Cash or Delivery Versus Payment "DVP"). If your preferred safekeeping agent, is something other than a Pershing LLC account, originated through Multi-Bank Securities, Inc., delivery and settlement instructions ("DVP Instructions"), must be provided prior to gaining access to security's inventory monitors.

User Access Start Date

Start Date: ____/____/ 2016

Your user access and all other rights under this eConnectDirect® Licensing Agreement will commence on the "Start Date" listed above if we have received from you a signed copy of this agreement and a complete set of all duly executed settlement documents required to purchase or issue a CD or security.

Modification/Cancellation

MBS reserves the right to:

- modify or cancel any feature of eConnectDirect® at any time.
- discontinue user access at anytime for any reason, without penalty, with 30 days written notice, or
- immediately suspend user access at anytime as provided below.

Subscriber reserves the right to:

- discontinue any or all eConnectDirect® services at anytime for any reason, without penalty, by providing written notice to MBS.

All changes to the terms, conditions, fees, representations and warranties related to this agreement will be distributed in writing for signature, email consent or online confirmation. If at any time you find these terms unacceptable and do not agree with them, you can let us know that you would like to discontinue your user access without penalty.

ACCOUNT ADMINISTRATION:

The Account Administrator is responsible for maintaining the account profile and approving/assigning additional users and account access. The additional users need to be identified on Schedule A – Authorized User List. All users will be assigned a unique user name and password and will be required to acknowledge and accept the terms, conditions and licensing agreement pertaining to the use of eConnectDirect® upon initial login.

Account Administrator Name: Russ Truell
 Title: Finance Director
 Phone: (615) 791-1457
 Email: russ.truell@franklintn.gov

Secondary Contact Name: _____
 Title: _____
 Phone: _____
 Email: _____

Licensing/User Fees:

Any applicable licensing fees will be disclosed per Schedule B -Licensing Fee Schedule of this agreement and will be billed annually, payable on the anniversary of the user access start date and are NON-REFUNDABLE. You will not be liable for any increase in licensing fees or new fees related to your access to eConnectDirect® unless you agree to such change in writing or other authenticated means.

MBS is not responsible for any fees incurred or charged in relationship to an eConnectDirect® CD transaction by the issuing bank, settlement/wire fees, safekeeping charges by your securities' custodian or any other fees related to the purchase, issuance, settlement, or safekeeping of products offered through eConnectDirect®. You are responsible for all such fees. Any applicable fees or selling concessions related to the issuance of DTC eligible CDs are disclosed at the time of trade and per the terms of an executed terms agreement and related Brokerage Agreement.

Account Classification and user access: (Additional documentation may need to be submitted depending on your user access request(s))

Institution Classification City _____

User Access

- ☒ Investor
- ☒ Securities
- ☐ Listing Service Deposits (eConnectDirect® CDs) (Exhibit C Required)
- ☐ Issuer
- ☐ DTC Eligible CDs (Brokerage Agreement Required)
- ☐ Listing Service Offerings (eConnectDirect® CDs) (Exhibit C Required)
- ☒ Securities Safekeeping Agent
- ☐ Pershing LLC (Only to be used if originated by Multi-Bank Securities)
- ☒ DVP (Delivery-versus-Payment) (Delivery instructions Required)

Proprietary Rights in the eConnectDirect Software and Database:

Restrictions on Use: SUBSCRIBER AGREES THAT IT WILL NOT PERMIT ANY OTHER PERSON INCLUDING, BUT NOT LIMITED TO, ANY INSTITUTION, BROKER OR BUSINESS OF ANY TYPE, ACCESS TO THE SOFTWARE AND DATABASE.

License Limitations:

This eConnectDirect® Licensing Agreement allows access to eConnectDirect® using a computer and/or web access by a user from any approved browser. Subscriber agrees not to modify, adapt or translate, disassemble, decompile, reverse engineer or otherwise attempt to discover the source code of the software. Subscriber further agrees not to sublicense, assign, transfer, distribute, pledge, lease, rent or share any rights under this license except with prior written permission from MBS.

Transaction Settlements:

Subscriber agrees to pay for, settle on, deliver or make whole on any approved transaction(s) processed through eConnectDirect® or Multi-Bank Securities, Inc. Failure to pay for a purchase, delivery on a sell or settle on an approved and accepted CD issuance, may result in an IMMEDIATE suspension or cancellation of this user agreement.

Immediate Suspension:

MBS may immediately suspend user access and all rights under this agreement if MBS has not received payment of the applicable License Fee within 30 days of invoice or MBS believes the Subscriber has or may violate MBS' proprietary rights or has or may breach any other provision of this agreement.

Warranty Disclaimer / Liability:

Only to the extent permitted by Tennessee law, if applicable - MBS makes no warranty of any kind, express or implied, regarding the timeliness, sequence, accuracy or completeness of data provided on eConnectDirect®. MBS will not be liable for any damages whatsoever, whether direct, indirect, general, special, compensatory, consequential and/or incidental, arising out of or relating to your use of eConnectDirect®.

City of Franklin
Account Holder

Multi-Bank Securities, Inc.
Company

Signature

Signature

Russ Truell
Name

Tim Peacock
Name

Finance Director
Title

Senior Vice President
Title

SCHEDULES, EXHIBITS & SUPPORTING DOCUMENTS

SCHEDULE A: AUTHORIZED USERS** (NOTE: The Administrator must be listed)

NAME	TITLE	PHONE	EMAIL
Russ Truell	Finance Director	(615) 791-1457	russ.truell@franklintn.gov

**Permissions, notifications and account access are set and maintained by the administrator upon login. Securities' trading authorization is only permitted to those approved by the account administrator or in confirmation with a submitted resolution of authorized signers

SCHEDULE B: LICENSING FEE(S)

Applicable licensing fees will apply

ALL FEES ARE PAYABLE WITHIN 30 DAYS OF INVOICE AND ARE NON REFUNDABLE;

eConnectDirect® Account Access (Including Securities): \$ 0.00 per year

eConnectDirect® CD Listing Services \$ N/A per year

Special Notes / Instructions:



**Institutional Suitability Certificate
FINRA RULE 2111
Affirmative Indication by Institution – Exercising Independent Judgment**

In connection with any recommended transaction or investment strategy by a registered broker-dealer, the undersigned acknowledges on behalf of the Institution named below that:

1. *It is an “Institutional Account” as defined in FINRA Rule 4512(c);*

PLEASE CHECK THE APPROPRIATE BOX BELOW

- ☐ (1) a Credit Union with total assets of \$50 Million or more (or any other entity with total assets in excess of \$50 Million). If a Credit Union (or any other entity) has total assets LESS THAN \$50 Million, check Box 4, and provide your most recent Investment Policy;
- ☐ (2) a bank, savings and loan association, insurance company or registered investment company;
- ☐ (3) an investment adviser registered either with the SEC under Section 203 of the Investment Advisers Act or with a state securities commission (or any agency or office performing like functions);
- ☒ (4) MBS will determine suitability (Please provide your most recent Investment Policy)

2. *It (1) is capable of evaluating investment risks independently, both in general and with regard to all transactions and investment strategies involving a security or securities; and (2) will exercise independent judgment in evaluating the recommendations of any broker-dealer or its associated persons, unless it has otherwise notified the broker-dealer in writing;*

3. *MBS will be notified by the Institutional Account if anything in this Certificate ceases to be true;*

4. *He or she is authorized to sign on behalf of the Institutional Account named below.*

By signing this Certificate, the undersigned affirms that the above statements are accurate but does not waive any rights afforded under U.S. federal or state securities laws, including without limitation, any rights under Section 10(b) of the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

This Certificate shall apply with respect to all recommended transactions and investment strategies involving securities that are entered into by the “Institutional Account” named in this Certificate, whether for the account(s) of such Institutional Account or for the account of any beneficial owner that has delegated decision making authority to such Institutional Account.

City of Franklin

Institutional Account Name

City Hall - 109 3rd Ave. South (PO Box 305)

Address

Franklin, TN 37065

City, State, ZIP

62-6000290

U.S. Tax ID / EIN If applicable)

russ.truell@franklinTN.gov

Email Address

Signature of Authorized Signatory

Russ Truell

Name of Authorized Signatory

Finance Director

Title of Authorized Signatory

Date

(615) 791-1457

Phone

ADDRESS 1000 Town Center, Suite 2300
Southfield, Michigan 48075

PHONES 800.967.9045
248.291.1100

FAX 248.291.1101

2400 East Commercial Boulevard, Suite 812
Ft. Lauderdale, Florida 33308

800.967.9045
954.351.6930
954.351.9197

Member of FINRA & SIPC; MSRB
A Veteran-Owned Business

**CITY OF FRANKLIN, TENNESSEE
PROFESSIONAL SERVICES AGREEMENT
COF Contract No. 2016-0322**

THIS PROFESSIONAL SERVICES AGREEMENT ("Agreement") is by and between the City of Franklin, Tennessee, hereinafter referenced as City, and **THE PFM GROUP**, hereinafter referenced as Consultant, who mutually agree as follows:

DECLARATIONS. City desires to retain Consultant to provide engineering, related technical, and other services in connection with City's project hereinafter referenced as Project. The Project is described as follows:

Consultant shall act as financial advisor to the City and will provide, upon request of the City, services related to financial planning, budget, strategic advice and planning, policy development and services related to debt issuance ("Project")

1. **SCOPE OF SERVICES.** Consultant shall provide preliminary engineering and related technical services for the Project in accordance with the SCOPE OF SERVICES. The SCOPE OF SERVICES as found in Attachment A which shall be considered as an integral part hereof.
2. Consultant shall be reimbursed based on the FEE SCHEDULE for the Project based on the detailed Attachment A. The FEE SCHEDULE shall be considered as an integral part hereof.
3. In event of a conflict between this Agreement and the attached document(s), this Agreement shall supersede conflicting terms and conditions.

The Board of Mayor and Aldermen Approved this Agreement on the _____ day of _____ 2016.

TERMS AND CONDITIONS FOR PROFESSIONAL SERVICES

ARTICLE 1. SERVICES. Consultant will:

- 1.1 Act for City in a professional manner, using that degree of care and skill ordinarily exercised by and consistent with standards of competent consultants using the standards in the industry:
- 1.2 Consider all reports to be confidential and distribute copies of the same only to those persons specifically designated by the City.
- 1.3 Perform all services under the general direction of a senior professional employee, licensed and/or registered in the State of Tennessee, when appropriate.
- 1.4 Designate, in writing, the sole Project representative to coordinate with City the Services to be provided, including all contact information.
- 1.5 Unless provided for in the Project Scope of Services (Attachment A), Consultant shall perform all Services with his own forces (employees). Should sub-consultants be proposed to be used in the Project, a listing of said sub-consultants with Services to be performed shall be provided. After approval of this Agreement, no substitute for sub-consultants shall be allowed unless approved by City.
- 1.6 Retain pertinent records relating to the services performed for a period of seven (7) years following the completion of the work; during this period the records shall be available for review by City at all reasonable times.

ARTICLE 2. CITY'S RESPONSIBILITIES. City, or its authorized representative, will:

- 2.1 Provide Consultant with all information regarding the Project, which is available to, or reasonably obtainable by, the City.
- 2.2 Furnish right-of-entry onto the Project site for Consultant's necessary field studies and surveys. Consultant will endeavor to restore the site to its original condition and shall remain solely liable for all damages, costs and expenses, including reasonable attorneys' fees, for failure to make such restoration.
- 2.3 Designate, in writing, the sole Project representative to coordinate with and direct the Consultant, including all contact information.
- 2.4 Guarantee to Consultant that it has the legal capacity to enter into this contract and that sufficient monies are available to fund Consultant's compensation.

ARTICLE 3. GENERAL CONDITIONS.

- 3.1 Consultant, by the performance of services covered hereunder, does not in any way assume, abridge or abrogate any of those duties, responsibilities or authorities customarily vested in other professionals or agencies participating in the Project.

- 3.2 Consultant shall be responsible for the acts or omissions of any party involved in concurrent or subsequent phases of the Project acting upon written instruction issued by the Consultant.
- 3.3 Neither City nor Consultant may assign or transfer its duties or interest in this Agreement without written consent of the other party.
- 3.4 **ALLOCATION OF RISK AND LIABILITY; GENERAL.** Considering the potential liabilities that may exist during the performance of the services of this Agreement, the relative benefits and risks of the Project, and the Consultant's fee for the services rendered, and in consideration of the promises contained in this Agreement, the City and the Consultant agree to allocate and limit such liabilities in accordance with this Article.
- 3.5 **INDEMNIFICATION.** Consultant agrees to indemnify and hold City harmless from and against legal liability for all judgments, losses, damages, and expenses to the extent such judgments, losses, damages, or expenses are caused by Consultant's negligent act, error or omission in the performance of the services of this Agreement. In the event judgments, losses, damages, or expenses are caused by the joint or concurrent negligence of Consultant and City, they shall be borne by each party in proportion to its own negligence.
- 3.5.1 **SURVIVAL.** The terms and conditions of this paragraph shall survive completion of this services agreement.
- 3.6 **LIMITATIONS OF RESPONSIBILITY.** Consultant shall not be responsible for (a) construction means, methods, techniques, sequences, procedures, or safety precautions and programs in connection with the Project unless specifically undertaken in Attachment A, Scope of Services ; (b) the failure of any contractor, subcontractor, Consultant, or other Project participant, not under contract to Consultant, to fulfill contractual responsibilities to City or to comply with federal, state, or local laws, regulations, and codes; or (c) procuring permits, certificates, and licenses required for any construction unless such procurement responsibilities are specifically assigned to Consultant in Attachment A, Scope of Services.

ARTICLE 4. TERMINATION BY THE CITY. The City may terminate this Agreement in accordance with the following terms and conditions:

- 4.1 **Termination for Convenience.** The City may, when in the interests of the City, terminate performance under this Agreement with the Consultant, in whole or in part, for the convenience of the City. The City shall give written notice of such termination to the Consultant specifying when termination becomes effective. The Consultant shall incur no further obligations in connection with the work so terminated, other than warranties and guarantees for completed work and installed equipment, and the Consultant shall stop work when such

termination becomes effective. The Consultant shall also terminate outstanding orders and subcontracts for the affected work. The Consultant shall settle the liabilities and claims arising out of the termination of subcontracts and orders. The City may direct the Consultant to assign the Consultant's right, title and interest under termination orders or subcontracts to the City or its designee. The Consultant shall transfer title and deliver to the City such completed or partially completed work and materials, equipment, parts, fixtures, information and Contract rights as the Consultant has in its possession or control. When terminated for convenience, the Consultant shall be compensated as follows:

- (1) The Consultant shall submit a termination claim to the City specifying the amounts due because of the termination for convenience together with costs, pricing or other data required by the City. If the Consultant fails to file a termination claim within one (1) year from the effective date of termination, the City shall pay the Consultant the amount the City deems the Consultant is due.
- (2) The City and the Consultant may agree to the compensation, if any, due to the Consultant hereunder.
- (3) Absent agreement to the amount due to the Consultant, the City shall pay the Consultant the following amounts:
 - (a) Contract costs for labor, materials, equipment and other services accepted under this Agreement;
 - (b) Reasonable costs incurred in preparing to perform and in performing the terminated portion of the work, and in terminating the Consultant's performance, plus a fair and reasonable allowance for direct job site overhead and earned profit thereon (such profit shall not include anticipated profit or consequential damages); provided however, that if it reasonably appears that the Consultant would have not profited or would have sustained a loss if the entire Agreement would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss, if any;

The total sum to be paid the Consultant under this Section shall not exceed the total Agreement Price, as properly adjusted, reduced by the amount of payments otherwise made, and shall in no event include duplication of payment.

- 4.2 Termination for Cause. If the Consultant does not perform the work, or any part thereof, in a timely manner, supply adequate labor, supervisory personnel or proper equipment or materials, or if it fails to timely discharge its obligations for labor, equipment and materials, or proceeds to disobey applicable law, or otherwise commits a violation of a material provision of this Agreement, then the City, in addition to any other rights it may have against the Consultant or others, may terminate the performance of the Consultant, in whole or in part at the City's sole option, and assume possession of the Project Plans and materials and may complete the work.

In such case, the Consultant shall not be paid further until the work is complete. After Completion has been achieved, if any portion of the Contract Price, as it may be modified hereunder, remains after the cost to the City of completing the work, including all costs and expenses of every nature incurred, has been deducted by the City, such remainder shall belong to the Consultant. Otherwise, the Consultant shall pay and make whole the City for such cost. This obligation for payment shall survive the termination of the Agreement.

In the event the employment of the Consultant is terminated by the City for cause pursuant to this Section and it is subsequently determined by a Court of competent jurisdiction that such termination was without cause, such termination shall thereupon be deemed a Termination for Convenience under this Section and the provisions of Section 4.1 shall apply.

- 4.3 Termination for Non-Appropriation. The City may also terminate this Agreement, in whole or in part, for non-appropriation of sufficient funds to complete or partially complete the Project, regardless of the source of such funds, and such termination shall be on the terms of Section 4.1.
- 4.4 The City's rights under this Section shall be in addition to those contained elsewhere herein or provided by law.

ARTICLE 5. SCOPE OF SERVICES. Consultant shall provide the Services as described in Attachment A, Scope of Services.

5.1 By mutual agreement, this Agreement and scope can be amended by the parties. The scope and fee for any additional tasks or services under such amendment shall be mutually negotiated and agreed to in writing prior to beginning such additional tasks or services.

5.2 **ENVIRONMENTAL RESPONSIBILITY.**

Where drilling/sampling services are involved, the samples obtained from the Project site are the property of the City. Should any of these samples be recognized by the Consultant to be contaminated, the City shall remove them from the Consultant's custody and transport them to a disposal site, all in accordance with applicable government statutes, ordinances, and regulations. For all other samples, the Consultant shall retain them for a sixty (60)-day period following the submission of the drilling/sampling report unless the City directs otherwise; thereafter, the Consultant shall discard the samples in accordance with all federal, state and local laws.

ARTICLE 6. SCHEDULE.

6.1 **TIME OF THE ESSENCE.** The parties agree that time is of the essence with respect to the parties' performance of all provisions of the Agreement.

6.2 Before executing this Agreement, the Consultant shall have prepared and submitted for approval to the City a Completion Schedule for the Project with milestones for the various stages (tasks) of the Services as outlined in the Scope of Services. The Consultant shall submit and obtain the City's approval for any proposed changes to the logic, durations, sequences, or timing of tasks as approved in the Completion Schedule.

6.3 **FORCE MAJEURE.** Neither party will be liable to the other for any delay or failure to perform any of the services or obligations set forth in this Agreement due to causes beyond its reasonable control, and performance times will be considered extended for a period of time equivalent to the time lost because of such delay plus a reasonable period of time to allow the parties to recommence performance of their respective obligations hereunder. Should a circumstance of force majeure last more than ninety (90) days, either party may by written notice to the other terminate this Agreement. The term "force majeure" as used herein shall mean the following: acts of God; strikes, lockouts or other industrial disturbances; acts of public enemies; orders or restraints of any kind of the government of the United States or of the State or any of their departments, agencies or officials, or any civil or military authority; insurrections, riots, landslides, earthquakes, fires, storms, tornadoes, droughts, floods, explosions, breakage or accident to

machinery, transmission pipes or canals; or any other cause or event not reasonably within the control of either party.

- 6.4 Should City request changes in the scope, extent, or character of the Project, the fee and the time of performance of Consultant's Services as indicated in Attachment A shall be adjusted equitably.

ARTICLE 7. USE OF DOCUMENTS, DATA.

- 7.1 All Documents, including, but not limited to, reports, drawings, specifications, and computer software prepared by Consultant pursuant to this Agreement are instruments of service in respect to the Project. Consultant shall retain an ownership and property interest therein (including the right of reuse at the discretion of the Consultant) whether or not the Project is completed.

7.1.1 **USE OF DATA SYSTEMS:** Ownership, property interests and proprietary rights in data systems used by Consultant do not extend to the data created by or supplied to Consultant by the City; all rights to that data (including derivative or hidden data such as metadata) shall vest solely in City at the moment of creation.

7.1.2 **DISCLOSURE OF DOCUMENTS/DATA.** City may be required to disclose documents or data under state or federal law. City shall notify Consultant if a request for data or documents has been made and shall give Consultant a reasonable opportunity under the circumstances to respond to the request by redacting proprietary or other confidential information. Consultant waives any right to confidentiality of any document, e-mail or file it fails to clearly mark on each page as confidential or proprietary. In exchange, Consultant agrees to indemnify, defend, and hold harmless City for any claims by third parties relating thereto or arising out of (i) the City's failure to disclose such documents or information required to be disclosed by law, or (ii) the City's release of documents as a result of City's reliance upon Consultant representation that materials supplied by Consultant (in full or redacted form) do not contain trade secrets or proprietary information, provided that the City impleads Consultant and Consultant assumes control over that claim.

- 7.2 By execution of this Agreement, Consultant and his sub-consultant(s) grant the City a royalty-free, perpetual, irrevocable, and assignable license to use any and all intellectual property interest Consultant or his sub-consultant(s) possess to any drawings, details, specifications, documents, and other information created before each of their first involvement with the Project and subsequently incorporated into the Project's documents. City-furnished data that may be relied upon by Consultant is limited to the printed copies that are delivered to the

- Consultant pursuant to Article 2 of this Agreement. Any copyrighted electronic files furnished by City shall be used by Consultant only for the Project as described herein. City's posting or publication of such documents created by Consultant for City shall constitute fair use and shall not constitute an infringement of Consultant's copyright, if any.
- 7.3 Documents that may be relied upon by City are limited to the printed copies (also known as hard copies) that are signed or sealed by the Consultant. Files in electronic media format of text, data, graphics, or of other types that are furnished by Consultant to City are only for convenience of City, unless the delivery of the Project in electronic media format has been dictated in Attachment A, Scope of Services. Any conclusion or information obtained or derived from electronic files provided for convenience will be at the user's sole risk.
- 7.4 Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within sixty (60) days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the party delivering the electronic files. Unless stated otherwise herein, Consultant shall not be responsible to maintain documents stored in electronic media format after acceptance by City.
- 7.5 When transferring documents in electronic media format, Consultant makes no representations as to long term compatibility, usability, or readability, of documents resulting from the use of software application packages, operating systems, or computer hardware differing from that as required of, and used by, Consultant at the beginning of this Project.
- 7.6 City may make and retain copies of Documents for information and reference in connection with use on the Project by the City, or his authorized representative. Such Documents are not intended or represented to be suitable for reuse by City or others on extensions of the Project or on any other project. Any such reuse or modifications without written verification or adaptation by Consultant, as appropriate for the specific purpose intended, will be at City's sole risk and without liability or legal exposure to the Consultant or to Consultant's sub-consultants.
- 7.7 If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- 7.8 Any verification or adaptation of the Documents for extensions of the Project or for any other project will entitle Consultant to further compensation at rates to be agreed upon by City and Consultant.

ARTICLE 8. INSURANCE.

- 8.1 During the performance of the Services under this Agreement, Consultant shall maintain the following minimum insurance:
- a) General Liability Insurance with a combined single limit of \$1,000,000 per occurrence and \$2,000,000 annual aggregate.
 - b) Automobile Liability Insurance with a combined single limit of \$1,000,000 for each person and \$1,000,000 for each accident.
 - c) Workers' Compensation Insurance Coverage A in accordance with statutory requirements and Coverage B, Employer's Liability Insurance, with a limit of \$500,000 for each occurrence.
 - d) Professional Liability Insurance with a limit of \$1,000,000 annual aggregate.
- 8.2 Consultant shall add the City an additional insured on all policies unless otherwise prohibited.
- 8.3 Consultant shall, upon execution of this Agreement, furnish City certificates of insurance, which shall include a provision that such insurance shall not be canceled without at least thirty (30) days' written notice to City.
- 8.4 No insurance, of whatever kind or type is to be considered as in any way limiting other parties' responsibility for damages resulting from their activities in the execution of the Project. City agrees to include, or cause to be included, in the Project's construction contract, such requirements for insurance coverage and performance bonds by the Project's construction contractor as City deems adequate to indemnify City, Consultant, and other concerned parties against claims for damages and to insure compliance of work performance and materials with Project requirements.

ARTICLE 9. PAYMENT.

- 9.1 City will pay Consultant for services and expenses in accordance with the Fee Schedule proposal submitted for the Project as part of the Scope of Services. Consultant's invoices will be presented at the completion of the work or monthly and will be payable upon receipt. Payment is due upon presentation of invoice and is past due thirty (30) days from invoice date. City shall give prompt written notice of any disputed amount and shall pay the remaining amount.
- 9.2 Consultant shall be paid in full for all services under this Agreement, including City authorized overruns of the Project budget or unforeseen need for Consultant's services exceeding the original Scope of Services.
- 9.3 **TRAVEL; EXPENSES**
City shall reimburse reasonable expenses, including travel and meals, when specified in the Scope of Services, but only in accordance with the City's Travel and Expense Policy and Procedures Manual. The maximum amount will be applied as of the date of travel and as listed

in the per diem reimbursement rates on the “CONUS” website developed by the United States General Services Administration, located at www.gsa.gov [click on ‘per diem rates’ under the ‘etools’ category].

ARTICLE 10. MISCELLANEOUS PROVISIONS

- 10.1 **EQUAL EMPLOYMENT OPPORTUNITY.** In connection with this Agreement and the Project, City and Consultant shall not discriminate against any employee or applicant for employment because of race, color, sex, national origin, disability or marital status. City and Consultant will take affirmative action to ensure that the contractor used for the Project does not discriminate against any employee and employees are treated during employment without regard to their race, age, religion, color, gender, national origin, disability or marital status. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination, rates of pay or other forms of compensation; and selection for training, including apprenticeship.
- 10.1.1 Consultant shall insert the foregoing provision in all contracts relating to this Project.
- 10.2 **TITLE VI – CIVIL RIGHTS ACT OF 1964.** City and Consultant shall comply with all the requirements imposed by Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d), 49 C.F.R., Part 21, and related statutes and regulations.
- 10.2.1 Consultant shall insert the foregoing provision in all contracts relating to this Project.
- 10.3 **NO THIRD PARTY RIGHTS CREATED.** City and Consultant each binds itself and its successors, executors, administrators, permitted assigns, legal representatives and, in the case of a partnership, its partners, to the other party to this Agreement and to their successors, executors, administrators, permitted assigns, legal representatives and partners of such other party in respect to all provisions of this Agreement. The Services provided for in this Agreement are for the sole use and benefit of City and Consultant. Nothing in this Agreement shall be construed to give any rights or benefits to anyone other than City and Consultant.
- 10.4 **WARRANTIES/LIMITATION OF LIABILITY/WAIVER.** City reserves all rights afforded to local governments under law for all general and implied warranties. City does not waive any rights it may have to all remedies provided by law and therefore any attempt by Consultant to limit its liability shall be void and unenforceable.

ARTICLE 11. EXTENT OF AGREEMENT:

- 11.1 **APPLICABLE LAW/CHOICE OF FORUM AND VENUE.** This Agreement is made under and will be construed in accordance with the laws of the State of Tennessee without giving effect to that state's choice of law rules. The parties' choice of forum and venue shall be exclusively in the courts of Williamson County, Tennessee. Any provision of this Agreement held to violate a law or regulation shall be deemed void, and all remaining provisions shall continue in force.
- 11.2 **ENTIRE AGREEMENT.** This Agreement, including these terms and conditions, represent the entire Agreement between City and Consultant for this Project and supersedes all prior negotiations, representations or agreements, written or oral. This Agreement may be amended only by written instrument signed by City and Consultant.

ARTICLE 12. DISPUTE RESOLUTION, BREACH.

- 12.1 If a dispute should arise relating to the performance of or payment for the Services under this Agreement, the aggrieved party shall notify the other party of the dispute within a reasonable time after such dispute arises. During the pendency of any dispute, the parties shall continue diligently to fulfill their respective obligations hereunder. No arbitration or mediation shall be required as a condition precedent to filing any legal claim arising out of or relating to this Agreement. No arbitration or mediation shall be binding.
- 12.2 **BREACH.** Upon deliberate breach of the Agreement by either party, the non-breaching party shall be entitled to terminate the Agreement with notice, with all of the remedies it would have in the event of termination, and may also have such other remedies as it may be entitled to in law or in equity.

ARTICLE 13. SURVIVAL.

The provisions contained in this Professional Services Agreement shall survive the completion of or any termination of the Agreement, contract or other document to which it may accompany or incorporate by reference or which subsequently may be modified, unless expressly excepted from this Article upon consent of both parties.

BY: _____
Consultant's Signature
TITLE: _____
Date: _____

BY: _____
Dr. Ken Moore
Mayor
Date: _____

Approved as to Form By:

Shauna R. Billingsley, City Attorney



Attachment A

Suite 160
530 Oak Court Drive
Memphis, TN 38117
901.682.8356

October 19, 2016

Mr. Russell Truell
City of Franklin, TN
109 3rd Avenue South
Franklin, TN 37064

Dear Mr. Truell:

The purpose of this letter (this "Engagement Letter") is to confirm and memorialize our agreement that PFM Financial Advisors, LLC ("PFM") will act as financial advisor to the City of Franklin, TN (the "Client"), pursuant to that certain Resolution of the City of Franklin, TN to be dated October 25, 2016 (the "Authorizing Resolution"). The City may also refer to this Engagement Letter or agreement with PFM as Contract Number 2016-0322. PFM will provide, upon request of the Client, services related to financial planning, budget and strategic advice and planning, policy development and services related to debt issuance, as applicable and set forth in Exhibit A to this Engagement Letter. Most tasks requested by Client will not require all services provided for in Exhibit A and as such the specific scope of services for such task shall be limited to just those services required to complete the task. Any material changes in or additions to the scope of services described in Exhibit A shall be promptly reflected in a written supplement or amendment to this Engagement Letter. Upon request of Client, PFM or an affiliate of PFM may agree to additional services to be provided by PFM or an affiliate of PFM, by a separate agreement between the Client and PFM or its respective affiliate.

MSRB Rule G-42 requires that municipal advisors make written disclosures to its Clients of all material conflicts of interest and certain legal or disciplinary events. Such disclosures are provided in PFM's Disclosure Statement delivered to Client together with this Engagement Letter.

PFM is a registered municipal advisor with the Securities and Exchange Commission (the "SEC") and the Municipal Securities Rulemaking Board (the "MSRB"), pursuant to the Securities Exchange Act of 1934 Rule 15Ba1-2. If Client has designated PFM as its independent registered municipal advisor ("IRMA") for purposes of SEC Rule 15Ba1-1(d)(3)(vi) (the "IRMA exemption"), then services provided pursuant to such designation shall be the services described in Exhibit A hereto, subject to any limitations described thereon. PFM shall not be responsible for, or have any liability in connection with, verifying that PFM is independent from any other party seeking to rely on the IRMA exemption (as such independent status is required pursuant to the IRMA exemption, as interpreted from time to time by the SEC). Client acknowledges and agrees that any reference to PFM, its personnel and its role as IRMA, including in the written representation of Client required under SEC Rule 15Ba1-1(d)(3)(vi)(B) shall be subject to prior approval by PFM. Client further agrees not to represent that PFM is Client's IRMA with respect to any aspect of a municipal securities issuance or municipal financial product, outside of the scope of services without PFM's prior written consent.



For the services described in Exhibit A, PFM's professional fees will be paid as provided in Exhibit B. In addition to fees for services, PFM will be reimbursed for necessary, reasonable, and documented out-of-pocket expenses incurred, including travel, meals, lodging, telephone, mail, and other ordinary cost and any actual extraordinary cost for graphics, printing, data processing and computer time which are incurred by PFM. Upon request of Client, documentation of such expenses will be provided.

This Engagement Letter shall be effective from October 1, 2016 and will extend automatically and shall remain in effect unless canceled in writing by either party upon thirty (30) days written notice to the other party. PFM shall not assign any interest in this Engagement Letter or subcontract any of the work performed under this Engagement Letter without the prior written consent of the Client; provided that upon notice to Client, PFM may assign this Engagement Letter or any interests hereunder to a municipal advisor entity registered with the SEC that directly or indirectly controls, is controlled by, or is under common control with, PFM.

All information, data, reports, and records ("Data") in the possession of the Client or any third party necessary for carrying out any services to be performed under this Engagement Letter shall be furnished to PFM and the Client shall, and shall cause its agent(s) to, cooperate with PFM in its conduct of reasonable due diligence in performing the services. To the extent Client requests that PFM provide advice with regard to any recommendation made by a third party, Client will provide to PFM written direction to do so as well as any Data it has received from such third party relating to its recommendation. Client acknowledges and agrees that while PFM is relying on the Data in connection with its provision of the services under this Engagement Letter, PFM makes no representation with respect to and shall not be responsible for the accuracy or completeness of such Data.

All notices given under this Engagement Letter will be in writing, sent by registered United States mail, with return receipt requested, addressed to the party for whom it is intended, at the addresses on the first page of this Engagement Letter.

All materials, except functioning or dynamic financial models, prepared by PFM pursuant exclusively to this Engagement Letter will be the property of the Client. Subject to the preceding exception, upon termination of this Engagement Letter, PFM will deliver to the Client copies of any and all material pertaining to this Engagement Letter.

The following professional employees of PFM will provide the services set forth in this Engagement Letter: Ricardo Callender, Lisa Daniel, Lauren Lowe, Olivia Menick, Micah Wasserman, Kyle Wright, Nick Yatsula. PFM may, from time to time, supplement or otherwise amend team members. The Client has the right to request, for any reason, PFM to replace any member of the advisory staff. Should the Client make such a request, PFM will promptly suggest a substitute for approval by the Client.

PFM will maintain insurance coverage with policy limits not less than as stated in Exhibit C. Except to the extent caused by willful misconduct, bad faith, gross negligence or reckless



disregard of obligations or duties under this Engagement Letter on the part of PFM or any of its associated persons, neither PFM nor any of its associated persons shall have liability to any person for any act or omission in connection with performance of its services hereunder, or for any error of judgment or mistake of law, or for any loss arising out of any issuance of municipal securities, any municipal financial product or any other financial product or investment, or for any financial or other damages resulting from Client's election to act or not to act, as the case may be, contrary to or, absent negligence on the part of PFM or any of its associated persons, upon any advice or recommendation provided by PFM to Client.

PFM, its employees, officers and representatives at all times will be independent contractors and will not be deemed to be employees, agents, partners, servants and/or joint ventures of Client by virtue of this Engagement Letter or any actions or services rendered under this Engagement Letter.

This Engagement Letter and the Authorizing Document represents the entire agreement between Client and PFM.

Sincerely,
PFM FINANCIAL ADVISORS LLC

A handwritten signature in cursive script that reads "Lauren S. Lowe".

Lauren S. Lowe
Managing Director



EXHIBIT A
SCOPE OF SERVICES

1. Services Related to Debt Transactions (Includes short term financings, notes, loans, letters of credit, line of credit and bonds); provided that if the transaction is competitive, the services of the financial advisor will be modified to reflect that process. Upon the request of the Client:

- Analyze financial and economic factors to determine if the issuance of bonds is appropriate.
- Develop a financing plan in concert with Client's staff which would include recommendations as to the timing and number of series of bonds to be issued.
- Assist the Client by recommending the best method of sale, either as a negotiated sale, private placement or a public sale. In a public sale, make recommendation as to the determination of the best bid. In the event of a negotiated sale, assist in the solicitation, review and evaluation of any investment banking proposals, and provide advice and information necessary to aid in such selection.
- Advise as to the various financing alternatives available to the Client.
- Develop alternatives related to debt transaction including evaluation of revenues available, maturity schedule and cash flow requirements.
- Evaluate benefits of bond insurance and/or security insurance for debt reserve fund.
- If appropriate, develop credit rating presentation and coordinate with the Client the overall presentation to rating agencies.
- Review underwriter's proposals and submit a written analysis of same to the Client.
- Assist the Client in the procurement of other services relating to debt issuance such as printing, paying agent, registrar, etc.
- Identify key bond covenant features and advise as to the financial consequences of provisions to be included in bond indentures, resolutions or other governing documents regarding security, creation of reserve funds, flow of funds, redemption provisions, additional parity debt tests, etc.; review and comment on successive drafts of bond governing documents.
- Review the requirements and submit analysis to bond insurers, rating agencies and other professionals as they pertain to the Client's obligation.



- Review the terms, conditions and structure of any proposed debt offering undertaken by the Client and provide suggestions, modifications and enhancements where appropriate and necessary to reflect the constraints or current financial policy and fiscal capability.
- Coordinate with Client's staff and other advisors as respects the furnishing of data for offering documents, it being specifically understood that PFM is not responsible for the inclusion or omission of any material in published offering documents.
- As applicable, advise the Client on the condition of the bond market at the time of sale, including volume, timing considerations, competing offerings, and general economic considerations.
- Assist and advise the Client in negotiations with investment banking groups regarding fees, pricing of the bonds and final terms of any security offering, and make recommendations regarding a proposed offering to obtain the most favorable financial terms based on existing market conditions.
- Arrange for the closing of the transaction including, but not limited, to bond printing, signing and final delivery of the bonds.



EXHIBIT B
COMPENSATION FOR SERVICES

1. Fixed Rate Transaction Fees (Competitive and Negotiated)

The compensation for this transaction will be a flat fee of \$35,000.

2. Non-Transaction Related Compensation

PFM's Non-Transaction related compensation will be based on PFM's Contract Number 2010-0136 Amendment One with the Client.

3. Expenses

Out-of-pocket expenses includes expenses incurred, including travel, meals, lodging, telephone, mail, and other ordinary cost and any actual extraordinary cost for graphics, printing which are incurred by PFM. Appropriate documentation will be provided to the Client.



EXHIBIT C
INSURANCE

PFM Financial Advisors LLC (“PFMFA”) has a complete insurance program, including property, casualty, comprehensive general liability, automobile liability and workers compensation. PFMFA maintains professional liability and fidelity bond coverages which total \$25 million and \$10 million, respectively. PFMFA also carries a \$10 million cyber liability policy.

Our Professional Liability policy is a “claims made” policy and our General Liability policy claims would be made by occurrence.

Deductibles/SIR:

Automobile \$250 comprehensive & \$500 collision
Cyber Liability \$50,000
General Liability \$0
Professional Liability (E&O) \$1,000,000
Financial Institution Bond \$75,000

Insurance Company & AM Best Rating

Professional Liability (E&O)	Indian Harbor Insurance Company; and Continental Casualty Company; (both are A)
Financial Institution Bond	Federal Insurance Company; (A++)
Cyber Liability	Indian Harbor Insurance Company (A)
General Liability	Great Northern Ins. Company; (A++)
Automobile Liability	Federal Insurance Company
Excess /Umbrella Liability	Federal Insurance Company
Workers Compensation & Employers Liability	Pacific Indemnity Company; (A++)

RESOLUTION 2016-76

A RESOLUTION DECLARING THE INTENT OF THE CITY OF FRANKLIN TO REIMBURSE ITSELF FOR CERTAIN EXPENDITURES RELATING TO PUBLIC WORKS PROJECTS WITH THE PROCEEDS OF BONDS OR OTHER DEBT OBLIGATIONS TO BE ISSUED BY THE CITY OF FRANKLIN, TENNESSEE IN AN APPROXIMATE AMOUNT OF \$75,000,000.

WHEREAS, it is the intention of the Board of Mayor and Aldermen (the "Governing Body") of the City of Franklin, Tennessee (the "Municipality") to provide funds for the (i) design, construction of and improvements to streets, roads, sidewalks, signalization, and signage, and the acquisition of rights-of-way in connection therewith; (ii) acquisition of land and site development for and the design, construction, renovation, repair and equipping of parks and fire stations; (iii) construction and improvements to public buildings and public facilities; (iv) construction, equipping and acquiring a public safety communications system and (iv) payment of legal, fiscal, administrative, architectural and engineering costs incident thereto (the "Projects"); and

WHEREAS, it is the intention of the Governing Body to pay all or a portion of the costs of the Projects by the sale of general obligation bonds (the "Bonds") or other debt obligations of the Municipality; and

WHEREAS, it is anticipated that it will be necessary to make expenditures in payment of costs of the Projects prior to the issuance of the Bonds or other debt obligations of the Municipality; and

WHEREAS, the Governing Body wishes to state its intentions with respect to reimbursements for said expenditures in accordance with the requirements of final regulations applicable thereto promulgated by the United States Department of the Treasury.

NOW, THEREFORE, BE IT RESOLVED by the Board of Mayor and Aldermen of the City of Franklin, Tennessee, as follows:

Section 1. It is reasonably expected that the Municipality will reimburse itself for certain expenditures in an amount not to exceed \$75,000,000 made by the Municipality in connection with the Projects. The Municipality intends to reimburse all such expenditures through issuance of the Bonds or other debt obligations of the Municipality. The expenditures made prior to the issuance of the Bonds or other debt obligations of the Municipality are expected to be paid from the Municipality's General Fund and reimbursement shall be made to said fund. Debt service on the Bonds or other debt obligations issued for the purposes herein is expected to be paid from unlimited ad valorem taxes to be levied on all taxable property within the corporate limits of the Municipality.

Section 2. The approximate principal amount of the Bonds, or other debt obligations of the Municipality, are expected to be issued to finance the Projects is \$75,000,000.

Section 3. This resolution shall be placed in the minutes of the Governing Body and shall be made available for inspection by the general public at the office of the City Recorder.

Section 4. It is the Municipality's reasonable expectation that it will reimburse the original expenditures for the Project, or a portion thereof, from the proceeds of the Bonds or other debt obligations of the Municipality.

Section 5. This resolution constitutes a declaration of official intent under Treas. Reg. §1.150-2.

Section 6. All resolutions or parts of resolutions in conflict herewith are hereby repealed, and this resolution shall be in immediate effect from and after its adoption.

Adopted and approved this 22nd day of November, 2016.

CITY OF FRANKLIN, TENNESSEE

Dr. Ken Moore
Mayor

ATTEST:

Eric S. Stuckey
City Administrator and Recorder

20694095.2

RESOLUTION 2016-81

A RESOLUTION AUTHORIZING FUNDING OF THE CITY OF FRANKLIN'S PORTION OF THE COUNTY-WIDE PUBLIC SAFETY RADIO SYSTEM PROJECT AND SUPPORT FOR THE CONTRACTUAL AGREEMENT AND ADDENDUM BETWEEN THE WILLIAMSON COUNTY JOINT COMMUNICATIONS NETWORK AUTHORITY AND MOTOROLA SOLUTIONS, INC.

WHEREAS, the Board of Mayor and Aldermen of the City of Franklin, Tennessee, desires to facilitate the improvement of existing emergency communication technologies used by the City of Franklin; and

WHEREAS, the City has joined the City of Brentwood and the County of Williamson to effect a regional system that is superior to the existing system; and

WHEREAS, the City of Franklin, City of Brentwood, and Williamson County entered into an Interlocal Agreement (COF Contract No. 2014-0081) in August of 2014 to create the Williamson County Joint Communications Network Authority with the expressed goal of building a county-wide public safety radio system; and

WHEREAS, the Williamson County Joint Communications Network Authority working with public safety and communications technology experts has thoroughly vetted a project proposal from Motorola Solutions, Inc.; and

WHEREAS, the Board of Mayor and Aldermen have identified the County-wide radio project as a component of its Phase I projects in the 2017-26 Capital Investment Program; and

WHEREAS, the Board of Mayor and Aldermen desires to express its intent to fund the City's portion of the cost of the System Improvements and to approve moving forward with the Countywide Radio system project.

NOW, THEREFORE, BE IT RESOLVED, by the Board of Mayor and Aldermen for the City of Franklin as follows:

- Section 1.** Funding of the City of Franklin's portion of the County-wide Public Safety Radio System Project of \$4,517,000 is hereby authorized and City Administrator working with staff and the City's financial advisor is authorized to develop and recommend a financing strategy for this obligation.
- Section 2.** The Board of Mayor and Aldermen hereby expresses its support for the Williamson County Joint Communication Network Authority to enter into appropriate contractual agreements with Motorola Solutions, Inc. for the implementation of the County-wide Public Safety Radio System Project.

Section 3. This Resolution shall be effective upon adoption.

IT IS SO RESOLVED AND DONE on this ___ day of _____, 2016.

ATTEST:

CITY OF FRANKLIN, TENNESSEE

By:_____

Eric S. Stuckey
City Administrator

By:_____

Dr. Ken Moore
Mayor

Approved as to Form:

Shauna Billingsley
City Attorney



October 24, 2016

Mr. John Allman
Director, Information Technology
City of Brentwood, Tennessee
615-371-7000

Reference: Motorola Proposal for the WCJCA

Dear Mr. Allman,

Tusa Consulting Services (TCS) is pleased to provide the Williamson County Joint Communications Authority with a recommendation for purchase of the Motorola proposal for a Public Safety Regional Radio Communications System (dated October 17, 2016) and subsequent Addendum received October 19, 2016. The cost breakout by municipality was as follows:

Total printed in proposal	\$30,613,024.00
Large System Discount	-\$8,118,024.00
Grand Total For System	\$22,495,000.00
System Upgrade Agreement (SUA II) Years 2-7	\$1,591,750.00
Post Warranty Maintenance Services Years 2-5	\$2,255,277.00
Grand Total For System + SUA II + Maintenance	\$26,342,027.00
Optional critical building coverage guarantee	\$1,300,000.00 (additional)
City of Franklin (with discount, no SUA II, no Maintenance)	\$4,517,449.00
City of Brentwood (with discount, no SUA II, no Maintenance)	\$4,041,598.00
Williamson County (with discount, no SUA II, no Maintenance)	\$13,935,953.00

Our behalf of the TCS team, we are excited by reaching this milestone and are looking forward to the implementation of the Public Safety Regional Radio Communications System.

Sincerely,

Dominic F. Tusa
nick.tusa@tusaconsulting.com
75757 Highway 1082
Covington, LA 70435
(985) 249-6467 Office
www.tusaconsulting.com

FRANKLIN PRICING SUMMARY

36B.1 CITY OF FRANKLIN PRICING SUMMARY

Table 36-1: Franklin Summary Pricing

Sub System	Unit Total
Franklin SIM Liberty Pike	\$931,487
Franklin SIM Long Lane	\$949,936
Franklin SIM Lula Lane	\$946,540
Franklin Dispatch	\$227,281
Franklin 7.16 Upgrade	\$474,329
Franklin NM & Spares	\$336,882
Franklin Subs	\$1,558,226
1/3 of DSR	\$435,070
1/3 of Geo Redundant Prime	\$360,908
Tennessee State Contract Price	\$6,220,659
Large System Discount	\$(1,703,210)
GRAND TOTAL	\$4,517,449

Maintenance Services Include:

- Dispatch with Network Monitoring and Technical Support.
- Infrastructure Repair with Advanced Replacement.
- On-Site Support.
- Network Preventative Maintenance.
- Up to three microwave software updates when available.
- One Hardware Replacement for MPLS Equipment.

Table 36-2: Post Warranty Maintenance Services Pricing

Warranty	Year 2	Year 3	Year 4	Year 5	Total
	\$136,039	\$136,039	\$136,039	\$152,713	\$560,830

Subscriber Maintenance 5th Year

Includes 1/3 of the DSR and Geo Redundant Prime Site Maintenance



BRENTWOOD PRICING SUMMARY

36C.1 CITY OF BRENTWOOD PRICING SUMMARY

Table 36-1: Brentwood Summary Pricing

Sub System	Unit Total
Brentwood SIM RF New	\$1,609,604
Brentwood SIM RF Existing	\$344,282
Brentwood Dispatch	\$715,171
Brentwood NM & Spares	\$349,052
Brentwood Subs	\$1,698,654
1/3 of DSR	\$435,070
1/3 of Geo Redundant Prime	\$360,908
Tennessee State Contract Price	\$5,512,742
Large System Discount	\$(1,471,144)
GRAND TOTAL	\$4,041,598

Maintenance Services Include:

- Dispatch with Network Monitoring and Technical Support.
- Infrastructure Repair with Advanced Replacement.
- On-Site Support.
- Network Preventative Maintenance.
- Up to three microwave software updates when available.
- One Hardware Replacement for MPLS Equipment.

Table 36-2: Post Warranty Maintenance Services Pricing

Warranty	Year 2	Year 3	Year 4	Year 5	Total
	\$104,742	\$104,742	\$104,742	\$121,166	\$435,392

Subscriber Maintenance 5th Year

Includes 1/3 of the DSR and Geo Redundant Prime Site Maintenance

WILLIAMSON COUNTY PRICING SUMMARY

36D.1 WILLIAMSON COUNTY PRICING SUMMARY

Table 36-1: Williamson County Pricing Summary

Sub System	Unit Total
WC SIM Fairview TDOT	\$1,185,247
WC SIM Landfill	\$1,500,269
WC SIM MTEMC Fairview	\$1,147,450
WC SIM Nolensville	\$2,028,969
WC SIM Pull Tight	\$1,254,236
WC SIM Sneed WT	\$1,341,706
WC SIM Century Ct	\$263,008
WC SIM Fairview WC	\$374,035
WC SIM Barking Dog	\$1,335,552
WC SIM Heritage	\$1,026,603
WC Dispatch	\$461,766
WC NM & Spares	\$494,786
WC Subs	\$5,670,017
1/3 of DSR	\$435,070
1/3 of Geo Redundant Prime	\$360,908
Tennessee State Contract Price	\$18,879,623
Large System Discount	\$(4,943,670)
GRAND TOTAL	\$13,935,953

Maintenance Services Include:

- Dispatch with Network Monitoring and Technical Support.
- Infrastructure Repair with Advanced Replacement.
- On-Site Support.
- Network Preventative Maintenance.
- Up to three microwave software updates when available.
- One Hardware Replacement for MPLS Equipment.

Table 36-2: Post Warranty Maintenance Services Pricing

Warranty	Year 2	Year 3	Year 4	Year 5	Total
	\$301,900	\$301,900	\$301,900	\$353,355	\$1,259,055

Subscriber Maintenance 5th Year

Includes 1/3 of the DSR and Geo Redundant Prime Site Maintenance

Communications System Agreement

Motorola Solutions, Inc. ("Motorola") and Williamson County Joint Communications Network Authority (the "Authority" or "WCJCNA" or "Customer") enter into this Communications System Agreement "Agreement," for the acquisition of a county-wide 800 MHz radio system pursuant to which Customer will purchase and Motorola will sell the System, as described below. Motorola and Customer acknowledge and agree that in entering into this Agreement the Customer is facilitating acquisition of the System in accord with that certain Interlocal Agreement COF Contract No. 2014-0081 ("ILA") executed by and between Williamson County and the Cities of Franklin and Brentwood ("ILA Members") wherein said ILA was executed, among other purposes, for the purpose of developing, purchasing and implementing the System. Motorola and Customer may be referred to individually as a "Party" and collectively as the "Parties." The Parties understand and acknowledge that the ILA Members have ratified and executed the terms of this ILA, but that the Authority shall remain the Customer hereunder. For good and valuable consideration, the Parties agree as follows:

Section 1 EXHIBITS

The exhibits listed below are incorporated into and made a part of this Agreement. In interpreting this Agreement and resolving any ambiguities, the main body of this Agreement takes precedence over the exhibits and any inconsistency between Exhibits A through F will be resolved in their listed order.

Exhibit A	Software License Agreement
Exhibit B	Payment Schedule
Exhibit C	Motorola Proposal Addendum dated October 19, 2016
Exhibit D	Motorola's Proposal dated September 1, 2016.
Exhibit E	Service Terms and Conditions, if applicable
Exhibit F	System Acceptance Certificate

Section 2 DEFINITIONS

Capitalized terms used in this Agreement have the following meanings:

- 2.1. "Acceptance Tests" means those tests described in the Acceptance Test Plan.
- 2.2. "Beneficial Use" means when Customer first uses the System or a Subsystem for operational purposes (excluding training or testing).
- 2.3. "Confidential Information" means any information that is disclosed in written, graphic, verbal, or machine-recognizable form, and is marked, designated, or identified at the time of disclosure as being confidential or its equivalent; or if the information is in verbal form, it is identified as confidential at the time of disclosure and is confirmed in writing within thirty (30) days of the disclosure. Confidential Information does not include any information that: is or becomes publicly known through no wrongful act of the receiving Party; is already known to the receiving Party without restriction when it is disclosed; is or becomes, rightfully and without breach of this Agreement, in the receiving Party's possession without any obligation restricting disclosure; is independently developed by the receiving Party without breach of this Agreement; is explicitly approved for release by written authorization of the disclosing Party; or is released pursuant to law.
- 2.4. "Contract Price" means the price for the System, Subscribers and SUAll, excluding applicable sales or similar taxes and freight charges.
- 2.5. "Effective Date" means that date upon which the last Party executes this Agreement.
- 2.6. "Equipment" means the equipment that Customer purchases from Motorola under this Agreement. Equipment that is part of the System is described in the Equipment List.

- 2.7. "Force Majeure" means an event, circumstance, or act of a third party that is beyond a Party's reasonable control (e.g., an act of God, an act of the public enemy, an act of a government entity, strikes or other labor disturbances, hurricanes, earthquakes, fires, floods, epidemics, embargoes, war, and riots).
- 2.8. "Infringement Claim" means a third party claim alleging that the Equipment manufactured by Motorola or the Motorola Software infringes upon the third party's United States patent or copyright.
- 2.9. "Motorola Software" means Software that Motorola or its affiliated company owns.
- 2.10. "Non-Motorola Software" means Software that another party owns.
- 2.11. "Open Source Software" (also called "freeware" or "shareware") means software that has its underlying source code freely available to evaluate, copy, and modify.
- 2.12. "Proprietary Rights" means the patents, patent applications, inventions, copyrights, trade secrets, trademarks, trade names, mask works, know-how, and other intellectual property rights in and to the Equipment and Software, including those created or produced by Motorola under this Agreement and any corrections, bug fixes, enhancements, updates or modifications to or derivative works from the Software whether made by Motorola or another party.
- 2.13. "Software" means the Motorola Software and Non-Motorola Software, in object code format that is furnished with the System or Equipment.
- 2.14. "Specifications" means the functionality and performance requirements that are described in Exhibit C.
- 2.15. "SUA2" means System Upgrade Agreement 2, as more fully described in Motorola's proposal.
- 2.16. "Subsystem" means a major part of the System that performs specific functions or operations. Subsystems are described in Exhibit D as amended by Exhibit C.
- 2.17. "System" means the Equipment, Software, and incidental hardware and materials that are combined together into an integrated system; the System is described in Exhibit D as amended by Exhibit C.
- 2.18. "System Acceptance" means the Acceptance Tests have been successfully completed.
- 2.19. "Warranty Period" means one (1) year from the date of System Acceptance or Beneficial Use, whichever occurs first.

Section 3 SCOPE OF AGREEMENT AND TERM

- 3.1. **SCOPE OF WORK.** Motorola will provide, install and test the System, and perform its other contractual responsibilities, all in accordance with this Agreement. Customer will perform its contractual responsibilities in accordance with this Agreement.
- 3.2. **CHANGE ORDERS.** Either Party may request changes within the general scope of this Agreement. If a requested change causes an increase or decrease in the cost or time required to perform this Agreement, the Parties will agree to an equitable adjustment of the Contract Price, Performance Schedule, or both, and will reflect the adjustment in a change order. Neither Party is obligated to perform requested changes unless both Parties execute a written change order.

3.3. TERM. Unless terminated in accordance with other provisions of this Agreement or extended by mutual agreement of the Parties, the term of this Agreement begins on the Effective Date and continues until the date of Final Project Acceptance or expiration of the Warranty Period, whichever occurs last.

3.4. ADDITIONAL EQUIPMENT OR SOFTWARE. For three (3) years after the Effective Date, Customer may order additional Equipment or Software if it is then available. Each order must refer to this Agreement and must specify the pricing and delivery terms. Notwithstanding any additional or contrary terms in the order, the applicable provisions of this Agreement (except for pricing, delivery, passage of title and risk of loss to Equipment, warranty commencement, and payment terms) will govern the purchase and sale of the additional Equipment or Software. Title and risk of loss to additional Equipment will pass at shipment, warranty will commence upon delivery, and payment is due within thirty (30) days after the invoice date. Motorola will send Customer an invoice as the additional Equipment is shipped or Software is licensed. Alternatively, Customer may register with and place orders through Motorola Online ("MOL"), and this Agreement will be the "Underlying Agreement" for those MOL transactions rather than the MOL On-Line Terms and Conditions of Sale. MOL registration and other information may be found at <http://www.motorola.com/businessandgovernment/> and the MOL telephone number is (800) 814-0601.

3.5. MAINTENANCE SERVICE. During the Warranty Period, Motorola will provide maintenance services for the Equipment and support for the Motorola Software pursuant to this Agreement. Those services and support are included in the Contract Price. If Customer wishes to purchase additional maintenance and support services for the Equipment during the Warranty Period, or any maintenance and support services for the Equipment after the Warranty Period, the description of and pricing for the services will be set forth in a separate document. If Customer wishes to purchase extended support for the Motorola Software after the Warranty Period, it may do so by ordering software subscription services. Unless otherwise agreed by the parties in writing, the terms and conditions applicable to the maintenance, support or software subscription services will be Motorola's standard Service Terms and Conditions, together with the appropriate statements of work. Changes and modifications to the Service Terms and Conditions after Contract Execution and during the term of the Services will be memorialized by a written change order executed by both Parties. .

3.6. MOTOROLA SOFTWARE. Any Motorola Software, including subsequent releases, is licensed to Customer solely in accordance with the Software License Agreement. Customer hereby accepts and agrees to abide by all of the terms and restrictions of the Software License Agreement.

3.7. NON-MOTOROLA SOFTWARE. Any Non-Motorola Software is licensed to Customer in accordance with the standard license, terms, and restrictions of the copyright owner on the Effective Date unless the copyright owner has granted to Motorola the right to sublicense the Non-Motorola Software pursuant to the Software License Agreement, in which case it applies and the copyright owner will have all of Licensor's rights and protections under the Software License Agreement. Motorola makes no representations or warranties of any kind regarding Non-Motorola Software. Non-Motorola Software may include Open Source Software. All Open Source Software is licensed to Customer in accordance with, the provisions of the standard license of the copyright owner and not the Software License Agreement. , Motorola will use commercially reasonable efforts to determine whether any Open Source Software will be provided under this Agreement; and if so, identify the Open Source Software and provide to Customer a copy of the applicable standard license (or specify where that license may be found); and provide to Customer a copy of the Open Source Software source code if it is publicly available without charge (although a distribution fee or a charge for related services may be applicable). Motorola will provide periodic updates concerning the applicable Open Source Software standard licenses upon written request of the Customer.

3.8. SUBSTITUTIONS. At no additional cost to Customer, Motorola may substitute any Equipment, Software, or services to be provided by Motorola, if the substitute meets or exceeds the Specifications and is of equivalent or better quality to the Customer. Any substitution will be reflected in a change order. Substitutions resulting in significant cost differences shall be reflected and approved by the Parties in a written Change Order as outlined in Section 3.2.

3.9. **OPTIONAL EQUIPMENT OR SOFTWARE.** This paragraph applies only if a "Priced Options" exhibit is shown in Section 1, or if the parties amend this Agreement to add a Priced Options exhibit. During the term of the option as stated in the Priced Options exhibit (or if no term is stated, then for one (1) year after the Effective Date), Customer has the right and option to purchase the equipment, software, and related services that are described in the Priced Options exhibit. Customer may exercise this option by giving written notice to Seller which must designate what equipment, software, and related services Customer is selecting (including quantities, if applicable). To the extent they apply, the terms and conditions of this Agreement will govern the transaction; however, the parties acknowledge that certain provisions must be agreed upon, and they agree to negotiate those in good faith promptly after Customer delivers the option exercise notice. Examples of provisions that may need to be negotiated are: specific lists of deliverables, statements of work, acceptance test plans, delivery and implementation schedules, payment terms, maintenance and support provisions, additions to or modifications of the Software License Agreement, hosting terms, and modifications to the acceptance and warranty provisions.

Section 4 PERFORMANCE SCHEDULE

The Parties will perform their respective responsibilities in accordance with this Agreement. By executing this Agreement, Customer authorizes Motorola to proceed with contract performance.

Section 5 CONTRACT PRICE, PAYMENT AND INVOICING

5.1. **CONTRACT PRICE.** The Contract Price in U.S. dollars is \$24,086,750 for the work described in Exhibit C and Exhibit D. The Contract Price is comprised of a System with Subscribers and SUAll services. System Price in U.S. dollars is \$22,495,000 of which \$7,366,756 is for Subscribers. The price of the SUAll services in U.S. dollars is \$1,591,750 for years beginning on the first day of the one year anniversary of acceptance of the System and continuing for 6 years. If applicable, a pricing summary is included with the Payment Schedule. Motorola has priced the services, Software, and Equipment as an integrated system. A reduction in Software or Equipment quantities, or services, may affect the overall Contract Price, including discounts if applicable.

5.2. **INVOICING AND PAYMENT.** Motorola will submit invoices to Customer according to the Payment Schedule. Except for a payment that is due on the Effective Date, Customer will make payments to Motorola within thirty (30) days after the date of each invoice. Motorola will submit invoices for SUAll services to Customer in advance of each payment period, according to Exhibit B and Customer will make payments to Motorola within (30) days after the date of each invoice. Customer will make payments when due in the form of a wire transfer, check, or cashier's check from a U.S. financial institution. For reference, the Federal Tax Identification Number for Motorola Solutions, Inc. is 36-1115800.

5.3. **FREIGHT, TITLE, AND RISK OF LOSS.** Motorola will pre-pay and add all freight charges to the invoices. Title and risk of loss to the Equipment will pass to Customer upon System Acceptance, and title will revert back to Motorola if the Equipment fails to pass Acceptance Testing. Title to Software will not pass to Customer at any time. Motorola will pack and ship all Equipment in accordance with good commercial practices.

5.4. **INVOICING AND SHIPPING ADDRESSES.** Invoices will be sent to the Customer at the following address: Williamson County Public Safety Building Attn: Bill Jorgensen 304 Beasley Drive Franklin, TN 37064.

The address which is the ultimate destination where the Equipment will be delivered to Customer is _____.

The Equipment will be shipped to the Customer at the following address (insert if this information is known): _____.

Customer may change this information by giving written notice to Motorola.

Section 6 SITES AND SITE CONDITIONS

6.1. ACCESS TO SITES. In addition to its responsibilities described elsewhere in this Agreement, Customer will provide a designated project manager; all necessary construction and building permits, zoning variances, licenses, and any other approvals that are necessary to develop or use the sites; and access to the work sites as reasonably requested by Motorola so that it may perform its duties in accordance with the Performance Schedule and Statement of Work. If the Statement of Work so indicates, Motorola may assist Customer in the local building permit process.

6.2. SITE CONDITIONS. Customer will ensure that all work sites it provides will be safe, secure, and in compliance with all applicable industry and OSHA standards. To the extent applicable and unless the Statement of Work states to the contrary, Customer will ensure that these work sites have adequate: physical space; air conditioning and other environmental conditions; electrical power outlets, distribution and equipment; and telephone or other communication lines (including modem access and adequate interfacing networking capabilities), all for the installation, use and maintenance of the System. Before installing the Equipment or Software at a work site, Motorola will inspect the work site and advise Customer of any apparent deficiencies or non-conformities with the requirements of this Section. This Agreement is predicated upon normal soil conditions as defined by the version of E.I.A. standard RS-222 in effect on the Effective Date.

6.3. SITE ISSUES. If a Party determines that the sites identified in the Technical and Implementation Documents are no longer available or desired, or if subsurface, structural, adverse environmental or latent conditions at any site differ from those indicated in the Technical and Implementation Documents, the Parties will promptly investigate the conditions and will select replacement sites or adjust the installation plans and specifications as necessary. If change in sites or adjustment to the installation plans and specifications causes a change in the cost or time to perform, the Parties will equitably amend the Contract Price, Performance Schedule, or both, by a change order.

Section 7 TRAINING

Any training to be provided by Motorola to Customer will be described in the Statement of Work. Customer will notify Motorola immediately if a date change for a scheduled training program is required. If Motorola incurs additional costs because Customer reschedules a training program less than thirty (30) days before its scheduled start date, Motorola may recover these additional costs.

Section 8 SYSTEM ACCEPTANCE

8.1. COMMENCEMENT OF ACCEPTANCE TESTING. Motorola will provide to Customer at least ten (10) days notice before the Acceptance Tests commence. System testing will occur only in accordance with the Acceptance Test Plan.

8.2. **SYSTEM ACCEPTANCE.** System Acceptance will occur upon successful completion of the Acceptance Tests. Upon System Acceptance, the Parties will memorialize this event by promptly executing a System Acceptance Certificate. If the Acceptance Test Plan includes separate tests for individual Subsystems or phases of the System, acceptance of the individual Subsystem or phase will occur upon the successful completion of the Acceptance Tests for the Subsystem or phase, and the Parties will promptly execute an acceptance certificate for the Subsystem or phase. If Customer believes the System has failed the completed Acceptance Tests, Customer will provide to Motorola a written notice that includes the specific details of the failure. Minor omissions or variances in the System ("Punchlist items") that do not materially impair the operation of the System as a whole will not postpone System Acceptance or Subsystem acceptance, but will be corrected according to a mutually agreed schedule. Any issues and Punchlist items will be resolved pursuant to and in compliance with the Statement of Work and Acceptance Tests specifications outlined in Motorola's proposal prior to the Parties executing a Final Project Acceptance Certificate as outlined in Section 8.4. Successful completion of items identified as Punchlist items shall be memorialized in writing on appropriate acceptance certificate(s) as applicable.

8.3. **BENEFICIAL USE.** Customer acknowledges that Motorola's ability to perform its implementation and testing responsibilities may be impeded if Customer begins using the System before System Acceptance. Therefore, Customer will not commence Beneficial Use before System Acceptance without Motorola's prior written authorization, which will not be unreasonably withheld. Motorola is not responsible for System performance deficiencies that occur during unauthorized Beneficial Use. Unless prior written authorization is given by Motorola, upon commencement of Beneficial Use, Customer assumes responsibility for the use and operation of the System.

8.4 **FINAL PROJECT ACCEPTANCE.** Final Project Acceptance will occur after System Acceptance when all deliverables and other work, including all identified Punchlist items, have been completed and in compliance with the Statement of Work and Acceptance Tests specifications defined in Motorola's proposal.. When Final Project Acceptance occurs, the parties will promptly memorialize this final event by so indicating on the System Acceptance Certificate.

Section 9 REPRESENTATIONS AND WARRANTIES

9.1. **SYSTEM FUNCTIONALITY.** Motorola represents that the System will perform in accordance with the Specifications in all material respects. Upon System Acceptance or Beneficial Use, whichever occurs first, this System functionality representation is fulfilled. Motorola is not responsible for System performance deficiencies that are caused by ancillary equipment not furnished by Motorola or a third party operating under Motorola's direction which is attached to or used in connection with the System or for reasons or parties beyond Motorola's control, such as natural causes; the construction of a building that adversely affects the microwave path reliability or radio frequency (RF) coverage; the addition of frequencies at System sites that cause RF interference or intermodulation; or Customer changes to load usage or configuration outside the Specifications.

9.2. **EQUIPMENT WARRANTY.** During the Warranty Period, Motorola warrants that the Equipment under normal use and service will be free from material defects in materials and workmanship.

9.3. **MOTOROLA SOFTWARE WARRANTY.** Unless otherwise stated in the Software License Agreement, during the Warranty Period, Motorola warrants the Motorola Software in accordance with the terms of the Software License Agreement and the provisions of this Section 9 that are applicable to the Motorola Software.

9.4. **EXCLUSIONS TO EQUIPMENT AND MOTOROLA SOFTWARE WARRANTIES.** These warranties do not apply to: (i) defects or damage resulting from: use of the Equipment or Motorola Software in other than its normal, customary, and authorized manner; accident, liquids, neglect, or acts of God, unless caused by Motorola's negligence; testing, maintenance, disassembly, repair, installation, alteration, modification, or adjustment not provided or authorized in writing by Motorola; Customer's failure to comply with all applicable industry and OSHA standards; (ii) breakage of or damage to antennas

unless caused directly by defects in material or workmanship; (iii) Equipment that has had the serial number removed or made illegible; (iv) batteries (because they carry their own separate limited warranty) or consumables; (v) scratches or other cosmetic damage to Equipment surfaces that does not affect the operation of the Equipment; and (vi) normal or customary wear and tear.

9.5. **WARRANTY CLAIMS.** To assert a warranty claim, Customer must notify Motorola in writing of the claim before the expiration of the Warranty Period. Upon receipt of this notice, Motorola will investigate the warranty claim. If this investigation confirms a valid warranty claim, Motorola will (at its option and at no additional charge to Customer) repair the defective Equipment or Motorola Software, replace it with the same or equivalent product, or refund the price of the defective Equipment or Motorola Software. To the extent permissible by Tennessee Law, that action will be the full extent of Motorola's liability for the warranty claim. If this investigation indicates the warranty claim is not valid, then Motorola may invoice Customer for responding to the claim on a time and materials basis using Motorola's then current labor rates. Upon request, Motorola shall provide all documentation and any other information used to determine that the warranty claim was not valid. Repaired or replaced product is warranted for the balance of the original applicable warranty period or 90 days whichever occurs last. All replaced products or parts will become the property of Motorola.

9.6. **ORIGINAL END USER IS COVERED.** These express limited warranties are extended by Motorola to the original user (the Authority, Williamson County, City of Franklin, City of Brentwood), purchasing the System for commercial, industrial, or governmental use only, and are not assignable or transferable

9.7. **DISCLAIMER OF OTHER WARRANTIES.** THESE WARRANTIES ARE THE COMPLETE WARRANTIES FOR THE EQUIPMENT AND MOTOROLA SOFTWARE PROVIDED UNDER THIS AGREEMENT AND ARE GIVEN IN LIEU OF ALL OTHER WARRANTIES. TO THE EXTENT ALLOWED BY TENNESSEE LAW, MOTOROLA DISCLAIMS ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Section 10 DELAYS

10.1. **FORCE MAJEURE.** Neither Party will be liable for its non-performance or delayed performance if caused by a Force Majeure. A Party that becomes aware of a Force Majeure that will significantly delay performance will notify the other Party promptly (but in no event later than fifteen days) after it discovers the Force Majeure. If a Force Majeure occurs, the Parties will execute a change order to extend the Performance Schedule for a time period that is reasonable under the circumstances.

10.2. **PERFORMANCE SCHEDULE DELAYS CAUSED BY CUSTOMER.** If Customer (including its other contractors) delays the Performance Schedule with no fault of Motorola or anyone acting on behalf of Motorola, the Parties will execute a change order agreeable to both parties to extend the Performance Schedule and, if requested, compensate Motorola for all reasonable charges incurred because of the delay. Customer delay charges shall not exceed \$5,000.00 per delay and shall be memorialized in a written change order detailing the charges and signed by the Parties. Delay charges shall include only actual costs that are directly related to the delay and incurred by Motorola or its subcontractors for additional freight, warehousing and handling of Equipment; extension of the warranties; travel; suspending and re-mobilizing the work; additional engineering, project management, and standby time calculated at then current rates; and preparing and implementing an alternative implementation plan.

Section 11 DISPUTES

11.1. **SETTLEMENT PREFERRED.** The Parties, by their project managers, will attempt to settle any dispute arising from this Agreement (except for a claim relating to intellectual property or breach of confidentiality) through consultation and a spirit of mutual cooperation. The dispute will be escalated to appropriate higher-level managers of the Parties, if necessary.

11.1.1 Claims, disputes or other matters in question between the parties to this Agreement arising out of or relating to this Agreement or breach thereof, shall be subject to and decided by a court of law. The parties can agree to non-binding mediation prior to litigation.

11.2. LITIGATION. A Party may submit to a court of competent jurisdiction in the state of Tennessee any claim relating to this Agreement. Each Party consents to jurisdiction over it by that court. Either Party may resort to the judicial proceedings described in this section if good faith efforts to resolve the dispute under these procedures have been unsuccessful; or interim relief from the court is necessary to prevent serious and irreparable injury to the Party.

Section 12 DEFAULT AND TERMINATION

12.1 DEFAULT BY A PARTY. If either Party fails to perform a material obligation under this Agreement, the other Party may consider the non-performing Party to be in default (unless a Force Majeure causes the failure) and may assert a default claim by giving the non-performing Party a written and detailed notice of default. Except for a default by Customer for failing to pay any undisputed amount when due under this Agreement which must be cured immediately, the defaulting Party will have thirty (30) days after receipt of the notice of default to either cure the default or, if the default is not curable within thirty (30) days, provide a written cure plan. The defaulting Party will begin implementing the cure plan immediately after receipt of notice by the other Party that it approves the plan. If Customer is the defaulting Party, Motorola may stop work on the project until it approves the Customer's cure plan.

12.2. FAILURE TO CURE. If a defaulting Party fails to cure the default as provided above in Section 12.1, unless otherwise agreed in writing, the non-defaulting Party may terminate any unfulfilled portion of this Agreement. In the event of termination for default, the defaulting Party will promptly return to the non-defaulting Party any of its Confidential Information. If Customer is the non-defaulting Party, terminates this Agreement as permitted by this Section, and completes the System through a third Party, Customer may, as its exclusive remedy, recover from Motorola reasonable costs incurred to complete the System to a capability not exceeding that specified in this Agreement less any unpaid earned portion of the Contract Price less any reasonable costs incurred by the Customer related to the completion of the System. Customer will provide Motorola with detailed invoices substantiating the charges.

12.3 If the Customer terminates the SUA2 Agreement before the end of the Five-year Term, for any reason other than Motorola default, then the Customer will reimburse Motorola for the amount of the multi-year discount realized by the Customer up to the date of termination, not to exceed two years. This is not a penalty. It is a reconciliation of the price structure. If a major upgrade has been delivered in the first year of the two year SUAll payment cycle. Customer would still be responsible for payment in full of the second year of the SUAll cycle to the degree permissible by applicable law.

12.4 The term of this Agreement is contingent on future funding by the individual ILA Members' legislative body. Should funding for the Project be discontinued, Customer shall have the right to terminate this Agreement immediately upon written notice to Motorola. The Customer warrants that it has the funds available to pay all payments until the end of the current fiscal period and shall use reasonable effort to obtain funding through the individual ILA Members' budgeting process. Should the ILA Members' legislative bodies fail to appropriate funds to pay the payments for subsequent fiscal years, then Customer shall provide Motorola with notice and this Agreement shall terminate on the last day of the fiscal year for which funds were appropriated. Nothing contained in the Agreement or any other document provided by Motorola shall be construed as binding the Customer or the ILA Members, whether jointly or severally, to expend any sum in excess of appropriations made by the ILA Members' legislative bodies for the purposes set forth in this Agreement or as involving Customer in any contract or other obligation for the further expenditure of money in excess of such appropriations including, but not limited to, liquidated damages.

12.5 TERMINATION FOR CONVENIENCE. Customer may terminate this Agreement (in whole or in part) at any time. To exercise this right, Customer must provide to Motorola formal written notice at least thirty (30) days in advance of the effective date of the termination. The notice shall explicitly state the effective date of the termination and whether the contract is being terminated in whole or in part, and if in part, which part is being terminated. Upon termination, the Customer will be liable to pay Motorola for the conforming Equipment and/or Software delivered, and all services performed prior to the date of termination.

Section 13 INDEMNIFICATION

13.1. GENERAL INDEMNITY BY MOTOROLA. Motorola will indemnify and hold Customer harmless from any and all liability, expense, judgment, suit, cause of action, or demand for personal injury, death, or direct damage to tangible property which may accrue against Customer to the extent it is caused by the negligence of Motorola, its subcontractors, or their employees or agents, while performing their duties under this Agreement, if Customer gives Motorola reasonable notice of any the claim or suit. Customer will cooperate with Motorola in its defense or settlement of the claim or suit, but no such settlement or compromise shall be binding upon Customer unless approved by the Williamson County attorney and, where required, the ILA Members' legislative bodies. Subject to Tennessee law, this section sets forth the full extent of Motorola's general indemnification of Customer from liabilities that are in any way related to Motorola's performance under this Agreement.

13.2. PATENT AND COPYRIGHT INFRINGEMENT.

13.2.1. Motorola will defend at its expense any suit brought against Customer to the extent it is based on an Infringement Claim, and Motorola will indemnify Customer for those costs and damages finally awarded against Customer for an Infringement Claim. Motorola's duties to defend and indemnify are conditioned upon: Customer reasonably notifying Motorola in writing of the Infringement Claim; Motorola having sole control of the defense of the suit and all negotiations for its settlement or compromise; and Customer providing to Motorola cooperation and, if requested by Motorola, reasonable assistance in the defense of the Infringement Claim but no such settlement or compromise shall be binding upon Customer unless approved by the Williamson County attorney and, where required, the ILA Members' legislative bodies. .

13.2.2. If an Infringement Claim occurs, or in Motorola's opinion is likely to occur, Motorola may at its option and expense procure for Customer the right to continue using the Equipment or Motorola Software, replace or modify it so that it becomes non-infringing while providing functionally equivalent performance, or grant Customer a credit for the cost of replacing the Equipment or Motorola Software and Motorola shall accept its return.

13.3. To the degree permissible by Tennessee Law, Motorola will have no duty to defend or indemnify for any Infringement Claim that is based upon: (a) the combination of the Motorola Product with any software, apparatus or device not furnished by or on behalf of Motorola; (b) the use of ancillary equipment or software not furnished by or on behalf of Motorola and that is attached to or used in connection with the Motorola Product; (c) Motorola Product designed or manufactured in accordance with Customer's designs, specifications, guidelines or instructions, if the alleged infringement would not have occurred without such designs, specifications, guidelines or instructions unless the basis of the Infringement Claim was known or should reasonably have been known by Motorola; (d) a modification of the Motorola Product by a party other than Motorola; (e) use of the Motorola Product in a manner for which the Motorola Product was not designed or that is inconsistent with the terms of this Agreement; or (f) the failure by Customer to install an enhancement release to the Motorola Software that is intended to correct the claimed infringement. To the degree permissible by Tennessee law, in no event will Motorola's liability resulting from its indemnity obligation to Customer extend in any way to royalties payable on a per use basis or the Customer's revenues, or any royalty basis other than a reasonable royalty based upon revenue derived by Motorola from Customer from sales or license of the infringing Motorola Product.

13.4. To the degree permissible by Tennessee law, this Section 13 provides Customer's sole and exclusive remedies and Motorola's entire liability in the event of an Infringement Claim. Customer has no right to recover and Motorola has no obligation to provide any other or further remedies, whether under another provision of this Agreement or any other legal theory or principle, in connection with an Infringement Claim. In addition, the rights and remedies provided in this Section 13 are subject to and limited by the restrictions set forth in Section 14.

Section 14 LIMITATION OF LIABILITY

To the degree permissible by Tennessee law, except for personal injury or death, Motorola's total liability, whether for breach of contract, warranty, negligence, strict liability in tort, indemnification, or otherwise, will be limited to the direct damages recoverable under law, but not to exceed the price of the Equipment, Software, or services with respect to which losses or damages are claimed. **ALTHOUGH THE PARTIES ACKNOWLEDGE THE POSSIBILITY OF SUCH LOSSES OR DAMAGES, THEY AGREE THAT MOTOROLA WILL NOT BE LIABLE FOR ANY COMMERCIAL LOSS; INCONVENIENCE; LOSS OF USE, TIME, DATA, GOOD WILL, REVENUES, PROFITS OR SAVINGS; OR OTHER SPECIAL, INCIDENTAL, INDIRECT, OR CONSEQUENTIAL DAMAGES IN ANY WAY RELATED TO OR ARISING FROM THIS AGREEMENT, THE SALE OR USE OF THE EQUIPMENT OR SOFTWARE, OR THE PERFORMANCE OF SERVICES BY MOTOROLA PURSUANT TO THIS AGREEMENT.** This limitation of liability provision survives the expiration or termination of the Agreement and applies notwithstanding any contrary provision. An action for contract breach or otherwise relating to the transactions contemplated by this Agreement may be brought within one year, subject to the limitations provided by Tennessee law concerning Customer's ability to agree to the limitation provided herein.

Section 15 CONFIDENTIALITY AND PROPRIETARY RIGHTS

15.1.1. Confidentiality Obligation. Each party is a disclosing party ("Discloser") and a receiving party ("Recipient") under this Agreement. During the term of this Agreement, for a period of three (3) years from the date of expiration or termination of this Agreement, and to the extent allowed by law, recipient will (i) not disclose Confidential Information to any third party; (ii) restrict disclosure of Confidential Information to only those employees (including, but not limited to, employees, officers, officials, agents, volunteers or consultants who must be directly involved with the Confidential Information for the purpose and who are bound by confidentiality terms substantially similar to those in this Agreement; (iii) not reverse engineer, de-compile or disassemble any Confidential Information; (iv) use the same degree of care as for its own information of like importance, but at least use reasonable care, in safeguarding against disclosure of Confidential Information; (v) promptly notify discloser upon discovery of any unauthorized use or disclosure of the Confidential Information and take reasonable steps to regain possession of the Confidential Information and prevent further unauthorized actions or other breach of this Agreement; and (vi) only use the Confidential Information as needed to fulfill this Agreement.

15.1.2. Required Disclosure. If a recipient is required to disclose Confidential Information pursuant to applicable law, statute, or regulation, or court order, the recipient will give to the discloser prompt written notice of the request and five (5) business days to object to such disclosure and seek a protective order or appropriate remedy. If, in the absence of a protective order, the recipient determines, upon the advice of counsel, that it is required to disclose such information, it may disclose only Confidential Information specifically required and only to the extent required to do so.

15.1.3. Confidential Exceptions. Recipient is not obligated to maintain as confidential, Confidential Information that recipient can demonstrate by documentation (i) is now available or becomes available to the public without breach of this Agreement; (ii) is explicitly approved for release by written authorization of discloser; (iii) is lawfully obtained from a third party or parties without a duty of confidentiality; (iv) is known to the recipient prior to such disclosure; or (v) is independently developed by recipient without the use of any discloser's Confidential Information or any breach of this Agreement.

15.1.4. Ownership and Retention. All Confidential Information remains the property of the discloser and will not be copied or reproduced without the express written permission of the discloser, except for copies that are absolutely necessary in order to fulfill this Agreement. Within ten (10) days of receipt of discloser's written request, recipient will return all Confidential Information to discloser along with all copies and portions thereof, or certify in writing that all such Confidential Information has been destroyed. However, recipient may retain one (1) archival copy of the Confidential Information that it may use only in case of a dispute concerning this Agreement. No license, express or implied, in the Confidential Information is granted other than to use the Confidential Information in the manner and to the extent authorized by this Agreement or applicable law. The discloser warrants that it is authorized to disclose any Confidential Information it discloses pursuant to this Agreement.

15.2. PRESERVATION OF MOTOROLA'S PROPRIETARY RIGHTS. Motorola, the third party manufacturer of any Equipment, and the copyright owner of any Non-Motorola Software own and retain all of their respective Proprietary Rights in the Equipment and Software, and nothing in this Agreement is intended to restrict their Proprietary Rights. All intellectual property developed, originated, or prepared by Motorola in connection with providing to Customer the Equipment, Software, or related services remain vested exclusively in Motorola, and this Agreement does not grant to Customer any shared development rights of intellectual property. Except as explicitly provided in the Software License Agreement, Motorola does not grant to Customer, either directly or by implication, estoppel, or otherwise, any right, title or interest in Motorola's Proprietary Rights. Customer will not modify, disassemble, peel components, decompile, otherwise reverse engineer or attempt to reverse engineer, derive source code or create derivative works from, adapt, translate, merge with other software, reproduce, distribute, sublicense, sell or export the Software, or permit or encourage any third party to do so. The preceding sentence does not apply to Open Source Software which is governed by the standard license of the copyright owner.

Section 16 GENERAL

16.1. TAXES. The Contract Price does not include any excise, sales, lease, use, property, or other taxes, assessments or duties, all of which will be paid by Customer except as exempt by law. If Motorola is required to pay any of these taxes and the Customer would not be otherwise exempt from the tax absent this Agreement, Motorola will send an invoice to Customer and Customer will pay to Motorola the amount of the taxes (including any interest and penalties) within forty-five (45) days after the date of the invoice. Customer will be solely responsible for reporting Equipment titled in the name of the Customer or the ILA Members should the Equipment be subject to personal taxes for personal property tax purposes, and Motorola will be solely responsible for reporting taxes on its income or net worth.

16.2. ASSIGNABILITY AND SUBCONTRACTING. Neither Party may assign this Agreement without the prior written consent of the other Party, except that Motorola may assign this Agreement to any of its affiliates or its right to receive payment without the prior consent of Customer, (the Authority, Williamson County, City of Brentwood and City of Franklin). Notwithstanding the proceeding sentence, Customer may assign this Agreement to all or any one of the ILA Members upon the provision of notice to Motorola by providing appropriate documentation and subject to Motorola's written approval, which shall not be unreasonably withheld. Motorola may subcontract any of the work, but subcontracting will not relieve Motorola of its duties under this Agreement.

16.3 WAIVER. Failure or delay by either Party to exercise a right or power under this Agreement will not be a waiver of the right or power. For a waiver of a right or power to be effective, it must be in a writing signed by the waiving Party. An effective waiver of a right or power will not be construed as either a future or continuing waiver of that same right or power, or the waiver of any other right or power.

16.4. SEVERABILITY. If a court of competent jurisdiction renders any part of this Agreement invalid or unenforceable, that part will be severed and the remainder of this Agreement will continue in full force and effect.

16.5. INDEPENDENT CONTRACTORS. Each Party will perform its duties under this Agreement as an independent contractor. The Parties and their personnel will not be considered to be employees or agents of the other Party. Nothing in this Agreement will be interpreted as granting either Party the right or authority to make commitments of any kind for the other. This Agreement will not constitute, create, or be interpreted as a joint venture, partnership or formal business organization of any kind.

16.6. HEADINGS AND SECTION REFERENCES. The section headings in this Agreement are inserted only for convenience and are not to be construed as part of this Agreement or as a limitation of the scope of the particular section to which the heading refers. This Agreement will be fairly interpreted in accordance with its terms and conditions and not for or against either Party.

16.7. GOVERNING LAW. This Agreement and the rights and duties of the Parties will be governed by and interpreted in accordance with the laws of the State of Tennessee.

16.8. ENTIRE AGREEMENT. This Agreement, including all Exhibits, constitutes the entire agreement of the Parties regarding the subject matter of the Agreement and supersedes all previous agreements, proposals, and understandings, whether written or oral, relating to this subject matter. This Agreement may be amended or modified only by a written instrument signed by authorized representatives of both Parties. The preprinted terms and conditions found on any Customer purchase order, acknowledgment or other form will not be considered an amendment or modification of this Agreement, even if a representative of each Party signs that document.

16.9. NOTICES. Notices required under this Agreement to be given by one Party to the other must be in writing and either personally delivered or sent to the address shown below by certified mail, return receipt requested and postage prepaid (or by a recognized courier service, such as Federal Express, UPS, or DHL), or by facsimile with correct answerback received, and will be effective upon receipt:

Motorola Solutions, Inc.
Attn: Law Department
500 W Monroe-43rd Floor
Chicago, IL 60661

Customer
Attn: Bill Jorgensen, Chairman

16.10. COMPLIANCE WITH APPLICABLE LAWS. Each Party will comply with all applicable federal, state, and local laws, regulations and rules concerning the performance of this Agreement or use of the System. Customer will obtain and comply with all Federal Communications Commission ("FCC") licenses and authorizations required for the installation, operation and use of the System before the scheduled installation of the Equipment. Although Motorola might assist Customer in the preparation of its FCC license applications, neither Motorola nor any of its employees is an agent or representative of Customer in FCC or other matters.

16.11. AUTHORITY TO EXECUTE AGREEMENT. Each Party represents that it has obtained all necessary approvals, consents and authorizations to enter into this Agreement and to perform its duties under this Agreement; the person executing this Agreement on its behalf has the authority to do so; upon execution and delivery of this Agreement by the Parties, it is a valid and binding contract, enforceable in accordance with its terms; and the execution, delivery, and performance of this Agreement does not violate any bylaw, charter, regulation, law or any other governing authority of the Party.

16.12 Motorola represents and warrants to the Customer that:

a. It is not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal Department, State Department or local department;

b. It has not, within a 3-year period preceding this proposal, been convicted of or had a civil judgment rendered against it for commission of fraud or a criminal offense in connection with

obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

c. It is not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of other similar crimes; and

d. It has not within a 3-year period preceding this Agreement had one or more public transactions (Federal, State or local) terminated for cause or default.

16.13 Motorola acknowledges that it shall be a breach of ethical standards for any person to offer, give, or agree to give any employee or former employee, or for any employee or former employee to solicit, demand, accept, or agree to accept from another person, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, preparation of any part of a program requirement or a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing or in any other advisory capacity in any proceeding or application, request for ruling, determination, claim or controversy or other particular matter, pertaining to any program requirement of a contract or subcontract or to any solicitation or proposal therefor. It shall be a breach of ethical standards for any payment, gratuity or offer of employment to be made by or on behalf of Motorola, a subcontractor under a contract to Motorola or a person associated therewith, as an inducement for the award of a subcontract or commercial sales order.

16.14 Motorola agrees to comply with the provisions contained in Title VI of the 1964 Civil Rights Act (42 U.S.C. 2000d), and any federal regulations specific to this Agreement or the Services provided by Motorola. Motorola agrees that no person shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.

16.15 Motorola shall not knowingly hire any unauthorized employees or fail to comply with record keeping requirements set forth in the Federal Immigration Reform and Control Act of 1986, Chapter 878 of the 2006 Tennessee Public Acts and all other applicable laws.

16.16 Motorola shall maintain documentation for all charges against Customer. The books, records, and documents of Motorola, insofar as they relate to services performed or money received under this Agreement, shall be maintained for a period of three (3) full years from the date of final payment and will be subject to audit at any reasonable time and upon reasonable notice, by Customer or its duly appointed representatives. The books and records shall be maintained in accordance with generally accepted accounting principles. Notwithstanding the proceeding, Motorola shall not be required to disclose its confidential or proprietary information, including its cost and internal pricing data and subcontracts.

16.17. SURVIVAL OF TERMS. The following provisions will survive the expiration or termination of this Agreement for any reason: Section 3.6 (Motorola Software); Section 3.7 (Non-Motorola Software); if any payment obligations exist, Sections 5.1 and 5.2 (Contract Price and Invoicing and Payment); Subsection 9.7 (Disclaimer of Implied Warranties); Section 11 (Disputes); Section 14 (Limitation of Liability); and Section 15 (Confidentiality and Proprietary Rights); and all of the General provisions in Section 16.

The Parties hereby enter into this Agreement as of the Effective Date. This Agreement may be executed by each of the Parties hereto in separate counterparts, and shall have the same legal force and effect as if the Parties had executed it as a single document. The parties may sign in writing, or by electronic signature, including by email. An electronic signature, or a facsimile copy or computer image, such as a PDF or tiff image, of a signature, shall be treated as and shall have the same effect as an original signature. In addition, an electronic signature, a true and correct facsimile copy or computer image of this Agreement shall be treated as and shall have the same effect as an original signed copy of this document.

Motorola Solutions, Inc.

Customer

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

Date: _____

Date: _____

Exhibit A

SOFTWARE LICENSE AGREEMENT

This Exhibit A Software License Agreement ("Agreement") is between Motorola Solutions, Inc., ("Motorola") and Williamson County Joint Communications Network Authority ("Licensee"). For good and valuable consideration, the parties agree as follows:

Section 1 DEFINITIONS

1.1 "Designated Products" means products provided by Motorola to Licensee with which or for which the Software and Documentation is licensed for use.

1.2 "Documentation" means product and software documentation that specifies technical and performance features and capabilities, and the user, operation and training manuals for the Software (including all physical or electronic media upon which such information is provided).

1.3 "Open Source Software" means software with either freely obtainable source code, license for modification, or permission for free distribution.

1.4 "Open Source Software License" means the terms or conditions under which the Open Source Software is licensed.

1.5 "Primary Agreement" means the agreement to which this exhibit is attached.

1.6 "Security Vulnerability" means a flaw or weakness in system security procedures, design, implementation, or internal controls that could be exercised (accidentally triggered or intentionally exploited) and result in a security breach such that data is compromised, manipulated or stolen or the system damaged.

1.7 "Software" (i) means proprietary software in object code format, and adaptations, translations, de-compilations, disassemblies, emulations, or derivative works of such software; (ii) means any modifications, enhancements, new versions and new releases of the software provided by Motorola; and (iii) may contain one or more items of software owned by a third party supplier. The term "Software" does not include any third party software provided under separate license or third party software not licensable under the terms of this Agreement.

Section 2 SCOPE

Motorola and Licensee enter into this Agreement in connection with Motorola's delivery of certain proprietary Software or products containing embedded or pre-loaded proprietary Software, or both. This Agreement contains the terms and conditions of the license Motorola is providing to Licensee, and Licensee's use of the Software and Documentation.

Section 3 GRANT OF LICENSE

3.1. Subject to the provisions of this Agreement and the payment of applicable license fees, Motorola grants to Licensee a personal, limited, non-transferable (except as permitted in Section 7) and non-exclusive license under Motorola's copyrights and Confidential Information (as defined in the Primary Agreement) embodied in the Software to use the Software, in object code form, and the Documentation solely in connection with Licensee's use of the Designated Products. This Agreement does not grant any rights to source code.

3.2. If the Software licensed under this Agreement contains or is derived from Open Source Software, the terms and conditions governing the use of such Open Source Software are in the Open Source

Software Licenses of the copyright owner and not this Agreement. All open Source Software is licensed to Customer in accordance with the provisions of the standard license of the copyright owner and not the Software License Agreement. Motorola will use commercially reasonable efforts to: (i) determine whether any Open Source Software is provided under this Agreement; (ii) identify the Open Source Software and provide Licensee a copy of the applicable Open Source Software License (or specify where that license may be found); and, (iii) provide Licensee a copy of the Open Source Software source code, without charge, if it is publicly available (although distribution fees may be applicable). Motorola will provide periodic updates concerning the applicable Open Source Software standard licenses upon written request of the Customer.

Section 4 LIMITATIONS ON USE

4.1. Licensee may use the Software only for Licensee's internal business purposes and only in accordance with the Documentation. Any other use of the Software is strictly prohibited. Without limiting the general nature of these restrictions, Licensee will not make the Software available for use by third parties on a "time sharing," "application service provider," or "service bureau" basis or for any other similar commercial rental or sharing arrangement.

4.2. Licensee will not, and will not allow or enable any third party to: (i) reverse engineer, disassemble, peel components, decompile, reprogram or otherwise reduce the Software or any portion to a human perceptible form or otherwise attempt to recreate the source code; (ii) modify, adapt, create derivative works of, or merge the Software; (iii) copy, reproduce, distribute, lend, or lease the Software or Documentation to any third party, grant any sublicense or other rights in the Software or Documentation to any third party, or take any action that would cause the Software or Documentation to be placed in the public domain; (iv) remove, or in any way alter or obscure, any copyright notice or other notice of Motorola's proprietary rights; (v) provide, copy, transmit, disclose, divulge or make the Software or Documentation available to, or permit the use of the Software by any third party or on any machine except as expressly authorized by this Agreement; or (vi) use, or permit the use of, the Software in a manner that would result in the production of a copy of the Software solely by activating a machine containing the Software. Licensee may make one copy of Software to be used solely for archival, back-up, or disaster recovery purposes; *provided* that Licensee may not operate that copy of the Software at the same time as the original Software is being operated. Licensee may make as many copies of the Documentation as it may reasonably require for the internal use of the Software.

4.3. Unless otherwise authorized by Motorola in writing, Licensee will not, and will not enable or allow any third party to: (i) install a licensed copy of the Software on more than one unit of a Designated Product; or (ii) copy onto or transfer Software installed in one unit of a Designated Product onto one other device. Licensee may temporarily transfer Software installed on a Designated Product to another device if the Designated Product is inoperable or malfunctioning, if Licensee provides written notice to Motorola of the temporary transfer and identifies the device on which the Software is transferred. Temporary transfer of the Software to another device must be discontinued when the original Designated Product is returned to operation and the Software must be removed from the other device. Licensee must provide prompt written notice to Motorola at the time temporary transfer is discontinued.

4.4. When using Motorola's Radio Service Software ("RSS"), Licensee must purchase a separate license for each location at which Licensee uses RSS. Licensee's use of RSS at a licensed location does not entitle Licensee to use or access RSS remotely. Licensee may make one copy of RSS for each licensed location. Licensee shall provide Motorola with a list of all locations at which Licensee uses or intends to use RSS upon Motorola's request.

4.5. Licensee will maintain, during the term of this Agreement and for a period of two years thereafter, accurate records relating to this license grant to verify compliance with this Agreement. Motorola or an independent third party ("Auditor") may inspect Licensee's premises, books and records, upon reasonable prior notice to Licensee, during Licensee's normal business hours and subject to Licensee's facility and security regulations. Motorola is responsible for the payment of all expenses and costs of the Auditor.

Any information obtained by Motorola and the Auditor will be kept in strict confidence by Motorola and the Auditor and used solely for the purpose of verifying Licensee's compliance with the terms of this Agreement.

Section 5 OWNERSHIP AND TITLE

Motorola, its licensors, and its suppliers retain all of their proprietary rights in any form in and to the Software and Documentation, including, but not limited to, all rights in patents, patent applications, inventions, copyrights, trademarks, trade secrets, trade names, and other proprietary rights in or relating to the Software and Documentation (including any corrections, bug fixes, enhancements, updates, modifications, adaptations, translations, de-compilations, disassemblies, emulations to or derivative works from the Software or Documentation, whether made by Motorola or another party, or any improvements that result from Motorola's processes or, provision of information services). No rights are granted to Licensee under this Agreement by implication, estoppel or otherwise, except for those rights which are expressly granted to Licensee in this Agreement. All intellectual property developed, originated, or prepared by Motorola in connection with providing the Software, Designated Products, Documentation or related services, remains vested exclusively in Motorola, and Licensee will not have any shared development or other intellectual property rights.

Section 6 LIMITED WARRANTY; DISCLAIMER OF WARRANTY

6.1. The commencement date and the term of the Software warranty will be a period of ninety (90) days from Motorola's shipment of the Software (the "Warranty Period"). If Licensee is not in breach of any of its material obligations under this Agreement, Motorola warrants that the unmodified Software, when used properly and in accordance with the Documentation and this Agreement, will be free from a reproducible defect that eliminates the functionality or successful operation of a feature critical to the primary functionality or successful operation of the Software. Whether a defect occurs will be determined by Motorola solely with reference to the Documentation. Motorola does not warrant that Licensee's use of the Software or the Designated Products will be uninterrupted, error-free, completely free of Security Vulnerabilities, or that the Software or the Designated Products will meet Licensee's particular requirements. Motorola makes no representations or warranties with respect to any third party software included in the Software.

6.2 To the degree permissible by Tennessee law, Motorola's sole obligation to Licensee and Licensee's exclusive remedy under this warranty is to remedy, as described in the following statements of this Section 6.2, any material Software defect covered by this warranty. These remedies will involve either replacing the media or attempting to correct significant, demonstrable program or documentation errors or Security Vulnerabilities. If Motorola cannot correct the defect within a reasonable time, then at Motorola's option, Motorola will replace the defective Software with functionally-equivalent Software, license to Licensee substitute Software which will accomplish the same objective, or terminate the license and refund the Licensee's paid license fee.

6.3. Warranty claims are described in the Primary Agreement.

6.4. To the degree permissible by Tennessee law, the express warranties set forth in this Section 6 are in lieu of, and Motorola disclaims, any and all other warranties (express or implied, oral or written) with respect to the Software or Documentation, including, without limitation, any and all implied warranties of condition, title, non-infringement, merchantability, or fitness for a particular purpose or use by Licensee (whether or not Motorola knows, has reason to know, has been advised, or is otherwise aware of any such purpose or use), whether arising by law, by reason of custom or usage of trade, or by course of dealing. In addition and to the degree permissible by Tennessee law, Motorola disclaims any warranty to any person other than Licensee with respect to the Software or Documentation.

Section 7 TRANSFERS

Licensee will not transfer the Software or Documentation to any third party without Motorola's prior written consent. Motorola's consent may be withheld at its discretion and may be conditioned upon transferee paying all applicable license fees and agreeing to be bound by this Agreement. If the Designated Products are Motorola's radio products and Licensee transfers ownership of the Motorola radio products to a third party, Licensee may assign its right to use the Software (other than RSS and Motorola's FLASHport® software) which is embedded in or furnished for use with the radio products and the related Documentation; *provided* that Licensee transfers all copies of the Software and Documentation to the transferee, and Licensee and the transferee sign a transfer form to be provided by Motorola upon request, obligating the transferee to be bound by this Agreement. Notwithstanding the limitations provided in this Section 7, Licensee shall have the right to transfer the license for the Software and Documentation to Williamson County, City of Franklin, or the City of Brentwood subject to the transferee paying all applicable license fees and agreeing to be bound by this Agreement

Section 8 TERM AND TERMINATION

8.1 Licensee's right to use the Software and Documentation will begin when the Primary Agreement is signed by both parties and will continue for the life of the Designated Products with which or for which the Software and Documentation have been provided by Motorola, unless Licensee breaches this Agreement, in which case this Agreement and Licensee's right to use the Software and Documentation may be terminated immediately upon notice by Motorola.

8.2 Within thirty (30) days after termination of this Agreement, Licensee must certify in writing to Motorola that all copies of the Software have been removed or deleted from the Designated Products and that all copies of the Software and Documentation have been returned to Motorola or destroyed by Licensee and are no longer in use by Licensee.

8.3 Licensee acknowledges that Motorola made a considerable investment of resources in the development, marketing, and distribution of the Software and Documentation and that Licensee's breach of this Agreement will result in irreparable harm to Motorola for which monetary damages would be inadequate. If Licensee breaches this Agreement, Motorola may terminate this Agreement and be entitled to all available remedies at law or in equity (including immediate injunctive relief and repossession of all non-embedded Software and associated Documentation unless Licensee is a Federal agency of the United States Government).

Section 9 UNITED STATES GOVERNMENT LICENSING PROVISIONS

This Section applies if Licensee is the United States Government or a United States Government agency. Licensee's use, duplication or disclosure of the Software and Documentation under Motorola's copyrights or trade secret rights is subject to the restrictions set forth in subparagraphs (c)(1) and (2) of the Commercial Computer Software-Restricted Rights clause at FAR 52.227-19 (JUNE 1987), if applicable, unless they are being provided to the Department of Defense. If the Software and Documentation are being provided to the Department of Defense, Licensee's use, duplication, or disclosure of the Software and Documentation is subject to the restricted rights set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013 (OCT 1988), if applicable. The Software and Documentation may or may not include a Restricted Rights notice, or other notice referring to this Agreement. The provisions of this Agreement will continue to apply, but only to the extent that they are consistent with the rights provided to the Licensee under the provisions of the FAR or DFARS mentioned above, as applicable to the particular procuring agency and procurement transaction.

Section 10 CONFIDENTIALITY

Licensee acknowledges that the Software and Documentation contain Motorola's valuable proprietary and Confidential Information and are Motorola's trade secrets, and that the provisions in the Primary Agreement concerning Confidential Information apply.

Section 11 LIMITATION OF LIABILITY

The Limitation of Liability provision is described in the Primary Agreement.

Section 12 NOTICES

Notices are described in the Primary Agreement.

Section 13 GENERAL

13.1. COPYRIGHT NOTICES. The existence of a copyright notice on the Software will not be construed as an admission or presumption of publication of the Software or public disclosure of any trade secrets associated with the Software.

13.2. COMPLIANCE WITH LAWS. Licensee acknowledges that the Software is subject to the laws and regulations of the United States and Licensee will comply with all applicable laws and regulations, including export laws and regulations of the United States. Licensee will not, without the prior authorization of Motorola and the appropriate governmental authority of the United States, in any form export or re-export, sell or resell, ship or reship, or divert, through direct or indirect means, any item or technical data or direct or indirect products sold or otherwise furnished to any person within any territory for which the United States Government or any of its agencies at the time of the action, requires an export license or other governmental approval. Violation of this provision is a material breach of this Agreement.

13.3. ASSIGNMENTS AND SUBCONTRACTING. Motorola may assign its rights or subcontract its obligations under this Agreement, or encumber or sell its rights in any Software, without prior notice to or consent of Licensee.

13.4. GOVERNING LAW. This Agreement is governed by the laws of the United States to the extent that they apply and otherwise by the internal substantive laws of the State of Tennessee. The terms of the U.N. Convention on Contracts for the International Sale of Goods do not apply. In the event that the Uniform Computer Information Transaction Act, any version of this Act, or a substantially similar law (collectively "UCITA") becomes applicable to a party's performance under this Agreement, UCITA does not govern any aspect of this Agreement or any license granted under this Agreement, or any of the parties' rights or obligations under this Agreement. The governing law will be that in effect prior to the applicability of UCITA.

13.5. THIRD PARTY BENEFICIARIES. This Agreement is entered into solely for the benefit of Motorola and Licensee or Williamson County, City of Franklin and City of Brentwood should Licensee transfer its rights to any of the entities. No third party has the right to make any claim or assert any right under this Agreement, and no third party is deemed a beneficiary of this Agreement. Notwithstanding the foregoing, any licensor or supplier of third party software included in the Software will be a direct and intended third party beneficiary of this Agreement.

13.6. SURVIVAL. Sections 4, 5, 6.3, 7, 8, 9, 10, 11 and 13 survive the termination of this Agreement.

13.7. ORDER OF PRECEDENCE. In the event of inconsistencies between this Exhibit and the Primary Agreement, the parties agree that this Exhibit prevails, only with respect to the specific subject matter of this Exhibit, and not the Primary Agreement or any other exhibit as it applies to any other subject matter.

13.8 SECURITY. Motorola uses reasonable means in the design and writing of its own Software and the acquisition of third party Software to limit Security Vulnerabilities. While no software can be guaranteed to be free from Security Vulnerabilities, if a Security Vulnerability is discovered, Motorola will take the steps set forth in Section 6 of this Agreement.

Exhibit B

Payment Schedules

System Payment Schedule

The System Price less Subscribers in U.S. dollars is \$15,128,244. Except for a payment that is due on the Effective Date, Customer will make payments to Motorola within thirty (30) days after the date of each invoice. Customer will make payments when due in the form of a check, cashier's check, or wire transfer drawn on a U.S. financial institution and in accordance with the following milestones.

System Price less Subscribers::

- 1) 5% of System Price less Subscribers upon completion of Contract Execution;
- 2) 5% of System Price less Subscribers upon Completion of Customer Design Review;
- 3) 35% of System Price less Subscribers upon Shipment of Infrastructure Equipment;
- 4) 10% of System Price less Subscribers upon Completion of Site Development, by site;
- 5) 30% of System Price less Subscribers upon Completion of Installation, by site;
- 6) 15% of System Price less Subscribers upon System Acceptance

Subscriber price in U.S. dollars is \$7,366,756. Subscribers will be invoiced 100% as shipped.

SUA Payment Schedule

SUAII services in U.S. dollars is \$1,591,752. Motorola will invoice Customer in advance for each payment period. All other charges will be billed monthly, and Customer must pay each invoice in U.S. dollars within thirty (30) days of the invoice date.

	Years 2	Years 3	Years 4	Years 5	Years 6	Years 7	Years 2-7 Total
Brentwood	\$ 60,070	\$ 60,070	\$ 60,070	\$ 60,070	\$ 60,070	\$ 60,070	\$ 360,420
Williamson County	\$128,003	\$128,003	\$128,003	\$128,003	\$128,003	\$128,003	\$ 768,018
Franklin	\$ 77,219	\$ 77,219	\$ 77,219	\$ 77,219	\$ 77,219	\$ 77,219	\$ 463,314
Total SUAII	\$265,292	\$265,292	\$265,292	\$265,292	\$265,292	\$265,292	\$1,591,752

Exhibit C
Motorola Proposal Addendum dated October 19, 2016

Exhibit D

Motorola's Proposal dated September 1, 2016

Exhibit E

Service Terms and Conditions

Motorola Solutions, Inc. ("Motorola") and the customer named in this Agreement ("Customer") hereby agree as follows:

Section 1 APPLICABILITY

These Service Terms and Conditions apply to service contracts whereby Motorola will provide to Customer either (1) maintenance, support, or other services under a Motorola Service Agreement, or (2) installation services under a Motorola Installation Agreement.

Section 2 DEFINITIONS AND INTERPRETATION

2.1. "Agreement" means these Service Terms and Conditions; the cover page for the Service Agreement or the Installation Agreement, as applicable; and any other attachments, all of which are incorporated herein by this reference. In interpreting this Agreement and resolving any ambiguities, these Service Terms and Conditions take precedence over any cover page, and the cover page takes precedence over any attachments, unless the cover page or attachment states otherwise.

2.2. "Equipment" means the equipment that is specified in the attachments or is subsequently added to this Agreement.

2.3. "Services" means those installation, maintenance, support, training, and other services described in this Agreement.

Section 3 ACCEPTANCE

Customer accepts these Service Terms and Conditions and agrees to pay the prices set forth in the Agreement. This Agreement becomes binding only when accepted in writing by Motorola. The term of this Agreement begins on the "Start Date" indicated in this Agreement.

Section 4 SCOPE OF SERVICES

4.1. Motorola will provide the Services described in this Agreement or in a more detailed statement of work or other document attached to this Agreement. At Customer's request, Motorola may also provide additional services at Motorola's then-applicable rates for the services.

4.2. If Motorola is providing Services for Equipment, Motorola parts or parts of equal quality will be used; the Equipment will be serviced at levels set forth in the manufacturer's product manuals; and routine service procedures that are prescribed by Motorola will be followed.

4.3. If Customer purchases from Motorola additional equipment that becomes part of the same system as the initial Equipment, the additional equipment may be added to this Agreement and will be billed at the applicable rates after the warranty for that additional equipment expires.

4.4. All Equipment must be in good working order on the Start Date or when additional equipment is added to the Agreement. Upon reasonable request by Motorola, Customer will provide a complete serial and model number list of the Equipment. Customer must promptly notify Motorola in writing when any Equipment is lost, damaged, stolen or taken out of service. Customer's obligation to pay Service fees for this Equipment will terminate at the end of the month in which Motorola receives the written notice.

4.5. Customer must specifically identify any Equipment that is labeled intrinsically safe for use in hazardous environments.

4.6. If Equipment cannot, in Motorola's reasonable opinion and in conjunction with the Customer's Project Manager, be properly or economically serviced for any reason, Motorola may modify the scope of Services related to that Equipment; remove that Equipment from the Agreement; or increase the price to Service that Equipment subject to available appropriated funds.

4.7. Customer must promptly notify Motorola of any Equipment failure. Motorola will respond to Customer's notification in a manner consistent with the level of Service purchased as indicated in this Agreement.

Section 5 EXCLUDED SERVICES

5.1. Service excludes the repair or replacement of Equipment that has become defective or damaged from use in other than the normal, customary, intended, and authorized manner; use not in compliance with applicable industry standards; excessive wear and tear; or accident, liquids, power surges, neglect, acts of God or other force majeure events unless the cause of the defect or damage is caused by the Negligence of Motorola.

5.2. Unless specifically included in this Agreement, Service excludes items that are consumed in the normal operation of the Equipment, such as batteries or magnetic tapes; upgrading or reprogramming Equipment; accessories, belt clips, battery chargers, custom or special products, modified units, or software; and repair or maintenance of any transmission line, antenna, microwave equipment, tower or tower lighting, duplexer, combiner, or multicoupler. Motorola has no obligations for any transmission medium, such as telephone lines, computer networks, the internet or the worldwide web, or for Equipment malfunction caused by the transmission medium.

Section 6 TIME AND PLACE OF SERVICE

Service will be provided at the location specified in this Agreement. When Motorola performs service at Customer's location, Customer will provide Motorola, at no charge, a non-hazardous work environment with adequate shelter, heat, light, and power and with full and free access to the Equipment. Waivers of liability from Motorola or its subcontractors will not be imposed as a site access requirement. Customer will provide all information pertaining to the hardware and software elements of any system with which the Equipment is interfacing so that Motorola may perform its Services. Unless otherwise stated in this Agreement, the hours of Service will be 8:30 a.m. to 4:30 p.m., local time, excluding weekends and holidays. Unless otherwise stated in this Agreement, the price for the Services exclude any charges or expenses associated with helicopter or other unusual access requirements; if these charges or expenses are reasonably incurred by Motorola in rendering the Services, Customer agrees to reimburse Motorola for those actual charges and expenses incurred by Motorola.

Section 7 CUSTOMER Contact

Customer will provide Motorola with designated points of contact (list of names and phone numbers) that will be available twenty-four (24) hours per day, seven (7) days per week, and an escalation procedure to enable Customer's personnel to maintain contact, as needed, with Motorola.

Section 8 PAYMENT

Unless alternative payment terms are stated in this Agreement, Motorola will invoice Customer in advance for each payment period. All other charges will be billed monthly, and Customer must pay each invoice in U.S. dollars within twenty (20) days of the invoice date. Customer will reimburse Motorola for all property taxes, sales and use taxes, excise taxes, and other taxes or assessments that are levied as a result of Services rendered under this Agreement (except income, profit, and franchise taxes of Motorola) by any governmental entity unless the Customer would be otherwise exempt from the tax or assessment as a governmental entity absent this Agreement.

Section 9 WARRANTY

Motorola warrants that its Services under this Agreement will be free of defects in materials and workmanship for a period of ninety (90) days from the date the performance of the Services are completed. In the event of a breach of this warranty and to the degree permissible by Tennessee law, Customer's sole remedy is to require Motorola to re-perform the non-conforming Service or to refund, on a pro-rata basis, the fees paid for the non-conforming Service. TO THE DEGREE PERMISSIBLE BY TENNESSEE LAW, MOTOROLA DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Section 10 DEFAULT/TERMINATION

10.1. If either party defaults in the performance of this Agreement, the other party will give to the non-performing party a written and detailed notice of the default. The non-performing party will have thirty (30) days thereafter to provide a written plan to cure the default that is acceptable to the other party and begin implementing the cure plan immediately after plan approval. If the non-performing party fails to provide or implement the cure plan, then the injured party, in addition to any other rights available to it under law, may immediately terminate this Agreement effective upon giving a written notice of termination to the defaulting party.

10.2. Any termination of this Agreement will not relieve either party of obligations previously incurred pursuant to this Agreement, including payments which may be due and owing at the time of termination. All undisputed earned sums owed by Customer to Motorola will become due and payable immediately upon termination of this Agreement. Upon the effective date of termination, Motorola will have no further obligation to provide Services.

Section 11 LIMITATION OF LIABILITY

To the degree permissible by Tennessee Law, and except for personal injury or death, Motorola's total liability, whether for breach of contract, warranty, negligence, strict liability in tort, or otherwise, will be limited to the direct damages recoverable under law, but not to exceed the price of twelve (12) months of Service provided under this Agreement. **ALTHOUGH THE PARTIES ACKNOWLEDGE THE POSSIBILITY OF SUCH LOSSES OR DAMAGES, THEY AGREE TO THE DEGREE PERMISSIBLE BY TENNESSEE LAW, THAT MOTOROLA WILL NOT BE LIABLE FOR ANY COMMERCIAL LOSS; INCONVENIENCE; LOSS OF USE, TIME, DATA, GOOD WILL, REVENUES, PROFITS OR SAVINGS; OR OTHER SPECIAL, INCIDENTAL, INDIRECT, OR CONSEQUENTIAL DAMAGES IN ANY WAY RELATED TO OR ARISING FROM THIS AGREEMENT OR THE PERFORMANCE OF SERVICES BY MOTOROLA PURSUANT TO THIS AGREEMENT.** To the degree permissible by Tennessee law, no action for contract breach or otherwise relating to the transactions contemplated by this Agreement may be brought more than one (1) year after the accrual of the cause of action, except for money due upon an open account. This limitation of liability will survive the expiration or termination of this Agreement and applies notwithstanding any contrary provision.

Section 12 EXCLUSIVE TERMS AND CONDITIONS

12.1. This Agreement supersedes all prior and concurrent agreements and understandings between the parties, whether written or oral, related to the Services, and there are no agreements or representations concerning the subject matter of this Agreement except for those expressed herein. The Agreement may not be amended or modified except by a written agreement signed by authorized representatives of both parties.

12.2. Customer agrees to reference this Agreement on any purchase order issued in furtherance of this Agreement, however, an omission of the reference to this Agreement will not affect its applicability. In no event will either party be bound by any terms contained in a Customer purchase order, acknowledgement, or other writings unless: the purchase order, acknowledgement, or other writing specifically refers to this Agreement; clearly indicate the intention of both parties to override and modify this Agreement; and the purchase order, acknowledgement, or other writing is signed by authorized representatives of both parties.

Section 13 PROPRIETARY INFORMATION; CONFIDENTIALITY; INTELLECTUAL PROPERTY RIGHTS

13.1. Any information or data in the form of specifications, drawings, reprints, technical information or otherwise furnished to Customer under this Agreement will remain Motorola's property, will be deemed proprietary, will be kept confidential, and will be promptly returned at Motorola's request. Customer may not disclose, without Motorola's written permission or as required by law, any confidential information or data to any person, or use confidential information or data for any purpose other than performing its obligations under this Agreement. The obligations set forth in this Section survive the expiration or termination of this Agreement.

13.2. Unless otherwise agreed in writing, no commercial, financial or technical information disclosed in any manner or at any time by Customer to Motorola will be deemed secret or confidential unless the information would allow a person to identify areas of structural or operational vulnerability of a utility service provider or that would permit disruption or interference with service;. Motorola will have no obligation to provide Customer with access to its confidential and proprietary information, including cost and pricing data.

13.3. This Agreement does not grant directly or by implication, estoppel, or otherwise, any ownership right or license under any Motorola patent, copyright, trade secret, or other intellectual property, including any intellectual property created as a result of or related to the Equipment sold or Services performed under this Agreement.

Section 14 FCC LICENSES AND OTHER AUTHORIZATIONS

Customer is solely responsible for obtaining licenses or other authorizations required by the Federal Communications Commission or any other federal, state, or local government agency and for complying with all rules and regulations required by governmental agencies. Neither Motorola nor any of its employees is an agent or representative of Customer in any governmental matters.

Section 15 COVENANT NOT TO EMPLOY

During the term of this Agreement and continuing for a period of two (2) years thereafter, Customer will not hire, engage on contract, solicit the employment of, or recommend employment to any third party of any employee of Motorola or its subcontractors without the prior written authorization of Motorola. This provision applies only to those employees of Motorola or its subcontractors who are responsible for rendering services under this Agreement. If this provision is found to be overly broad under applicable law, it will be modified as necessary to conform to applicable law.

Section 16 MATERIALS, TOOLS AND EQUIPMENT

All tools, equipment, dies, gauges, models, drawings or other materials paid for or furnished by Motorola for the purpose of this Agreement will be and remain the sole property of Motorola. Customer will safeguard all such property while it is in Customer's custody or control, be liable for any loss or damage to this property, and return it to Motorola upon request. This property will be held by Customer for Motorola's use without charge and may be removed from Customer's premises by Motorola at any time without restriction.

Section 17 GENERAL TERMS

17.1. If any court renders any portion of this Agreement unenforceable, the remaining terms will continue in full force and effect.

17.2. This Agreement and the rights and duties of the parties will be governed and interpreted in accordance with the laws of the State in which the Services are performed.

17.3. Failure to exercise any right will not operate as a waiver of that right, power, or privilege.

17.4. Neither party is liable for delays or lack of performance resulting from any causes that are beyond that party's reasonable control, such as strikes, material shortages, or acts of God.

17.5. Motorola may assign its rights and obligations, and may subcontract any portion of its performance, under this Agreement.

17.6. THE MAXIMUM LIFE OF THIS AGREEMENT IS SEVEN (7) YEARS. Prior to the seventh anniversary of the start date, should Motorola wish to continue, it must submit a new proposal, to include a Communications System Agreement, to be negotiated with the Customer. Any new Agreement must be in place on the day following the seventh anniversary. Sixty (60) calendar days prior to the annual anniversary date, Motorola shall provide the Customer with an extension request which clearly states any changes to the original agreement. The Customer, should it desire to continue the Agreement, will submit a letter of concurrence to the Customer's Procurement Branch for approval. Should either party wish to discontinue the Agreement, it must notify the other party in writing not less than thirty (30) calendar days prior to the annual anniversary date.

17.7. If Motorola provides Services after the termination or expiration of this Agreement, the terms and conditions in effect at the time of the termination or expiration will apply to those Services and Customer agrees to pay for those services on a time and materials basis at Motorola's then effective hourly rates.

Exhibit F
System Acceptance Certificate

Customer Name: _____

Project Name: _____

This System Acceptance Certificate memorializes the occurrence of System Acceptance. Motorola and Customer acknowledge that:

1. The Acceptance Tests set forth in the Acceptance Test Plan have been successfully completed.
2. The System is accepted.

Customer Representative:

Motorola Representative:

Signature: _____

Signature: _____

Print Name: _____

Print Name: _____

Title: _____

Title: _____

Date: _____

Date: _____

FINAL PROJECT ACCEPTANCE:

Motorola has provided and Customer has received all deliverables, and Motorola has performed all other work required for Final Project Acceptance.

Customer Representative:

Motorola Representative:

Signature: _____

Signature: _____

Print Name: _____

Print Name: _____

Title: _____

Title: _____

Date: _____

Date: _____

Exhibit C

ADDENDUM 1 ADJUSTMENTS AND RESPONSES

THIS ADDENDUM ("Addendum") is made part of the Communications Systems Agreement and all other related agreements and proposals ("Contract Documents"), entered into and between Motorola Solutions, Inc. ("Motorola") and Williamson County Joint Communications Network Authority (the "WCJCNA").

Purpose: The purpose of this Addendum is to address adjustments and responses to the Contract Documents as agreed by the parties.

Adjustments to the WCJCNA proposal:

1. In Table 1-2, System Description, only one site is HSB protected (Brentwood to Brentwood 911). We suggest all microwave links have HSB protection.

Section 1.7.1.1 page 1-24 is amended to include the following as clarification:

All microwave links are loop protected. Please see figure 1-3 in section 1.7.1.1 page 1-24. Motorola and WCJCNA have discussed the proposal additions required to achieve this design requirement and WCJCNA has decided to stay with Loop Protection. The updated Tables from Section 1.7.1.1 are below and replace the ones in the System Description in the September 2016 proposal.

2. SUA II Scope of Work Rev 02 9-07-16 System Upgrade

Clarification to WCJCNA Responsibilities:

- 1) Purchase any additional software and hardware necessary to implement optional system release features or system expansions.
- 2) Provide or purchase labor to implement optional system release features or system expansions.

SUA II SOW 2.1.2.5 & 2.1.2.6 is amended as follows:

Motorola's Major System Releases contain both new standard and optional features and enhancements. Standard features and labor will be included in SUA upgrades. WCJCNA may be subject to license and/or equipment charges for optional features and/or enhancements. In addition, Motorola's SUA pricing is based on the system design outlined in Appendix B. Any expansions will need to be purchased separately and could be subject to a price adjustment of the SUA annual price after the expansion.

STANDARD FEATURES – These are features available in the current release and all releases going forward. These features will be defined in each Software release.

OPTIONAL FEATURES – These features are defined as any feature not included in any given standard software release.

3. MNI Network Management (Radio and uW)
Monitor sites should include the local Motorola Service Shop.

Section 1.7.4 page 1-30 is amended for clarification as follows:

The Motorola SSC monitors the system. The shop will then be dispatched per the severity level. WCJCNA shall have the ability to view and/or create system management reports, which includes system statistical information from four (4) Network Management clients.

4. Alarms should include tower lights and low fuel alarms, documents indicate it is not included.

The connection of tower alarms and low fuel alarms are included in the Contract Price. There are up to 48 inputs available on the proposed SDM RTU's at each RF site. Please see attached document "MSB Building Alarms 7-23-02" for standard and optional alarms on a 12x24 MSB.

Any other alarms that WCJCNA would like to be monitored on existing equipment (i.e. Generators, Towers, Buildings, etc.) would need the appropriate alarm panel/contact closure(s) to do so.

5. Motorola shall install 8' fencing with 3 strands of barbed wire on angled support at all new tower sites.

6. Suggest that Motorola, not the WCJCNA, be responsible for storing equipment.

Motorola agrees that it shall be responsible for storing any and all equipment. Title and risk of loss will pass to the customer upon system acceptance.

7. Suggest that Motorola repair any access road damages, rather than the WCJCNA.

During construction, if any roads are damaged by Motorola, its contractor's, or subcontractors, Motorola shall repair the roads to meet applicable road construction standards of the governing authority with jurisdiction over the road.

8. Amendments to the Statement of Work Limitations –

- a. Process Equipment List – WCJCNA will not provide secure storage of equipment

Motorola shall store any equipment. Title and risk of loss will pass to the customer upon system acceptance.

- b. 28.4.3. is amended for clarification purposes.

1. Motorola agrees that WCJCNA shall not have possession of subscriber units prior to staging.

2. Motorola shall develop required room layouts before Staging.

9. Amend 28.7.1 Optimize System FNE to add the following:

- a. Provide WCJCNA with Optimization data that includes:

1. 700 MHz Radios

- a. Line Sweeps
- b. Frequencies of each transmitter and receiver
- c. Forward and Reverse Power of each Transmitter (Transmitter Isolator Loads are to be removed for this test)
- d. Individual TX and Combiner Losses
- e. Receiver Sensitivity
- f. Receiver Filter Bandpass at input to Multicoupler
- g. Verify TTA is functioning correctly
- h. Site Noise Floor
- i. Turn on all transmitters in shelter then monitor receive antenna for Intermods

Motorola shall provide the data for informational purposes only. The customer is responsible for frequencies and any pending results. Data (a) through (g) shall be provided by Motorola. Data (h) is not needed. This may be typical of VHF or UHF, but not required for 700/800. Data (i), Motorola will provide the paper intermodulation study at no additional costs.

2. Provide all microwave site tests that include but are not limited to
 - a. Alarms

- b. 24-Hour Bit Error Test in each direction
- c. Transmitter output power
- d. Receiver sensitivity
- e. Operation at a 40 dB Fade Margin to verify ACM function

Motorola shall provide the data for informational purposes only. The customer is responsible for frequencies and any pending results. Tests (a) through (e) can be performed as factory tests and are provided at no additional cost to WCJCN.

- 10. Amend 28.10.3 Regarding-Program Existing Subscribers –Program for exhibiting Subscribers shall not be performed until system is ready for Cutover.

11. Warranty and Maintenance

a. Response time and time to repair are not provided and should be included. In response, Motorola agrees to provide the following response times in the time and manner as provided below.

- 1. Severity 1 – Motorola shall respond within 2 to 4 hours from receipt of Notification. Restoral shall be achieved within 8 Hours of notification. If Motorola fails to respond to severity level 1 system failure, within 4 hours, Motorola shall deduct \$2,000 from the annual maintenance contract, per occurrence.
- 2. Severity 2 – Motorola shall respond within 4 hours from receipt of Notification. Restoral – shall be achieved within 8 Hours of notification. If Motorola fails to respond to severity level 2 system failure, within 4 hours, Motorola shall deduct \$1,000 from the annual maintenance contract, per occurrence.
- 3. Severity 3 – Motorola shall respond within 24 hours from receipt of Notification. Restoral shall be achieved within 48 Hours of notification.

b. Motorola acknowledges that the non-fulfillment of its obligations within the defined response times provided above would result in losses of types and in amounts which are near impossible to compute and ascertain with certainty and that the amounts above represent a fair, reasonable, and appropriate estimate of damages. The amounts are intended to represent estimated damages and are not intended as a penalty.

12. Brentwood RF Site

Replace Brentwood RF Existing Microwave Equipment \$71,248.70 with
Brentwood RF Microwave Equipment \$52,620.10

Motorola shall cover under maintenance/warranty the upgraded microwave equipment between Brentwood 911 and Brentwood RF Existing.

The pricing for Brentwood RF Existing had included the “ENTIRE” upgrade for the hop between Brentwood RF Existing and Brentwood Dispatch. Those numbers have been revised. Brentwood RF Existing should be reduced by \$52,857.14 and Brentwood Dispatch should increase by \$52,857.14.

Brentwood RF Existing System Integration = \$199,886.93
Brentwood Dispatch System Integration = \$296,552.66

In comparison, Brentwood RF Existing and Brentwood Dispatch both have two (2) microwave links - one (1) link is new, one (1) link will be upgraded. However, Brentwood Dispatch also includes MCC7500 console positions, MCC7100 console positions, and a CEN.

Another comparison is Williamson County Fairview. System Integration = \$249,227. This location has two (2) new microwave links, 7 TAC Repeaters, and a rack mount UPS. It is less than Brentwood Dispatch, because it does not have the console positions or a CEN. It is more than Brentwood RF Existing because it has 7 TAC Repeaters, a rack

mount UPS, and two (2) new microwave links versus one (1) new microwave link and one (1) upgraded link.

13. Explanation and Additional Pricing Amendments for Williamson County Joint Communications Network Authority (Brentwood, Franklin and Williamson County). Motorola agrees to the following pricing amendments and or clarifications.
- a. All Pricing is Based on the Tennessee State Contract.
 - b. Pricing validity is until 11/30/16.
 - c. Maintenance Pricing begins at the end of the warranty period, and is included in for your review.
 - d. The System Upgrade Agreement (SUA II) pricing is included in the Contract Price.
 - e. For the five (5) locations receiving new towers (Brentwood RF, Barking Dog, Land Fill, Nolensville, and Sneed WT), Motorola Solutions, Inc. (Motorola) originally included tower foundation pricing based on normal soil analysis. Motorola agrees to provide an optional, not-to- exceed price of an additional \$1,200,000 for all five (5) locations if the technical report requires additional cost based on the Long Lane soil sample. Motorola warrants that the additional costs shall not exceed the \$1,200,000.00 price and costs exceeding the price shall be borne by Motorola.
 - f. Motorola has included a Five Year Pricing Guarantee on all subscribers.
 - g. Motorola is including an optional critical building coverage guarantee for 58 buildings listed in the CATP. The price is not to exceed \$1,300,000. Motorola warrants that the additional costs for the critical building coverage shall not exceed \$1,300,000.00. Any costs associated with the critical building coverage exceeding \$1,300,000 shall be borne by Motorola.
 - h. Motorola has agreed to provide a \$300,000 Technology credit, which can be used for equipment or services of your choice. This offer is based on a signed CSA and Purchase Order issued to Motorola by November 30, 2016.
14. In the event of any conflict between the terms of this Addendum and any contract, exhibits, or any other previously executed addenda, this Addendum shall control.

The parties agree to the terms and obligations contained in this Addendum which is evidenced by the authorized representative

Motorola

Williamson County Communications Joint
Network Authority

Signature

Date

Signature

Date

**CITY OF FRANKLIN, TENNESSEE
PROFESSIONAL SERVICES AGREEMENT
COF Contract No. 2016-0316**

THIS PROFESSIONAL SERVICES AGREEMENT ("Agreement") is by and between the City of Franklin, Tennessee, hereinafter referenced as City, and **HAZEN AND SAWYER** hereinafter referenced as Consultant, who mutually agree as follows:

DECLARATIONS. City desires to retain Consultant to provide engineering, related technical, and other services in connection with City's project hereinafter referenced as Project. The Project is described as follows:

54" HARPETH RIVER INTERCEPTOR SEWER ASSESSMENT

1. SCOPE OF SERVICES. Consultant shall provide engineering related technical for the Project in accordance with the Scope of Services (Services) as found in Attachment A which shall be considered as an integral part hereof.
2. Consultant shall submit as a part of Attachment A an individual Fee Schedule and a Completion Schedule for the Project based on the detailed Scope of Services.
3. In event of a conflict between this Agreement and the attached document(s), this Agreement shall supersede conflicting terms and conditions.
4. Consultant shall be paid on a not-to-exceed basis for work performed based on the Fee Schedule as contained in Attachment A in the Amount of TWENTY-FOUR THOUSAND SEVEN HUNDRED FIFTY-SIX AND NO/100 DOLLARS (\$24,756.00).

**The Board of Mayor and Aldermen Approved this Agreement on the
_____ Day of _____ 201__.**

TERMS AND CONDITIONS FOR PROFESSIONAL SERVICES

ARTICLE 1. SERVICES. Consultant will:

- 1.1 Act for City in a professional manner, using that degree of care and skill ordinarily exercised by and consistent with standards of competent consultants using the standards in the industry:
- 1.2 Consider all reports to be confidential and distribute copies of the same only to those persons specifically designated by the City.
- 1.3 Perform all services under the general direction of a senior professional employee, licensed and/or registered in the State of Tennessee, when appropriate.
- 1.4 Designate, in writing, the sole Project representative to coordinate with City the Services to be provided, including all contact information.
- 1.5 Unless provided for in the Project Scope of Services (Attachment A), Consultant shall perform all Services with his own forces (employees). Should sub-consultants be proposed to be used in the Project, a listing of said sub-consultants with Services to be performed shall be provided. After approval of this Agreement, no substitute for sub-consultants shall be allowed unless approved by City.
- 1.6 Retain pertinent records relating to the services performed for a period of seven (7) years following the completion of the work; during this period the records shall be available for review by City at all reasonable times.

ARTICLE 2. CITY'S RESPONSIBILITIES. City, or its authorized representative, will:

- 2.1 Provide Consultant with all information regarding the Project, which is available to, or reasonably obtainable by, the City.
- 2.2 Furnish right-of-entry onto the Project site for Consultant's necessary field studies and surveys. Consultant will endeavor to restore the site to its original condition and shall remain solely liable for all damages, costs and expenses, including reasonable attorneys' fees, for failure to make such restoration.
- 2.3 Designate, in writing, the sole Project representative to coordinate with and direct the Consultant, including all contact information.
- 2.4 Guarantee to Consultant that it has the legal capacity to enter into this contract and that sufficient monies are available to fund Consultant's compensation.

ARTICLE 3. GENERAL CONDITIONS.

- 3.1 Consultant, by the performance of services covered hereunder, does not in any way assume, abridge or abrogate any of those duties, responsibilities or authorities customarily vested in other professionals or agencies participating in the Project.

- 3.2 Consultant shall be responsible for the acts or omissions of any party involved in concurrent or subsequent phases of the Project acting upon written instruction issued by the Consultant.
- 3.3 Neither City nor Consultant may assign or transfer its duties or interest in this Agreement without written consent of the other party.
- 3.4 **ALLOCATION OF RISK AND LIABILITY; GENERAL.** Considering the potential liabilities that may exist during the performance of the services of this Agreement, the relative benefits and risks of the Project, and the Consultant's fee for the services rendered, and in consideration of the promises contained in this Agreement, the City and the Consultant agree to allocate and limit such liabilities in accordance with this Article.
- 3.5 **INDEMNIFICATION.** Consultant agrees to indemnify and hold City harmless from and against legal liability for all judgments, losses, damages, and expenses to the extent such judgments, losses, damages, or expenses are caused by Consultant's negligent act, error or omission in the performance of the services of this Agreement. In the event judgments, losses, damages, or expenses are caused by the joint or concurrent negligence of Consultant and City, they shall be borne by each party in proportion to its own negligence.
- 3.5.1 **SURVIVAL.** The terms and conditions of this paragraph shall survive completion of this services agreement.
- 3.6 **LIMITATIONS OF RESPONSIBILITY.** Consultant shall not be responsible for (a) construction means, methods, techniques, sequences, procedures, or safety precautions and programs in connection with the Project unless specifically undertaken in Attachment A, Scope of Services ; (b) the failure of any contractor, subcontractor, Consultant, or other Project participant, not under contract to Consultant, to fulfill contractual responsibilities to City or to comply with federal, state, or local laws, regulations, and codes; or (c) procuring permits, certificates, and licenses required for any construction unless such procurement responsibilities are specifically assigned to Consultant in Attachment A, Scope of Services.

ARTICLE 4. TERMINATION BY THE CITY. The City may terminate this Agreement in accordance with the following terms and conditions:

- 4.1 **Termination for Convenience.** The City may, when in the interests of the City, terminate performance under this Agreement with the Consultant, in whole or in part, for the convenience of the City. The City shall give written notice of such termination to the Consultant specifying when termination becomes effective. The Consultant shall incur no further obligations in connection with the work so terminated, other than warranties and guarantees for completed work and installed equipment, and the Consultant shall stop work when such

termination becomes effective. The Consultant shall also terminate outstanding orders and subcontracts for the affected work. The Consultant shall settle the liabilities and claims arising out of the termination of subcontracts and orders. The City may direct the Consultant to assign the Consultant's right, title and interest under termination orders or subcontracts to the City or its designee. The Consultant shall transfer title and deliver to the City such completed or partially completed work and materials, equipment, parts, fixtures, information and Contract rights as the Consultant has in its possession or control. When terminated for convenience, the Consultant shall be compensated as follows:

- (1) The Consultant shall submit a termination claim to the City specifying the amounts due because of the termination for convenience together with costs, pricing or other data required by the City. If the Consultant fails to file a termination claim within one (1) year from the effective date of termination, the City shall pay the Consultant the amount the City deems the Consultant is due.
- (2) The City and the Consultant may agree to the compensation, if any, due to the Consultant hereunder.
- (3) Absent agreement to the amount due to the Consultant, the City shall pay the Consultant the following amounts:
 - (a) Contract costs for labor, materials, equipment and other services accepted under this Agreement;
 - (b) Reasonable costs incurred in preparing to perform and in performing the terminated portion of the work, and in terminating the Consultant's performance, plus a fair and reasonable allowance for direct job site overhead and earned profit thereon (such profit shall not include anticipated profit or consequential damages); provided however, that if it reasonably appears that the Consultant would have not profited or would have sustained a loss if the entire Agreement would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss, if any;

The total sum to be paid the Consultant under this Section shall not exceed the total Agreement Price, as properly adjusted, reduced by the amount of payments otherwise made, and shall in no event include duplication of payment.

- 4.2 Termination for Cause. If the Consultant does not perform the work, or any part thereof, in a timely manner, supply adequate labor, supervisory personnel or proper equipment or materials, or if it fails to timely discharge its obligations for labor, equipment and materials, or proceeds to disobey applicable law, or otherwise commits a violation of a material provision of this Agreement, then the City, in addition to any other rights it may have against the Consultant or others, may terminate the performance of the Consultant, in whole or in part at the City's sole option, and assume possession of the Project Plans and materials and may complete the work.

In such case, the Consultant shall not be paid further until the work is complete. After Completion has been achieved, if any portion of the Contract Price, as it may be modified hereunder, remains after the cost to the City of completing the work, including all costs and expenses of every nature incurred, has been deducted by the City, such remainder shall belong to the Consultant. Otherwise, the Consultant shall pay and make whole the City for such cost. This obligation for payment shall survive the termination of the Agreement.

In the event the employment of the Consultant is terminated by the City for cause pursuant to this Section and it is subsequently determined by a Court of competent jurisdiction that such termination was without cause, such termination shall thereupon be deemed a Termination for Convenience under this Section and the provisions of Section 4.1 shall apply.

- 4.3 Termination for Non-Appropriation. The City may also terminate this Agreement, in whole or in part, for non-appropriation of sufficient funds to complete or partially complete the Project, regardless of the source of such funds, and such termination shall be on the terms of Section 4.1.
- 4.4 The City's rights under this Section shall be in addition to those contained elsewhere herein or provided by law.

ARTICLE 5. SCOPE OF SERVICES. Consultant shall provide the Services as described in Attachment A, Scope of Services.

- 5.1 By mutual agreement, this Agreement and scope can be amended by the parties. The scope and fee for any additional tasks or services under such

amendment shall be mutually negotiated and agreed to in writing prior to beginning such additional tasks or services.

5.2 ENVIRONMENTAL RESPONSIBILITY.

Where drilling/sampling services are involved, the samples obtained from the Project site are the property of the City. Should any of these samples be recognized by the Consultant to be contaminated, the City shall remove them from the Consultant's custody and transport them to a disposal site, all in accordance with applicable government statutes, ordinances, and regulations. For all other samples, the Consultant shall retain them for a sixty (60)-day period following the submission of the drilling/sampling report unless the City directs otherwise; thereafter, the Consultant shall discard the samples in accordance with all federal, state and local laws.

ARTICLE 6. SCHEDULE.

6.1 TIME OF THE ESSENCE. The parties agree that time is of the essence with respect to the parties' performance of all provisions of the Agreement.

6.2 Before executing this Agreement, the Consultant shall have prepared and submitted for approval to the City a Completion Schedule for the Project with milestones for the various stages (tasks) of the Services as outlined in the Scope of Services. The Consultant shall submit and obtain the City's approval for any proposed changes to the logic, durations, sequences, or timing of tasks as approved in the Completion Schedule.

6.3 FORCE MAJEURE. Neither party will be liable to the other for any delay or failure to perform any of the services or obligations set forth in this Agreement due to causes beyond its reasonable control, and performance times will be considered extended for a period of time equivalent to the time lost because of such delay plus a reasonable period of time to allow the parties to recommence performance of their respective obligations hereunder. Should a circumstance of force majeure last more than ninety (90) days, either party may by written notice to the other terminate this Agreement. The term "force majeure" as used herein shall mean the following: acts of God; strikes, lockouts or other industrial disturbances; acts of public enemies; orders or restraints of any kind of the government of the United States or of the State or any of their departments, agencies or officials, or any civil or military authority; insurrections, riots, landslides, earthquakes, fires, storms, tornadoes, droughts, floods, explosions, breakage or accident to machinery, transmission pipes or canals; or any other cause or event not reasonably within the control of either party.

- 6.4 Should City request changes in the scope, extent, or character of the Project, the fee and the time of performance of Consultant's Services as indicated in Attachment A shall be adjusted equitably.

ARTICLE 7. USE OF DOCUMENTS, DATA.

- 7.1 All Documents, including, but not limited to, reports, drawings, specifications, and computer software prepared by Consultant pursuant to this Agreement are instruments of service in respect to the Project. Consultant shall retain an ownership and property interest therein (including the right of reuse at the discretion of the Consultant) whether or not the Project is completed.
- 7.1.1 **USE OF DATA SYSTEMS:** Ownership, property interests and proprietary rights in data systems used by Consultant do not extend to the data created by or supplied to Consultant by the City; all rights to that data (including derivative or hidden data such as metadata) shall vest solely in City at the moment of creation.
- 7.1.2 **DISCLOSURE OF DOCUMENTS/DATA.** City may be required to disclose documents or data under state or federal law. City shall notify Consultant if a request for data or documents has been made and shall give Consultant a reasonable opportunity under the circumstances to respond to the request by redacting proprietary or other confidential information. Consultant waives any right to confidentiality of any document, e-mail or file it fails to clearly mark on each page as confidential or proprietary. In exchange, Consultant agrees to indemnify, defend, and hold harmless City for any claims by third parties relating thereto or arising out of (i) the City's failure to disclose such documents or information required to be disclosed by law, or (ii) the City's release of documents as a result of City's reliance upon Consultant representation that materials supplied by Consultant (in full or redacted form) do not contain trade secrets or proprietary information, provided that the City impleads Consultant and Consultant assumes control over that claim.
- 7.2 By execution of this Agreement, Consultant and his sub-consultant(s) grant the City a royalty-free, perpetual, irrevocable, and assignable license to use any and all intellectual property interest Consultant or his sub-consultant(s) possess to any drawings, details, specifications, documents, and other information created before each of their first involvement with the Project and subsequently incorporated into the Project's documents. City-furnished data that may be relied upon by Consultant is limited to the printed copies that are delivered to the Consultant pursuant to Article 2 of this Agreement. Any copyrighted electronic files furnished by City shall be used by Consultant only for

the Project as described herein. City's posting or publication of such documents created by Consultant for City shall constitute fair use and shall not constitute an infringement of Consultant's copyright, if any.

- 7.3 Documents that may be relied upon by City are limited to the printed copies (also known as hard copies) that are signed or sealed by the Consultant. Files in electronic media format of text, data, graphics, or of other types that are furnished by Consultant to City are only for convenience of City, unless the delivery of the Project in electronic media format has been dictated in Attachment A, Scope of Services. Any conclusion or information obtained or derived from electronic files provided for convenience will be at the user's sole risk.
- 7.4 Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within sixty (60) days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the party delivering the electronic files. Unless stated otherwise herein, Consultant shall not be responsible to maintain documents stored in electronic media format after acceptance by City.
- 7.5 When transferring documents in electronic media format, Consultant makes no representations as to long term compatibility, usability, or readability, of documents resulting from the use of software application packages, operating systems, or computer hardware differing from that as required of, and used by, Consultant at the beginning of this Project.
- 7.6 City may make and retain copies of Documents for information and reference in connection with use on the Project by the City, or his authorized representative. Such Documents are not intended or represented to be suitable for reuse by City or others on extensions of the Project or on any other project. Any such reuse or modifications without written verification or adaptation by Consultant, as appropriate for the specific purpose intended, will be at City's sole risk and without liability or legal exposure to the Consultant or to Consultant's sub-consultants.
- 7.7 If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- 7.8 Any verification or adaptation of the Documents for extensions of the Project or for any other project will entitle Consultant to further compensation at rates to be agreed upon by City and Consultant.

ARTICLE 8. INSURANCE.

- 8.1 During the performance of the Services under this Agreement, Consultant shall maintain the following minimum insurance:
- a) General Liability Insurance with a combined single limit of \$1,000,000 per occurrence and \$2,000,000 annual aggregate.
 - b) Automobile Liability Insurance with a combined single limit of \$1,000,000 for each person and \$1,000,000 for each accident.
 - c) Workers' Compensation Insurance Coverage A in accordance with statutory requirements and Coverage B, Employer's Liability Insurance, with a limit of \$500,000 for each occurrence.
 - d) Professional Liability Insurance with a limit of \$1,000,000 annual aggregate.
- 8.2 Consultant shall add the City an additional insured on all policies unless otherwise prohibited.
- 8.3 Consultant shall, upon execution of this Agreement, furnish City certificates of insurance, which shall include a provision that such insurance shall not be canceled without at least thirty (30) days' written notice to City.
- 8.4 No insurance, of whatever kind or type is to be considered as in any way limiting other parties' responsibility for damages resulting from their activities in the execution of the Project. City agrees to include, or cause to be included, in the Project's construction contract, such requirements for insurance coverage and performance bonds by the Project's construction contractor as City deems adequate to indemnify City, Consultant, and other concerned parties against claims for damages and to insure compliance of work performance and materials with Project requirements.

ARTICLE 9. PAYMENT.

- 9.1 City will pay Consultant for services and expenses in accordance with the Fee Schedule proposal submitted for the Project as part of the Scope of Services. Consultant's invoices will be presented at the completion of the work or monthly and will be payable upon receipt. Payment is due upon presentation of invoice and is past due thirty (30) days from invoice date. City shall give prompt written notice of any disputed amount and shall pay the remaining amount.
- 9.2 Consultant shall be paid in full for all services under this Agreement, including City authorized overruns of the Project budget or unforeseen need for Consultant's services exceeding the original Scope of Services.
- 9.3 **TRAVEL; EXPENSES**
City shall reimburse reasonable expenses, including travel and meals, when specified in the Scope of Services, but only in accordance with the City's Travel and Expense Policy and Procedures Manual. The maximum amount will be applied as of the date of travel and as listed

in the per diem reimbursement rates on the “CONUS” website developed by the United States General Services Administration, located at www.gsa.gov [click on ‘per diem rates’ under the ‘etools’ category].

ARTICLE 10. MISCELLANEOUS PROVISIONS

- 10.1 **EQUAL EMPLOYMENT OPPORTUNITY.** In connection with this Agreement and the Project, City and Consultant shall not discriminate against any employee or applicant for employment because of race, color, sex, national origin, disability or marital status. City and Consultant will take affirmative action to ensure that the contractor used for the Project does not discriminate against any employee and employees are treated during employment without regard to their race, age, religion, color, gender, national origin, disability or marital status. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination, rates of pay or other forms of compensation; and selection for training, including apprenticeship.
- 10.1.1 Consultant shall insert the foregoing provision in all contracts relating to this Project.
- 10.2 **TITLE VI – CIVIL RIGHTS ACT OF 1964.** City and Consultant shall comply with all the requirements imposed by Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d), 49 C.F.R., Part 21, and related statutes and regulations.
- 10.2.1 Consultant shall insert the foregoing provision in all contracts relating to this Project.
- 10.3 **NO THIRD PARTY RIGHTS CREATED.** City and Consultant each binds itself and its successors, executors, administrators, permitted assigns, legal representatives and, in the case of a partnership, its partners, to the other party to this Agreement and to their successors, executors, administrators, permitted assigns, legal representatives and partners of such other party in respect to all provisions of this Agreement. The Services provided for in this Agreement are for the sole use and benefit of City and Consultant. Nothing in this Agreement shall be construed to give any rights or benefits to anyone other than City and Consultant.
- 10.4 **WARRANTIES/LIMITATION OF LIABILITY/WAIVER.** City reserves all rights afforded to local governments under law for all general and implied warranties. City does not waive any rights it may have to all remedies provided by law and therefore any attempt by Consultant to limit its liability shall be void and unenforceable.

ARTICLE 11. EXTENT OF AGREEMENT.

- 11.1 APPLICABLE LAW/CHOICE OF FORUM AND VENUE. This Agreement is made under and will be construed in accordance with the laws of the State of Tennessee without giving effect to that state's choice of law rules. The parties' choice of forum and venue shall be exclusively in the courts of Williamson County, Tennessee. Any provision of this Agreement held to violate a law or regulation shall be deemed void, and all remaining provisions shall continue in force.
- 11.2 ENTIRE AGREEMENT. This Agreement, including these terms and conditions, represent the entire Agreement between City and Consultant for this Project and supersedes all prior negotiations, representations or agreements, written or oral. This Agreement may be amended only by written instrument signed by City and Consultant.

ARTICLE 12. DISPUTE RESOLUTION, BREACH.

- 12.1 If a dispute should arise relating to the performance of or payment for the Services under this Agreement, the aggrieved party shall notify the other party of the dispute within a reasonable time after such dispute arises. During the pendency of any dispute, the parties shall continue diligently to fulfill their respective obligations hereunder. No arbitration or mediation shall be required as a condition precedent to filing any legal claim arising out of or relating to this Agreement. No arbitration or mediation shall be binding.
- 12.2 BREACH. Upon deliberate breach of the Agreement by either party, the non-breaching party shall be entitled to terminate the Agreement with notice, with all of the remedies it would have in the event of termination, and may also have such other remedies as it may be entitled to in law or in equity.

ARTICLE 13. SURVIVAL.

The provisions contained in this Professional Services Agreement shall survive the completion of or any termination of the Agreement, contract or other document to which it may accompany or incorporate by reference or which subsequently may be modified, unless expressly excepted from this Article upon consent of both parties.

CONSULTANT

CITY OF FRANKLIN

BY: _____

Consultant's Signature

TITLE: _____

Date: _____

BY: _____

Dr. Ken Moore

Mayor

Date: _____

Approved as to Form:

Kristen L. Corn, Assistant City Attorney

September 16, 2016

Mr. Mark Hilty, P.E.
City of Franklin
Water Management Director
124 Lumber Dr
Franklin, TN 37064

Re: 54" Harpeth River Interceptor Sewer Assessment

Dear Mr. Hilty:

We are pleased to submit this proposal to assess and subsequently design improvements to the existing 54" interceptor sewer. The interceptor sewer runs predominately parallel to the Harpeth River. Originally installed in 2001 as an improvement over an existing 42" ductile iron sewer, the 54" reinforced polymer mortar pipe manufactured by HOBAS serves the southern area of Franklin. Until recent years the new 54" sewer has operated as anticipated by the City. However, during the past 3 years the City has discovered several major deficiencies and structural failures within this section of the sewer system.

Under this Task Order 3, Hazen will evaluate 24 previously recorded CCTV videos by First Response and prepare a technical memo with a table summarizing the repairs. These videos have been provided to Hazen by the City along with a transcript noting issues with the sewer. Hazen will review each video and determine a solution and budgetary cost to each issue discovered. The solutions will be divided into two categories.

- Category 1, Repairs that can be performed by City maintenance forces or offered to one of the City's on-call Contractors for construction.
- Category 2, Repairs that are more complicated and will require an engineered design, state, and federal permitting to complete. These series of repairs shall be designed under an amendment to this contract and be packaged into one bid project as a design sealed by an engineer.

Current City documented deficiencies are as follows:

1. 54" HOBAS – SMH-10332 – SMH-11110 – INFILTRATION IN JOINT AT 13.3' – 11/18/15
2. 54" HOBAS – SMH-11110 – SMH-10324 – TOP OF PIPE IS CRACKED WITH INFILTRATION DUE TO DEFLECTION AT 236.4' – SMH-11110 IS 25.5' DEEP - 11/18/15
3. 54" HOBAS – SMH-10686 – SMH-18055 – DEFLECTION STARTING AT 128' TO ABOUT 145' – PIPE IS CRACKED AT TOP WITH NO INFILTRATION ON VIDEO – POSSIBLE DEFLECTION AT 234' - 11/19/15
4. 54" HOBAS – SMH-18055 - SMH-18054 – SMH-18054 HAS SMALL INFILTRATION AT OUT PIPE – POSSIBLE BROKEN BAND OR PIPE NOT IN MANHOLE ALL THE WAY - 11/19/15
5. 54" HOBAS – SMH-18054 - SMH-11510 – MAJOR INFILTRATION AT OUT PIPE – (THE ONE WE KNOW ABOUT AT WRF) – 11/19/15
6. 54" HOBAS – SMH-11510 - SMH-17051 – SMH-17051 HAS INFILTRATION AT IN AND OUT PIPE – OUT PIPE MAY HAVE A BROKEN BAND AT BOOT – 11/19/15

7. 54" HOBAS – SMH-17051 - SMH-11509 – SMH-11509 HAS SMALL INFILTRATION AT IN PIPE – POSSIBLE BROKEN BAND - 11/19/15
8. 54" HOBAS – SMH-11509 – 11508 – SMH-11508 HAS MEDIUM INFILTRATION BETWEEN BASE SECTION AND FIRST RISER – 11/19/15
9. 54" HOBAS – SMH-11508 – SMH-11507 – SMH-11507 HAS VERY SMALL INFILTRATION AT IN PIPE – POSSIBLE BROKEN BAND -11/19/15
10. 54" HOBAS – SMH-11507 – SMH-10346 – SMH-10346 HAS LARGE INFILTRATION AT IN PIPE – POSSIBLE BROKEN BAND -12/8/15
11. 54" HOBAS – SMH-16726 – SMH-16727 – SMH-16727 HAS VERY SMALL INFILTRATION AT THE OUT PIPE – 11/17/15
12. 54" HOBAS – SMH-10693 – SMH-10694 – POSSIBLE DEFLECTION – START VIEWING AT 70' – 11/17/15
13. 54" HOBAS – SMH-10694 – SMH-10748 – SMH-10748 HAS MEDIUM INFILTRATION BETWEEN BASE SECTION AND FIRST RISER – BLOCKAGE IN DROP – 12/4/15
14. 54" HOBAS – SMH-10312 – SMH-17083 – ROOTS OR SOMETHING IN LINE AT 22.2' – 12/3/15
15. 36" HOBAS – SMH-12296 – SMH-12297 – LINE HAS A BAD SWAG. CAMERA UNDER WATER ALL THE WAY 12/4/15
16. 36" HOBAS – SMH-17759 – SMH-17758 – INFILTRATION IN JOINT AT 107.3 AND SWAG IN LINE FROM 226 FEET TO 330 FEET – 11/11/15
17. 36" HOBAS – SMH-12296 – SMH-12297 – SOMETHING IN TOP OF JOINT AT 40 FEET – CAMERA GOES UNDER WATER AT 87 FEET AND STAYS UNDER WATER TO MANHOLE ON OTHER SIDE OF RIVER – 12/4/15
18. 36" HOBAS – SMH-10586 – SMH-16963 – INFILTRATION AT IN AND OUT PIPE AT MANHOLE SMH-16963 – 11/2/15
19. 36" HOBAS – SMH-16963 – SMH-12296 – SMH-12296 HAS INFILTRATION AT IN PIPE – 11/2/15
20. 36" HOBAS – SMH-17755 – SMH-17754 – INFILTRATION AT JOINT AT 119.4 FEET – 10/30/15
21. 36" HOBAS – SMH-18222 – SMH-18221 – SMH-18221 HAS MEDIUM INFILTRATION AT OUT PIPE – POSSIBLE BROKEN BAND – 11/9/15
22. 24" PVC – SMH-11955 – SMH-11954 – SWAG IN LINE FROM 50 FEET TO 213 FEET – 11/10/15
23. 24" PVC – SMH-11576 – SMH-11578 – SMH-11578 HAS INFILTRATION AT OUT PIPE – 11/5/15
24. 48" HOBAS – SMH-11022 – SMH-11310 – OBSTRUCTION IN BOTTOM OF PIPE AT 145 FEET – CAMERA COULD NOT PASS IT – LINE WAS CLEANED – 12/8/15

Hazen proposes to perform these tasks for a not-to-exceed fee of **\$24,750** based on our standard hourly rates. Hazen will begin work immediately upon notice to proceed and the evaluation will be completed within 1 month of notice to proceed.

Depending on the clarity of the existing CCTV videos, additional deflection measurements and CCTV may be required.

This letter proposal is for the CCTV video evaluation and technical memo only. Design plans, permitting, bidding, survey, easement documents, procurement, geotechnical etc. shall be added to this task order via amendment once the summary recommendations are reviewed and approved by the City.



COF 2016-0316
Attachment A
PG 3 of 4

As always we appreciate the opportunity and look forward to working with the City to complete the project. Please contact Michael Orr or me if you have questions or require additional information.

Sincerely,
Hazen and Sawyer

A handwritten signature in blue ink, appearing to read "Scott Woodard".

Scott Woodard, P.E.
Vice President
cc: Michael Orr, P.E. (Project Manager)

ATTACHMENT A
City of Franklin
54" Interceptor Sewer Assessment /Design

COF 2016-0316 Attachment A PG 4 of 4		VP/ Tech.Adv.		Associate	Sr.Pr Engineer	Sr. Modeler	Designer	Admin.	Total Hours	Fee
		FitzGerald	Woodard	Orr	O'Rourke	Dean	B. Edwards	Lawrence		
		QC/ Process Mech.	Project Director	Project Manager/ Civil	Civil	Modeling	CADD			
TASK 1 - Data Collection and Kick-off Meeting										
1.1	Internal Kick-off meeting		1	2					3	\$ 540.00
1.2	Data gathering review		1	8					9	\$ 1,560.00
	Task Total	0	2	10	0	0	0	0	12	\$ 2,100.00
TASK 2 -Evaluation & Summary										
2.1	First Response CCTV review	4		8	24				36	\$ 5,688.00
2.2	Locate sewer issues in GIS			4	8	8			20	\$ 3,072.00
2.3	Determine a repair/replacement for each issue			8	16				24	\$ 3,712.00
2.4	Prepare a Draft Memo describing each location and repair recommended	4		8	16	8			36	\$ 5,728.00
2.5	Hazen QC Review/Revisions	2		4	4				10	\$ 1,668.00
2.6	Submit Memo to City for review/comment			2					2	\$ 340.00
2.7	Revise Memo per City Comments and issue final document amendment for design phase			8	4				12	\$ 1,948.00
	Task Total	10	0	42	72	16	0	0	140	\$ 22,156.00
TASK 3 - 30 Percent Design										
3.1	TBD								0	\$ -
	Task Total	0	0	0	0	0	0	0	0	\$ -
TASK 4 - 60 Percent Design										
4.1	TBD								0	\$ -
	Task Total	0	0	0	0	0	0	0	0	\$ -
TASK 5- 90 Percent Design										
5.1	TBD								0	\$ -
	Task Total	0	0	0	0	0	0	0	0	\$ -
TASK 6 - 100 Percent Design										
6.1	TBD								0	\$ -
	Task Total	0	0	0	0	0	0	0	0	\$ -
TASK 7 - Bid Phase Services										
7.1	TBD								0	\$ -
	Task Total	0	0	0	0	0	0	0	0	\$ -
TASK 8 - Construction Phase Services										
8.1	TBD								0	\$ -
	Task Total	0	0	0	0	0	0	0	0	\$ -
	TOTAL	10	2	52	72	16	0	0	152	\$ 24,256.00

Expenses (travel, lodging, mileage, shipping, misc.) \$ 500.00

Subtotal \$ 24,756.00

Survey

Geotechnical

Historical/Archaeological

Landscape Architecture

Total Estimated Fee (without optional tasks) \$ 24,756.00

**AMENDMENT NO. 2 TO
PROFESSIONAL SERVICES AGREEMENT
FOR FIGUERS DRIVE AREA DRAINAGE IMPROVEMENTS
PROJECT
COF Contract No. 2013-0182**

THIS AMENDMENT is made and entered into on this the ____ day of _____, 2016, by and between the **City of Franklin, Tennessee** ("City") and **NEEL-SCHAFFER, INC.** ("Consultant").

WITNESSETH:

WHEREAS, City and Consultant entered into a Professional Services Agreement ("Agreement") entitled Preliminary Engineering of the Figuers Drive Area Drainage Improvements ("Project"), dated the 26th day of November 2013; and

WHEREAS, said Agreement stipulated that the Consultant would be paid a not to exceed fee of **EIGHTY-TWO THOUSAND AND NO/100 DOLLARS (\$82,000.00)**, as authorized by the City Engineer and as detailed in the fee Schedule; and

WHEREAS, on August 26, 2015, the Board of Mayor and Aldermen approved Amendment No. 1 to the Professional Services Agreement with the Consultant for additional design work to complete the final design for the Project's East Option 2 and West Option 1 tasks in the amount of **ONE HUNDRED TWENTY-FIVE THOUSAND TWO HUNDRED AND NO/100 DOLLARS (\$125,200.00)**, and

WHEREAS, the City and Consultant realize the need for additional utility design work for the Project due to circumstances beyond the control of the Consultant; and

WHEREAS, the Consultant has provided a Proposal for an increase in engineering services for water and sanitary sewer designs, as described in Exhibit A dated August 19, 2016, in the amount of **TWENTY-NINE THOUSAND FIVE HUNDRED AND NO/100 DOLLARS (\$29,500.00)**; and

WHEREAS, the City has reviewed the Proposal and desires to enter into an agreement for the Project as proposed.

NOW, THEREFORE, in consideration of these premises and the mutual promises contained herein, it is agreed by and between the parties as follows:

1. The foregoing recitals are incorporated by reference as if fully stated herein.

2. Consultant's Responsibilities and Duties. Consultant agrees to perform the work as proposed in its August 19, 2016, letter of proposal (**Exhibit A**) which includes the Scope of Services for this Amendment, all of which shall be considered as an integral part hereof.

3. City's Responsibilities and Duties. City shall pay Consultant for the cost of the work as described in Exhibit A an amount not to exceed **TWENTY-NINE THOUSAND FIVE HUNDRED AND NO/100 DOLLARS (\$29,500.00)**.

The City reserves the right to issue any payments jointly to the Consultant and Sub-Consultant when the City receives information that the Consultant has not paid its Sub-Consultant.

4. Waiver. Neither party's failure nor delay to exercise any of its rights or powers under this Amendment will constitute or be deemed a waiver or forfeiture of those rights or powers. For a waiver of a right or power to be effective, it must be in writing signed by the waiving party. An effective waiver of a right or power shall not be construed as either (a) a future or continuing waiver of that same right or power, or (b) the waiver of any other right or power.

5. Severability. If any term or provision of the Amendment is held to be illegal or unenforceable, the validity or enforceability of the remainder of the Amendment will not be affected.

6. Precedence. In the event of conflict between this Amendment and the provisions of the previous Agreement(s), or any other contract, agreement or other document to which this Amendment may accompany or incorporate by reference, the provisions of this Amendment will, to the extent of such conflict (or to the extent the Agreement is silent), take precedence unless such document expressly states that it is amending this Amendment.

7. Entire Agreement. The Amendment between the parties supersedes any prior or contemporaneous communications, representations or agreements between the parties, whether oral or written, regarding the subject matter of the entire Amendment. The terms and conditions of this Amendment may not be changed except by an amendment expressly referencing this Amendment by section number and signed by an authorized representative of each party.

8. Additions/Modifications. If seeking any addition or modification to the Amendment, the parties agree to reference the specific paragraph number sought to be changed on any future document or purchase order issued in furtherance of the Amendment, however, an omission of the reference to same shall not affect

its applicability. In no event shall either party be bound by any terms contained in any purchase order, acknowledgement, or other writings unless: (a) such purchase order, acknowledgement, or other writings specifically refer to the Amendment or to the specific clause they are intended to modify; (b) clearly indicate the intention of both parties to override and modify the Amendment; and (c) such purchase order, acknowledgement, or other writings are signed, with specific material clauses separately initialed, by authorized representatives of both parties.

9. Breach. Upon deliberate breach of the Amendment by either party, the non-breaching party shall be entitled to terminate the Amendment without notice, with all of the remedies it would have in the event of termination, and may also have such other remedies as it may be entitled to in law or in equity.

10. Survival. This Amendment shall survive the completion of or any termination of the original contract, revised contract, or agreement or other document to which it may accompany or incorporate by reference.

All other provisions of the Agreement dated November 26, 2013 and Amendment 1 dated August 25, 2015 are unchanged and remain in full force and effect.

IN WITNESS WHEREOF, the parties have executed this Amendment.

CITY OF FRANKLIN, TENNESSEE

NEEL-SCHAFFER, INC.

By: _____
Dr. Ken Moore
Mayor
Date: _____

By: _____
Print: _____
Title: _____
Date: _____

Attest:

Eric S. Stuckey
City Administrator
Date: _____

Approved as to form:

Kristen L. Corn, Assistant City Attorney

August 19, 2016

Mr. William G. Banks
City of Franklin
Staff Engineer
City Hall
109 3rd Avenue South
Franklin, Tennessee 37064

REF: Exhibit A – Proposal for Additional Design Engineering for Water/Sewer Improvements within Figuers Drive Drainage Improvement Area

Dear Mr. Banks,

We appreciate you contacting Neel-Schaffer concerning additional design engineering for the water and sewer improvements to be incorporated within the drainage improvements on Figuers Drive. The following is our best interpretation of the scope and tasks that have been previously discussed with you. The tasks for each improvement include development of final plans and specifications and assistance with the bid process.

The design will implement the existing survey obtained from the drainage improvement project to the maximum extent possible, but limited survey will be required within the right-of-way of Alicia Drive.

Scope of Work

The proposed scope of work for each option is described in Exhibit A.1 for water line improvements and Exhibit A.2 for sewer improvements.

Fee

The proposed professional fee for each phase of the project is shown below.

Phase 1 – Figuers Drive/Alicia Drive Water Improvements

This improvement generally consists of replacing approximately 1,450 linear feet of existing 6 inch transite water line on Figuers Drive and Alicia Drive with a new water line of a material and size as selected by the City.

The proposed maximum hourly fee for the Scope of Work contained in Exhibit A.1 (Water Improvements), will be **\$15,500.00**. Services outlined herein will not exceed **\$15,500.00** without your written authorization.

Phase 2 – Figuers Drive Sewer Improvements

This improvement generally consists of intercepting the existing 8 inch gravity sewer line from the Franklin Elementary School on Figuers Drive and installing approximately 500 linear feet of new 8 inch gravity sewer line and manholes along Figuers Drive to a new manhole on the 10 inch gravity sewer line on Alicia Drive.

The proposed maximum hourly fee for the Scope of Work contained in Exhibit A.2 (Sewer Improvements), will be **\$14,000.00**. Services outlined herein will not exceed **\$14,000.00** without your written authorization.

Overall Project Fee

The proposed total not-to-exceed fee for the combined Scope of Work contained in Exhibit A.1 (Water Improvements) and A.2 (Sewer Improvements), will be **\$29,500.00**. Services outlined herein will not exceed **\$29,500.00** without your written authorization.

Project Schedule

It is anticipated the above Scope of Work will be completed within 90 days of receipt of Notice-to-Proceed.



Date: 08-19-16

Thomas M. Allen, P.E.
Senior Project Manager
Neel-Schaffer, Inc.



Exhibit A.1

Scope of Work

Figuers Drive Water Line Replacement – Development of Final Contract Plans and Specifications

Background

The proposed drainage improvements on Figuers Drive, Alicia Drive, and Perkins Drive will pose survivability concerns with the exiting transite water line.

Figuers Drive/Alicia Drive Water Improvements

This improvement generally consists of replacing approximately 1,450 linear feet of existing 6 inch transit water line on Figuers Drive and Alicia Drive with a new water line of a material and size as selected by the City.

Scope of Work

The Scope of Work for the water line improvements, including development of final plans and specifications, is listed below. Design will, to the extent possible, utilize the topographic survey previously performed for the drainage improvements project. However, topographic data was not originally collected along Alicia Drive between its intersection with Figuers Drive and Battle Avenue; therefore, limited topographic data within the right-of-way of Alicia Drive will be collected within these limits to support the design of the new water line.

Figuers Drive/Alicia Drive Water Improvements

1. Prepare technical documentation regarding pipe material, sizes, and pressure rating for water line improvements;
2. Determine construction limits and easements for proposed water line improvements;
3. Prepare draft plans and specifications and submit to City for review;
4. Obtain necessary permits;
5. Obtain topographic survey data within right-of-way of Alicia Drive between its intersection with Figuers Drive and Battle Avenue;
6. Meet with City to discuss alignment, material, and pipe size requirements;
7. Incorporate City comments and submit final plans and specifications to City (3 iterations of comments);
8. Provide an Engineer's Opinion of Probable Construction Cost at the 60%, 90% and final plan stages (Engineer's Opinion of Probable Construction Costs will be based on City unit prices – right of way costs will not be included in this Opinion of Probable Construction Costs); and
9. Assist City with the bidding process by providing responses to Contractor questions regarding water line improvements and performing other tasks as required.

Exhibit A.2

Scope of Work

Figuers Drive Sewer Improvements – Development of Final Contract Plans and Specifications

Background

The proposed drainage improvements on Figuers Drive will conflict with an existing gravity sewer line that serves Franklin Elementary School and adjacent residential areas.

Figuers Drive Sewer Improvements

This improvement generally consists of intercepting the existing 8 inch gravity sewer line running from the Franklin Elementary School on Figuers Drive and installing approximately 500 linear feet of new 8-inch gravity sewer line and manholes along Figuers Drive to a new manhole on the 10-inch gravity sewer line on Alicia Drive. The abandoned section of the existing sewer will be capped where cut and plugged in the manhole.

Scope of Work

The Scope of Work for the sewer line improvements, including development of final plans and specifications, is listed below. Design will, to the extent possible, utilize the topographic survey previously performed for the drainage improvements project.

Figuers Drive Sewer Improvements

1. Prepare technical documentation regarding pipe capacity, slope, and velocity for sewer line improvements;
2. Determine construction limits and easements for proposed sewer line improvements;
3. Prepare draft plans and specifications and submit to City for review;
4. Obtain necessary permits;
5. Meet with City to discuss alignment, material, and pipe size requirements;
6. Incorporate City comments and submit final plans and specifications to City (3 iterations of comments);
7. Provide an Engineer's Opinion of Probable Construction Cost at the 60%, 90% and final plan stages (Engineer's Opinion of Probable Construction Costs will be based on City unit prices – right of way costs will not be included in this Opinion of Probable Construction Costs); and
8. Assist City with the bidding process by providing responses to Contractor questions regarding water line improvements and performing other tasks as required.



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

Office of General Counsel
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 2nd Floor,
Nashville, Tennessee 37243
Telephone: (615) 532-0131

September 26, 2016

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
RECEIPT NO. 7008 1830 0004 8096 4022

Mr. Robert N. Moore Jr.
Respondent
2406 Goose Creek Bypass
Franklin, TN, 37064

Re: Commissioner's Order, Case No. WPC16-0053
In the Matter of: Goose Creek Inn

Dear Mr. Moore

Enclosed please find an Order issued by Commissioner Robert J. Martineau, Jr., on behalf of the Tennessee Department of Environment and Conservation in the above referenced matter. Please read it carefully and pay special attention to the NOTICE OF RIGHTS section.

Sincerely,

A handwritten signature in blue ink that reads "Stephanie A. Durman".

Stephanie A. Durman
Assistant General Counsel

Enclosure

REC'D SEP 28 2016

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

IN THE MATTER OF:

)
) DIVISION OF WATER RESOURCES
)
)

ROBERT N. MOORE, Jr. d/b/a
THE ROBERT N. MOORE
COMPANY,

)
) CASE NO. WPC16-0053
)
)

RESPONDENT.

COMMISSIONER'S ORDER AND ASSESSMENT

NOW COMES Robert J. Martineau, Jr., Commissioner of the Tennessee Department of Environment and Conservation (the "Department"), and states:

PARTIES

I.

Robert J. Martineau, Jr., is the duly appointed Commissioner of the Department. The Commissioner is responsible for administering the *Water Quality Control Act* (the "Act"), Tenn. Code Ann. § 69-3-101 *et seq.*

II.

Robert N. Moore, Jr. (hereinafter "Respondent"), doing business as the Robert N. Moore Company,¹ owns and operates a domestic wastewater treatment system associated with the Goose Creek Inn in Franklin, Tennessee. Service of process may be made on the Respondent at 2406 Goose Creek Bypass, Franklin, Tennessee 37064.

¹ The Permit was issued to the Respondent as the owner of The Robert N. Moore Company. No such company is registered with the Tennessee Secretary of State. The January 31, 2011 renewal application was submitted by Mr. Moore as the owner/operator, and was signed by him, and the deed to the property is in Mr. Moore's name individually.

REC'D SEP 28 2016

JURISDICTION

III.

Whenever the Commissioner has reason to believe that a violation of the Act has occurred, or is about to occur, the Commissioner may issue a complaint to the violator and may order corrective action be taken pursuant to Tenn. Code Ann. § 69-3-109(a). Further, the Commissioner has authority to assess civil penalties against any violator of the Act pursuant to Tenn. Code Ann. § 69-3-115, and has authority to assess damages incurred by the state resulting from the violation pursuant to Tenn. Code Ann. § 69-3-116.

IV.

The Respondent is a "person" as defined by Tenn. Code Ann. § 69-3-103(26) and, as herein described, has violated the Act.

V.

Fivemile Creek is a "water of the state" as defined by Tenn. Code Ann. § 69-3-103(44). Pursuant to Tenn. Code Ann. § 69-3-105(a)(1), all waters of the state have been classified by the Tennessee Board of Water Quality, Oil and Gas for suitable uses. Tenn. Comp. R. & Regs. Chapter 0400-40-04. Accordingly, all waters of the state have been classified for the following uses: fish and aquatic life, recreation, irrigation, and livestock watering and wildlife, and may additionally be classified for use as industrial water supply, domestic water supply, and navigation.

VI.

Tennessee Code Annotated § 69-3-108 requires that a person obtain a permit from the Department prior to discharging pollutants into waters of the state. Rules governing the issuance of water quality permits have been promulgated as Tenn. Comp. R. & Regs. Chapter 0400-40-

REC'D SEP 28 2016

05. Tenn. Comp. R. & Regs. 0400-40-05-.08 requires that discharge permits issued by the Department impose effluent limitations that are sufficiently stringent to ensure adequate operation and performance of treatment units based on applicable technology-based requirements. In addition, Tenn. Code Ann. § 69-3-108(g)(1) requires all such permits to include the most stringent effluent limitations required to implement applicable water quality standards and to impose monitoring and reporting requirements. Furthermore, it is unlawful for any person to violate the conditions of a discharge permit issued by the Department. Tenn. Code Ann. § 69-3-108(b)(6) & Tenn. Comp. R. & Regs. 0400-40-05-.07(2)(a) & -.08(2).

FACTS

VII.

On May 31, 2011, the Department issued National Pollutant Discharge Elimination System (“NPDES”) Permit TN0060216 (the “Permit”) to the Respondent. The Permit became effective on July 1, 2011, and expires on June 30, 2016.² The Permit authorizes the Respondent to discharge treated domestic wastewater from the Goose Creek Inn wastewater treatment plant (“Goose Creek Inn WWTP”) to mile 2.2 of Fivemile Creek in accordance with effluent limitations, monitoring and reporting requirements, and other conditions set forth therein, including a requirement that monitoring and treatment equipment be properly operated and maintained. The receiving waters are in the Harpeth River Watershed and are designated by the Department’s Division of Water Resources (“Division”) as having unavailable parameters for *E. coli* and sedimentation/siltation. The receiving waters have a 7-day, 10-year interval (“7Q10”) low flow of zero. The design average daily flow from the Goose Creek Inn WWTP is 30,000 gallons per day. The Permit requires monitoring of certain effluent parameters and reporting the

² The Respondent reapplied in a timely manner for reissuance of his NPDES permit via application received January 12, 2016. This permit is administratively extended.

results to the Department on Monthly Operation Reports (“MORs”) signed and certified by the Respondent.

VIII.

The Goose Creek Inn WWTP is a package plant installed in the 1960s. The plant includes a contact stabilization system that consists of three barscreens at the influent structure, an aeration basin, a clarifier and tertiary filter. Liquid chlorine bleach is used for disinfection, and calcium thiosulfate is used for de-chlorination. The Goose Creek Inn WWTP receives wastewater flow from the Goose Creek Inn and two other businesses near the intersection of I-65 and Goose Creek Bypass (Highway 248): Mapco Service Station and K & T Associates.

IX.

On September 30, 2011, Division personnel conducted a Compliance Evaluation Inspection (“CEI”) of the Goose Creek Inn WWTP. The Division issued a notice of violation (“NOV”) to the Respondent on December 2, 2011, indicating the “wastewater treatment plant was found to be in very poor condition. Maintenance of the facility has been severely neglected and needs immediate attention.” The NOV also cited a number of effluent violations.

X.

On December 21, 2015, Division personnel conducted a CEI of the Goose Creek Inn WWTP. The purpose of the CEI was to verify compliance with the Permit’s self-monitoring requirements, effluent limitations, and other permit conditions. A review of monthly operation reports (“MORs”) submitted from January 2014 through December 2015 revealed that the Respondent reported numerous violations of the Permit’s effluent limitations, including:

- 7 daily maximum concentration violations for total residual chlorine (“TRC”);
- 1 daily maximum concentration violation for ammonia as nitrogen (“NH₃”);

REC'D SEP 28 2016

- 3 monthly average concentration violations for NH_3 ;
- 1 daily maximum concentration violations for *E. coli*;
- 1 daily maximum concentration violations for carbonaceous biochemical oxygen demand (“CBOD”);
- 1 monthly average concentration violation for CBOD; and
- 1 daily minimum concentration violation for dissolved oxygen (“DO”).

The CEI revealed systemic structural problems throughout the Goose Creek Inn WWTP that indicated a failure to properly operate and maintain all facilities and systems. During the CEI inspection, Department personnel observed:

- Severe deterioration and corrosion of the plant’s influent structure, treatment unit walls and structures above the water level, clarifier, emergency overflow weir, other weirs, grill walkway, metal supports throughout the plant, metal air lines leading to the aeration basin, piping and structures in the effluent chamber and effluent weir box, and electrical wiring, as a result of inadequate maintenance and age;
- Only one blower motor to supply aeration, which does not meet the minimum aeration capability required by the Division’s Engineering Design Criteria (Chapter 7, Activated Sludge, 7.4 Aeration Equipment, 7.4.2.2 Special Details) or the Goose Creek Inn permit (Part II, General Provisions, 4. Proper Operation and Maintenance, a.);
- No electrical timer for the blower motor to cycle the air on and off which is needed to prevent overheating and excess wear;
- Uncontrolled air flow (due, in part, to the absence of an electrical timer), resulting in aeration basin DO levels ranging from 6.0 to 12.0 mg/L, most frequently 7.0 to 9.0

mg/L, which far exceeds 2.0 mg/L—the range that supports appropriate micro-organisms required for activated sludge plants to provide efficient and effective biological treatment;

- Inadequate equipment to properly control the chlorine and de-chlorination solution feed rates, causing excess amounts of chemicals to be discharged, leading to white, gray, and black precipitate discharges resulting in adverse impacts to the receiving stream including objectionable color contrast;
- Electrical wiring and control mechanisms that have failed or are inadequate; and
- The inside of the weir box was coated with a white precipitate, and the effluent discharge was discolored white and was opaque. There were deposits of white material, then progressing to gray and blackish deposits in the bottom of the wet weather conveyance leading to the receiving stream. The discolored flow and deposits continued into the receiving stream, and there was discoloration of the receiving stream at and downstream of the discharge. The stream was clear upstream of the discharge point. In the upstream area, there were no deposits or discoloration of the type observed downstream of the plant discharge. It was later determined the discoloration was caused by the chlorination/de-chlorination chemicals, which were adjusted lower by the plant operator.

The CEI concluded that these violations render the plant structurally unsound and incompatible with the Division's engineering design criteria. As a result, the Goose Creek Inn WWTP cannot be operated according to normal treatment practices, and can no longer provide consistent wastewater treatment to meet permit conditions and protect water quality.

REC'D SEP 28 2016

XI.

On April 8, 2016, the Department issued a NOV to the Respondent, detailing the above-referenced violations. The NOV required a response detailing corrective actions within 30 days of receipt and submission of an updated engineering alternatives analysis to evaluate future sewerage needs and options within 60 days of receipt. The Respondent's green card for the certified mailing shows receipt on April 18, 2016, so his response was due on May 18, 2016 and his engineering alternatives analysis was due on June 17, 2016. The NOV also identified the ongoing provision of sewer services to two other businesses.

XII.

The Tennessee Regulatory Authority ("TRA") sent an undated letter (a copy of which was received by the Division on April 18, 2016) notifying the Respondent he was required to apply for a certificate of convenience and public necessity ("CCN") from the TRA, or explain why he believes he is not a public utility pursuant to Tenn. Code Ann. § 65-4-101(6) no later than April 28, 2016. On April 26, 2016, a letter was sent by Kim Craddock on letterhead of the Robert N. Moore Company to TRA indicating Mr. Moore was, and had been, out on medical leave. To date, the Respondent has failed to satisfy the TRA's request.

XIII.

On June 24, 2016, Linda Sullivan, P.E., of Civil Infrastructure Associates ("CIA") contacted Division personnel to discuss potential corrective action, focusing on how to abandon the existing package plant and connect to the City of Franklin's municipal sewer system.

REC'D SEP 28 2016

XIV.

On June 28, 2016, Ms. Sullivan sent a response to the NOV on behalf of the Respondent. The response indicated that the Respondent submitted a “request for sewer availability and associated costs” to the City of Franklin on May 27, 2016, and met with city officials on June 24, 2016 to discuss abandoning the existing package plant and connecting to the municipal sewer system. The Respondent has engaged CIA to develop a schedule, plans, and budget to connect to the sewer. The letter indicated that CIA would “need time for meetings and approvals from the City to clearly define the scope of the necessary work.” Since that time, Ms. Sullivan has continued to update Division staff.

VIOLATIONS

XV.

By failing to comply with the terms and conditions of his NPDES permit, the Respondent has violated Tenn. Code Ann. §§ 69-3-108(b)(1), (3) & (6), and -114(b), which state, in relevant part:

Tenn. Code Ann. § 69-3-108(b):

It is unlawful for any person, other than a person who discharges into a publicly owned treatment works or a person who is a domestic discharger into a privately owned treatment works, to carry out any of the following activities, except in accordance with the conditions of a valid permit:

- (1) The alteration of the physical, chemical, radiological, biological, or bacteriological properties of any waters of the state;
- (3) The increase in volume or strength of any wastes in excess of the permissive discharges specified under any existing permit;
- (6) The discharge of sewage, industrial wastes, or other wastes into water, or a location from which it is likely that the discharged substances will move into waters;

Tenn. Code Ann. § 69-3-114(b):

REC'D SEP 28 2016

In addition, it is unlawful for any person to act in a manner or degree which is violative of any provision of this part or of any rule, regulation, or standard of water quality promulgated by the board or of any permits or orders issued pursuant to the provisions of this part; or fail or refuse to file an application for a permit as required in § 69-3-108; or to refuse to furnish, or to falsify any records, information, plans, specifications, or other data required by the board or the commissioner under this part.

XVI.

By causing a condition of pollution in Fivemile Creek, the Respondent has violated Tenn.

Code Ann. § 69-3-114(a) which states:

It is unlawful for any person to discharge any substance into the waters of the state or to place or cause any substance to be placed in any location where such substances, either by themselves or in combination with others, cause any of the damages as defined in § 69-3-103, unless such discharge shall be due to an unavoidable accident or unless such action has been properly authorized. Any such action is declared to be a public nuisance.

XVII.

During the course of the investigation the Division incurred DAMAGES in the amount of FOUR HUNDRED EIGHTEEN DOLLARS AND 27 CENTS (\$418.27).

ORDER AND ASSESSMENT

XVIII.

WHEREFORE, pursuant to the authority vested by Tenn. Code Ann. §§ 69-3-109, 69-3-115 and 69-3-116, I, Robert J. Martineau, Jr., hereby issue the following ORDER and ASSESSMENT to the Respondent:

1. No later than forty-five (45) days after receipt of this Order and Assessment, the Respondent shall submit all required design and engineering plans and, if required, ARAP or SOP applications, necessary to connect the Goose Creek Inn to the City of Franklin's sewer system, abandon the existing package plant, and stop discharging from the Goose Creek Inn

REC'D SEP 28 2016

WWTP. These plans shall be submitted to the manager of the Division of Water Resources located at the Nashville Environmental Field Office (N-EFO) at 711 R.S. Gass Blvd, Nashville, TN 37216, with a copy to the Compliance and Enforcement Unit of the Division of Water Resources at the William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, TN 37243. All correspondence regarding this Order and Assessment should include the Respondent's name, this Order and Assessment number, and county name. The Respondent WILL NOT be required to submit the plans and permit applications outlined in Item 2 (with the exception of plans to abandon the existing package plant) if he enters into agreement with the City of Franklin for the latter to construct all sewer appurtenances necessary to connect to public sewer within 45 days after receipt of this Order and Assessment.

2. The Respondent shall notify any entities for which it is currently providing wastewater treatment of its plans to abandon the Goose Creek WWTP no later than sixty (60) days prior to ceasing service, and provide copies of the correspondence to the Division at the addresses listed in item 1.

3. No later than ninety (90) days after Division approval of all required plans and permits identified in Item 1, the Respondent shall connect the Goose Creek Inn to the City of Franklin's sewer system, abandon the existing Goose Creek Inn WWTP, stop discharging from the Goose Creek Inn WWTP, and provide written and photographic documentation in duplicate to the Division at the addresses listed in Item 1. If, at any point within 45 days after receipt of this Order and Assessment, the Respondent enters into agreement with the City of Franklin for the latter to construct all sewer appurtenances necessary to connect to public sewer, the Respondent will have 90 days from the date of agreement for all work to be completed. The Respondent shall provide evidence of completion to the Division at the addresses listed in item 1.

REC'D SEP 28 2016

4. The Respondent shall pay a CIVIL PENALTY of ONE HUNDRED TEN THOUSAND, THREE HUNDRED DOLLARS (\$110,300.00).

a. The Respondent shall pay an upfront civil penalty of TWENTY-TWO THOUSAND SIXTY DOLLARS (\$22,060.00) in four equal payments of FIVE THOUSAND, FIVE HUNDRED FIFTEEN DOLLARS (\$5,515.00) each. The first payment is due on or before the 31st day after receipt of this Order and Assessment. The second payment is due 180 days after receipt of this Order and Assessment.

b. If the Respondent fails to timely comply with Item 1, then the Respondent shall pay a CIVIL PENALTY in the amount of THIRTY THOUSAND DOLLARS (\$30,000.00), within 30 days of default.

c. If the Respondent fails to timely comply with Item 2, then the Respondent shall pay a CIVIL PENALTY in the amount of THREE THOUSAND, TWO HUNDRED FORTY DOLLARS (\$3,240.00), within 30 days of default.

d. If the Respondent fails to timely comply with Item 3, then the Respondent shall pay a CIVIL PENALTY in the amount of FIFTY-FIVE THOUSAND DOLLARS (\$55,000.00), within 30 days of default.

5. The Respondent shall, on or before the 31st day after receipt of this Order and Assessment, pay DAMAGES to the Division in the amount of FOUR HUNDRED EIGHTEEN DOLLARS AND 27 CENTS (\$418.27).

The Director of the Division may, for good cause shown, extend the compliance dates contained within this Order and Assessment. In order to be eligible for this time extension, the Respondent shall submit a written request to be received in advance of the compliance date. The

written request must include sufficient detail to justify such an extension and include at a minimum the anticipated length of the delay, the precise cause or causes of the delay, and all preventive measures taken to minimize the delay. Any such extension by the Department will be in writing. Should the Respondent fail to meet the requirement by the extended date, any associated Civil Penalty shall become due 30 days thereafter.

Further, the Respondent is advised that the foregoing Order and Assessment is in no way to be construed as a waiver, expressed or implied, of any provision of the law or regulations. However, compliance with the Order and Assessment will be one factor considered in any decision whether to take enforcement action against the Respondent in the future. Failure to comply with any of the requirements of this Order and Assessment could lead to further enforcement actions which may include additional civil penalties, assessment of damages and/or recovery of costs.

NOTICE OF RIGHTS

Tenn. Code Ann. §§ 69-3-109, 69-3-115, and 69-3-116 allows the Respondent to appeal this Order and Assessment. To do so, a written petition setting forth the grounds (reasons) for requesting a hearing must be RECEIVED by the Commissioner within THIRTY (30) DAYS of the date the Respondent received this Order and Assessment or this Order and Assessment become final (not subject to review).

If an appeal is filed, an initial hearing of this will be conducted by an Administrative Law Judge ("ALJ") as a contested case hearing pursuant to the provisions of Tenn. Code Ann. § 69-3-110 and §§ 4-5-301 *et seq.* (the Uniform Administrative Procedures Act), and Tenn. Comp. R. & Regs. 1360-04-01 *et seq.* (the Department of State's Uniform Rules of Procedure for Hearing Contested Cases Before State Administrative Agencies). Such hearings are legal proceedings in the nature of a trial. Individual Respondents may represent themselves or be represented by an

REC'D SEP 28 2016

attorney licensed to practice law in Tennessee. **Artificial Respondents (corporations, limited partnerships, limited liability companies, etc.) cannot engage in the practice of law and therefore may only pursue an appeal through an attorney licensed to practice law in Tennessee.** Low income individuals may be eligible for representation at reduced or no cost through a local bar association or legal aid organization.

At the conclusion of any initial hearing the ALJ has the authority to affirm, modify, or deny the Order and Assessment. This includes the authority to modify (decrease or increase) the penalty within the statutory limits of Tenn. Code Ann. § 69-3-115 (up to \$10,000 per day per violation). Furthermore, the ALJ on behalf of the Board has the authority to assess additional damages incurred by the Department including, but not limited to, all docketing expenses associated with the setting of the matter for a hearing and the hourly fees incurred due to the presence of the ALJ and a court reporter.

Any petition for review (appeal) must be directed to the Commissioner of the Department of Environment and Conservation, c/o Jenny L. Howard, General Counsel, Department of Environment and Conservation, 2nd Floor, William R. Snodgrass Bldg., 312 Rosa Parks Avenue, Nashville, TN 37243. Payments of the civil penalty and/or damages shall be made payable to the "Treasurer, State of Tennessee" and sent to the Division of Fiscal Services - Consolidated Fees Section, Tennessee Department of Environment and Conservation, 10th Floor, William R. Snodgrass Bldg., 312 Rosa Parks Avenue, Nashville, TN 37243. Technical questions and other correspondence involving compliance issues should be sent to Jessica Murphy, State of Tennessee, Division of Water Resources, 11th Floor, William R. Snodgrass Bldg., 312 Rosa Parks Avenue, Nashville, TN 37243. Attorneys should contact the undersigned counsel of

REC'D SEP 28 2016

record. The case number, **WPC16-0053**, should be written on all correspondence regarding this matter.

Issued by the Commissioner of the Tennessee Department of Environment and Conservation on this 23rd day of September 2016.

Robert J. Martineau Jr. w/perm. gzh
Robert J. Martineau, Jr., Commissioner,
Tennessee Department of Environment and Conservation

Reviewed by:

Stephanie A. Durman
Stephanie A. Durman (BPR No. 027783)
Assistant General Counsel
Department of Environment & Conservation
312 Rosa L. Parks Avenue, 2nd Floor
Nashville, Tennessee 37243
615-532-3020
stephanie.durman@tn.gov

REC'D SEP 28 2016



**TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE ENVIRONMENTAL FIELD OFFICE
711 R. S. GASS BOULEVARD
NASHVILLE, TENNESSEE 37243
PHONE (615) 687-7000 STATEWIDE 1-888-891-8332 FAX (615) 687-7078**

April 8, 2016

**Certified Mail: 7014 2870 0001 3597 0404
Return Receipt Requested**

Mr. Robert N. Moore, Jr.
2406 Goose Creek Bypass
Franklin, TN 37064

Re: **Notice of Violation**
Compliance Evaluation Inspection
Goose Creek Inn Wastewater Treatment System
NPDES # TN0060216, Williamson County

On December 21, 2015, I conducted a Compliance Evaluation Inspection (CEI) of the Goose Creek Inn Wastewater Treatment Plant. I would like to thank Certified Operator Jim Johnson and your Assistant, Kim Craddock, for their assistance during the inspection. The following items are the more significant findings from that inspection. An inspection report is attached which provides details of these and other items noted during the inspection.

Permit

- The NPDES Permit expires on June 30, 2016. The Division has received an application for permit renewal. Based on the condition of the treatment system, an engineering evaluation should be conducted to determine whether to seek other options for handling the wastewater generated by the Inn and the other sewer customers, rather than continuing this permit coverage and discharge.
- The City of Franklin extended their wastewater collection system in 2008, making connection to public sewer available for businesses at this location.

Records and Reports

- For the period from January 2013 through December 2015, there were violations of permit effluent concentration limits for total residual chlorine (TRC), ammonia as nitrogen, E. coli, carbonaceous biochemical oxygen demand (CBOD), and dissolved oxygen (DO).
- Daily analysis records were not labeled with the facility name, and sludge disposal records were not maintained as required in the permit.

Facility Site Review - Operation and Maintenance

- The metal package treatment plant is severely deteriorated and corroded due to inadequate maintenance and age. Piping, metal treatment basins and other structures have corroded, are breaking apart or have failed. It is no longer structurally sound.
- In its current condition, the plant does not meet the Division's engineering design criteria, and as a result it cannot be operated according to normal treatment practices. Processes cannot be properly controlled. The plant can no longer provide consistent wastewater treatment to meet permit conditions and protect water quality.

- There is inadequate equipment to properly control the chlorine and de-chlorination solution feed rates, causing excess amounts of chemicals to be discharged. This has resulted in adverse impact to the receiving stream.
- Electrical wiring and control mechanisms have failed or are inadequate, extension cords are used to provide power for some of the equipment.
- Deterioration of metal structures and walkways, lack of grill covers or safety rails for treatment units, and use of extension cords, pose a safety hazard to the operators when conducting necessary duties at the plant.
- The NPDES permit requires that the permittee shall at all times properly operate and maintain all facilities and systems (and related appurtenances) used for collection and treatment to achieve compliance with the terms and conditions of the permit (Part II, A. General Provisions, 4. Operation and Maintenance, a.). The system does not meet these requirements of the permit.

Effluent and Receiving Stream

The effluent was discolored white at the point of discharge and contained a white precipitate. The channel leading to the stream was discolored progressively from white, to gray, to black with precipitate and solids. The discolored effluent was causing a contrasting plume of cloudy water, solids precipitate and deposits where it enters the receiving stream. These conditions do not meet the requirements of the NPDES Permit (Part I, A. Effluent Limitation and Monitoring Requirements) which prohibits any objectionable color contrast in the receiving stream or discharge of any other detrimental materials.

Self-Monitoring Program and Laboratory

The carbonaceous biochemical oxygen demand sampling point is not the correct location for the samples to be representative of the volume and the nature of the discharge. This does not meet the requirements of the NPDES permit (Part I, B. Monitoring Procedures, 1. Representative Sampling), which states that the samples must be representative of the volume and nature of the discharge.

Conclusions

The treatment plant is no longer structurally sound, and much of the treatment equipment has failed or is inadequate. The system cannot be properly operated, and cannot consistently meet permit effluent limits.

The treatment system is functioning as a public sewer provider for two other business properties, Mapco and K & T Associates. State law requires such systems to be registered as public utilities and regulated by the Tennessee Regulatory Authority (TRA). Goose Creek Inn is operating without being authorized as a public utility. Personnel at the TRA (1-888-276-0677) should be contacted to obtain information about the proper actions to comply with those regulations.

Discharges that do not meet permit effluent limits, not providing representative effluent sampling, failure to maintain required or adequate records, and not providing proper operation and maintenance of treatment facilities are violations of the NPDES permit. Violations of the Permit are also violations of the *Tennessee Water Quality Control Act* (the *Act*). Not meeting conditions of Division's Engineering Design Criteria are also violations of the rules promulgated under the *Act*.

Please provide a written response **within 30 days of receipt** of this letter stating what actions have been or will be taken to correct the violations listed and other items needing attention. The response should

Mr. Robert N. Moore, Jr.
April 8, 2016
Page 3

include specific corrective measures and date of completion, or a scheduled completion date for each item.

Please provide **within 60 days of receipt** of this letter an updated engineering alternatives analysis of your future sewerage service needs and an evaluation of the feasible and practical alternatives to deliver that sewer service in accordance with applicable laws and regulations. At a minimum, the alternatives need to include an engineering evaluation, prepared in accordance with good engineering practice by a registered professional engineer, licensed to practice engineering in Tennessee, and include the following scope at a minimum:

- Feasible alternatives and costs associated with replacing the existing treatment system;
- Feasible alternatives of connecting to the City of Franklin public sewer system; and
- Alternatives and costs associated with the following: (1) arranging for separate sewer service to the properties not owned by you, or (2) costs associated with becoming a privately-owned public utility regulated by the Tennessee Regulatory Authority.

Should you and your neighboring customers wish to discharge to the City of Franklin sewer, each property must connect to the public sewer directly with its own service line, or you will need to make arrangements with the city for public sewer with a public utility easement to which you may all connect.

Again, I would like to thank the facility personnel for their assistance and courtesy. If you have any questions or need additional information, please contact me at 615-687-7123, or e-mail at Ann.Rochelle@tn.gov.

Sincerely,



Ann E. Rochelle, Environmental Consultant
Division of Water Resources
Nashville Environmental Field Office

Enclosures

cc: Shiva Bozarth, Tennessee Regulatory Authority, Compliance Division, shiva.bozarth@tn.gov
Paul Holzen, Director of Engineering, City of Franklin, paul.holzen@franklintn.gov
Jim Johnson, Certified Operator, james-johnson@comcast.net
Mapco Family Centers, Inc, 1900 Dalrock Rd, Rowlett, TX 75088
K & T Associates, PO Box 477, Kingston Springs, TN 37082
Jessica Murphy, Manager, DWR, Compliance and Enforcement Section, jessica.murphy@tn.gov

**Compliance Evaluation Inspection Report
Goose Creek Inn Wastewater Treatment System
NPDES # TN0060216, Williamson County**

On December 21, 2015, I conducted a Compliance Evaluation Inspection (CEI) of the Goose Creek Inn Wastewater Treatment Plant. During the inspection I met with the wastewater treatment plant operator Jim Johnson and Kim Craddock, assistant to owner Robert N. Moore. Mr. Johnson assisted with the plant inspection and Ms. Craddock provided assistance with records review. Mr. Johnson was also contacted by telephone, most recently on March 4, 2016, for additional information about the system and the self-monitoring program. The following is a report of the findings of the inspection.

Mr. Johnson holds Grade 4 wastewater treatment plant certification and is the operator in direct responsible charge of the system. Under contract with the owner, he and Robert Schaaf provide day to day plant operations and conduct the sampling for the self-monitoring program.

Permit

The NPDES Permit expires on June 30, 2016. The Division has received an application for permit renewal. Discharge is to a wet weather conveyance which flows almost immediately in to Fivemile Creek.

Records and Reports

1. A review of monthly operation reports (MORs) submitted by the system for the period from January 2013 through December 2015 found the following violations of permit effluent limits.

Parameter	Daily Maximum or Minimum Concentration	Monthly Average Concentration
Total residual chlorine (TRC), mg/L	<i>16 maximum</i>	<i>N/A</i>
Ammonia as Nitrogen (NH ₃), mg/L	<i>1 maximum</i>	<i>6</i>
E. coli, cfu/100 ml	<i>2 maximum</i>	<i>2</i>
Carbonaceous Biochemical Oxygen Demand (CBOD), mg/L	<i>2 maximum</i>	<i>1</i>
Dissolved oxygen (DO), mg/L	<i>1 minimum</i>	<i>N/A</i>

2. Records for the facility are maintained on file at the business office of the owner, which is located at the Inn. A review of those records was conducted. A copy of the current permit was on hand and the self-monitoring records are kept on file for three years as required by the permit. Chain of custody forms and reports of results for private laboratory analysis were on file. The facility name was not recorded on the worksheets and raw analysis data conducted at the facility. The operator also runs analysis for and operates other systems and this could result in the records being confused. All the records and documents related to the system must be properly identified.
3. There were no records on hand to document what method of disposal was provided for sludge from the treatment plant. The permit (Part III, Other Requirements, D. Sludge Management Practices) requires that proper sludge disposal be provided in accordance with 40 CFR Part 503, and that documentation be provided on the MORs. The permit requires that if the sludge is transported to a publically owned treatment works (POTW) the permittee shall note on the MOR the amount of sludge wasted in gallons, the percent solids of the sludge that was wasted and the name of the facility where the sludge was taken for disposal. The sludge records must be maintained for a period of five years. Since the inspection the operator has reported that sludge removed recently from the facility was

taken to the Columbia Wastewater Treatment Plant for disposal and that the required records were obtained.

4. The volume of sludge wasted to the sludge holding tank and sludge hauled from the plant should be noted, along with any operational problems or compliance issues, on the MOR in the section labeled "Comments About Operation and Compliance".

Facility Site Review, Operation & Maintenance

1. The gravel access road to the plant is badly eroded and contains deep gullies that make it difficult to drive into the plant. An all-weather access road must be maintained to the treatment facility.
2. Fencing around the treatment plant has been improved and the gate is now kept locked to prevent unauthorized access. This has improved the safety and security of the plant.
3. The system is a metal package treatment plant that was constructed in the 1960's, with a 30,000 gallon per day design capacity. Treatment includes aeration basin, clarifier, filtration, and disinfection. It has continued to deteriorate due to poor maintenance and age. Much of the plant is no longer structurally sound. Treatment unit walls and structures that are above the usual water level have corroded and the metal is separating into layers and flaking off in sheets. Almost all of the metal piping within the plant that was visible was observed to be severely corroded.
4. The influent structure has corroded through in several places. The metal bars have crumbled apart and pieces have fallen off of the bar screens. From the accumulation of material observed, it seems that more frequent cleaning is needed. The screened material is stored in five gallon plastic buckets beside the intake structure. One of the buckets was full and mounded up, with no covering over the material. The solids and sewage debris should be stored in covered container to prevent it from attracting insects and rodents, and to prevent rainwater runoff from washing bacteria outside the plant grounds. The material can be placed in trash bags and sent for disposal at a permitted landfill.
5. There is only one blower motor to supply aeration. This does not meet the minimum aeration capability required by the Division's Engineering Design Criteria (Chapter 7, Activated Sludge, 7.4 Aeration Equipment, 7.4.2.2 Special Details) or the permit (Part II, General Provisions, 4. Proper Operation and Maintenance, a.). The single motor is located on the grass beside the plant and connected to the piping with rubber hose and metal band clamps. A small wood frame with sheet metal top and one side covered is used to house the motor.
6. The motor runs 24 hours a day, 7 days per week in order to provide aeration throughout the plant, and there is no means to control the volume of air distributed or a timing system. Normal operation of aerated systems should include electrical timers to cycle the air on and off and to alternate between at least two blower motors in order to obtain the most effective treatment. Having two motors, either one of which is adequate to provide aeration for the plant, is needed to allow alternation to prevent overheating and excess wear. If one motor fails, plant operation can continue normally using the other motor until the first is repaired or replaced. With no aeration the plant would go septic, the micro-organisms that provide the biological treatment would die off, and inadequately treated wastewater would be discharged.
7. The uncontrolled air flow results in aeration basin dissolved oxygen (DO) levels much in excess of the range which provides efficient and effective biological treatment, which is no more than 2.0 mg/L. The aeration basin DO levels at this plant are running from 6.0 to 12.0 mg/L, and most frequently 7.0 to 9.0 mg/L. These levels are too high to support the appropriate micro-organisms to provide efficient biological treatment. This also breaks up the biological floc, causing settling problems, which interferes with adequate solids removal. De-nitrification cannot be obtained at these higher DO levels. This excessive aeration can also add significantly to the cost of operation and wastes energy.
8. The decking of the clarifier has corroded through and there was a large open hole in the metal, and the rest of the structure was also corroded. The clarifier weirs did not appear to be uniformly level in all areas. This can affect the overflow rate and allow surface solids to exit the clarifier and pass through the plant. The surface skimmer was not working properly and did not capture all the surface

solids for return to the aeration basin. Clumps of solids were rising in the clarifier and had entered the clarifier weir trough, leaving deposits. The weir trough contained heavy masses of algae growth and some small rooted plants. Some of the weir notches were blocked by this material. More frequent cleaning is needed to prevent buildup of either solids or plant and algae growth.

9. The emergency overflow weir, located in the treatment unit between the clarifier and the filters, is severely corroded and the metal weir box is crumbling apart. It was leaking during the last site visit. Attempts may have been made to seal the remaining metal but the structure is unsound and must be replaced or the pipe sealed off to prevent discharge of wastewater before final treatment is complete. Discharges that occur from this point do not have adequate chlorine contact time, and filtration and de-chlorination is not provided. The operator does not know the discharge point for this emergency overflow line. Any discharges from this emergency overflow weir are not authorized by the permit and would be violations of the permit conditions. Any discharges from this weir must be reported as a bypass of treatment units as required by the permit (Part II, C. Noncompliance. 6. Bypass).
10. The grill walkway used for access over the aeration basin was severely corroded and had a large rusted out area surrounding the opening for the sludge return line.
11. The weirs leading into the filters and the filter plates are severely corroded. The weir trough contained solids, debris and leaves. The material was hanging in the weir notches and clogging the openings. The filters are backwashed every other day using the treated effluent which contains chlorine. The backwash is fed back into the aeration basin. This may lead to adverse impact to the micro-organisms necessary for the treatment process.
12. Many of the metal supports throughout the plant were corroded through and have broken off. Some pipes, connections and valves were supported with a broom handle, galvanized pipe, angle iron or PVC pipe wedged under them. The open top of the sludge return line in the aeration basin extends above the walkway and is covered with a five gallon plastic bucket. A rock is placed on top of the bucket and a 2"x4" board on top of that, with the 2"x4" board wedged under the bottom pipe of the safety rails to hold it down. The grilled access walkway in this area has rusted through and fallen apart leaving a large hole around the sludge return line. This makes it unsafe to access the area to work on this line.
13. The metal air lines to the aeration basin have corroded to the point of being un-useable. These lines have been out of service for many years and the operator has installed PVC piping and flexible hose above the basin in order to maintain necessary aeration for this treatment unit.
14. There are no grills to cover most of the open areas of treatment units, and no safety rails around the outside of the treatment units. The corroded walkways and decking, lack of grill covers or safety rails, and the use of electrical extension cords is unsafe and poses a safety hazard for the operators while conducting normal day to day activities to keep the plant functioning. The system does not meet the safety requirements in the Division's Engineering Design Criteria (Chapter 7, Activated Sludge, 7.5 Additional Details, 7.5.2. Noise and Safety).
15. The piping and structures in the effluent chamber and the effluent weir box are severely corroded and crumbling apart. The surface grillwork of the access platform in the chamber has corroded through and most of it is missing. The metal ladder was also severely corroded. Scrap wire and nylon string are used to hold some of the piping in place.
16. The wiring for the plant is no longer adequate. Much of the original electrical wiring system has failed, and the electrical control panels are in poor condition. Some of the original lines have shorted out and are not in use. There were many points where the outer covering was gone from the wiring. It could not be determined if this wiring was still serviceable or connected. Multiple extension cords run across the ground and over the treatment units to provide power to sump pumps, and the chlorine solution and Captor solution feed pumps. Electrical cord connections were in wet areas exposed to rain and wastewater splash over, with no covers for the connections. These circumstances do not meet the engineering design criteria rules for wastewater systems, and also pose a safety hazard to the operators.

17. The sludge return line in the aeration basin was clogged at the time of the inspection and the operator was attempting to get the line open. This is a recurrent problem. The operator reports that he was able to unclog the line later that day.
18. A 12.5 % solution of sodium hypochlorite solution is used for disinfection of the effluent. A 30% solution of calcium thiosulfate (Captor brand) is used for de-chlorination. There is no way to vary the chemical feed rates to match the flow rates through the plant. This can lead to excess use of either or both chemical solutions. The solution feed pumps are lying on the floor at the edge of an open sided structure and exposed to rain and other weather conditions. The feed lines are of excessive length and tangled. This can cause the lines to kink or clog which would interrupt the solution feed or cause uneven flow.
19. The NPDES permit requires that the permittee shall at all times properly operate and maintain all facilities and systems (and related appurtenances) used for collection and treatment to achieve compliance with the terms and conditions of the permit (Part II, A. General Provisions, 4. Operation and Maintenance, a.).
20. Use of "Liquid Fire" drain cleaner to unclog the main line leading to the treatment plant from the Inn has in the past caused plant upsets and problems with pH levels. Such chemicals can also kill out the micro-organisms that provide biological treatment at the plant and can cause extended periods of inadequate treatment and effluent limit violations. In the future, only methods of unclogging the lines which will not adversely impact the treatment process should be used.
21. The operator mentioned that a methamphetamine lab had been operated in one of the rooms at the Inn and that chemicals had entered the wastewater system from the illegal lab. It was believed this caused treatment problems at the plant. The chemicals and waste materials related to methamphetamine production are very dangerous and hazardous, and require special handling and disposal as hazardous materials. Any suspected illegal activity of this type should be reported the proper law enforcement authorities. Law enforcement agencies will arrange proper clean-up and disposal of the hazardous chemicals and should be advised if these chemicals may have entered the plant. Chris Andel of the TDEC Division of Remediation can also be contacted at 865-594-5444 to discuss any additional measures that might be necessary to prevent a public health, safety, or water quality hazard due to chemicals and wastes.

Effluent and Receiving Stream

1. The effluent appeared clear at the point where it enters the effluent weir box. However, the inside of the weir box was coated with a white precipitate. The weir box is the location where Captor, a de-chlorinating chemical, is added to reduce the total residual chlorine in the effluent before it reaches the receiving stream.
2. The effluent outfall line discharges into a wet weather conveyance leading into Fivemile Creek. The inside and the opening of the discharge pipe were coated with a thick covering of a white precipitate. The effluent discharge was discolored white and was opaque. There were deposits of white material, then progressing to gray and blackish deposits on the bottom of the channel leading down to the receiving stream. The discolored flow and deposits continued into the receiving stream and there was discoloration of the receiving stream at and downstream of the discharge. Despite rain that day, the stream was clear upstream of the discharge point. In the upstream area, there were no deposits or discoloration of the type observed at and downstream of the plant discharge.
3. In addition to the discharge of the solids deposited in the channel and stream, the discoloration of the stream is a violation of the permit conditions which state: There shall be no distinctly visible floating scum, oil or other matter contained in the wastewater discharge. The wastewater discharge must not cause an objectionable color contrast in the receiving stream or discharge of any other detrimental materials (Permit: Part I, A. Effluent Limitation and Monitoring Requirements).
4. It appears that the deposits and discoloration of the effluent and receiving stream are related to the addition of Captor, and that excessive amounts of this de-chlorinating agent are being used. The chemical can cause calcium scale (white deposits) and sulfur precipitate (gray or black deposits)

when it comes in contact with iron and oxygen in the water. Acidic conditions in the effluent help to produce this reaction. Since the inspection the operator has advised the he has reduced both the chlorine and the Captor feed rates. He is also exploring use of a solid Captor tablet for de-chlorination which could reduce the probability of excess Captor reaction in the effluent. These efforts should continue in order to prevent the discoloration of the effluent and deposits being discharged into the stream. If the E. coli and TRC effluent limits cannot be met after making these changes to correct the problems caused by the Captor, then the de-chlorinating agent should be changed to make it possible to meet all permit conditions.

5. Most of the last section of the outfall pipe has over time been exposed due to erosion of the embankment of the wet weather conveyance channel. The pipe is suspended and unsupported, with no structure around it where it exits the embankment. The outfall line should be supported and the embankment should be stabilized to prevent further erosion of the soil. Continued erosion can result in the metal pipe breaking off at the section joint.
6. The discharge point was posted with an appropriate double faced sign that met the permit requirements. This is a wooded area, during the months when foliage is present, limbs and vegetation must be kept cleared to allow an unobstructed view of the signs from the stream and the land.

Flow Measurement

Effluent flow is measured using a stop watch and gallon jug to collect flow at the effluent weir. The flow measurement should be taken during peak flow periods of the day to meet the requirement of the permit which states that self-monitoring data must be representative of the volume and nature of the discharge.

Self-Monitoring Program and Laboratory

1. The operators carry the meters, analytical equipment, and reagents to the plant to conduct analysis for TRC, pH, DO and settleable solids (SS). Due to temperature extremes throughout the year, care should be taken to make sure the calibration standards and other reagents are kept within the proper temperature ranges to meet the requirements of the EPA approved analysis procedures. The Federal Method Update Rule (MUR) procedures are in place for the analysis conducted by the operators at the plant.
2. Microbac Labs conducts the laboratory analysis for the other parameters, CBOD, total suspended solids (TSS), and E. coli. The samples are placed in coolers on ice and transported directly to the private laboratory by the operators on the date of sample collection.
3. There were two separate incidents where samples were collected (NH₃ and TSS) and taken to the contract laboratory, but the laboratory did not conduct the analysis. The operator was not made aware of the failure to conduct the analysis until the next calendar month, and therefore sampling could not be repeated. Regardless of the cause, failure to meet the self-monitoring and reporting requirements is a violation of the permit conditions. Better communication should be worked out with the laboratory in order to allow for repeat sampling if necessary.
4. All the effluent samples were collected from the discharge pipe at the outfall point, except CBOD which was collected at the plant before the addition of Captor (calcium thiosulfate) the de-chlorinating agent used.
5. The CBOD sample location was moved to a point before Captor addition because the private laboratory running the analysis reported interference with the analysis caused by this chemical. In discussing this with the operator it was discovered that the samples had produced extremely high CBOD concentrations if collected at the effluent weir box where Captor is added. The high analysis results were attributed to chemical interference, not additional oxygen demand contributed by the chemical. The sampling point was moved to before Captor addition based on that assumption. Personnel at the MicroBac Labs were contacted to verify the information about the analysis results. Brian Richard at MicroBac Labs confirmed that all the samples are checked for TRC, de-chlorinated if needed, and seeded.

6. Based on information obtained about the chemical nature of the Captor, it appears to be contributing additional oxygen demand to the effluent. Oxygen demand from any source would have the same adverse impact on the receiving stream. The actual CBOD of the effluent discharge must be monitored. Following the inspection, the operator was advised to collect the CBOD samples after the Captor is added and mixing occurs, at the same point as all the other effluent samples. The permit requires that self-monitoring samples must be representative of the volume and nature of the discharge (Part I, B. Monitoring Procedures, 1. Representative Sampling). This situation was cited in a previous inspection report and Notice of Violation in 2011. Nitrification inhibitor must be added to CBOD samples and because of that all CBOD samples must be seeded, so this will not add any additional steps to the analysis procedure.

Sludge Handling and Disposal

Sludge is removed from the treatment plant at a rate of less than once per year. Williamson County Septic Service is the company that hauls the sludge. At the time of the inspection, the operator did not know where the sludge was taken or the means of disposal used by the hauling company (See Records and Reports, item #3 above).

Conclusion

Despite the inventive efforts of the operators to keep the system working, the treatment plant is in severely deteriorated condition and is no longer structurally sound due to age and poor maintenance. As a result the plant cannot provide reliable wastewater treatment in order to consistently meet permit effluent limits and protect water quality. There is adverse impact to the receiving stream. The system does not meet engineering design criteria for structures and equipment necessary for proper operation and maintenance. Severe corrosion, failure of system components, and lack of adequate control equipment, prevents normal operation of the treatment processes. Major rehabilitation and upgrades to the system would be costly and it would be difficult to make sufficient changes or replacement of components to bring the system into compliance. Due to the existing conditions, it appears that construction of a new treatment plant would be necessary if the discharge is to continue. The severely deteriorated condition of the plant and violations of permit effluent limits and conditions have been cited during previous inspections and in a Notice of Violation dated December 2, 2011.

The City of Franklin constructed a sewer main along the west bank of Fivemile Creek in 2008. The project included installation of a manhole directly across the stream from the Goose Creek Inn treatment plant in order to allow for connection of the Inn and other future customers in that vicinity. Considering the poor condition and compliance status of the treatment system, connection to the City of Franklin sewer collection system appears to be the most cost effective and reliable means of providing wastewater treatment for the Inn and its current sewer customers. Personnel in the Engineering Department with the City of Franklin should be contacted to determine what would be necessary to make the sewer service connection. Any plans for sewer connection should be coordinated with officials representing the two other business customers currently served by the treatment plant.

The Goose Creek Inn treatment system is functioning as a public sewer provider for two other business properties, Mapco (2408 Goose Creek Road) and K & T Associates (424 Old Peytonsville Road). State law requires such systems to be registered as public utilities and regulated by the Tennessee Regulatory Authority (TRA). Goose Creek Inn is operating without being authorized as a public utility. Personnel at the TRA (1-888-276-0677) should be contacted to obtain information about the proper actions to comply with those regulations.

Report by Ann Rochelle

**Goose Creek Inn Wastewater Treatment Plant
NPDES Permit # TN0060216, Williamson County
Compliance Evaluation Inspection Photo Summary**



Influent bar screens showing severe corrosion, bar screens breaking apart & ineffective screening of raw wastewater



Severe corrosion of bar screen structure & metal walls breaking apart

**Goose Creek Inn Wastewater Treatment Plant
NPDES Permit # TN0060216, Williamson County
Compliance Evaluation Inspection Photo Summary**



Deteriorated condition of structures, piping & wiring, makeshift repairs & replacement of metal piping with PVC and flexible hoses



Digester & aeration basin, deteriorated/corroded metal structures & makeshift repairs of piping

**Goose Creek Inn Wastewater Treatment Plant
NPDES Permit # TN0060216, Williamson County
Compliance Evaluation Inspection Photo Summary**



Aeration basin, PVC pipe & flexible hose replacing corroded & un-useable aeration lines



Aeration basin walkway corroded through around return sludge line, return sludge line covered with plastic bucket, rock & 2 x 4 on bucket & wedged under hand rails is used to hold bucket in place

**Goose Creek Inn Wastewater Treatment Plant
NPDES Permit # TN0060216, Williamson County
Compliance Evaluation Inspection Photo Summary**



Severely corroded clarifier structure with hole in decking & with metal flaking off of weir trough



Rising solids in clarifier due to clogged sludge return line & inadequate treatment,
surface skimmer broken & ineffective

**Goose Creek Inn Wastewater Treatment Plant
NPDES Permit # TN0060216, Williamson County
Compliance Evaluation Inspection Photo Summary**



Clarifier with solids exiting weir trough



Corroded pipes broken off, emergency overflow weir box severely corroded, piping held up with broom handle & galvanized pipe, wiring deteriorated, extension cords run across basin

**Goose Creek Inn Wastewater Treatment Plant
NPDES Permit # TN0060216, Williamson County
Compliance Evaluation Inspection Photo Summary**



Corroded, broken piping, broom handle support



Corroded filter structure & weir troughs, & chlorine feed lines

**Goose Creek Inn Wastewater Treatment Plant
NPDES Permit # TN0060216, Williamson County
Compliance Evaluation Inspection Photo Summary**



Corroded second filter structure & weir trough

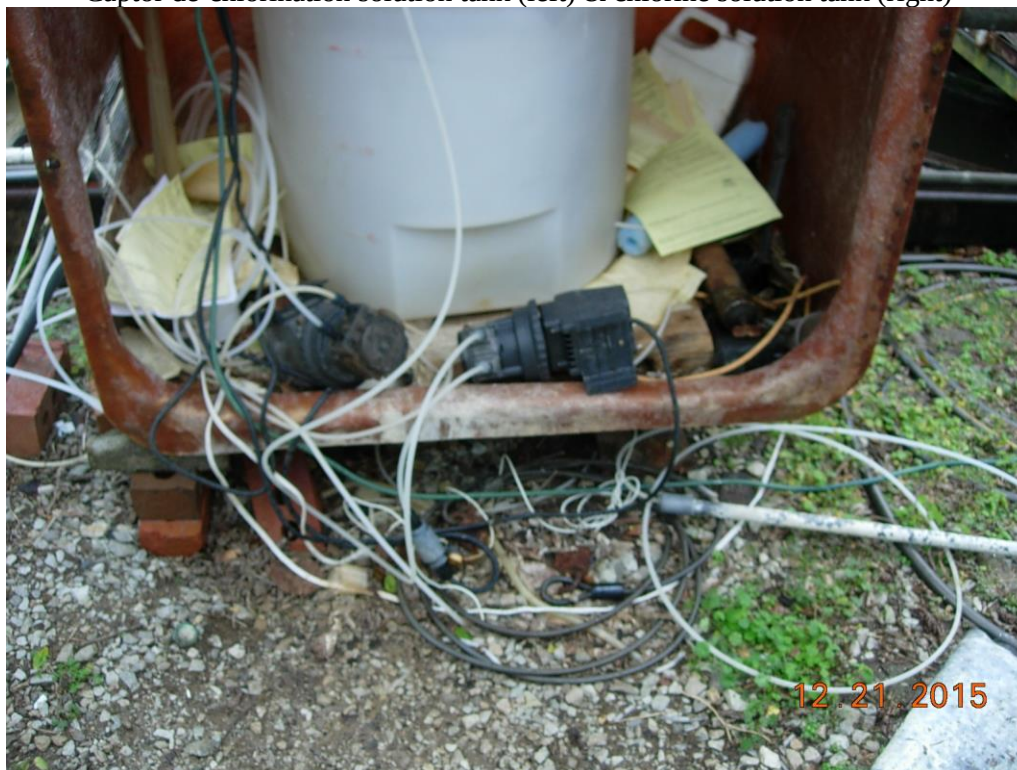


Single blower motor beside plant with flexible hose connection to air lines

**Goose Creek Inn Wastewater Treatment Plant
NPDES Permit # TN0060216, Williamson County
Compliance Evaluation Inspection Photo Summary**



Captor de-chlorination solution tank (left) & chlorine solution tank (right)



Chlorination solution & de-chlorination solution feed pumps, wiring, & feed lines

**Goose Creek Inn Wastewater Treatment Plant
NPDES Permit # TN0060216, Williamson County
Compliance Evaluation Inspection Photo Summary**



Deteriorated wiring conditions

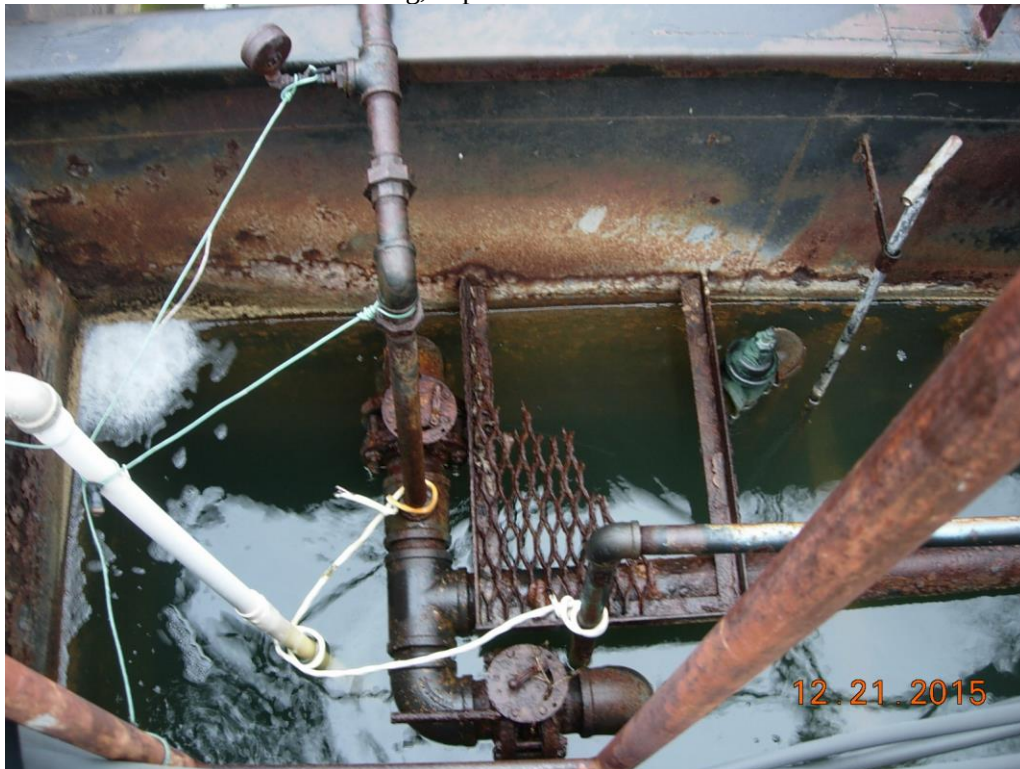


Deteriorated electrical system conditions

**Goose Creek Inn Wastewater Treatment Plant
NPDES Permit # TN0060216, Williamson County
Compliance Evaluation Inspection Photo Summary**



Example of extension cords used for wiring, exposed to wet weather & wastewater from treatment units



Corroded access platform & piping, makeshift piping for aeration in final effluent chamber

**Goose Creek Inn Wastewater Treatment Plant
NPDES Permit # TN0060216, Williamson County
Compliance Evaluation Inspection Photo Summary**



Corroded effluent weir box, Captor de-chlorination feed point, effluent discoloration in weir box



Effluent outfall pipe & discharge, cloudy/opaque effluent discharge, white precipitate & gray deposits in channel leading to receiving stream Fivemile Creek

**Goose Creek Inn Wastewater Treatment Plant
NPDES Permit # TN0060216, Williamson County
Compliance Evaluation Inspection Photo Summary**



Effluent discharge pipe, cloudy/opaque effluent discharge, white & gray precipitate & deposits in channel leading into Fivemile Creek, effluent & deposits change from white to gray then to blackish color as it flows toward the stream

**Goose Creek Inn Wastewater Treatment Plant
NPDES Permit # TN0060216, Williamson County
Compliance Evaluation Inspection Photo Summary**



Gray precipitate & deposits in effluent flow



Gray & blackish precipitate & deposits in effluent flow

**Goose Creek Inn Wastewater Treatment Plant
NPDES Permit # TN0060216, Williamson County
Compliance Evaluation Inspection Photo Summary**



Effluent flow entering from the right into Fivemile Creek, gray & blackish precipitate & deposits



Effluent flow entering Fivemile Creek, showing gray & blackish precipitate & deposits, & discoloration of the receiving stream

COF 2016-0307
Exhibit A
Goose Creek Inn Sewer Extension Project
Conceptual Sewer Design

Existing Goose
Creek Inn WWTP

Tract 1

Tract 2

Tract 3

Existing Interceptor

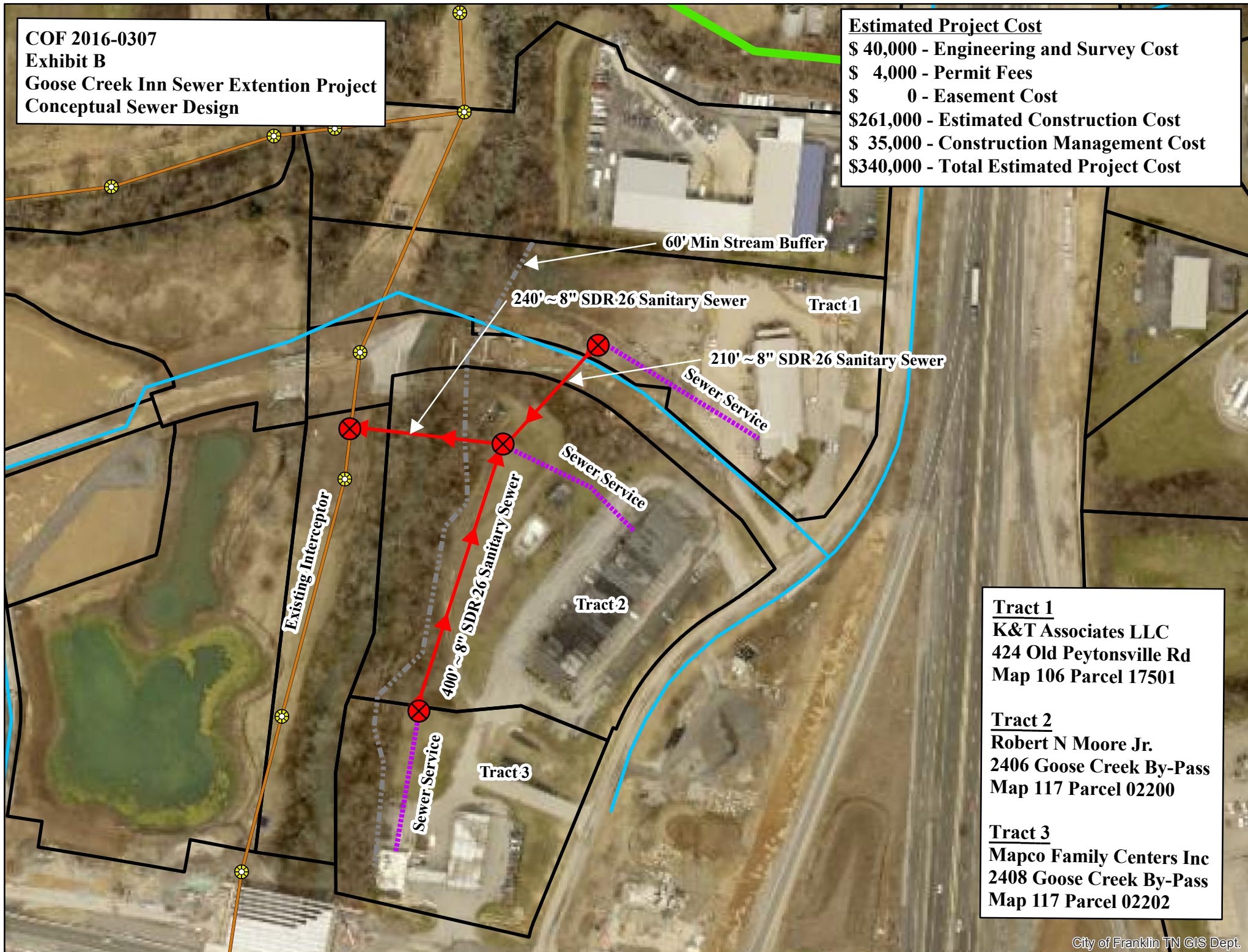
Tract 1
K&T Associates LLC
424 Old Peytonsville Rd
Map 106 Parcel 17501

Tract 2
Robert N Moore Jr.
2406 Goose Creek By-Pass
Map 117 Parcel 02200

Tract 3
Mapco Family Centers Inc
2408 Goose Creek By-Pass
Map 117 Parcel 02202

COF 2016-0307
Exhibit B
Goose Creek Inn Sewer Extension Project
Conceptual Sewer Design

Estimated Project Cost
\$ 40,000 - Engineering and Survey Cost
\$ 4,000 - Permit Fees
\$ 0 - Easement Cost
\$261,000 - Estimated Construction Cost
\$ 35,000 - Construction Management Cost
\$340,000 - Total Estimated Project Cost



Tract 1
K&T Associates LLC
424 Old Peytonsville Rd
Map 106 Parcel 17501

Tract 2
Robert N Moore Jr.
2406 Goose Creek By-Pass
Map 117 Parcel 02200

Tract 3
Mapco Family Centers Inc
2408 Goose Creek By-Pass
Map 117 Parcel 02202

CITY OF FRANKLIN
Speical Assessment Estimated Cost (002)
CONCEPTUAL ESTIMATE

Rights of Way (ROW)		\$0.00				SEWER TAP and CONNECTION FEES																	
Detailed Engineering		\$50,000.00				Usual and customary fees (rates as of 3/5/12) - SUBJECT TO CHANGE																	
Construction (Contract)		\$325,000.00				Meter Size		Applic Fee		Sewer Conn Fee		SDF		ACCESS		INSTALL		EDF		TOTAL			
Construction Management Cost		\$40,000.00				Mapco Express		1"		\$25.00		\$50.00		\$5,775.00		\$8,400.00		\$263.00		\$1,800.00		\$16,313	
SUBTOTAL		\$415,000.00				B&G Rental		3/4"		\$25.00		\$50.00		\$1,444.00		\$2,100.00		\$263.00		\$450.00		\$4,332	
Bond Issuance Cost (0.18% of Subtotal)		\$747.00				B&G REntal		1"		\$25.00		\$50.00		\$5,775.00		\$8,400.00		\$263.00		\$1,800.00		\$16,313	
INITIAL ASSESSMENT		\$415,747.00				Goose Creek Inn		2"		\$25.00		\$50.00		\$18,480.00		\$26,880.00		\$263.00		\$5,760.00		\$51,458	
HOMEOWNER AS APPROVED FOR THE ASSESSESSMENT																	COMMENTS						
Str #	STREET NAME	OWNER (as of 3/5/12)	PARCEL ID	SI	Legal Acres (PT)	COF UTILITY ACCT #	ASSESSMENT ACCT #	2016 APPRAISED LAND VALUE	2016 IMPROV VALUE	2016 APPRAISED VALUE	2016 ASSESSED VALUE	% of ASSESSMENT	COST To PROPERTY OWNER (before interest)	5 Year Payback (Monthly)									
ment)														3.50%									
2408	Goose Creek By-Pass	Mapco Family Centers Inc	Map:117 Parcel: 02202	000	2.27	NA	TBD	\$1,430,100	\$0	\$1,430,100	\$572,040	24.71%	\$102,713.96	\$1,868.55									
2406	Goose Creek By-Pass	Moore Robert N Jr	Map: 117 Parcel: 02200	000	5.00	NA	TBD	\$2,260,700	\$0	\$2,260,700	\$904,280	39.06%	\$162,370.09	\$2,953.80									
424	Old Peytonsville Rd	K&T Associates LLC	Map: 106 Parcel: 17501	000	3.82	NA	TBD	\$1,363,700	\$734,000	\$2,097,700	\$839,080	36.24%	\$150,662.95	\$2,740.82									
		GRAND TOTAL - ASSESSMENT DISTRICT						\$5,054,500	\$734,000	\$5,788,500	\$2,315,400	100.00%	\$415,747.00	\$7,563.16									
		AVERAGE/PARCEL						\$1,684,833	\$244,667	\$1,929,500	\$771,800		\$138,582.33	\$2,521.05									

RESOLUTION NO. 2016-85

TO BE ENTITLED: "A RESOLUTION AUTHORIZING THE CITY OF FRANKLIN TO ENTER INTO AN AGREEMENT, SUBJECT TO REVIEW AND APPROVAL BY THE BOARD OF MAYOR AND ALDERMEN, WITH THE CUSTOMERS OF THE GOOSE CREEK SEWAGE TREATMENT PLANT (TN0060216) TO CONSTRUCT SANITARY SEWER INFRASTRUCTURE TO CONNECT TO THE CITY OF FRANKLIN WASTEWATER COLLECTION SYSTEM"

WHEREAS, the City of Franklin supports human health and stewardship of the Harpeth River and Harpeth River tributaries; and

WHEREAS, the Goose Creek Sewage Treatment Plant (TN0060216) received a Tennessee Department of Environment and Conservation (TDEC) Commissioners Order requiring closing of the facility; and

WHEREAS, the City of Franklin has the ability to provide sanitary sewer services to the customers of the Goose Creek STP upon construction of certain improvements; and

WHEREAS, the City of Franklin has the ability to construct the improvements and recapture costs, including interest, such that existing customers do not fund the connection of the Goose Creek STP customers.

NOW THEREFORE, BE IT RESOLVED, BY THE BOARD OF MAYOR AND ALDERMEN OF THE CITY OF FRANKLIN, TENNESSEE, that the City shall endeavor to enter into an agreement, to be reviewed and approved by the Board of Mayor and Aldermen, with the sanitary sewer customers of the Goose Creek Sewage Treatment Plant (TN0060216) to provide infrastructure for sanitary sewer service through the City of Franklin system.

IT IS SO RESOLVED AND DONE on this ____ day of _____ 2016.

ATTEST:

CITY OF FRANKLIN, TENNESSE

By: _____
ERIC S. STUCKEY
City Administrator

By: _____
DR. KEN MOORE
Mayor

Approved as to Form

By: _____
Shauna R. Billingsley, City Attorney

RESOLUTION NO. 2016-77

A RESOLUTION AUTHORIZING THE CITY OF FRANKLIN TO CONTRIBUTE \$400,000 TO THE GOOSE CREEK SANITARY SEWER EXTENSION PROJECT AS PART OF THE LAMPO GROUP CORPORATE HEADQUARTERS PROJECT.

WHEREAS, the City approved the Berry Farms PUD Subdivision (Reams-Fleming Tract), Development Plan, revision 1 in June of 2015 (Lampo Group Future Corporate Headquarters); and

WHEREAS, Smith Seckman Reid, Inc. completed a sanitary sewer study for the Goose Creek Drainage Basin in May of 2005; and

WHEREAS, Goose Creek Drainage Basin Study recommended the extension of a 12" Sanitary Sewer Main from the east side of I-65 to the west side of I-65 as shown in Exhibit A and Exhibit B to account for existing topography and broader service area; and

WHEREAS, the extension of a 12" sanitary sewer main will allow the City to one day provide gravity sanitary sewer to an additional 441 AC of land currently located in the City of Franklin and Williamson County as shown in Exhibit A; and

WHEREAS, the development of the Lampo Group Future Corporate Headquarters is expected to generate an estimate \$270,000 in Sanitary Sewer Access Fees for their development; and

WHEREAS, the City has agreed to make a contribution in an amount not to exceed \$400,000 to this sanitary sewer extension project as conceptually shown in Exhibit B with the funding source being the Water and Wastewater Fund; and

NOW THEREFORE, BE IT RESOLVED, BY THE BOARD OF MAYOR AND ALDERMEN OF THE CITY OF FRANKLIN, TENNESSEE THAT:

Authority is granted to the City Administrator to reimburse the Lampo Group, based on actual cost, in an amount not to exceed Four Hundred Thousand and no/100 Dollars (\$400,000.00) following the installation, testing, and acceptance of the sanitary sewer main as shown in Exhibit B. Payment to be made within sixty (60) days.

IT IS SO RESOLVED AND DONE on this ____ day of _____, 2016

ATTEST:

By: _____

ERIC S. STUCKEY
City Administrator

CITY OF FRANKLIN, TENNESSEE:

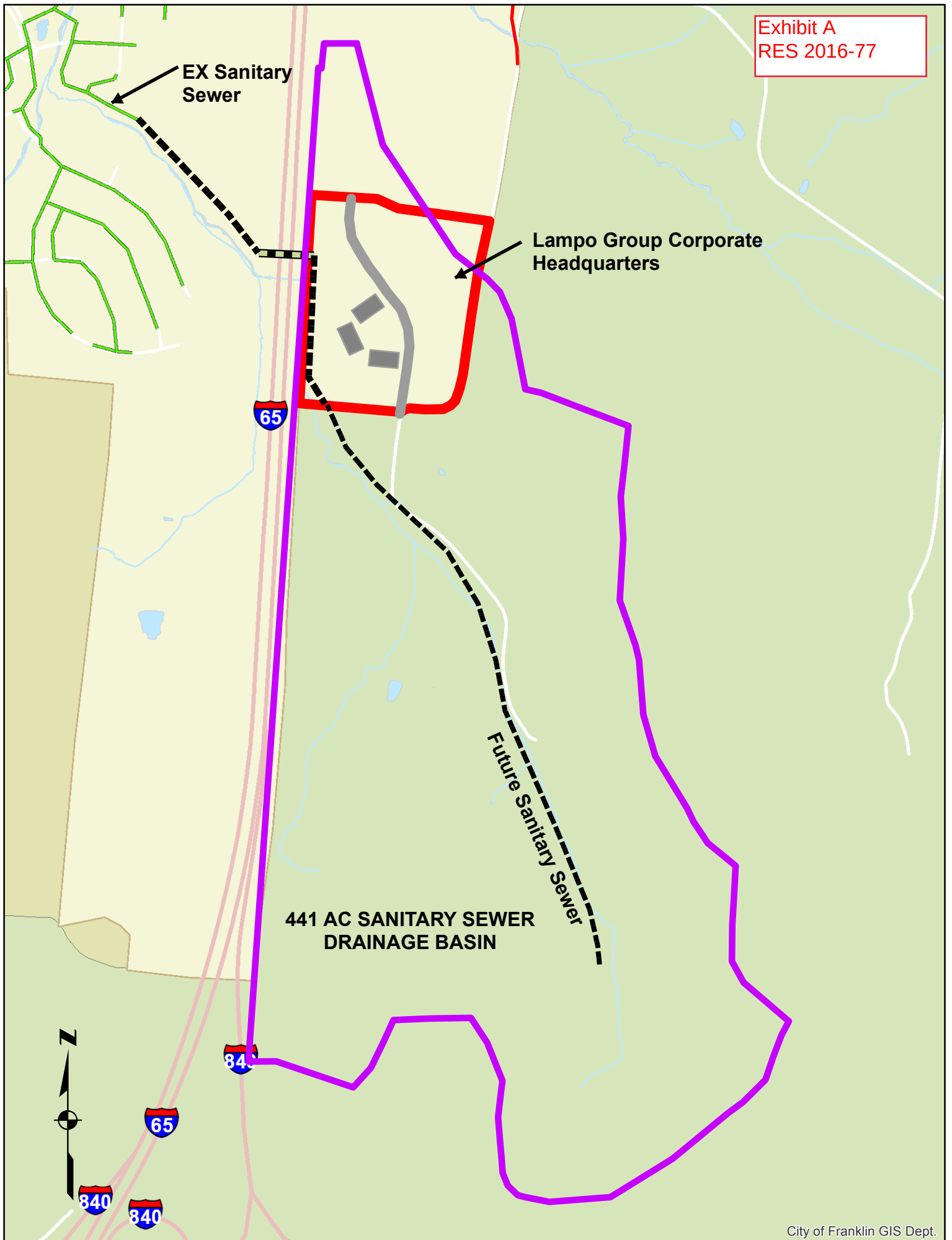
By: _____

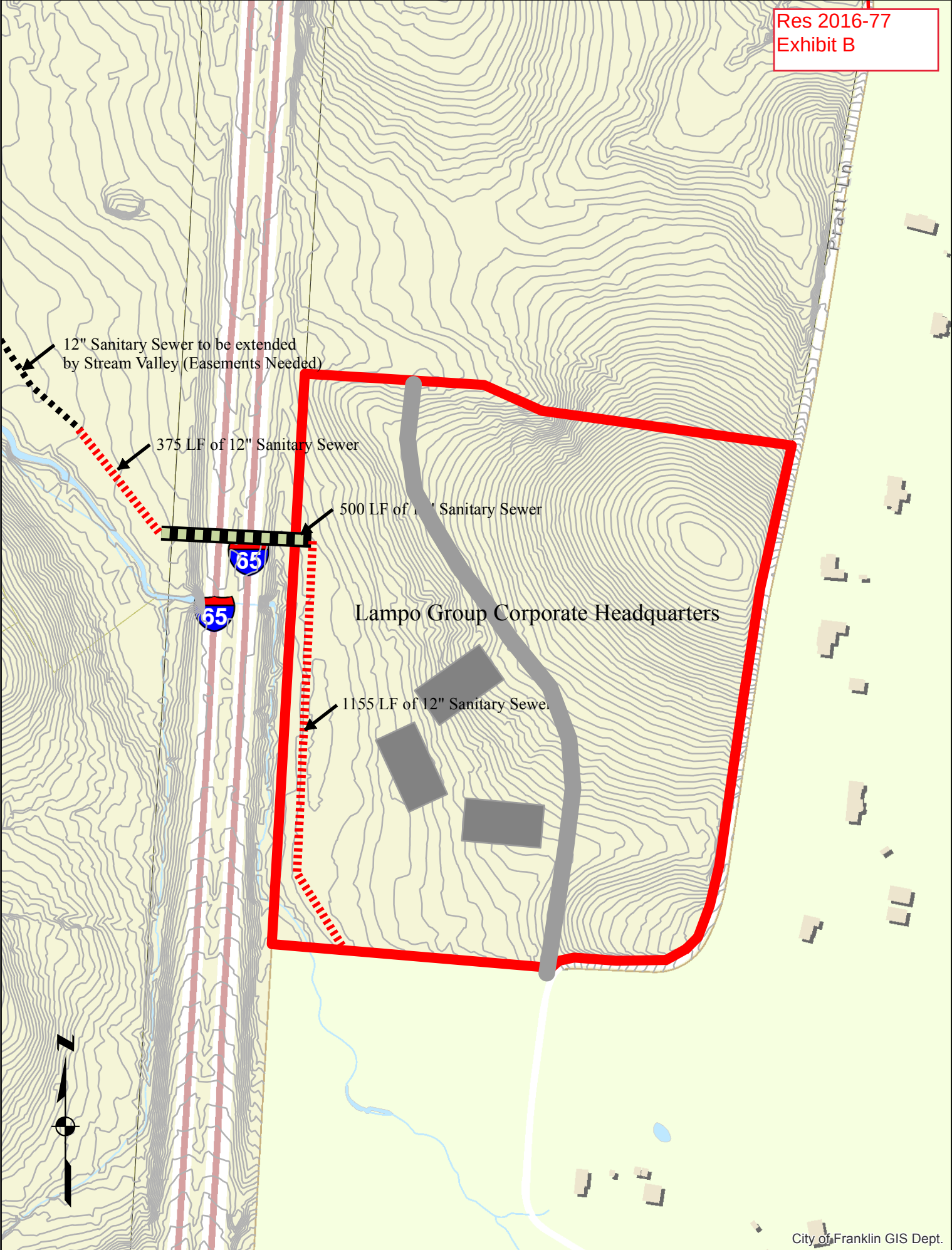
DR. KEN MOORE
Mayor

Approved as to Form

By: _____

Shauna R. Billingsley, City Attorney





**AMENDMENT NO. 2 TO
PROFESSIONAL SERVICES AGREEMENT
FOR THE GOOSE CREEK SANITARY SEWER EXTENSION
PROJECT FROM WEST OF I-65 TO THE EAST SIDE OF I-65
COF Contract No. 2014-0177**

THIS AMENDMENT is made and entered into on this the ____ day of _____, 201_, by and between the **City of Franklin, Tennessee** ("City") and **HETHCOAT & DAVIS, INC.** ("Consultant").

WITNESSETH:

WHEREAS, City and Consultant entered into a Professional Services Agreement ("Agreement") for the Preliminary Engineering of the Goose Creek Sanitary Sewer Extension Project from West of I-65 to the East Side of I-65 ("Project"), dated the 9th day of September 2014; and

WHEREAS, said Agreement stipulated that the Consultant would be paid a not to exceed fee of ONE HUNDRED TWENTY THOUSAND SEVEN HUNDRED TWENTY-FIVE AND NO/100 DOLLARS (\$120,725.00), as authorized by the City Engineer and as detailed in the fee Schedule; and

WHEREAS, the City and the Consultant amended this agreement through Amendment No 1 To Professional Engineering Services For the Goose Creek Sanitary Sewer Extension Project from West of I-65 to the East Side of I-65 (COF Contract No. 2014-0177), dated the 8th day of September, 2015; and

WHEREAS, said Amendment No 1 stipulated that the Consultant would be paid a not to exceed fee of \$11,810.00, as authorized by the City Engineer as detailed in the Fee Schedule; and

WHEREAS, the City and Consultant realize the need for additional engineering services related to permitting and construction services support to fully complete the Project's final design and construction; and

WHEREAS, the Consultant has provided a Proposal for an increase in engineering services for the Goose Creek Sanitary Sewer Extension Project from West of I-65 to the East Side of I-65, as described in Exhibit A dated September 15, 2016, in the amount of **TWENTY-SIX THOUSAND SIX HUNDRED FIVE AND NO/100 DOLLARS (\$26,605.00)**; and

WHEREAS, the City has reviewed the Proposal and desires to enter into an amendment to the Agreement to include the final design as stated above for the Project as proposed by the Consultant.

NOW, THEREFORE, in consideration of these premises and the mutual promises contained herein, it is agreed by and between the parties as follows:

1. The foregoing recitals are incorporated by reference as if fully stated herein.
2. Consultant's Responsibilities and Duties. Consultant agrees to perform the work as proposed in their September 15, 2016, letter of proposal (**Exhibit A**) which includes the Scope of Services for this Amendment, all of which shall be considered as an integral part hereof.
3. City's Responsibilities and Duties. City shall pay Consultant for the cost of the work as described in Exhibit A an amount not to exceed **TWENTY-SIX THOUSAND SIX HUNDRED FIVE AND NO/100 DOLLARS (\$26,605.00)**.

The City reserves the right to issue any payments jointly to the Consultant and Sub-Consultant when the City receives information that the Consultant has not paid its Sub-Consultant.

4. Waiver. Neither party's failure nor delay to exercise any of its rights or powers under this Amendment will constitute or be deemed a waiver or forfeiture of those rights or powers. For a waiver of a right or power to be effective, it must be in writing signed by the waiving party. An effective waiver of a right or power shall not be construed as either (a) a future or continuing waiver of that same right or power, or (b) the waiver of any other right or power.
5. Severability. If any term or provision of the Amendment is held to be illegal or unenforceable, the validity or enforceability of the remainder of the Amendment will not be affected.
6. Precedence. In the event of conflict between this Amendment and the provisions of the previous Agreement(s), or any other contract, agreement or other document to which this Amendment may accompany or incorporate by reference, the provisions of this Amendment will, to the extent of such conflict (or to the extent the Agreement is silent), take precedence unless such document expressly states that it is amending this Amendment.
7. Entire Agreement. The Amendment between the parties supersedes any prior or contemporaneous communications, representations or agreements between the parties, whether oral or written, regarding the subject matter of the entire Amendment. The terms and conditions of this Amendment may not be changed except by an amendment expressly referencing this Amendment by section number and signed by an authorized representative of each party.

8. Additions/Modifications. If seeking any addition or modification to the Amendment, the parties agree to reference the specific paragraph number sought to be changed on any future document or purchase order issued in furtherance of the Amendment, however, an omission of the reference to same shall not affect its applicability. In no event shall either party be bound by any terms contained in any purchase order, acknowledgement, or other writings unless: (a) such purchase order, acknowledgement, or other writings specifically refer to the Amendment or to the specific clause they are intended to modify; (b) clearly indicate the intention of both parties to override and modify the Amendment; and (c) such purchase order, acknowledgement, or other writings are signed, with specific material clauses separately initialed, by authorized representatives of both parties.

9. Breach. Upon deliberate breach of the Amendment by either party, the non-breaching party shall be entitled to terminate the Amendment without notice, with all of the remedies it would have in the event of termination, and may also have such other remedies as it may be entitled to in law or in equity.

10. Survival. This Amendment shall survive the completion of or any termination of the original contract, revised contract, or agreement or other document to which it may accompany or incorporate by reference.

All other provisions of the Agreement dated September 9, 2014 and Amendment 1 dated September 8th, 2015 are unchanged and remain in full force and effect.

IN WITNESS WHEREOF, the parties have executed this Amendment.

The CITY OF FRANKLIN, TENNESSEE

HETHCOAT & DAVIS, INC.

By: _____

Dr. Ken Moore

Mayor

Date: _____

By: _____

Print: _____

Title: _____

Date: _____

Attest:

Eric S. Stuckey
City Administrator
Date: _____

Approved as to form:

Kristen L. Corn, Assistant City Attorney

HEATHCOAT DAVIS

September 15, 2016

COF 2014-0177
Amendment 2
PG 1 of 2
Exhibit A

Mr. Patricia McNeese, PE
City of Franklin
109 Third Avenue South
Franklin, TN 37064

**Re: Request for Additional Engineering Services related to
Permitting & Construction Services Support
Fire Hall Sewer Extension**

Dear Patricia:

We are requesting an additional service amendment for additional services related to the permit revisions and additional construction services for the current Fire Hall Sewer Extension project.

In our original contract proposal dated July 11, 2014, we identified construction phase services for engineering and resident project representation based on a five (5) month contract period. At the time of this proposal, only the sanitary sewer improvements were considered. Since that time, additional reclaimed water work has been added to the contract and as a result of that addition, the overall construction time period was lengthened to seven (7) months to allow the contractor adequate time to complete the project scope. As a result of this change, we request an increase in fees to accommodate this increased construction period.

Additionally, due to the lengthy time frame required for easement acquisition, the original TDOT permit that was approved in June 2015 expired in June 2016. In conjunction, the crossing of I65 was increased to accommodate the addition of the reclaimed water line. Due to the expiration of the original permit as well as the need to upgrade the permit to reflect the change in crossing size, the TDOT permit had to be re-worked and resubmitted for approval. As a result of this effort, we request a small increase in fees to cover this permit renewal.

The cost for these additional services is as follows:

- TDOT Permit Update & Renewal - \$605.00
- Additional Engineering Construction Phase Services for two months - \$7,000.00
- Additional Resident Project Representative Services for two months - \$19,000.00



COF 2014-0177
Amendment 2
PG 2 of 2
Exhibit A

Page 2

We respectfully request a contract amendment in the lump sum amount of \$26,605.00.

We sincerely appreciate the opportunity to work with you and the City of Franklin. If you should have any questions or require additional information, please call.

Hethcoat & Davis, Inc.

A handwritten signature in blue ink, appearing to read "Keith Davis".

Keith Davis, PE,
Secretary

Cc: Cory Borum, H&D

BID TABULATION SHEET FOR
CITY OF FRANKLIN
CURD BRANCH AND WATSON BRANCH
INTERCEPTOR SEWER IMPROVEMENTS
COF CONTRACT NO: 2014-0181
SSR NO. 13-41-032.0
Page 1 of 1
BID DATE: September 20, 2016
2:30 PM CDT TIME



Norris Bros Excavating, LLC 1007 Rodgers Road Crossville, TN 38572 TN LN #: 00048700 EXP. DATE: 7/31/2018	Cleary Construction, Inc. 2006 Edmonton Road Tompkinsville, KY 42167 TN LN #: 00041957 EXP. DATE: 5/31/2017	Jarrett Builders, Inc. 1106 Lebanon Pike Nashville, TN 37210 TN LN #: 00040392 EXP. DATE: 8/31/2018	Civil Constructors, LLC P.O. Box 685 Franklin, TN 37065 TN LN#: 00034765 EXP. DATE: 11/30/2017	SBW Constructors, LLC 1314 Baptist World Center Dr. Nashville, TN 37207 TN LN #: 00067157 EXP. DATE: 9/30/2017	Walker Building Group, LLC 2817 West End Avenue, #126-256 Nashville, TN 37203 TN LN #: 00057127 EXP. DATE: 3/31/2018
---	---	---	--	--	--

Item Number	Quantity & Units		Description	Unit Price	Extension	Unit Price	Extension	Unit Price	Extension	Unit Price	Extension	Unit Price	Extension	Unit Price	Extension
1	1	LS	Mobilization (Less than 3% of Bid)	\$ 33,950.00	\$ 33,950.00	\$ 40,000.00	\$ 40,000.00	\$ 52,000.00	\$ 52,000.00	\$ 54,580.00	\$ 54,580.00	\$ 56,500.00	\$ 56,500.00	\$ 84,000.00	\$ 84,000.00
2	106	LF	24" DIP Sewer	\$ 232.80	\$ 24,676.80	\$ 270.00	\$ 28,620.00	\$ 271.00	\$ 28,726.00	\$ 548.00	\$ 58,088.00	\$ 242.00	\$ 25,652.00	\$ 300.00	\$ 31,800.00
3	2,500	LF	24" PVC Sewer	\$ 181.39	\$ 453,475.00	\$ 163.00	\$ 407,500.00	\$ 183.68	\$ 459,200.00	\$ 241.00	\$ 602,500.00	\$ 170.00	\$ 425,000.00	\$ 300.00	\$ 750,000.00
4	55	LF	24" PVC Sewer Under Roadway	\$ 116.40	\$ 6,402.00	\$ 270.00	\$ 14,850.00	\$ 244.00	\$ 13,420.00	\$ 408.00	\$ 22,440.00	\$ 325.00	\$ 17,875.00	\$ 400.00	\$ 22,000.00
5	1,080	LF	24" PVC Sewer in Existing Trench	\$ 192.06	\$ 207,424.80	\$ 116.00	\$ 125,280.00	\$ 87.80	\$ 94,824.00	\$ 196.00	\$ 211,680.00	\$ 175.00	\$ 189,000.00	\$ 300.00	\$ 324,000.00
6	260	LF	Trenchless Installation of 24" DIP Sewer in 48" Steel Casing	\$ 750.00	\$ 195,000.00	\$ 1,060.00	\$ 275,600.00	\$ 1,990.00	\$ 517,400.00	\$ 1,240.00	\$ 322,400.00	\$ 1,350.00	\$ 351,000.00	\$ 2,200.00	\$ 572,000.00
7	1	LS	24" PVC Sewer Creek Crossing STA. 31+10.0 to 31+40.0	\$ 970.00	\$ 970.00	\$ 35,000.00	\$ 35,000.00	\$ 28,775.00	\$ 28,775.00	\$ 33,610.00	\$ 33,610.00	\$ 35,000.00	\$ 35,000.00	\$ 80,000.00	\$ 80,000.00
8	440	LF	8" DIP Sewer	\$ 135.80	\$ 59,752.00	\$ 60.00	\$ 26,400.00	\$ 176.00	\$ 77,440.00	\$ 165.00	\$ 72,600.00	\$ 180.00	\$ 79,200.00	\$ 150.00	\$ 66,000.00
9	220	LF	8" HDPE Sewer in Existing 15" VCP Sewer Pipe	\$ 53.35	\$ 11,737.00	\$ 80.00	\$ 17,600.00	\$ 63.75	\$ 14,025.00	\$ 60.00	\$ 13,200.00	\$ 130.00	\$ 28,600.00	\$ 115.00	\$ 25,300.00
10	3	EA	48" Manhole, 0' - 6' Depth	\$ 3,686.00	\$ 11,058.00	\$ 4,500.00	\$ 13,500.00	\$ 5,300.00	\$ 15,900.00	\$ 4,060.00	\$ 12,180.00	\$ 7,500.00	\$ 22,500.00	\$ 14,000.00	\$ 42,000.00
11	21	EA	60" Manhole, 0' - 6' Depth	\$ 5,723.00	\$ 120,183.00	\$ 6,500.00	\$ 136,500.00	\$ 4,600.00	\$ 96,600.00	\$ 5,500.00	\$ 115,500.00	\$ 8,500.00	\$ 178,500.00	\$ 14,000.00	\$ 294,000.00
12	3	EA	72" Manhole, 0' - 6' Depth	\$ 6,693.00	\$ 20,079.00	\$ 7,500.00	\$ 22,500.00	\$ 8,400.00	\$ 25,200.00	\$ 7,390.00	\$ 22,170.00	\$ 9,500.00	\$ 28,500.00	\$ 15,000.00	\$ 45,000.00
13	155	VF	Additional Manhole Sidewall	\$ 291.00	\$ 45,105.00	\$ 280.00	\$ 43,400.00	\$ 588.00	\$ 91,140.00	\$ 245.00	\$ 37,975.00	\$ 275.00	\$ 42,625.00	\$ 275.00	\$ 42,625.00
14	26	EA	Extra for Watertight MH F&C	\$ 582.00	\$ 15,132.00	\$ 425.00	\$ 11,050.00	\$ 621.30	\$ 16,153.80	\$ 965.00	\$ 25,090.00	\$ 595.00	\$ 15,470.00	\$ 500.00	\$ 13,000.00
15	2	EA	Manhole Vent Assembly	\$ 1,455.00	\$ 2,910.00	\$ 2,700.00	\$ 5,400.00	\$ 4,200.00	\$ 8,400.00	\$ 3,100.00	\$ 6,200.00	\$ 5,300.00	\$ 10,600.00	\$ 5,500.00	\$ 11,000.00
16	1	EA	Connection to Existing Manholes	\$ 2,425.00	\$ 2,425.00	\$ 3,000.00	\$ 3,000.00	\$ 4,500.00	\$ 4,500.00	\$ 4,150.00	\$ 4,150.00	\$ 6,250.00	\$ 6,250.00	\$ 500.00	\$ 500.00
17	12	EA	Abandon Existing Manholes	\$ 582.00	\$ 6,984.00	\$ 300.00	\$ 3,600.00	\$ 984.00	\$ 11,808.00	\$ 1,290.00	\$ 15,480.00	\$ 1,250.00	\$ 15,000.00	\$ 1,000.00	\$ 12,000.00
18	50	CY	Overdepth Excavation and Gravel Refill	\$ 33.95	\$ 1,697.50	\$ 50.00	\$ 2,500.00	\$ 130.00	\$ 6,500.00	\$ 65.00	\$ 3,250.00	\$ 25.00	\$ 1,250.00	\$ 200.00	\$ 10,000.00
19	50	TON	Rip-Rap	\$ 33.95	\$ 1,697.50	\$ 100.00	\$ 5,000.00	\$ 35.15	\$ 1,757.50	\$ 95.00	\$ 4,750.00	\$ 20.00	\$ 1,000.00	\$ 75.00	\$ 3,750.00
20	17	EA	Concrete Check Dams	\$ 291.00	\$ 4,947.00	\$ 2,000.00	\$ 34,000.00	\$ 975.00	\$ 16,575.00	\$ 1,180.00	\$ 20,060.00	\$ 6,800.00	\$ 115,600.00	\$ 3,500.00	\$ 59,500.00
21	250	LF	Flowable Fill	\$ 135.80	\$ 33,950.00	\$ 100.00	\$ 25,000.00	\$ 117.50	\$ 29,375.00	\$ 40.00	\$ 10,000.00	\$ 240.00	\$ 60,000.00	\$ 300.00	\$ 75,000.00
22	40	LF	Cast-In-Place Concrete	\$ 97.00	\$ 3,880.00	\$ 150.00	\$ 6,000.00	\$ 233.00	\$ 9,320.00	\$ 40.00	\$ 1,600.00	\$ 125.00	\$ 5,000.00	\$ 100.00	\$ 4,000.00
23	75	LF	Concrete Curb Replacement	\$ 97.00	\$ 7,275.00	\$ 36.00	\$ 2,700.00	\$ 35.15	\$ 2,636.25	\$ 28.00	\$ 2,100.00	\$ 40.00	\$ 3,000.00	\$ 100.00	\$ 7,500.00
24	125	SY	Permanent Pavement Repair	\$ 22.31	\$ 2,788.75	\$ 127.00	\$ 15,875.00	\$ 60.00	\$ 7,500.00	\$ 110.00	\$ 13,750.00	\$ 110.00	\$ 13,750.00	\$ 140.00	\$ 17,500.00
25	20	LF	6" PVC Lateral Piping	\$ 48.50	\$ 970.00	\$ 60.00	\$ 1,200.00	\$ 133.25	\$ 2,665.00	\$ 65.00	\$ 1,300.00	\$ 10.00	\$ 200.00	\$ 125.00	\$ 2,500.00
26	1	EA	Lateral Service Connection	\$ 970.00	\$ 970.00	\$ 3,500.00	\$ 3,500.00	\$ 2,650.00	\$ 2,650.00	\$ 3,150.00	\$ 3,150.00	\$ 2,500.00	\$ 2,500.00	\$ 2,750.00	\$ 2,750.00
27	3,800	LF	Grassing	\$ 0.49	\$ 1,862.00	\$ 10.00	\$ 38,000.00	\$ 2.15	\$ 8,170.00	\$ 9.30	\$ 35,340.00	\$ 10.00	\$ 38,000.00	\$ 4.00	\$ 15,200.00
28	4,355	LF	Sewer Television Inspection	\$ 2.91	\$ 12,673.05	\$ 4.00	\$ 17,420.00	\$ 3.20	\$ 13,936.00	\$ 4.00	\$ 17,420.00	\$ 2.00	\$ 8,710.00	\$ 3.50	\$ 15,242.50
29	1	LS	Sewer Flow Control	\$ 4,850.00	\$ 4,850.00	\$ 41,000.00	\$ 41,000.00	\$ 34,000.00	\$ 34,000.00	\$ 87,545.00	\$ 87,545.00	\$ 148,500.00	\$ 148,500.00	\$ 100,000.00	\$ 100,000.00
30	1	LS	Erosion Control	\$ 4,850.00	\$ 4,850.00	\$ 30,000.00	\$ 30,000.00	\$ 34,553.45	\$ 34,553.45	\$ 21,610.00	\$ 21,610.00	\$ 15,200.00	\$ 15,200.00	\$ 30,000.00	\$ 30,000.00
31	1	LS	Miscellaneous Allowance	\$50,000.00	\$ 50,000.00	\$50,000.00	\$ 50,000.00	\$50,000.00	\$ 50,000.00	\$50,000.00	\$ 50,000.00	\$50,000.00	\$ 50,000.00	\$50,000.00	\$ 50,000.00

ALTERNATE BID ITEM

1	48" - 72" Manhole, 0' - 6' Depth (EA)	\$ 6,596.00	\$ 545.00	\$ 8,400.00	\$ 4,465.00	\$ 600.00	\$ 250.00
2	Additional Manhole Sidewall (VF)	\$ 291.00	\$ 93.00	\$ 588.00	\$ 160.00	\$ 100.00	\$ 100.00
TOTAL BASE BID		\$ 1,349,674.40	\$ 1,481,995.00	\$ 1,775,150.00	\$ 1,901,718.00	\$ 1,989,982.00	\$ 2,808,167.50

I HEREBY CERTIFY THAT THIS IS A TRUE AND CORRECT RECORD WITH ALL ERRORS AND EXTENSIONS OF UNIT PRICE CORRECTED.

BY: Paolo M. Fonda, P.E.

DATE: September 23, 2016





October 17, 2016

Ms. Patricia McNeese
Engineering Director
P.O. Box 305, City Hall
Franklin, Tennessee 37065

Re: **City of Franklin, TN**
Curd Branch & Watson Branch Interceptor Sewer Improvements
Bid Award
SSR No. 13-41-032.0 / COF No. 2014-0181

Dear Ms. McNeese:

On Tuesday, September 20, 2016 at 2:30 P.M., bids were opened for Curd Branch & Watson Branch Interceptor Sewer Improvements project. Six (6) bids were submitted. A list of bidders and bid amounts are shown below.

Bidder	Total Base Bid	Alt. No. 1	Alt. No. 2
1. Norris Brothers Excavating, LLC	\$1,349,674.40	\$6,596.00	\$291.00
2. Cleary Construction, Inc.	\$1,481,995.00	\$545.00	\$93.00
3. Jarrett Builders, Inc.	\$1,775,150.00	\$8,400.00	\$588.00
4. Civil Constructors, LLC	\$1,901,718.00	\$4,465.00	\$160.00
5. SBW Constructors, LLC	\$1,989,982.00	\$600.00	\$100.00
6. Walker Building Group, LLC	\$2,808,167.50	\$250.00	\$100.00

After evaluations of the submitted bids, the low bidder is Norris Brothers Excavating. Per Section 00 2113, each bid was checked for errors and a bid tabulation was created. Two (2) errors were found and corrected on the bid tab. A copy of the bid tab has been sent to all plan holders.

Per Section 00 2113, qualifications were requested from the low bidder. After reviewing their information, SSR and the City of Franklin have come to the conclusion that Norris Brothers has not provided adequate experience for a project of this magnitude. Given this information, we recommend the next lowest bidder, Cleary Construction, Inc. be awarded the contract for the Curd Branch & Watson Branch Interceptor Sewer Improvements project. Cleary Construction is located in Tompkinsville, Kentucky. They have provided a list of ten (10) projects of similar size and scope. We have worked with this contractor in the past and feel confident in their capabilities for the work to be accomplished.

Per our phone conversation, we do not recommend the City accept the alternate prices to add the MIC additive to all manholes. After further review the manhole manufacturers did not include the waterproofing admixture with the MIC admixture as specified. The Total Base Bid for this project is **\$1,481,995.00**. If you have any questions regarding this recommendation please feel free to contact me at pfonda@ssr-inc.com or (615)460-0543.

Sincerely,
SMITH SECKMAN REID, INC.

A handwritten signature in black ink, appearing to read "Paolo Fonda". The signature is stylized with a large, looped "P" and a cursive "Fonda".

Paolo M. Fonda, P.E.

Cc: Paul Holzen – COF
Mark Hilty – FWMD
File (1)

RESOLUTION 2016-71

A RESOLUTION AWARDING THE CONSTRUCTION CONTRACT (COF CONTRACT NO. 2014-0181) TO CLEARY CONSTRUCTION IN THE AMOUNT OF \$1,511,125.00 FOR THE CURD BRANCH AND WATSON BRANCH INTERCEPTOR SEWER IMPROVEMENTS PROJECT

WHEREAS, the Curd Branch and Watson Branch Interceptor Sewer Improvements Project is one of the projects identified by the City of Franklin in need of upgrades due to the amount of development being constructed upstream of the existing interceptor sewer; and

WHEREAS, the construction of the Curd Branch and Watson Branch Interceptor Sewer Improvements Project generally includes the furnishing of all materials, equipment and labor for the following: the construction of approximately 5,110 LF of gravity sanitary sewer and twenty-six (26) manholes; and

WHEREAS, on September 20, 2016, sealed bids were received in the Engineering Department, City Hall, 109 3rd Avenue South, Suite 142, Franklin, Tennessee 37064 and were publicly opened and read aloud for the Curd Branch and Watson Branch Interceptor Sewer Improvements Project (COF Contract No 2014-0181).

NOW THEREFORE, BE IT RESOLVED by the Board of Mayor and Aldermen of the City of Franklin, Tennessee, that approval is granted for the bid award to Cleary Construction for the Curd Branch and Watson Branch Interceptor Sewer Improvements Project (COF Contract No. 2014-0181) in the amount of One Million Five Hundred Eleven Thousand One Hundred Twenty-Five and No/100 Dollars (\$1,511,125.00).

BE IT FURTHER RESOLVED BY THE BOARD OF MAYOR AND ALDERMEN OF THE CITY OF FRANKLIN, TENNESSEE that the Director/City Engineer is hereby authorized to have authority to review and approval the spending of all project funds included in the bid and award of the construction contract for the Curd Branch and Watson Branch Interceptor Sewer Improvements Project (COF Contract No. 2014-0181).

IT IS SO RESOLVED AND DONE on this ____ day of _____, 201__.

ATTEST:

By: _____

Eric S. Stuckey
City Administrator

CITY OF FRANKLIN, TENNESSEE

By: _____

Dr. Ken Moore
Mayor

Approved as to Form

By: _____
Shauna R. Billingsley, City Attorney

HETHCOAT DAVIS

September 26, 2016

File No. 1082-03

Ms. Patricia McNeese, PE
Utilities Project Manager
City of Franklin
Engineering Department
109 3rd Avenue South
Franklin TN 37065

**RE: Recommendation of Award
Sanitary Sewer from West I-65 to East I-65
City of Franklin, TN**

Dear Ms. McNeese:

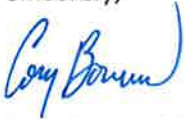
On Friday, September 23, 2016 at 11:00 AM, six (6) separate sealed bids were received for the subject project. The bidders appear to have complied with the Tennessee Department of Commerce & Insurance Licensing Board for General Contractors requirements for submission of a competitively bid project.

A breakdown of the bids is included in the attached Bid Tabulation. There were mathematical errors in the bids received from Civil Constructors, LLC and Norris Bros. Excavating, but they did not affect either the order of the bidders or the low bidder. The bid received from Jarrett Builders was rejected for failure to include the Illegal Immigrant (per TCA 50-1-103) and Iran Divestment Act (per TCA 12-12-111) forms. Jarrett Builders bid was opened but the results were not included in the bid tabulation. The action of rejecting their bid did not change the outcome of the low bidder.

Dynamic Construction, LLC with a bid of \$1,717,620.40 was the lowest responsive bidder. Dynamic Construction, LLC is licensed, bondable for this work, and we believe they are capable of completing the work as intended. ***Therefore, Hethcoat and Davis, Inc., recommends award of the project to Dynamic Construction, LLC in the amount of \$1,717,620.40.***

Please contact me if you have any questions or need additional information. Thank you.

Sincerely,



Cory Borum, PE

Enclosure: Bid Tabulation

Copy: Paul Holzen, Director of Engineering
H&D File 1082-03

Sanitary Sewer from West I-65 to East I-65
City of Franklin, Tennessee
H & D Project No. 1082-03
Bid Date: Friday, September 23, 2016, at 11:00 a.m. local time

				Dynamic Construction, LLC		Civil Constructors, LLC		Walker Building Group, LLC		JSJ Construction, LLC		Norris Bros. Excavating		Jarrett Builders	
				14 Main Street East, Suite E		425 Downs Blvd., PO Box 685		2817 West End Ave #126-256		1019 Bradley Dr., Bldg B, Ste 4		1007 Rodgers Road		BID REJECTED FOR FAILURE TO INCLUDE	
				Gordonsville TN 38563		Franklin TN 37065		Nashville TN 37203		Springfield TN 37172		Crossville TN 38572		ALL REQUIRED ITEMS	
Item	Description	Qty	Unit	Unit Price	Total	Unit Price	Total	Unit Price	Total	Unit Price	Total	Unit Price	Total	Unit Price	Total
GENERAL															
1	Temporary Facilities and Controls	1	LS	\$ 40,000.00	\$ 40,000.00	\$ 114,591.00	\$ 114,591.00	\$ 68,500.00	\$ 68,500.00	\$ 64,171.30	\$ 64,171.30	\$ 85,000.00	\$ 85,000.00		\$ -
2	Seeding	5,380	LF	\$ 1.50	\$ 8,070.00	\$ 1.50	\$ 8,070.00	\$ 3.00	\$ 16,140.00	\$ 8.10	\$ 43,578.00	\$ 10.00	\$ 53,800.00		\$ -
3	Erosion & Sediment Control	1	LS	\$ 13,000.00	\$ 13,000.00	\$ 23,680.00	\$ 23,680.00	\$ 28,000.00	\$ 28,000.00	\$ 14,808.80	\$ 14,808.80	\$ 30,000.00	\$ 30,000.00		\$ -
4	Additional Crushed Stone Refill - No. 67 stone, where directed by the Owner or Engineer	150	CY	\$ 40.00	\$ 6,000.00	\$ 45.00	\$ 6,750.00	\$ 45.00	\$ 6,750.00	\$ 56.80	\$ 8,520.00	\$ 45.00	\$ 6,750.00		\$ -
5	Contingency	1	LS	\$ 50,000.00	\$ 50,000.00	\$ 50,000.00	\$ 50,000.00	\$ 50,000.00	\$ 50,000.00	\$ 50,000.00	\$ 50,000.00	\$ 50,000.00	\$ 50,000.00	\$ 50,000.00	\$ 50,000.00
SANITARY SEWER															
6	12-inch DIP CL 350 w/Protecto 401 lining Gravity Sewer	50	LF	\$ 151.10	\$ 7,555.00	\$ 350.00	\$ 17,500.00	\$ 188.00	\$ 9,400.00	\$ 133.00	\$ 6,650.00	\$ 200.00	\$ 10,000.00		\$ -
7	12-inch PVC SDR 26 Gravity Sewer	835	LF	\$ 90.20	\$ 75,317.00	\$ 125.00	\$ 104,375.00	\$ 106.00	\$ 88,510.00	\$ 115.50	\$ 96,442.50	\$ 200.00	\$ 167,000.00		\$ -
8	8-inch PVC SDR 26 Gravity Sewer (*See note 1)	2,890	LF	\$ 90.80	\$ 262,412.00	\$ 128.00	\$ 369,920.00	\$ 101.00	\$ 291,890.00	\$ 135.30	\$ 391,017.00	\$ 185.00	\$ 534,650.00		\$ -
9	8-inch DIP CL 350 w/Protecto 401 lining Gravity Sewer (*See note 1)	251	LF	\$ 99.40	\$ 24,949.40	\$ 150.00	\$ 37,650.00	\$ 110.00	\$ 27,610.00	\$ 118.30	\$ 29,693.30	\$ 200.00	\$ 50,200.00		\$ -
10	54-inch diameter liner plate tunnel installed beneath I-65 including 12-inch DIP CL 350 Gravity Sewer & 12-inch C900 DR 25 Reclaimed Water Line	330	LF	\$ 2,130.00	\$ 702,900.00	\$ 2,920.00	\$ 963,600.00	\$ 3,400.00	\$ 1,122,000.00	\$ 3,592.90	\$ 1,185,657.00	\$ 5,000.00	\$ 1,650,000.00		\$ -
11	8" PVC SDR 26 Gravity Sewer installed inside existing 16-inch casing, complete including casing spacers and end seals	80	LF	\$ 63.90	\$ 5,112.00	\$ 150.00	\$ 12,000.00	\$ 105.00	\$ 8,400.00	\$ 159.80	\$ 12,784.00	\$ 200.00	\$ 16,000.00		\$ -
12	4' diameter Precast Manhole, 0 - 6' depth	19	EA	\$ 3,200.00	\$ 60,800.00	\$ 3,100.00	\$ 58,900.00	\$ 5,200.00	\$ 98,800.00	\$ 2,797.40	\$ 53,150.60	\$ 6,000.00	\$ 114,000.00		\$ -
13	4' diameter Precast Manhole Sidewall, greater than 6' depth	60	VF	\$ 215.00	\$ 12,900.00	\$ 240.00	\$ 14,400.00	\$ 162.00	\$ 9,720.00	\$ 286.90	\$ 17,214.00	\$ 400.00	\$ 24,000.00		\$ -
14	6" PVC SDR 26 Gravity Sewer Service Line (*See note 2)	12	EA	\$ 1,640.00	\$ 19,680.00	\$ 3,205.00	\$ 38,460.00	\$ 1,500.00	\$ 18,000.00	\$ 1,598.10	\$ 19,177.20	\$ 2,500.00	\$ 30,000.00		\$ -
15	Manhole Vent Assembly	3	EA	\$ 4,210.00	\$ 12,630.00	\$ 2,685.00	\$ 8,055.00	\$ 4,000.00	\$ 12,000.00	\$ 3,453.00	\$ 10,359.00	\$ 3,000.00	\$ 9,000.00		\$ -
16	Watertight Manhole Casting	5	EA	\$ 1,050.00	\$ 5,250.00	\$ 620.00	\$ 3,100.00	\$ 1,200.00	\$ 6,000.00	\$ 662.70	\$ 3,313.50	\$ 3,000.00	\$ 15,000.00		\$ -
17	Connect to existing manhole	1	EA	\$ 2,100.00	\$ 2,100.00	\$ 5,040.00	\$ 5,040.00	\$ 7,200.00	\$ 7,200.00	\$ 6,626.90	\$ 6,626.90	\$ 6,000.00	\$ 6,000.00		\$ -
18	New exterior drop assembly on existing manhole	1	EA	\$ 3,040.00	\$ 3,040.00	\$ 4,850.00	\$ 4,850.00	\$ 3,900.00	\$ 3,900.00	\$ 3,833.30	\$ 3,833.30	\$ 3,000.00	\$ 3,000.00		\$ -
19	Concrete Encasement	75	LF	\$ 30.00	\$ 2,250.00	\$ 42.00	\$ 3,150.00	\$ 75.00	\$ 5,625.00	\$ 123.40	\$ 9,255.00	\$ 3,000.00	\$ 225,000.00		\$ -
20	CCTV Inspection of New Gravity Sewer	4,430	LF	\$ 1.50	\$ 6,645.00	\$ 1.75	\$ 7,752.50	\$ 3.00	\$ 13,290.00	\$ 1.90	\$ 8,417.00	\$ 10.00	\$ 44,300.00		\$ -
RECLAIMED WATER															
21	12" C900 DR 25 PVC Reclaimed Water Line (*See note 1)	3,050	LF	\$ 61.40	\$ 187,270.00	\$ 56.50	\$ 172,325.00	\$ 40.00	\$ 122,000.00	\$ 43.60	\$ 132,980.00	\$ 55.00	\$ 167,750.00		\$ -
22	Bore & jack 24" steel casing w/ 12" C900 DR 25 PVC reclaimed water including casing spacers and end seals	100	LF	\$ 500.00	\$ 50,000.00	\$ 700.00	\$ 70,000.00	\$ 575.00	\$ 57,500.00	\$ 340.00	\$ 34,000.00	\$ 400.00	\$ 40,000.00		\$ -
23	12" gate valve with valve box assembly	5	EA	\$ 3,620.00	\$ 18,100.00	\$ 2,930.00	\$ 14,650.00	\$ 3,500.00	\$ 17,500.00	\$ 2,487.90	\$ 12,439.50	\$ 6,000.00	\$ 30,000.00		\$ -
24	8" x 8" tapping sleeve and valve on existing reclaimed water line	1	EA	\$ 5,270.00	\$ 5,270.00	\$ 5,140.00	\$ 5,140.00	\$ 6,500.00	\$ 6,500.00	\$ 4,833.60	\$ 4,833.60	\$ 5,000.00	\$ 5,000.00		\$ -
25	2" blow-off assembly	1	EA	\$ 2,150.00	\$ 2,150.00	\$ 3,165.00	\$ 3,165.00	\$ 2,800.00	\$ 2,800.00	\$ 1,997.90	\$ 1,997.90	\$ 3,500.00	\$ 3,500.00		\$ -
26	Ductile iron fittings for reclaimed water line	1,500	LBS	\$ 10.00	\$ 15,000.00	\$ 4.00	\$ 6,000.00	\$ 5.00	\$ 7,500.00	\$ 4.70	\$ 7,050.00	\$ 6.00	\$ 9,000.00		\$ -
27	Mineral Aggregate, Type A, Grading D (303-01) (See Note 3)	500	TON	\$ 25.90	\$ 12,950.00	\$ 25.00	\$ 12,500.00	\$ 36.00	\$ 18,000.00	\$ 27.10	\$ 13,550.00	\$ 40.00	\$ 20,000.00		\$ -
28	Asphalt Concrete Mix (PG70-22), Grading B-M2 (307-02.08) (See Note 3)	500	TON	\$ 98.70	\$ 49,350.00	\$ 110.00	\$ 55,000.00	\$ 140.00	\$ 70,000.00	\$ 172.80	\$ 86,400.00	\$ 200.00	\$ 100,000.00		\$ -
29	Bituminous Material for Tack Coat (TC) (403-01) (See Note 3)	2	TON	\$ 1,160.00	\$ 2,320.00	\$ 730.00	\$ 1,460.00	\$ 1,100.00	\$ 2,200.00	\$ 1,357.50	\$ 2,715.00	\$ 300.00	\$ 600.00		\$ -
30	Asphalt Surface Mix (PG70-22) (1.5" depth) - full width overlay (411-02.10) (See Note 3)	375	TON	\$ 112.00	\$ 42,000.00	\$ 110.00	\$ 41,250.00	\$ 120.00	\$ 45,000.00	\$ 157.40	\$ 59,025.00	\$ 300.00	\$ 112,500.00		\$ -
31	Cold Planing (Milling) (415-01.02) (See Note 3)	3,150	SY	\$ 4.00	\$ 12,600.00	\$ 3.50	\$ 11,025.00	\$ 3.50	\$ 11,025.00	\$ 3.70	\$ 11,655.00	\$ 10.00	\$ 31,500.00		\$ -
TOTAL BASE BID				\$ 1,717,620.40		\$ 2,244,358.50		\$ 2,251,760.00		\$ 2,401,314.40		\$ 3,643,550.00		\$ 50,000.00	

Note 1 Roadway base stone or any other pavement repair materials shall not be included in this line item. These items shall be paid separately and are designated for payment under line items 27, 28, 29, 30, & 31

corrected for math error

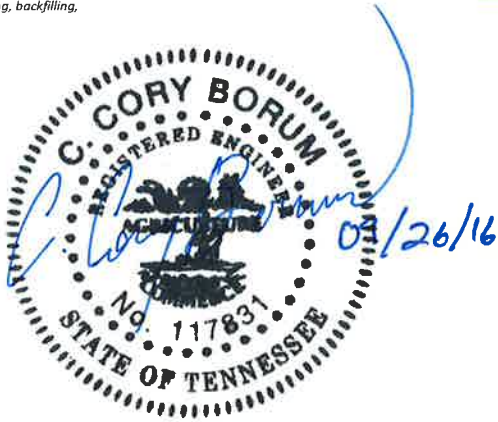
corrected for math error

Note 2 Complete in place service connection (includes at minimum a cleanout assembly, service line pipe, fittings, unclassified excavation, bedding, backfilling, flexible couplings and tees, and all other materials, labor and equipment to complete the work).

Note 3 See paving repair schedule on Plan Sheet C-3

I do hereby certify this to be a true and correct representation of the bids.

C. Cory Borum, P.E.



RESOLUTION 2016-72

A RESOLUTION AWARDING THE CONSTRUCTION CONTRACT (COF CONTRACT NO. 2015-0070) TO DYNAMIC CONSTRUCTION, LLC, IN THE AMOUNT OF \$1,717,620.40 FOR THE GOOSE CREEK SANITARY SEWER EXTENSION PROJECT FROM WEST OF I-65 TO THE EAST SIDE OF I-65

WHEREAS, the Goose Creek Sanitary Sewer Extension Project from west of I-65 to the east side of I-65 is one of the projects identified by the City of Franklin to provide sanitary sewer service to the east side of I-65 for existing and proposed developments; and

WHEREAS, the construction of the Goose Creek Sanitary Sewer Extension Project from west of I-65 to the east side of I-65 generally includes the furnishing of all materials, equipment and labor for the following: the construction of approximately 1,211 linear feet of 12-inch sanitary sewer, 2,219 linear feet of 8-inch sanitary sewer and 3,410 linear feet of 12-inch reclaimed water line to serve the east side of I-65 in the Goose Creek area (including the Williamson County Agriculture Center, Travel Centers of America and Franklin Fire Station No. 7); and

WHEREAS, on September 23, 2016, sealed bids were received in the Engineering Department, City Hall, 109 3rd Avenue South, Suite 142, Franklin, Tennessee 37064 and were publicly opened and read aloud for the Goose Creek Sanitary Sewer Extension Project from west of I-65 to the east side of I-65 (COF Contract No 2015-0070); and

NOW THEREFORE, BE IT RESOLVED by the Board of Mayor and Aldermen of the City of Franklin, Tennessee, that approval is granted for the bid award to Dynamic Construction, LLC for the Goose Creek Sanitary Sewer Extension Project from west of I-65 to the east side of I-65 (COF Contract No. 2015-0070) in the amount of One Million Seven Hundred Seventeen Thousand Six Hundred Twenty and 40/100 Dollars (\$1,717,620.40).

BE IT FURTHER RESOLVED BY THE BOARD OF MAYOR AND ALDERMEN OF THE CITY OF FRANKLIN, TENNESSEE that the Director/City Engineer is hereby authorized to have authority to review and approval the spending of all project funds included in the bid and award of the construction contract for the Goose

Creek Sanitary Sewer Extension Project from west of I-65 to the east side of I-65 (COF Contract No. 2015-0070).

IT IS SO RESOLVED AND DONE on this ____ day of _____,
201__.

ATTEST:

By: _____

ERIC S. STUCKEY
City Administrator

CITY OF FRANKLIN, TENNESSEE:

By: _____

Dr. Ken Moore
Mayor

Approved as to Form:

By: _____
Shauna R. Billingsley, City Attorney

Amendment Number: 3

Agreement Number: 110291

Project Identification Number: 116144.00 & 116144.01

Federal Project Number: STP-M-9305(26) and STP-M-9305(30)

State Project Number: 94LPLM-F3-039 and 94LPLM-F3-065

**FOR IMPLEMENTATION OF SURFACE TRANSPORTATION
PROGRAM ACTIVITY**

THIS AGREEMENT AMENDMENT is made and entered into this _____ day of _____, 20____ by and between the STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION, an agency of the State of Tennessee (hereinafter called the "Department") and the City of Franklin (hereinafter called the "Agency") for the purpose of providing an understanding between the parties of their respective obligations related to the management of the project described as:

Expansion of the City of Franklin's current ITS infrastructure network capabilities into areas with extensive congestion to include CCTV, DMS, Weather Communication, and connect to TDOT & Brentwood systems.

1. The language of AGREEMENT # 110291 dated November 2, 2015 Exhibit A is hereby deleted in its entirety and replaced with the attached Exhibit A for Amendment **3**.
2. The language of Agreement # 110291 dated November 2, 2015, Section B.2 a) Completion Date is amended to change the first sentence of Section B.2 a) from:

The Agency agrees to complete the herein assigned phases of the Project on or before **12-31-2016**.

to

The Agency agrees to complete the herein assigned phases of the Project on or before **12-31-2017**.

All provisions of the original contract not expressly amended hereby shall remain in full force and effect.

IN WITNESS WHEREOF, the parties have caused this instrument to be executed by their respective authorized officials on the date first above written.

CITY OF FRANKLIN

**STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION**

By: _____

**Ken Moore
Mayor**

Date

By: _____

**John C. Schroer
Commissioner**

Date

**APPROVED AS TO
FORM AND LEGALITY**

**APPROVED AS TO
FORM AND LEGALITY**

By: _____

**Shauna Billingsley
City Attorney**

Date

By: _____

**John Reinbold
General Counsel**

Date

EXHIBIT "A" for Amendment 3

CONTRACT NUMBER: 110291

PROJECT IDENTIFICATION NUMBER: 116144.00 and 116144.01

FEDERAL PROJECT NUMBER: STP-M-9305(26)

STATE PROJECT NUMBER: 94LPLM-F3-039

PROJECT DESCRIPTION: Expansion of the City of Franklin's current ITS infrastructure network capabilities into areas with extensive congestion to include CCTV, DMS, Weather Communication, and connect to TDOT & Brentwood systems.

CHANGE IN COST: Cost hereunder is controlled by the figures shown in the TIP and any amendments, adjustments or changes thereto.

TYPE OF WORK: Intelligent Transportation System

116144.00

PHASE	FUNDING SOURCE	FED %	STATE %	LOCAL %	ESTIMATED Cost
PE-DESIGN	U-STP	80	0	20	\$150,000.00
CONSTRUCTION	U-STP	80	0	20	\$667,500.00
CONSTRUCTION-CEI	U-STP	80	0	20	\$75,000.00
TDOT ES	U-STP	80	0	20	\$7,500.00

116144.01

PHASE	FUNDING SOURCE	FED %	STATE %	LOCAL %	ESTIMATED Cost
PE-DESIGN	U-STP	80	0	20	\$350,000.00
IMPLEMENTATION	U-STP	80	0	20	\$375,000.00
CONSTRUCTION	U-STP	80	0	20	\$778,750.00
CONSTRUCTION-CEI	U-STP	80	0	20	\$87,500.00
TDOT ES	U-STP	80	0	20	\$8,750.00

INELIGIBLE COST: One hundred percent (100%) of the actual cost will be paid from Agency funds following expenditure of the most recently approved TIP cost or if the use of said federal funds is ruled ineligible at any time by the Federal Highway Administration.

TDOT ENGINEERING SERVICES (TDOT ES): In order to comply with all federal and state laws, rules, and regulations, the TDOT Engineering Services line item in Exhibit A is placed there to ensure that the Department's expenses associated with the project during construction are covered. The anticipated Department expenses include but are not necessarily limited to Construction Inspection and Material and Testing Expenses (Quality Assurance Testing).

LEGISLATIVE AUTHORITY: STP: 23 U.S.C.A., Section 133, Surface Transportation Program.

If federal funds are included in this Agreement, the requirements detailed in CFDA Number 20.205-Highway Planning and Construction are included as a part of this Agreement by reference and the Agency shall comply with the requirements detailed in CFDA Number 20.205 in the performance of this Agreement.



Charles

**TENNESSEE DEPARTMENT OF REVENUE
COMPARATIVE STATEMENT OF COLLECTED REVENUES**

July-16

PAGE # 1

CLASS OF TAX	July FY 2015	July FY 2016	July FY 2017	July FY 2016- July FY 2016 \$ Change	July FY 2016- July FY 2016 % Change	July FY 2016- July FY 2017 \$ Change	July FY 2016- July FY 2017 % Change
Sales and Use	654,991,640.06	700,901,068.46	742,662,173.05	45,909,428.40	7.01%	41,761,104.59	5.96%
Franchise & Excise	68,475,939.29	80,501,532.32	56,300,773.93	12,025,593.03	17.56%	(24,200,758.39)	-30.06%
Business	4,081,853.41	5,662,943.33	5,531,527.13	1,581,089.92	38.73%	(131,416.20)	-2.32%
Gasoline	54,758,559.12	59,506,752.28	61,933,392.86	4,748,193.16	8.67%	2,426,640.58	4.08%
Motor Fuel	15,387,364.42	16,099,928.33	16,273,978.16	712,563.91	4.63%	174,049.83	1.08%
Petroleum Special	5,536,342.49	5,944,259.33	6,176,013.74	407,916.84	7.37%	231,754.41	3.90%
Inheritance, Gift & Estate	9,528,868.72	5,685,507.40	1,101,970.64	(3,843,361.32)	-40.33%	(4,583,536.76)	-80.62%
Gas & Oil Severance	143,079.11	80,843.63	60,357.87	(62,235.48)	-43.50%	(20,485.76)	-25.34%
TVA	27,075,597.41	28,622,969.33	28,453,941.91	1,547,371.92	5.72%	(169,027.42)	-0.59%
Motor Vehicle Registration	20,275,858.97	24,580,803.28	23,759,698.38	4,304,944.31	21.23%	(821,104.90)	-3.34%
Motor Vehicle Title	983,516.77	1,119,156.86	2,072,485.89	135,640.09	13.79%	953,329.03	85.18%
Income	1,313,572.43	1,943,603.65	1,034,915.92	630,031.22	47.96%	(908,687.73)	-46.75%
Tobacco	24,933,128.65	25,504,136.79	22,817,100.76	571,008.14	2.29%	(2,687,036.03)	-10.54%
Alcoholic Beverage	5,257,346.10	5,559,822.21	7,086,364.28	302,476.11	5.75%	1,526,542.07	27.46%
Beer	1,686,120.20	1,637,031.83	1,620,533.07	(49,088.37)	-2.91%	(16,498.76)	-1.01%
Mixed Drink (LBD)	7,005,820.48	7,538,249.29	8,384,359.87	532,428.81	7.60%	846,110.58	11.22%
Privilege	25,823,589.10	33,610,891.94	32,544,699.30	7,787,302.84	30.16%	(1,066,192.64)	-3.17%
Miscellaneous Taxes	14,511,346.90	17,419,085.10	11,729,485.49	2,907,738.20	20.04%	(5,689,599.61)	-32.66%
TOTAL STATE COLLECTIONS	941,769,543.63	1,021,918,585.36	1,029,543,772.25	80,149,041.73	8.51%	7,625,186.89	0.75%
Local Government							
Local Sales Tax	194,166,758.63	207,150,133.36	219,114,786.58	12,983,374.73	6.69%	11,964,653.22	5.78%
Local Business Tax	4,225,791.55	6,076,758.31	5,807,208.75	1,850,966.76	43.80%	(269,549.56)	-4.44%
Local Business Tax Fees	500,947.73	626,194.31	617,288.41	125,246.58	25.00%	(8,905.90)	-1.42%
Mineral Tax	429,066.13	485,510.09	487,716.06	56,443.96	13.16%	2,205.97	0.45%
Coal Severance	41,681.00	70,386.00	58,414.00	28,705.00	68.87%	(11,972.00)	-17.01%
TOTAL LOCAL COLLECTIONS	199,364,245.04	214,408,982.07	226,085,413.80	15,044,737.03	7.55%	11,676,431.73	5.45%
TOTAL COLLECTED REVENUE	1,141,133,788.67	1,236,327,567.43	1,255,629,186.05	95,193,778.76	8.34%	19,301,618.62	1.56%



Federal Emergency Management Agency

Washington, D.C. 20472

August 12, 2016

THE HONORABLE KEN MOORE
MAYOR, CITY OF FRANKLIN
109 3RD AVENUE SOUTH
FRANKLIN, TN 37064

CASE NO.: 16-04-6736A
COMMUNITY: CITY OF FRANKLIN, WILLIAMSON
COUNTY, TENNESSEE
COMMUNITY NO.: 470206

DEAR MR. MOORE:

This is in reference to a request that the Federal Emergency Management Agency (FEMA) determine if the property described in the enclosed document is located within an identified Special Flood Hazard Area, the area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood), on the effective National Flood Insurance Program (NFIP) map. Using the information submitted and the effective NFIP map, our determination is shown on the attached Letter of Map Revision based on Fill (LOMR-F) Determination Document. This determination document provides additional information regarding the effective NFIP map, the legal description of the property and our determination.

Additional documents are enclosed which provide information regarding the subject property and LOMR-Fs. Please see the List of Enclosures below to determine which documents are enclosed. Other attachments specific to this request may be included as referenced in the Determination/Comment document. If you have any questions about this letter or any of the enclosures, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605.

Sincerely,

Luis V. Rodriguez, P.E., Director
Engineering and Modeling Division
Federal Insurance and Mitigation Administration

LIST OF ENCLOSURES:

LOMR-F DETERMINATION DOCUMENT (REMOVAL)

cc: State/Commonwealth NFIP Coordinator
Community Map Repository
Region
Mr. Sean Winters



Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP REVISION BASED ON FILL DETERMINATION DOCUMENT (REMOVAL)

COMMUNITY AND MAP PANEL INFORMATION		LEGAL PROPERTY DESCRIPTION
COMMUNITY	CITY OF FRANKLIN, WILLIAMSON COUNTY, TENNESSEE	A parcel of land, as described in the Special Warranty Deed recorded as Document No. 14010992, in Book 6155, Pages 151 through 156, in the Office of the Register of Deeds, Williamson County, Tennessee The portion of property is more particularly described by the following metes and bounds:
	COMMUNITY NO.: 470206	
AFFECTED MAP PANEL	NUMBER: 47187C0214F	
	DATE: 9/29/2006	
FLOODING SOURCE: HARPETH RIVER		APPROXIMATE LATITUDE & LONGITUDE OF PROPERTY: 35.883263, -86.820105 SOURCE OF LAT & LONG: LOMA LOGIC DATUM: NAD 83

DETERMINATION

LOT	BLOCK/ SECTION	SUBDIVISION	STREET	OUTCOME WHAT IS REMOVED FROM THE SFHA	FLOOD ZONE	1% ANNUAL CHANCE FLOOD ELEVATION (NAVD 88)	LOWEST ADJACENT GRADE ELEVATION (NAVD 88)	LOWEST LOT ELEVATION (NAVD 88)
--	--	--	4413 Carothers Road	Portion of Property	X (shaded)	--	--	652.1 feet

Special Flood Hazard Area (SFHA) - The SFHA is an area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood).

ADDITIONAL CONSIDERATIONS (Please refer to the appropriate section on Attachment 1 for the additional considerations listed below.)

LEGAL PROPERTY DESCRIPTION	STUDY UNDERWAY
PORTIONS REMAIN IN THE FLOODWAY	SUPERSEDES PREVIOUS DETERMINATION
ANNEXATION	

This document provides the Federal Emergency Management Agency's determination regarding a request for a Letter of Map Revision based on Fill for the property described above. Using the information submitted and the effective National Flood Insurance Program (NFIP) map, we have determined that the described portion(s) of the property(ies) is/are not located in the SFHA, an area inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood). This document revises the effective NFIP map to remove the subject property from the SFHA located on the effective NFIP map; therefore, the Federal mandatory flood insurance requirement does not apply. However, the lender has the option to continue the flood insurance requirement to protect its financial risk on the loan. A Preferred Risk Policy (PRP) is available for buildings located outside the SFHA. Information about the PRP and how one can apply is enclosed.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605.


Luis V. Rodriguez, P.E., Director
Engineering and Modeling Division
Federal Insurance and Mitigation Administration



Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP REVISION BASED ON FILL DETERMINATION DOCUMENT (REMOVAL)

ATTACHMENT 1 (ADDITIONAL CONSIDERATIONS)

LEGAL PROPERTY DESCRIPTION (CONTINUED)

COMMENCING at a point on the west right-of-way of Carothers Parkway, the same point being the northwestern corner of Real Estate Solutions Group LLC, of record in Deed Book 6155, Page 151 in the Register's Office of said county and state; thence along a curve having a delta of 02 degrees 22 minutes 43 seconds a radius of 2799.79 feet, a tangent of 58.13 feet, an arc of 116.24 feet, a chord bearing of North 22 degrees 17 minutes 05 seconds West, and a chord length of 116.23 feet to a point, thence South 21 degrees 5 minutes 44 seconds East a distance of 28.94 feet to a point, thence South 23 degrees 17 minutes 37 seconds West a distance of 40.24 feet, thence South 23 degrees 46 minutes 32 seconds East a distance of 66.77 feet, thence South 66 degrees 10 minutes 33 seconds East a distance of 35.35 feet, thence South 21 degrees 5 minutes 44 seconds East a distance of 573.48 feet leaving the west right-of-way of said Carothers Parkway and into the land of said Real Estate Solutions Group LLC South 35 degrees, 10 minutes, 30 seconds East 32.08 feet to a point, said point being the POINT OF BEGINNING of the following land which has been elevated to the 100 year flood elevation; thence severing the land of said Real Estate Solutions Group LLC as follows: Thence, S 35° 10' 30" W for a distance of 23.44 feet to a point; Thence, S 08° 55' 43" W for a distance of 100.80 feet to a point; Thence, S 41° 40' 29" W for a distance of 17.92 feet to a point; Thence, N 85° 48' 45" W for a distance of 20.71 feet to a point; Thence, S 09° 11' 21" W for a distance of 31.52 feet to a point; Thence, N 87° 53' 30" W for a distance of 15.32 feet to a point; Thence, N 17° 07' 07" W for a distance of 37.84 feet to a point; Thence, S 29° 27' 03" W for a distance of 23.53 feet to a point; Thence, S 40° 05' 09" W for a distance of 36.33 feet to a point; Thence, S 80° 04' 46" W for a distance of 28.90 feet to a point; Thence, N 42° 30' 46" W for a distance of 36.74 feet to a point; Thence, S 42° 52' 54" W for a distance of 22.85 feet to a point; Thence, S 06° 04' 08" E for a distance of 68.28 feet to a point; Thence, S 53° 50' 12" W for a distance of 83.90 feet to a point; Thence, S 23° 48' 42" W for a distance of 24.09 feet to a point; Thence, S 61° 50' 49" W for a distance of 121.87 feet to a point; Thence, S 78° 56' 30" W for a distance of 32.88 feet to a point; Thence, S 55° 28' 46" W for a distance of 29.31 feet to a point; Thence, S 67° 31' 39" W for a distance of 99.21 feet to a point; Thence, S 77° 22' 14" W for a distance of 49.33 feet to a point; Thence, S 64° 58' 58" W for a distance of 79.79 feet to a point; Thence, S 49° 34' 46" W for a distance of 93.21 feet to a point; Thence, S 03° 02' 16" W for a distance of 91.74 feet to a point; Thence, S 20° 37' 56" W for a distance of 29.38 feet to a point; Thence, S 38° 30' 57" E for a distance of 19.32 feet to a point; Thence, S 20° 35' 04" W for a distance of 86.60 feet to a point; Thence, S 45° 11' 13" W for a distance of 40.24 feet to a point; Thence, S 06° 35' 26" E for a distance of 43.47 feet to a point; Thence, S 26° 39' 43" W for a distance of 140.02 feet to a point; Thence, S 01° 46' 12" W for a distance of 43.29 feet to a point; Thence, S 35° 07' 23" W for a distance of 39.47 feet to a point; Thence N 83° 38' 44" W a distance of 31.18 feet to a point; Thence, N 65° 08' 25" W for a distance of 115.80 feet to a point; Thence, N 60° 56' 01" W for a distance of 135.15 feet to a point; Thence, N 75° 07' 11" W for a distance of 55.74 feet to a point; Thence, N 53° 11' 44" W for a distance of 57.82 feet to a point; Thence, N 31° 07' 57" E for a distance of 108.95 feet to a point; Thence, N 80° 04' 46" E for a distance of 34.70 feet to a point; Thence, N 63° 26' 54" E for a distance of 44.47 feet to a point; Thence, S 59° 08' 31" E for a distance of 38.00 feet to a point; Thence, N 35° 04' 22" E for a distance of 33.39 feet to a point; Thence, N 68° 32' 45" E for a distance of 36.48 feet to a point; Thence, S 77°

This attachment provides additional information regarding this request. If you have any questions about this attachment, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605.


Luis V. Rodriguez, P.E., Director
Engineering and Modeling Division
Federal Insurance and Mitigation Administration



Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP REVISION BASED ON FILL DETERMINATION DOCUMENT (REMOVAL)

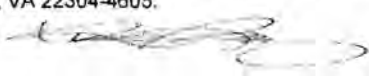
ATTACHMENT 1 (ADDITIONAL CONSIDERATIONS)

16° 44" E for a distance of 107.58 feet to a point; Thence, N 75° 11' 46" E for a distance of 91.45 feet to a point; Thence, N 14° 15' 02" E for a distance of 67.01 feet to a point; Thence, N 19° 33' 17" W for a distance of 113.28 feet to a point; Thence, N 67° 00' 43" E for a distance of 48.48 feet to a point; Thence, N 47° 17' 48" E for a distance of 32.72 feet to a point; Thence, N 42° 27' 04" E for a distance of 46.78 feet to a point; Thence, N 12° 05' 08" E for a distance of 79.42 feet to a point; Thence, N 01° 55' 14" W for a distance of 64.46 feet to a point; Thence, N 43° 53' 11" E for a distance of 72.98 feet to a point; Thence, N 36° 52' 24" E for a distance of 113.37 feet to a point; Thence, S 69° 39' 25" E for a distance of 45.42 feet to a point; Thence, N 82° 02' 59" E for a distance of 108.74 feet to a point; Thence, N 03° 02' 27" E for a distance of 88.24 feet to a point; Thence, N 34° 05' 54" W for a distance of 100.18 feet to a point; Thence, N 41° 38' 43" W for a distance of 72.04 feet to a point; Thence, N 37° 51' 56" W for a distance of 95.41 feet to a point; Thence, N 36° 26' 32" W for a distance of 147.57 feet to a point; Thence, N 38° 51' 00" W for a distance of 32.09 feet to a point; Thence, N 43° 43' 41" E for a distance of 142.12 feet to a point; Thence, N 53° 04' 16" E for a distance of 112.67 feet to a point; Thence, S 86° 33' 17" E for a distance of 34.14 feet to a point; Thence, S 45° 22' 07" E for a distance of 394.38 feet to a point; Thence, S 25° 21' 16" E for a distance of 93.00 feet to a point; Thence, N 88° 55' 11" E for a distance of 50.81 feet to a point; Thence, S 26° 59' 52" E for a distance of 45.39 feet to a point; Thence, N 28° 40' 59" E for a distance of 64.42 feet to a point; Thence, S 34° 45' 05" E for a distance of 107.94 feet to the POINT OF BEGINNING.

PORTIONS OF THE PROPERTY REMAIN IN THE FLOODWAY (This Additional Consideration applies to the preceding 1 Property.)

A portion of this property is located within the Special Flood Hazard Area and the National Flood Insurance Program (NFIP) regulatory floodway for the flooding source indicated on the Determination/Comment Document while the subject of this determination is not. The NFIP regulatory floodway is the area that must remain unobstructed in order to prevent unacceptable increases in base flood elevations. Therefore, no construction may take place in an NFIP regulatory floodway that may cause an increase in the base flood elevation, and any future construction or substantial improvement on the property remains subject to Federal, State/Commonwealth, and local regulations for floodplain management. The NFIP regulatory floodway is provided to the community as a tool to regulate floodplain development. Modifications to the NFIP regulatory floodway must be accepted by both the Federal Emergency Management Agency (FEMA) and the community involved. Appropriate community actions are defined in Paragraph 60.3(d) of the NFIP regulations. Any proposed revision to the NFIP regulatory floodway must be submitted to FEMA by community officials. The community should contact either the Regional Director (for those communities in Regions I-IV, and VI-X), or the Regional Engineer (for those communities in Region V) for guidance on the data which must be submitted for a revision to the NFIP regulatory floodway. Contact information for each regional office can be obtained by calling the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or from our web site at <http://www.fema.gov/about/regoff.htm>.

This attachment provides additional information regarding this request. If you have any questions about this attachment, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605.


Luis V. Rodriguez, P.E., Director
Engineering and Modeling Division
Federal Insurance and Mitigation Administration



Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP REVISION BASED ON FILL DETERMINATION DOCUMENT (REMOVAL)

ATTACHMENT 1 (ADDITIONAL CONSIDERATIONS)

ANNEXATION (This Additional Consideration applies to the preceding 1 Property.)

Although the subject of this determination is shown on the National Flood Insurance Program map as being located in a community other than the community indicated on the Determination/Comment Document, it has been annexed by the community referenced therein.

STUDY UNDERWAY (This Additional Consideration applies to all properties in the LOMR-F DETERMINATION DOCUMENT (REMOVAL))

This determination is based on the flood data presently available. However, the Federal Emergency Management Agency is currently revising the National Flood Insurance Program (NFIP) map for the community. New flood data could be generated that may affect this property. When the new NFIP map is issued it will supersede this determination. The Federal requirement for the purchase of flood insurance will then be based on the newly revised NFIP map.

SUPERSEDES OUR PREVIOUS DETERMINATION (This Additional Consideration applies to all properties in the LOMR-F DETERMINATION DOCUMENT (REMOVAL))

This Determination Document supersedes our previous determination dated 6/17/2016, for the subject property.

This attachment provides additional information regarding this request. If you have any questions about this attachment, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605.


Luis V. Rodriguez, P.E., Director
Engineering and Modeling Division
Federal Insurance and Mitigation Administration

**CITY OF FRANKLIN, TENNESSEE
PROFESSIONAL SERVICES AGREEMENT
COF Contract No. 2016-0295**

THIS PROFESSIONAL SERVICES AGREEMENT ("Agreement") is by and between the City of Franklin, Tennessee, hereinafter referenced as City, and **CIVIL INFRASTRUCTURE ASSOCIATES, LLC** hereinafter referenced as Consultant, who mutually agree as follows:

DECLARATIONS. City desires to retain Consultant to provide engineering, related technical, and other services in connection with City's project hereinafter referenced as Project. The Project is described as follows:

Professional Survey Services On An As-Needed Basis

1. SCOPE OF SERVICES. Consultant shall provide survey services for the Project in accordance with the Scope of Services (Services) as found in Attachment A which shall be considered as an integral part hereof.
2. Consultant shall submit as a part of Attachment A an individual Fee Schedule and a Completion Schedule for the Project based on the detailed Scope of Services.
3. In event of a conflict between this Agreement and the attached document(s), this Agreement shall supersede conflicting terms and conditions.
4. Consultant shall be paid on a monthly basis for work performed based on the Fee Schedule as contained in Attachment A. Individual work orders shall be authorized by the City Engineer and approved by the City Administrator and shall be subject to all terms in this Agreement.
5. This Agreement shall terminate no later than three (3) years from the date of execution.

**The Board of Mayor and Aldermen Approved this Agreement on the
_____ Day of _____ 201__.**

TERMS AND CONDITIONS FOR PROFESSIONAL SERVICES

ARTICLE 1. SERVICES. Consultant will:

- 1.1 Act for City in a professional manner, using that degree of care and skill ordinarily exercised by and consistent with standards of competent consultants using the standards in the industry:
- 1.2 Consider all reports to be confidential and distribute copies of the same only to those persons specifically designated by the City.
- 1.3 Perform all services under the general direction of a senior professional employee, licensed and/or registered in the State of Tennessee, when appropriate.
- 1.4 Designate, in writing, the sole Project representative to coordinate with City the Services to be provided, including all contact information.
- 1.5 Unless provided for in the Project Scope of Services (Attachment A), Consultant shall perform all Services with his own forces (employees). Should sub-consultants be proposed to be used in the Project, a listing of said sub-consultants with Services to be performed shall be provided. After approval of this Agreement, no substitute for sub-consultants shall be allowed unless approved by City.
- 1.6 Retain pertinent records relating to the services performed for a period of seven (7) years following the completion of the work; during this period the records shall be available for review by City at all reasonable times.

ARTICLE 2. CITY'S RESPONSIBILITIES. City, or its authorized representative, will:

- 2.1 Provide Consultant with all information regarding the Project, which is available to, or reasonably obtainable by, the City.
- 2.2 Furnish right-of-entry onto the Project site for Consultant's necessary field studies and surveys. Consultant will endeavor to restore the site to its original condition and shall remain solely liable for all damages, costs and expenses, including reasonable attorneys' fees, for failure to make such restoration.
- 2.3 Designate, in writing, the sole Project representative to coordinate with and direct the Consultant, including all contact information.
- 2.4 Guarantee to Consultant that it has the legal capacity to enter into this contract and that sufficient monies are available to fund Consultant's compensation.

ARTICLE 3. GENERAL CONDITIONS.

- 3.1 Consultant, by the performance of services covered hereunder, does not in any way assume, abridge or abrogate any of those duties, responsibilities or authorities customarily vested in other professionals or agencies participating in the Project.

- 3.2 Consultant shall be responsible for the acts or omissions of any party involved in concurrent or subsequent phases of the Project acting upon written instruction issued by the Consultant.
- 3.3 Neither City nor Consultant may assign or transfer its duties or interest in this Agreement without written consent of the other party.
- 3.4 **ALLOCATION OF RISK AND LIABILITY; GENERAL.** Considering the potential liabilities that may exist during the performance of the services of this Agreement, the relative benefits and risks of the Project, and the Consultant's fee for the services rendered, and in consideration of the promises contained in this Agreement, the City and the Consultant agree to allocate and limit such liabilities in accordance with this Article.
- 3.5 **INDEMNIFICATION.** Consultant agrees to indemnify and hold City harmless from and against legal liability for all judgments, losses, damages, and expenses to the extent such judgments, losses, damages, or expenses are caused by Consultant's negligent act, error or omission in the performance of the services of this Agreement. In the event judgments, losses, damages, or expenses are caused by the joint or concurrent negligence of Consultant and City, they shall be borne by each party in proportion to its own negligence.
- 3.5.1 **SURVIVAL.** The terms and conditions of this paragraph shall survive completion of this services agreement.
- 3.6 **LIMITATIONS OF RESPONSIBILITY.** Consultant shall not be responsible for (a) construction means, methods, techniques, sequences, procedures, or safety precautions and programs in connection with the Project unless specifically undertaken in Attachment A, Scope of Services ; (b) the failure of any contractor, subcontractor, Consultant, or other Project participant, not under contract to Consultant, to fulfill contractual responsibilities to City or to comply with federal, state, or local laws, regulations, and codes; or (c) procuring permits, certificates, and licenses required for any construction unless such procurement responsibilities are specifically assigned to Consultant in Attachment A, Scope of Services.

ARTICLE 4. TERMINATION BY THE CITY. The City may terminate this Agreement in accordance with the following terms and conditions:

- 4.1 **Termination for Convenience.** The City may, when in the interests of the City, terminate performance under this Agreement with the Consultant, in whole or in part, for the convenience of the City. The City shall give written notice of such termination to the Consultant specifying when termination becomes effective. The Consultant shall incur no further obligations in connection with the work so terminated, other than warranties and guarantees for completed work and installed equipment, and the Consultant shall stop work when such

termination becomes effective. The Consultant shall also terminate outstanding orders and subcontracts for the affected work. The Consultant shall settle the liabilities and claims arising out of the termination of subcontracts and orders. The City may direct the Consultant to assign the Consultant's right, title and interest under termination orders or subcontracts to the City or its designee. The Consultant shall transfer title and deliver to the City such completed or partially completed work and materials, equipment, parts, fixtures, information and Contract rights as the Consultant has in its possession or control. When terminated for convenience, the Consultant shall be compensated as follows:

- (1) The Consultant shall submit a termination claim to the City specifying the amounts due because of the termination for convenience together with costs, pricing or other data required by the City. If the Consultant fails to file a termination claim within one (1) year from the effective date of termination, the City shall pay the Consultant the amount the City deems the Consultant is due.
- (2) The City and the Consultant may agree to the compensation, if any, due to the Consultant hereunder.
- (3) Absent agreement to the amount due to the Consultant, the City shall pay the Consultant the following amounts:
 - (a) Contract costs for labor, materials, equipment and other services accepted under this Agreement;
 - (b) Reasonable costs incurred in preparing to perform and in performing the terminated portion of the work, and in terminating the Consultant's performance, plus a fair and reasonable allowance for direct job site overhead and earned profit thereon (such profit shall not include anticipated profit or consequential damages); provided however, that if it reasonably appears that the Consultant would have not profited or would have sustained a loss if the entire Agreement would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss, if any;

The total sum to be paid the Consultant under this Section shall not exceed the total Agreement Price, as properly adjusted, reduced by the amount of payments otherwise made, and shall in no event include duplication of payment.

- 4.2 Termination for Cause. If the Consultant does not perform the work, or any part thereof, in a timely manner, supply adequate labor, supervisory personnel or proper equipment or materials, or if it fails to timely discharge its obligations for labor, equipment and materials, or proceeds to disobey applicable law, or otherwise commits a violation of a material provision of this Agreement, then the City, in addition to any other rights it may have against the Consultant or others, may terminate the performance of the Consultant, in whole or in part at the City's sole option, and assume possession of the Project Plans and materials and may complete the work.

In such case, the Consultant shall not be paid further until the work is complete. After Completion has been achieved, if any portion of the Contract Price, as it may be modified hereunder, remains after the cost to the City of completing the work, including all costs and expenses of every nature incurred, has been deducted by the City, such remainder shall belong to the Consultant. Otherwise, the Consultant shall pay and make whole the City for such cost. This obligation for payment shall survive the termination of the Agreement.

In the event the employment of the Consultant is terminated by the City for cause pursuant to this Section and it is subsequently determined by a Court of competent jurisdiction that such termination was without cause, such termination shall thereupon be deemed a Termination for Convenience under this Section and the provisions of Section 4.1 shall apply.

- 4.3 Termination for Non-Appropriation. The City may also terminate this Agreement, in whole or in part, for non-appropriation of sufficient funds to complete or partially complete the Project, regardless of the source of such funds, and such termination shall be on the terms of Section 4.1.
- 4.4 The City's rights under this Section shall be in addition to those contained elsewhere herein or provided by law.

ARTICLE 5. SCOPE OF SERVICES. Consultant shall provide the Services as described in Attachment A, Scope of Services.

5.1 By mutual agreement, this Agreement and scope can be amended by the parties. The scope and fee for any additional tasks or services under such amendment shall be mutually negotiated and agreed to in writing prior to beginning such additional tasks or services.

5.2 **ENVIRONMENTAL RESPONSIBILITY.**

Where drilling/sampling services are involved, the samples obtained from the Project site are the property of the City. Should any of these samples be recognized by the Consultant to be contaminated, the City shall remove them from the Consultant's custody and transport them to a disposal site, all in accordance with applicable government statutes, ordinances, and regulations. For all other samples, the Consultant shall retain them for a sixty (60)-day period following the submission of the drilling/sampling report unless the City directs otherwise; thereafter, the Consultant shall discard the samples in accordance with all federal, state and local laws.

ARTICLE 6. SCHEDULE.

6.1 **TIME OF THE ESSENCE.** The parties agree that time is of the essence with respect to the parties' performance of all provisions of the Agreement.

6.2 Before executing this Agreement, the Consultant shall have prepared and submitted for approval to the City a Completion Schedule for the Project with milestones for the various stages (tasks) of the Services as outlined in the Scope of Services. The Consultant shall submit and obtain the City's approval for any proposed changes to the logic, durations, sequences, or timing of tasks as approved in the Completion Schedule.

6.3 **FORCE MAJEURE.** Neither party will be liable to the other for any delay or failure to perform any of the services or obligations set forth in this Agreement due to causes beyond its reasonable control, and performance times will be considered extended for a period of time equivalent to the time lost because of such delay plus a reasonable period of time to allow the parties to recommence performance of their respective obligations hereunder. Should a circumstance of force majeure last more than ninety (90) days, either party may by written notice to the other terminate this Agreement. The term "force majeure" as used herein shall mean the following: acts of God; strikes, lockouts or other industrial disturbances; acts of public enemies; orders or restraints of any kind of the government of the United States or of the State or any of their departments, agencies or officials, or any civil or military authority; insurrections, riots, landslides, earthquakes, fires, storms, tornadoes, droughts, floods, explosions, breakage or accident to

machinery, transmission pipes or canals; or any other cause or event not reasonably within the control of either party.

- 6.4 Should City request changes in the scope, extent, or character of the Project, the fee and the time of performance of Consultant's Services as indicated in Attachment A shall be adjusted equitably.

ARTICLE 7. USE OF DOCUMENTS, DATA.

- 7.1 All Documents, including, but not limited to, reports, drawings, specifications, and computer software prepared by Consultant pursuant to this Agreement are instruments of service in respect to the Project. Consultant shall retain an ownership and property interest therein (including the right of reuse at the discretion of the Consultant) whether or not the Project is completed.

7.1.1 **USE OF DATA SYSTEMS:** Ownership, property interests and proprietary rights in data systems used by Consultant do not extend to the data created by or supplied to Consultant by the City; all rights to that data (including derivative or hidden data such as metadata) shall vest solely in City at the moment of creation.

7.1.2 **DISCLOSURE OF DOCUMENTS/DATA.** City may be required to disclose documents or data under state or federal law. City shall notify Consultant if a request for data or documents has been made and shall give Consultant a reasonable opportunity under the circumstances to respond to the request by redacting proprietary or other confidential information. Consultant waives any right to confidentiality of any document, e-mail or file it fails to clearly mark on each page as confidential or proprietary. In exchange, Consultant agrees to indemnify, defend, and hold harmless City for any claims by third parties relating thereto or arising out of (i) the City's failure to disclose such documents or information required to be disclosed by law, or (ii) the City's release of documents as a result of City's reliance upon Consultant representation that materials supplied by Consultant (in full or redacted form) do not contain trade secrets or proprietary information, provided that the City impleads Consultant and Consultant assumes control over that claim.

- 7.2 By execution of this Agreement, Consultant and his sub-consultant(s) grant the City a royalty-free, perpetual, irrevocable, and assignable license to use any and all intellectual property interest Consultant or his sub-consultant(s) possess to any drawings, details, specifications, documents, and other information created before each of their first involvement with the Project and subsequently incorporated into the Project's documents. City-furnished data that may be relied upon by Consultant is limited to the printed copies that are delivered to the

- Consultant pursuant to Article 2 of this Agreement. Any copyrighted electronic files furnished by City shall be used by Consultant only for the Project as described herein. City's posting or publication of such documents created by Consultant for City shall constitute fair use and shall not constitute an infringement of Consultant's copyright, if any.
- 7.3 Documents that may be relied upon by City are limited to the printed copies (also known as hard copies) that are signed or sealed by the Consultant. Files in electronic media format of text, data, graphics, or of other types that are furnished by Consultant to City are only for convenience of City, unless the delivery of the Project in electronic media format has been dictated in Attachment A, Scope of Services. Any conclusion or information obtained or derived from electronic files provided for convenience will be at the user's sole risk.
- 7.4 Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within sixty (60) days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the party delivering the electronic files. Unless stated otherwise herein, Consultant shall not be responsible to maintain documents stored in electronic media format after acceptance by City.
- 7.5 When transferring documents in electronic media format, Consultant makes no representations as to long term compatibility, usability, or readability, of documents resulting from the use of software application packages, operating systems, or computer hardware differing from that as required of, and used by, Consultant at the beginning of this Project.
- 7.6 City may make and retain copies of Documents for information and reference in connection with use on the Project by the City, or his authorized representative. Such Documents are not intended or represented to be suitable for reuse by City or others on extensions of the Project or on any other project. Any such reuse or modifications without written verification or adaptation by Consultant, as appropriate for the specific purpose intended, will be at City's sole risk and without liability or legal exposure to the Consultant or to Consultant's sub-consultants.
- 7.7 If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- 7.8 Any verification or adaptation of the Documents for extensions of the Project or for any other project will entitle Consultant to further compensation at rates to be agreed upon by City and Consultant.

ARTICLE 8. INSURANCE.

- 8.1 During the performance of the Services under this Agreement, Consultant shall maintain the following minimum insurance:
- a) General Liability Insurance with a combined single limit of \$1,000,000 per occurrence and \$2,000,000 annual aggregate.
 - b) Automobile Liability Insurance with a combined single limit of \$1,000,000 for each person and \$1,000,000 for each accident.
 - c) Workers' Compensation Insurance Coverage A in accordance with statutory requirements and Coverage B, Employer's Liability Insurance, with a limit of \$500,000 for each occurrence.
 - d) Professional Liability Insurance with a limit of \$1,000,000 annual aggregate.
- 8.2 Consultant shall add the City an additional insured on all policies unless otherwise prohibited.
- 8.3 Consultant shall, upon execution of this Agreement, furnish City certificates of insurance, which shall include a provision that such insurance shall not be canceled without at least thirty (30) days' written notice to City.
- 8.4 No insurance, of whatever kind or type is to be considered as in any way limiting other parties' responsibility for damages resulting from their activities in the execution of the Project. City agrees to include, or cause to be included, in the Project's construction contract, such requirements for insurance coverage and performance bonds by the Project's construction contractor as City deems adequate to indemnify City, Consultant, and other concerned parties against claims for damages and to insure compliance of work performance and materials with Project requirements.

ARTICLE 9. PAYMENT.

- 9.1 City will pay Consultant for services and expenses in accordance with the Fee Schedule proposal submitted for the Project as part of the Scope of Services. Consultant's invoices will be presented at the completion of the work or monthly and will be payable upon receipt. Payment is due upon presentation of invoice and is past due thirty (30) days from invoice date. City shall give prompt written notice of any disputed amount and shall pay the remaining amount.
- 9.2 Consultant shall be paid in full for all services under this Agreement, including City authorized overruns of the Project budget or unforeseen need for Consultant's services exceeding the original Scope of Services.
- 9.3 **TRAVEL; EXPENSES**
City shall reimburse reasonable expenses, including travel and meals, when specified in the Scope of Services, but only in accordance with the City's Travel and Expense Policy and Procedures Manual. The maximum amount will be applied as of the date of travel and as listed

in the per diem reimbursement rates on the “CONUS” website developed by the United States General Services Administration, located at www.gsa.gov [click on ‘per diem rates’ under the ‘etools’ category].

ARTICLE 10. MISCELLANEOUS PROVISIONS

- 10.1 **EQUAL EMPLOYMENT OPPORTUNITY.** In connection with this Agreement and the Project, City and Consultant shall not discriminate against any employee or applicant for employment because of race, color, sex, national origin, disability or marital status. City and Consultant will take affirmative action to ensure that the contractor used for the Project does not discriminate against any employee and employees are treated during employment without regard to their race, age, religion, color, gender, national origin, disability or marital status. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination, rates of pay or other forms of compensation; and selection for training, including apprenticeship.
- 10.1.1 Consultant shall insert the foregoing provision in all contracts relating to this Project.
- 10.2 **TITLE VI – CIVIL RIGHTS ACT OF 1964.** City and Consultant shall comply with all the requirements imposed by Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d), 49 C.F.R., Part 21, and related statutes and regulations.
- 10.2.1 Consultant shall insert the foregoing provision in all contracts relating to this Project.
- 10.3 **NO THIRD PARTY RIGHTS CREATED.** City and Consultant each binds itself and its successors, executors, administrators, permitted assigns, legal representatives and, in the case of a partnership, its partners, to the other party to this Agreement and to their successors, executors, administrators, permitted assigns, legal representatives and partners of such other party in respect to all provisions of this Agreement. The Services provided for in this Agreement are for the sole use and benefit of City and Consultant. Nothing in this Agreement shall be construed to give any rights or benefits to anyone other than City and Consultant.
- 10.4 **WARRANTIES/LIMITATION OF LIABILITY/WAIVER.** City reserves all rights afforded to local governments under law for all general and implied warranties. City does not waive any rights it may have to all remedies provided by law and therefore any attempt by Consultant to limit its liability shall be void and unenforceable.

ARTICLE 11. EXTENT OF AGREEMENT:

- 11.1 APPLICABLE LAW/CHOICE OF FORUM AND VENUE. This Agreement is made under and will be construed in accordance with the laws of the State of Tennessee without giving effect to that state's choice of law rules. The parties' choice of forum and venue shall be exclusively in the courts of Williamson County, Tennessee. Any provision of this Agreement held to violate a law or regulation shall be deemed void, and all remaining provisions shall continue in force.
- 11.2 ENTIRE AGREEMENT. This Agreement, including these terms and conditions, represent the entire Agreement between City and Consultant for this Project and supersedes all prior negotiations, representations or agreements, written or oral. This Agreement may be amended only by written instrument signed by City and Consultant.

ARTICLE 12. DISPUTE RESOLUTION, BREACH.

- 12.1 If a dispute should arise relating to the performance of or payment for the Services under this Agreement, the aggrieved party shall notify the other party of the dispute within a reasonable time after such dispute arises. During the pendency of any dispute, the parties shall continue diligently to fulfill their respective obligations hereunder. No arbitration or mediation shall be required as a condition precedent to filing any legal claim arising out of or relating to this Agreement. No arbitration or mediation shall be binding.
- 12.2 BREACH. Upon deliberate breach of the Agreement by either party, the non-breaching party shall be entitled to terminate the Agreement with notice, with all of the remedies it would have in the event of termination, and may also have such other remedies as it may be entitled to in law or in equity.

ARTICLE 13. SURVIVAL.

The provisions contained in this Professional Services Agreement shall survive the completion of or any termination of the Agreement, contract or other document to which it may accompany or incorporate by reference or which subsequently may be modified, unless expressly excepted from this Article upon consent of both parties.

BY: _____
Consultant's Signature
TITLE: _____
Date: _____

BY: _____
Dr. Ken Moore
Mayor
Date: _____

Approved as to Form:

Kristen L. Corn, Assistant City Attorney

September 20, 2016

Mr. Paul Holzen, PE
Director / City Engineer
City of Franklin
109 Third Avenue South
Franklin, TN 37064

RE: Proposal for Survey On-Call

Dear Paul:

CIA, Civil Infrastructure Associates, LLC is pleased to provide this proposal to provide on-call professional land surveying services to the City of Franklin. It is our understanding that the typical opportunity under this contract would be of a limited nature and scope typically requiring less than 40 man hours to complete. We look forward to working with you and your staff.

SCHEDULE

Services will be performed and/or delivered within 15 calendar days following receipt of written authorization to proceed barring any extenuating circumstances beyond our control.

FEES

Individual work orders will be reviewed and approved by the City Engineer prior to any work. Services will be provided for the following hourly rates:

Sr. Land Surveyor (RLS)	\$150
Two Man Survey Crew	\$150
One Man Robotic or RTK (GPS) Survey Crew	\$120
Senior Survey CADD Technician	\$110
Party Chief / Sr. Field Technician	\$90
Instrument Man / Field Technician	\$60

Hourly rates shown above are inclusive of labor, overhead, profit, and customary expenses including travel, printing, postage, and survey supplies.

Sincerely,
CIVIL INFRASTRUCTURE ASSOCIATES, LLC



Tim Haggard, PE, RLS
Survey Manager

**CITY OF FRANKLIN, TENNESSEE
PROFESSIONAL SERVICES AGREEMENT
COF Contract No. 2016-0319**

THIS PROFESSIONAL SERVICES AGREEMENT ("Agreement") is by and between the City of Franklin, Tennessee, hereinafter referenced as City, and **CIVIL & ENVIRONMENTAL CONSULTANTS, INC** hereinafter referenced as Consultant, who mutually agree as follows:

DECLARATIONS. City desires to retain Consultant to provide engineering, related technical, and other services in connection with City's project hereinafter referenced as Project. The Project is described as follows:

Professional Survey Services on an As-Needed Basis

1. SCOPE OF SERVICES. Consultant shall provide survey services for the Project in accordance with the Scope of Services (Services) as found in Attachment A which shall be considered as an integral part hereof.
2. Consultant shall submit as a part of Attachment A an individual Fee Schedule and a Completion Schedule for the Project based on the detailed Scope of Services.
3. In event of a conflict between this Agreement and the attached document(s), this Agreement shall supersede conflicting terms and conditions.
4. Consultant shall be paid on a monthly basis for work performed based on the Fee Schedule as contained in Attachment A. Individual work orders shall be authorized by the City Engineer and approved by the City Administrator and shall be subject to all terms of this Agreement.
5. This Agreement shall terminate no later than three (3) years from the date of execution.

The Board of Mayor and Aldermen Approved this Agreement on the _____ Day of _____ 201__.

TERMS AND CONDITIONS FOR PROFESSIONAL SERVICES

ARTICLE 1. SERVICES. Consultant will:

- 1.1 Act for City in a professional manner, using that degree of care and skill ordinarily exercised by and consistent with standards of competent consultants using the standards in the industry:
- 1.2 Consider all reports to be confidential and distribute copies of the same only to those persons specifically designated by the City.
- 1.3 Perform all services under the general direction of a senior professional employee, licensed and/or registered in the State of Tennessee, when appropriate.
- 1.4 Designate, in writing, the sole Project representative to coordinate with City the Services to be provided, including all contact information.
- 1.5 Unless provided for in the Project Scope of Services (Attachment A), Consultant shall perform all Services with his own forces (employees). Should sub-consultants be proposed to be used in the Project, a listing of said sub-consultants with Services to be performed shall be provided. After approval of this Agreement, no substitute for sub-consultants shall be allowed unless approved by City.
- 1.6 Retain pertinent records relating to the services performed for a period of seven (7) years following the completion of the work; during this period the records shall be available for review by City at all reasonable times.

ARTICLE 2. CITY'S RESPONSIBILITIES. City, or its authorized representative, will:

- 2.1 Provide Consultant with all information regarding the Project, which is available to, or reasonably obtainable by, the City.
- 2.2 Furnish right-of-entry onto the Project site for Consultant's necessary field studies and surveys. Consultant will endeavor to restore the site to its original condition and shall remain solely liable for all damages, costs and expenses, including reasonable attorneys' fees, for failure to make such restoration.
- 2.3 Designate, in writing, the sole Project representative to coordinate with and direct the Consultant, including all contact information.
- 2.4 Guarantee to Consultant that it has the legal capacity to enter into this contract and that sufficient monies are available to fund Consultant's compensation.

ARTICLE 3. GENERAL CONDITIONS.

- 3.1 Consultant, by the performance of services covered hereunder, does not in any way assume, abridge or abrogate any of those duties, responsibilities or authorities customarily vested in other professionals or agencies participating in the Project.

- 3.2 Consultant shall be responsible for the acts or omissions of any party involved in concurrent or subsequent phases of the Project acting upon written instruction issued by the Consultant.
- 3.3 Neither City nor Consultant may assign or transfer its duties or interest in this Agreement without written consent of the other party.
- 3.4 **ALLOCATION OF RISK AND LIABILITY; GENERAL.** Considering the potential liabilities that may exist during the performance of the services of this Agreement, the relative benefits and risks of the Project, and the Consultant's fee for the services rendered, and in consideration of the promises contained in this Agreement, the City and the Consultant agree to allocate and limit such liabilities in accordance with this Article.
- 3.5 **INDEMNIFICATION.** Consultant agrees to indemnify and hold City harmless from and against legal liability for all judgments, losses, damages, and expenses to the extent such judgments, losses, damages, or expenses are caused by Consultant's negligent act, error or omission in the performance of the services of this Agreement. In the event judgments, losses, damages, or expenses are caused by the joint or concurrent negligence of Consultant and City, they shall be borne by each party in proportion to its own negligence.
- 3.5.1 **SURVIVAL.** The terms and conditions of this paragraph shall survive completion of this services agreement.
- 3.6 **LIMITATIONS OF RESPONSIBILITY.** Consultant shall not be responsible for (a) construction means, methods, techniques, sequences, procedures, or safety precautions and programs in connection with the Project unless specifically undertaken in Attachment A, Scope of Services ; (b) the failure of any contractor, subcontractor, Consultant, or other Project participant, not under contract to Consultant, to fulfill contractual responsibilities to City or to comply with federal, state, or local laws, regulations, and codes; or (c) procuring permits, certificates, and licenses required for any construction unless such procurement responsibilities are specifically assigned to Consultant in Attachment A, Scope of Services.

ARTICLE 4. TERMINATION BY THE CITY. The City may terminate this Agreement in accordance with the following terms and conditions:

- 4.1 **Termination for Convenience.** The City may, when in the interests of the City, terminate performance under this Agreement with the Consultant, in whole or in part, for the convenience of the City. The City shall give written notice of such termination to the Consultant specifying when termination becomes effective. The Consultant shall incur no further obligations in connection with the work so terminated, other than warranties and guarantees for completed work and installed equipment, and the Consultant shall stop work when such

termination becomes effective. The Consultant shall also terminate outstanding orders and subcontracts for the affected work. The Consultant shall settle the liabilities and claims arising out of the termination of subcontracts and orders. The City may direct the Consultant to assign the Consultant's right, title and interest under termination orders or subcontracts to the City or its designee. The Consultant shall transfer title and deliver to the City such completed or partially completed work and materials, equipment, parts, fixtures, information and Contract rights as the Consultant has in its possession or control. When terminated for convenience, the Consultant shall be compensated as follows:

- (1) The Consultant shall submit a termination claim to the City specifying the amounts due because of the termination for convenience together with costs, pricing or other data required by the City. If the Consultant fails to file a termination claim within one (1) year from the effective date of termination, the City shall pay the Consultant the amount the City deems the Consultant is due.
- (2) The City and the Consultant may agree to the compensation, if any, due to the Consultant hereunder.
- (3) Absent agreement to the amount due to the Consultant, the City shall pay the Consultant the following amounts:
 - (a) Contract costs for labor, materials, equipment and other services accepted under this Agreement;
 - (b) Reasonable costs incurred in preparing to perform and in performing the terminated portion of the work, and in terminating the Consultant's performance, plus a fair and reasonable allowance for direct job site overhead and earned profit thereon (such profit shall not include anticipated profit or consequential damages); provided however, that if it reasonably appears that the Consultant would have not profited or would have sustained a loss if the entire Agreement would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss, if any;

The total sum to be paid the Consultant under this Section shall not exceed the total Agreement Price, as properly adjusted, reduced by the amount of payments otherwise made, and shall in no event include duplication of payment.

- 4.2 Termination for Cause. If the Consultant does not perform the work, or any part thereof, in a timely manner, supply adequate labor, supervisory personnel or proper equipment or materials, or if it fails to timely discharge its obligations for labor, equipment and materials, or proceeds to disobey applicable law, or otherwise commits a violation of a material provision of this Agreement, then the City, in addition to any other rights it may have against the Consultant or others, may terminate the performance of the Consultant, in whole or in part at the City's sole option, and assume possession of the Project Plans and materials and may complete the work.

In such case, the Consultant shall not be paid further until the work is complete. After Completion has been achieved, if any portion of the Contract Price, as it may be modified hereunder, remains after the cost to the City of completing the work, including all costs and expenses of every nature incurred, has been deducted by the City, such remainder shall belong to the Consultant. Otherwise, the Consultant shall pay and make whole the City for such cost. This obligation for payment shall survive the termination of the Agreement.

In the event the employment of the Consultant is terminated by the City for cause pursuant to this Section and it is subsequently determined by a Court of competent jurisdiction that such termination was without cause, such termination shall thereupon be deemed a Termination for Convenience under this Section and the provisions of Section 4.1 shall apply.

- 4.3 Termination for Non-Appropriation. The City may also terminate this Agreement, in whole or in part, for non-appropriation of sufficient funds to complete or partially complete the Project, regardless of the source of such funds, and such termination shall be on the terms of Section 4.1.
- 4.4 The City's rights under this Section shall be in addition to those contained elsewhere herein or provided by law.

ARTICLE 5. SCOPE OF SERVICES. Consultant shall provide the Services as described in Attachment A, Scope of Services.

5.1 By mutual agreement, this Agreement and scope can be amended by the parties. The scope and fee for any additional tasks or services under such amendment shall be mutually negotiated and agreed to in writing prior to beginning such additional tasks or services.

5.2 **ENVIRONMENTAL RESPONSIBILITY.**

Where drilling/sampling services are involved, the samples obtained from the Project site are the property of the City. Should any of these samples be recognized by the Consultant to be contaminated, the City shall remove them from the Consultant's custody and transport them to a disposal site, all in accordance with applicable government statutes, ordinances, and regulations. For all other samples, the Consultant shall retain them for a sixty (60)-day period following the submission of the drilling/sampling report unless the City directs otherwise; thereafter, the Consultant shall discard the samples in accordance with all federal, state and local laws.

ARTICLE 6. SCHEDULE.

6.1 **TIME OF THE ESSENCE.** The parties agree that time is of the essence with respect to the parties' performance of all provisions of the Agreement.

6.2 Before executing this Agreement, the Consultant shall have prepared and submitted for approval to the City a Completion Schedule for the Project with milestones for the various stages (tasks) of the Services as outlined in the Scope of Services. The Consultant shall submit and obtain the City's approval for any proposed changes to the logic, durations, sequences, or timing of tasks as approved in the Completion Schedule.

6.3 **FORCE MAJEURE.** Neither party will be liable to the other for any delay or failure to perform any of the services or obligations set forth in this Agreement due to causes beyond its reasonable control, and performance times will be considered extended for a period of time equivalent to the time lost because of such delay plus a reasonable period of time to allow the parties to recommence performance of their respective obligations hereunder. Should a circumstance of force majeure last more than ninety (90) days, either party may by written notice to the other terminate this Agreement. The term "force majeure" as used herein shall mean the following: acts of God; strikes, lockouts or other industrial disturbances; acts of public enemies; orders or restraints of any kind of the government of the United States or of the State or any of their departments, agencies or officials, or any civil or military authority; insurrections, riots, landslides, earthquakes, fires, storms, tornadoes, droughts, floods, explosions, breakage or accident to

machinery, transmission pipes or canals; or any other cause or event not reasonably within the control of either party.

- 6.4 Should City request changes in the scope, extent, or character of the Project, the fee and the time of performance of Consultant's Services as indicated in Attachment A shall be adjusted equitably.

ARTICLE 7. USE OF DOCUMENTS, DATA.

- 7.1 All Documents, including, but not limited to, reports, drawings, specifications, and computer software prepared by Consultant pursuant to this Agreement are instruments of service in respect to the Project. Consultant shall retain an ownership and property interest therein (including the right of reuse at the discretion of the Consultant) whether or not the Project is completed.

7.1.1 **USE OF DATA SYSTEMS:** Ownership, property interests and proprietary rights in data systems used by Consultant do not extend to the data created by or supplied to Consultant by the City; all rights to that data (including derivative or hidden data such as metadata) shall vest solely in City at the moment of creation.

7.1.2 **DISCLOSURE OF DOCUMENTS/DATA.** City may be required to disclose documents or data under state or federal law. City shall notify Consultant if a request for data or documents has been made and shall give Consultant a reasonable opportunity under the circumstances to respond to the request by redacting proprietary or other confidential information. Consultant waives any right to confidentiality of any document, e-mail or file it fails to clearly mark on each page as confidential or proprietary. In exchange, Consultant agrees to indemnify, defend, and hold harmless City for any claims by third parties relating thereto or arising out of (i) the City's failure to disclose such documents or information required to be disclosed by law, or (ii) the City's release of documents as a result of City's reliance upon Consultant representation that materials supplied by Consultant (in full or redacted form) do not contain trade secrets or proprietary information, provided that the City impleads Consultant and Consultant assumes control over that claim.

- 7.2 By execution of this Agreement, Consultant and his sub-consultant(s) grant the City a royalty-free, perpetual, irrevocable, and assignable license to use any and all intellectual property interest Consultant or his sub-consultant(s) possess to any drawings, details, specifications, documents, and other information created before each of their first involvement with the Project and subsequently incorporated into the Project's documents. City-furnished data that may be relied upon by Consultant is limited to the printed copies that are delivered to the

- Consultant pursuant to Article 2 of this Agreement. Any copyrighted electronic files furnished by City shall be used by Consultant only for the Project as described herein. City's posting or publication of such documents created by Consultant for City shall constitute fair use and shall not constitute an infringement of Consultant's copyright, if any.
- 7.3 Documents that may be relied upon by City are limited to the printed copies (also known as hard copies) that are signed or sealed by the Consultant. Files in electronic media format of text, data, graphics, or of other types that are furnished by Consultant to City are only for convenience of City, unless the delivery of the Project in electronic media format has been dictated in Attachment A, Scope of Services. Any conclusion or information obtained or derived from electronic files provided for convenience will be at the user's sole risk.
- 7.4 Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within sixty (60) days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the party delivering the electronic files. Unless stated otherwise herein, Consultant shall not be responsible to maintain documents stored in electronic media format after acceptance by City.
- 7.5 When transferring documents in electronic media format, Consultant makes no representations as to long term compatibility, usability, or readability, of documents resulting from the use of software application packages, operating systems, or computer hardware differing from that as required of, and used by, Consultant at the beginning of this Project.
- 7.6 City may make and retain copies of Documents for information and reference in connection with use on the Project by the City, or his authorized representative. Such Documents are not intended or represented to be suitable for reuse by City or others on extensions of the Project or on any other project. Any such reuse or modifications without written verification or adaptation by Consultant, as appropriate for the specific purpose intended, will be at City's sole risk and without liability or legal exposure to the Consultant or to Consultant's sub-consultants.
- 7.7 If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- 7.8 Any verification or adaptation of the Documents for extensions of the Project or for any other project will entitle Consultant to further compensation at rates to be agreed upon by City and Consultant.

ARTICLE 8. INSURANCE.

- 8.1 During the performance of the Services under this Agreement, Consultant shall maintain the following minimum insurance:
- a) General Liability Insurance with a combined single limit of \$1,000,000 per occurrence and \$2,000,000 annual aggregate.
 - b) Automobile Liability Insurance with a combined single limit of \$1,000,000 for each person and \$1,000,000 for each accident.
 - c) Workers' Compensation Insurance Coverage A in accordance with statutory requirements and Coverage B, Employer's Liability Insurance, with a limit of \$500,000 for each occurrence.
 - d) Professional Liability Insurance with a limit of \$1,000,000 annual aggregate.
- 8.2 Consultant shall add the City an additional insured on all policies unless otherwise prohibited.
- 8.3 Consultant shall, upon execution of this Agreement, furnish City certificates of insurance, which shall include a provision that such insurance shall not be canceled without at least thirty (30) days' written notice to City.
- 8.4 No insurance, of whatever kind or type is to be considered as in any way limiting other parties' responsibility for damages resulting from their activities in the execution of the Project. City agrees to include, or cause to be included, in the Project's construction contract, such requirements for insurance coverage and performance bonds by the Project's construction contractor as City deems adequate to indemnify City, Consultant, and other concerned parties against claims for damages and to insure compliance of work performance and materials with Project requirements.

ARTICLE 9. PAYMENT.

- 9.1 City will pay Consultant for services and expenses in accordance with the Fee Schedule proposal submitted for the Project as part of the Scope of Services. Consultant's invoices will be presented at the completion of the work or monthly and will be payable upon receipt. Payment is due upon presentation of invoice and is past due thirty (30) days from invoice date. City shall give prompt written notice of any disputed amount and shall pay the remaining amount.
- 9.2 Consultant shall be paid in full for all services under this Agreement, including City authorized overruns of the Project budget or unforeseen need for Consultant's services exceeding the original Scope of Services.
- 9.3 **TRAVEL; EXPENSES**
City shall reimburse reasonable expenses, including travel and meals, when specified in the Scope of Services, but only in accordance with the City's Travel and Expense Policy and Procedures Manual. The maximum amount will be applied as of the date of travel and as listed

in the per diem reimbursement rates on the “CONUS” website developed by the United States General Services Administration, located at www.gsa.gov [click on ‘per diem rates’ under the ‘etools’ category].

ARTICLE 10. MISCELLANEOUS PROVISIONS

- 10.1 **EQUAL EMPLOYMENT OPPORTUNITY.** In connection with this Agreement and the Project, City and Consultant shall not discriminate against any employee or applicant for employment because of race, color, sex, national origin, disability or marital status. City and Consultant will take affirmative action to ensure that the contractor used for the Project does not discriminate against any employee and employees are treated during employment without regard to their race, age, religion, color, gender, national origin, disability or marital status. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination, rates of pay or other forms of compensation; and selection for training, including apprenticeship.
- 10.1.1 Consultant shall insert the foregoing provision in all contracts relating to this Project.
- 10.2 **TITLE VI – CIVIL RIGHTS ACT OF 1964.** City and Consultant shall comply with all the requirements imposed by Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d), 49 C.F.R., Part 21, and related statutes and regulations.
- 10.2.1 Consultant shall insert the foregoing provision in all contracts relating to this Project.
- 10.3 **NO THIRD PARTY RIGHTS CREATED.** City and Consultant each binds itself and its successors, executors, administrators, permitted assigns, legal representatives and, in the case of a partnership, its partners, to the other party to this Agreement and to their successors, executors, administrators, permitted assigns, legal representatives and partners of such other party in respect to all provisions of this Agreement. The Services provided for in this Agreement are for the sole use and benefit of City and Consultant. Nothing in this Agreement shall be construed to give any rights or benefits to anyone other than City and Consultant.
- 10.4 **WARRANTIES/LIMITATION OF LIABILITY/WAIVER.** City reserves all rights afforded to local governments under law for all general and implied warranties. City does not waive any rights it may have to all remedies provided by law and therefore any attempt by Consultant to limit its liability shall be void and unenforceable.

ARTICLE 11. EXTENT OF AGREEMENT.

- 11.1 APPLICABLE LAW/CHOICE OF FORUM AND VENUE. This Agreement is made under and will be construed in accordance with the laws of the State of Tennessee without giving effect to that state's choice of law rules. The parties' choice of forum and venue shall be exclusively in the courts of Williamson County, Tennessee. Any provision of this Agreement held to violate a law or regulation shall be deemed void, and all remaining provisions shall continue in force.
- 11.2 ENTIRE AGREEMENT. This Agreement, including these terms and conditions, represent the entire Agreement between City and Consultant for this Project and supersedes all prior negotiations, representations or agreements, written or oral. This Agreement may be amended only by written instrument signed by City and Consultant.

ARTICLE 12. DISPUTE RESOLUTION, BREACH.

- 12.1 If a dispute should arise relating to the performance of or payment for the Services under this Agreement, the aggrieved party shall notify the other party of the dispute within a reasonable time after such dispute arises. During the pendency of any dispute, the parties shall continue diligently to fulfill their respective obligations hereunder. No arbitration or mediation shall be required as a condition precedent to filing any legal claim arising out of or relating to this Agreement. No arbitration or mediation shall be binding.
- 12.2 BREACH. Upon deliberate breach of the Agreement by either party, the non-breaching party shall be entitled to terminate the Agreement with notice, with all of the remedies it would have in the event of termination, and may also have such other remedies as it may be entitled to in law or in equity.

ARTICLE 13. SURVIVAL.

The provisions contained in this Professional Services Agreement shall survive the completion of or any termination of the Agreement, contract or other document to which it may accompany or incorporate by reference or which subsequently may be modified, unless expressly excepted from this Article upon consent of both parties.

BY: _____
Consultant's Signature
TITLE: _____
Date: _____

BY: _____
Dr. Ken Moore
Mayor
Date: _____

Approved as to Form:

Kristen L. Corn, Assistant City Attorney



October 6, 2016

Mr. Paul Holzen, P.E.
Director of Engineering/City Engineer
City of Franklin
109 3rd Avenue South
Franklin, Tennessee 37094
Delivered via email: paul.holzen@franklintn.gov

Dear Mr. Holzen:

Subject: On-Call Professional Support Services
CEC Project 163-585

Civil & Environmental Consultants, Inc. (CEC) is pleased to present this proposed scope of service, as requested by the City of Franklin, to perform on-call professional services in support of the City. At this time, the full scope of work is unknown; therefore, CEC proposes to perform work as directed by the City on a time & materials basis in accordance with the attached fee schedule for each task order. When active task orders exist, CEC will provide the City with a monthly report to summarize work performed through this contract.

1.0 INITIATION – TASK ORDER

The following is a summary of the initiation of a task order. The City will contact CEC with a project/service request. CEC will work with City staff to evaluate and help prioritize the project/service request, as well as identify locations. During the evaluation process, CEC will assist City staff to determine if it will be (1) closed with no further action required; (2) referred to maintenance by a City Department (i.e. Street Department, Water Management, etc.); (3) classified as a project with services provided through this contract; or (4) recommended to the Board of Mayor and Aldermen (BOMA) as a CIP project.

If it is determined that a project/service request will require professional services, the City will issue a task order. CEC will work with City staff to determine a scope of services, estimated fee, and schedule. Once the scope, fee, and schedule are agreed upon, CEC will provide the professional services in accordance to the Professional Services Agreement and Fee Schedule and complete the task order.

2.0 SERVICES PROVIDED

It is anticipated that the complexity and services provided through this on-call contract will vary from task order to task order. It is expected that the task orders issued through this on-call contract will be services associated with projects or service requests made by citizens that are not associated with Capital Investment Program (CIP) projects. The list of services that CEC may provide through this contract will include but not be limited to:

Survey

- Horizontal and Vertical Control
- Construction Staking
- Boundary and Land Title
- Volumetric
- As-Built
- Easement and Right-of-Way (ROW) Document Preparation

Civil/Site

- Predevelopment Site Investigations
- Site Design and Permitting
- Landscape Architecture and Planning
- Development Plan Review Assistance

Stormwater/MS4

- Compliance Audits and Gap Analysis
- Stormwater Best Management Practice (BMP) Design
- Ordinance Review and Preparation
- Benthic Macroinvertebrate Stream Sampling
- Stream Restoration and Enhancement
- Stream Monitoring Work Plan Development
- Corrective Action Plan Development
- Storm Sewer Input Location Mapping

- Annual Report Preparation
- Stormwater User Fee Development/Update
- Hydrologic Studies/Hydraulic Modeling
- Stream Condition Assessment
- Floodway Delineation and Mapping
- FEMA Map Revisions
- Training and Educational Assistance

Public Infrastructure

- Wastewater Collection System, Pump Station, and Forcemain Design
- Wastewater Collection System Rehabilitation
- Water Distribution System Design
- Intersection Design
- Traffic Signal Warrant Evaluation and Design
- Traffic Calming Studies
- Trip Generation Studies
- Travel Time/Delay Studies

Other Services

- ADA Compliance and Remediation Services
- BMP Product Testing and Performance Evaluation
- Wetland and Waters Determination and Delineation
- Transfer Station Operations and Management Support
- Construction Inspection
- Environmental Assessments (Phase I and II Assessments, Archaeological)
- Erosion Prevention and Sediment Control Design and Inspection

Our Standard Municipal Services Rate Sheet, which applies to the proposed work, is attached. Your oral or written authorization to proceed will form a binding contract and indicates your

acceptance of our Proposal. Any changes to our Professional Services Agreement (PSA) must be agreed to in writing by both parties prior to your authorization to proceed.

Thank you for the opportunity to present this contract for your review and acceptance. We look forward to continuing to work with the City. Please contact us if you have any questions at 615-333-7797 or egardner@cecinc.com or scasey@cecinc.com.

Sincerely,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.



Eric J. Gardner, P.E., CPESC
Project Manager



Steven E. Casey, P.E., CPESC
Principal

Enclosures

Nashville Municipal Services Fee Schedule

January 1, 2016 through December 31, 2016

PROFESSIONAL SERVICES

Classification	Rate/Hour
Vice President.....	\$220
Principal/Senior Consultant	\$185
Senior Project Manager	\$170
Project Manager III	\$155
Project Manager II	\$145
Project Manager I	\$135
Assistant Project Manager	\$110
Project Consultant / Geologist / Hydrogeologist / Biologist / Scientist	\$100
Staff Consultant / Geologist / Hydrogeologist / Environmental Specialist	\$95
CAD Designer.....	\$90
Draftsperson / CADD Operator.....	\$65
Senior Field Technician.....	\$80
Construction Observer / Environmental Technician.....	\$78
Senior Land Surveyor	\$140
Project Land Surveyor / GPS Specialist.....	\$100
Survey Technician IV	\$83
Survey Technician III.....	\$78
Survey Technician II.....	\$70
Survey Technician I.....	\$63
Administrative Assistant.....	\$65
Administrative Manager	\$73

**CITY OF FRANKLIN, TENNESSEE
PROFESSIONAL SERVICES AGREEMENT
COF Contract No. 2016-0320**

THIS PROFESSIONAL SERVICES AGREEMENT ("Agreement") is by and between the City of Franklin, Tennessee, hereinafter referenced as City, and **CIVIL INFRASTRUCTURE ASSOCIATES** hereinafter referenced as Consultant, who mutually agree as follows:

DECLARATIONS. City desires to retain Consultant to provide engineering, related technical, and other services in connection with City's project hereinafter referenced as Project. The Project is described as follows:

Watson Branch Culvert Rehabilitation

1. SCOPE OF SERVICES. Consultant shall provide engineering related technical services for the Project in accordance with the Scope of Services (Services) as found in Attachment A which shall be considered as an integral part hereof.
2. Consultant shall submit as a part of Attachment A an individual Fee Schedule and a Completion Schedule for the Project based on the detailed Scope of Services.
3. In event of a conflict between this Agreement and the attached document(s), this Agreement shall supersede conflicting terms and conditions.
4. Consultant shall be paid on a monthly basis for work performed based on the Fee Schedule as contained in Attachment A in the Amount of THIRTY THOUSAND SIX HUNDRED FORTY AND NO/100 DOLLARS (\$30,640.00).

The Board of Mayor and Aldermen Approved this Agreement on the _____ Day of _____ 201__.

TERMS AND CONDITIONS FOR PROFESSIONAL SERVICES

ARTICLE 1. SERVICES. Consultant will:

- 1.1 Act for City in a professional manner, using that degree of care and skill ordinarily exercised by and consistent with standards of competent consultants using the standards in the industry:
- 1.2 Consider all reports to be confidential and distribute copies of the same only to those persons specifically designated by the City.
- 1.3 Perform all services under the general direction of a senior professional employee, licensed and/or registered in the State of Tennessee, when appropriate.
- 1.4 Designate, in writing, the sole Project representative to coordinate with City the Services to be provided, including all contact information.
- 1.5 Unless provided for in the Project Scope of Services (Attachment A), Consultant shall perform all Services with his own forces (employees). Should sub-consultants be proposed to be used in the Project, a listing of said sub-consultants with Services to be performed shall be provided. After approval of this Agreement, no substitute for sub-consultants shall be allowed unless approved by City.
- 1.6 Retain pertinent records relating to the services performed for a period of seven (7) years following the completion of the work; during this period the records shall be available for review by City at all reasonable times.

ARTICLE 2. CITY'S RESPONSIBILITIES. City, or its authorized representative, will:

- 2.1 Provide Consultant with all information regarding the Project, which is available to, or reasonably obtainable by, the City.
- 2.2 Furnish right-of-entry onto the Project site for Consultant's necessary field studies and surveys. Consultant will endeavor to restore the site to its original condition and shall remain solely liable for all damages, costs and expenses, including reasonable attorneys' fees, for failure to make such restoration.
- 2.3 Designate, in writing, the sole Project representative to coordinate with and direct the Consultant, including all contact information.
- 2.4 Guarantee to Consultant that it has the legal capacity to enter into this contract and that sufficient monies are available to fund Consultant's compensation.

ARTICLE 3. GENERAL CONDITIONS.

- 3.1 Consultant, by the performance of services covered hereunder, does not in any way assume, abridge or abrogate any of those duties, responsibilities or authorities customarily vested in other professionals or agencies participating in the Project.

- 3.2 Consultant shall be responsible for the acts or omissions of any party involved in concurrent or subsequent phases of the Project acting upon written instruction issued by the Consultant.
- 3.3 Neither City nor Consultant may assign or transfer its duties or interest in this Agreement without written consent of the other party.
- 3.4 **ALLOCATION OF RISK AND LIABILITY; GENERAL.** Considering the potential liabilities that may exist during the performance of the services of this Agreement, the relative benefits and risks of the Project, and the Consultant's fee for the services rendered, and in consideration of the promises contained in this Agreement, the City and the Consultant agree to allocate and limit such liabilities in accordance with this Article.
- 3.5 **INDEMNIFICATION.** Consultant agrees to indemnify and hold City harmless from and against legal liability for all judgments, losses, damages, and expenses to the extent such judgments, losses, damages, or expenses are caused by Consultant's negligent act, error or omission in the performance of the services of this Agreement. In the event judgments, losses, damages, or expenses are caused by the joint or concurrent negligence of Consultant and City, they shall be borne by each party in proportion to its own negligence.
- 3.5.1 **SURVIVAL.** The terms and conditions of this paragraph shall survive completion of this services agreement.
- 3.6 **LIMITATIONS OF RESPONSIBILITY.** Consultant shall not be responsible for (a) construction means, methods, techniques, sequences, procedures, or safety precautions and programs in connection with the Project unless specifically undertaken in Attachment A, Scope of Services ; (b) the failure of any contractor, subcontractor, Consultant, or other Project participant, not under contract to Consultant, to fulfill contractual responsibilities to City or to comply with federal, state, or local laws, regulations, and codes; or (c) procuring permits, certificates, and licenses required for any construction unless such procurement responsibilities are specifically assigned to Consultant in Attachment A, Scope of Services.

ARTICLE 4. TERMINATION BY THE CITY. The City may terminate this Agreement in accordance with the following terms and conditions:

- 4.1 **Termination for Convenience.** The City may, when in the interests of the City, terminate performance under this Agreement with the Consultant, in whole or in part, for the convenience of the City. The City shall give written notice of such termination to the Consultant specifying when termination becomes effective. The Consultant shall incur no further obligations in connection with the work so terminated, other than warranties and guarantees for completed work and installed equipment, and the Consultant shall stop work when such

termination becomes effective. The Consultant shall also terminate outstanding orders and subcontracts for the affected work. The Consultant shall settle the liabilities and claims arising out of the termination of subcontracts and orders. The City may direct the Consultant to assign the Consultant's right, title and interest under termination orders or subcontracts to the City or its designee. The Consultant shall transfer title and deliver to the City such completed or partially completed work and materials, equipment, parts, fixtures, information and Contract rights as the Consultant has in its possession or control. When terminated for convenience, the Consultant shall be compensated as follows:

- (1) The Consultant shall submit a termination claim to the City specifying the amounts due because of the termination for convenience together with costs, pricing or other data required by the City. If the Consultant fails to file a termination claim within one (1) year from the effective date of termination, the City shall pay the Consultant the amount the City deems the Consultant is due.
- (2) The City and the Consultant may agree to the compensation, if any, due to the Consultant hereunder.
- (3) Absent agreement to the amount due to the Consultant, the City shall pay the Consultant the following amounts:
 - (a) Contract costs for labor, materials, equipment and other services accepted under this Agreement;
 - (b) Reasonable costs incurred in preparing to perform and in performing the terminated portion of the work, and in terminating the Consultant's performance, plus a fair and reasonable allowance for direct job site overhead and earned profit thereon (such profit shall not include anticipated profit or consequential damages); provided however, that if it reasonably appears that the Consultant would have not profited or would have sustained a loss if the entire Agreement would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss, if any;

The total sum to be paid the Consultant under this Section shall not exceed the total Agreement Price, as properly adjusted, reduced by the amount of payments otherwise made, and shall in no event include duplication of payment.

- 4.2 Termination for Cause. If the Consultant does not perform the work, or any part thereof, in a timely manner, supply adequate labor, supervisory personnel or proper equipment or materials, or if it fails to timely discharge its obligations for labor, equipment and materials, or proceeds to disobey applicable law, or otherwise commits a violation of a material provision of this Agreement, then the City, in addition to any other rights it may have against the Consultant or others, may terminate the performance of the Consultant, in whole or in part at the City's sole option, and assume possession of the Project Plans and materials and may complete the work.

In such case, the Consultant shall not be paid further until the work is complete. After Completion has been achieved, if any portion of the Contract Price, as it may be modified hereunder, remains after the cost to the City of completing the work, including all costs and expenses of every nature incurred, has been deducted by the City, such remainder shall belong to the Consultant. Otherwise, the Consultant shall pay and make whole the City for such cost. This obligation for payment shall survive the termination of the Agreement.

In the event the employment of the Consultant is terminated by the City for cause pursuant to this Section and it is subsequently determined by a Court of competent jurisdiction that such termination was without cause, such termination shall thereupon be deemed a Termination for Convenience under this Section and the provisions of Section 4.1 shall apply.

- 4.3 Termination for Non-Appropriation. The City may also terminate this Agreement, in whole or in part, for non-appropriation of sufficient funds to complete or partially complete the Project, regardless of the source of such funds, and such termination shall be on the terms of Section 4.1.
- 4.4 The City's rights under this Section shall be in addition to those contained elsewhere herein or provided by law.

ARTICLE 5. SCOPE OF SERVICES. Consultant shall provide the Services as described in Attachment A, Scope of Services.

- 5.1 By mutual agreement, this Agreement and scope can be amended by the parties. The scope and fee for any additional tasks or services under such

amendment shall be mutually negotiated and agreed to in writing prior to beginning such additional tasks or services.

5.2 ENVIRONMENTAL RESPONSIBILITY.

Where drilling/sampling services are involved, the samples obtained from the Project site are the property of the City. Should any of these samples be recognized by the Consultant to be contaminated, the City shall remove them from the Consultant's custody and transport them to a disposal site, all in accordance with applicable government statutes, ordinances, and regulations. For all other samples, the Consultant shall retain them for a sixty (60)-day period following the submission of the drilling/sampling report unless the City directs otherwise; thereafter, the Consultant shall discard the samples in accordance with all federal, state and local laws.

ARTICLE 6. SCHEDULE.

6.1 TIME OF THE ESSENCE. The parties agree that time is of the essence with respect to the parties' performance of all provisions of the Agreement.

6.2 Before executing this Agreement, the Consultant shall have prepared and submitted for approval to the City a Completion Schedule for the Project with milestones for the various stages (tasks) of the Services as outlined in the Scope of Services. The Consultant shall submit and obtain the City's approval for any proposed changes to the logic, durations, sequences, or timing of tasks as approved in the Completion Schedule.

6.3 FORCE MAJEURE. Neither party will be liable to the other for any delay or failure to perform any of the services or obligations set forth in this Agreement due to causes beyond its reasonable control, and performance times will be considered extended for a period of time equivalent to the time lost because of such delay plus a reasonable period of time to allow the parties to recommence performance of their respective obligations hereunder. Should a circumstance of force majeure last more than ninety (90) days, either party may by written notice to the other terminate this Agreement. The term "force majeure" as used herein shall mean the following: acts of God; strikes, lockouts or other industrial disturbances; acts of public enemies; orders or restraints of any kind of the government of the United States or of the State or any of their departments, agencies or officials, or any civil or military authority; insurrections, riots, landslides, earthquakes, fires, storms, tornadoes, droughts, floods, explosions, breakage or accident to machinery, transmission pipes or canals; or any other cause or event not reasonably within the control of either party.

- 6.4 Should City request changes in the scope, extent, or character of the Project, the fee and the time of performance of Consultant's Services as indicated in Attachment A shall be adjusted equitably.

ARTICLE 7. USE OF DOCUMENTS, DATA.

- 7.1 All Documents, including, but not limited to, reports, drawings, specifications, and computer software prepared by Consultant pursuant to this Agreement are instruments of service in respect to the Project. Consultant shall retain an ownership and property interest therein (including the right of reuse at the discretion of the Consultant) whether or not the Project is completed.
- 7.1.1 **USE OF DATA SYSTEMS:** Ownership, property interests and proprietary rights in data systems used by Consultant do not extend to the data created by or supplied to Consultant by the City; all rights to that data (including derivative or hidden data such as metadata) shall vest solely in City at the moment of creation.
- 7.1.2 **DISCLOSURE OF DOCUMENTS/DATA.** City may be required to disclose documents or data under state or federal law. City shall notify Consultant if a request for data or documents has been made and shall give Consultant a reasonable opportunity under the circumstances to respond to the request by redacting proprietary or other confidential information. Consultant waives any right to confidentiality of any document, e-mail or file it fails to clearly mark on each page as confidential or proprietary. In exchange, Consultant agrees to indemnify, defend, and hold harmless City for any claims by third parties relating thereto or arising out of (i) the City's failure to disclose such documents or information required to be disclosed by law, or (ii) the City's release of documents as a result of City's reliance upon Consultant representation that materials supplied by Consultant (in full or redacted form) do not contain trade secrets or proprietary information, provided that the City impleads Consultant and Consultant assumes control over that claim.
- 7.2 By execution of this Agreement, Consultant and his sub-consultant(s) grant the City a royalty-free, perpetual, irrevocable, and assignable license to use any and all intellectual property interest Consultant or his sub-consultant(s) possess to any drawings, details, specifications, documents, and other information created before each of their first involvement with the Project and subsequently incorporated into the Project's documents. City-furnished data that may be relied upon by Consultant is limited to the printed copies that are delivered to the Consultant pursuant to Article 2 of this Agreement. Any copyrighted electronic files furnished by City shall be used by Consultant only for

the Project as described herein. City's posting or publication of such documents created by Consultant for City shall constitute fair use and shall not constitute an infringement of Consultant's copyright, if any.

- 7.3 Documents that may be relied upon by City are limited to the printed copies (also known as hard copies) that are signed or sealed by the Consultant. Files in electronic media format of text, data, graphics, or of other types that are furnished by Consultant to City are only for convenience of City, unless the delivery of the Project in electronic media format has been dictated in Attachment A, Scope of Services. Any conclusion or information obtained or derived from electronic files provided for convenience will be at the user's sole risk.
- 7.4 Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within sixty (60) days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the party delivering the electronic files. Unless stated otherwise herein, Consultant shall not be responsible to maintain documents stored in electronic media format after acceptance by City.
- 7.5 When transferring documents in electronic media format, Consultant makes no representations as to long term compatibility, usability, or readability, of documents resulting from the use of software application packages, operating systems, or computer hardware differing from that as required of, and used by, Consultant at the beginning of this Project.
- 7.6 City may make and retain copies of Documents for information and reference in connection with use on the Project by the City, or his authorized representative. Such Documents are not intended or represented to be suitable for reuse by City or others on extensions of the Project or on any other project. Any such reuse or modifications without written verification or adaptation by Consultant, as appropriate for the specific purpose intended, will be at City's sole risk and without liability or legal exposure to the Consultant or to Consultant's sub-consultants.
- 7.7 If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- 7.8 Any verification or adaptation of the Documents for extensions of the Project or for any other project will entitle Consultant to further compensation at rates to be agreed upon by City and Consultant.

ARTICLE 8. INSURANCE.

- 8.1 During the performance of the Services under this Agreement, Consultant shall maintain the following minimum insurance:
- a) General Liability Insurance with a combined single limit of \$1,000,000 per occurrence and \$2,000,000 annual aggregate.
 - b) Automobile Liability Insurance with a combined single limit of \$1,000,000 for each person and \$1,000,000 for each accident.
 - c) Workers' Compensation Insurance Coverage A in accordance with statutory requirements and Coverage B, Employer's Liability Insurance, with a limit of \$500,000 for each occurrence.
 - d) Professional Liability Insurance with a limit of \$1,000,000 annual aggregate.
- 8.2 Consultant shall add the City an additional insured on all policies unless otherwise prohibited.
- 8.3 Consultant shall, upon execution of this Agreement, furnish City certificates of insurance, which shall include a provision that such insurance shall not be canceled without at least thirty (30) days' written notice to City.
- 8.4 No insurance, of whatever kind or type is to be considered as in any way limiting other parties' responsibility for damages resulting from their activities in the execution of the Project. City agrees to include, or cause to be included, in the Project's construction contract, such requirements for insurance coverage and performance bonds by the Project's construction contractor as City deems adequate to indemnify City, Consultant, and other concerned parties against claims for damages and to insure compliance of work performance and materials with Project requirements.

ARTICLE 9. PAYMENT.

- 9.1 City will pay Consultant for services and expenses in accordance with the Fee Schedule proposal submitted for the Project as part of the Scope of Services. Consultant's invoices will be presented at the completion of the work or monthly and will be payable upon receipt. Payment is due upon presentation of invoice and is past due thirty (30) days from invoice date. City shall give prompt written notice of any disputed amount and shall pay the remaining amount.
- 9.2 Consultant shall be paid in full for all services under this Agreement, including City authorized overruns of the Project budget or unforeseen need for Consultant's services exceeding the original Scope of Services.
- 9.3 **TRAVEL; EXPENSES**
City shall reimburse reasonable expenses, including travel and meals, when specified in the Scope of Services, but only in accordance with the City's Travel and Expense Policy and Procedures Manual. The maximum amount will be applied as of the date of travel and as listed

in the per diem reimbursement rates on the “CONUS” website developed by the United States General Services Administration, located at www.gsa.gov [click on ‘per diem rates’ under the ‘etools’ category].

ARTICLE 10. MISCELLANEOUS PROVISIONS

- 10.1 **EQUAL EMPLOYMENT OPPORTUNITY.** In connection with this Agreement and the Project, City and Consultant shall not discriminate against any employee or applicant for employment because of race, color, sex, national origin, disability or marital status. City and Consultant will take affirmative action to ensure that the contractor used for the Project does not discriminate against any employee and employees are treated during employment without regard to their race, age, religion, color, gender, national origin, disability or marital status. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination, rates of pay or other forms of compensation; and selection for training, including apprenticeship.
- 10.1.1 Consultant shall insert the foregoing provision in all contracts relating to this Project.
- 10.2 **TITLE VI – CIVIL RIGHTS ACT OF 1964.** City and Consultant shall comply with all the requirements imposed by Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d), 49 C.F.R., Part 21, and related statutes and regulations.
- 10.2.1 Consultant shall insert the foregoing provision in all contracts relating to this Project.
- 10.3 **NO THIRD PARTY RIGHTS CREATED.** City and Consultant each binds itself and its successors, executors, administrators, permitted assigns, legal representatives and, in the case of a partnership, its partners, to the other party to this Agreement and to their successors, executors, administrators, permitted assigns, legal representatives and partners of such other party in respect to all provisions of this Agreement. The Services provided for in this Agreement are for the sole use and benefit of City and Consultant. Nothing in this Agreement shall be construed to give any rights or benefits to anyone other than City and Consultant.
- 10.4 **WARRANTIES/LIMITATION OF LIABILITY/WAIVER.** City reserves all rights afforded to local governments under law for all general and implied warranties. City does not waive any rights it may have to all remedies provided by law and therefore any attempt by Consultant to limit its liability shall be void and unenforceable.

ARTICLE 11. EXTENT OF AGREEMENT.

- 11.1 APPLICABLE LAW/CHOICE OF FORUM AND VENUE. This Agreement is made under and will be construed in accordance with the laws of the State of Tennessee without giving effect to that state's choice of law rules. The parties' choice of forum and venue shall be exclusively in the courts of Williamson County, Tennessee. Any provision of this Agreement held to violate a law or regulation shall be deemed void, and all remaining provisions shall continue in force.
- 11.2 ENTIRE AGREEMENT. This Agreement, including these terms and conditions, represent the entire Agreement between City and Consultant for this Project and supersedes all prior negotiations, representations or agreements, written or oral. This Agreement may be amended only by written instrument signed by City and Consultant.

ARTICLE 12. DISPUTE RESOLUTION, BREACH.

- 12.1 If a dispute should arise relating to the performance of or payment for the Services under this Agreement, the aggrieved party shall notify the other party of the dispute within a reasonable time after such dispute arises. During the pendency of any dispute, the parties shall continue diligently to fulfill their respective obligations hereunder. No arbitration or mediation shall be required as a condition precedent to filing any legal claim arising out of or relating to this Agreement. No arbitration or mediation shall be binding.
- 12.2 BREACH. Upon deliberate breach of the Agreement by either party, the non-breaching party shall be entitled to terminate the Agreement with notice, with all of the remedies it would have in the event of termination, and may also have such other remedies as it may be entitled to in law or in equity.

ARTICLE 13. SURVIVAL.

The provisions contained in this Professional Services Agreement shall survive the completion of or any termination of the Agreement, contract or other document to which it may accompany or incorporate by reference or which subsequently may be modified, unless expressly excepted from this Article upon consent of both parties.

CONSULTANT

CITY OF FRANKLIN

BY: _____
Consultant's Signature
TITLE: _____
Date: _____

BY: _____
Eric S. Stuckey
City Administrator
Date: _____

Approved as to Form:

Kristen L. Corn, Assistant City Attorney

SCOPE & FEE SUMMARY
Watson Branch Culvert Rehabilitation
664 Watson Branch Drive
City of Franklin, Williamson County, TN

COF 2016-0320
Attachment A
PG 1 of 5

SUMMARY TOTALS	Total Hours	Fee
TOTALS ACTUAL ==>	222	\$ 30,640

FEE	TOTAL HOURS	PM (PE/RLS)	Survey Crew	Senior Technician
	Loaded Rate	\$150.00	\$150.00	\$115.00
PERCENT OF TIME ==>	100%	58.56%	7.21%	34.23%
TOTAL HOURS ==>	222.0	130.0	16.0	76.0
Task 1.0 Data Collection and Preliminary Alternatives Analysis	76.0	44.0	16.0	16.0
Task 2.0 - Design Development and Stakeholder Review	40.0	40.0		
Task 3.0 - Final Design	52.0	12.0		40.0
Task 4.0 - Project Management	54.0	34.0		20.0
FEE TOTALS==>	\$ 30,640	\$ 19,500	\$ 2,400	\$ 8,740

Project Level Scope & Labor - Breakdown

	DESCRIPTION	TOTAL HOURS	PM (PE / RLS)	Survey Crew	Survey/CAD Technician
Task Number	Project: Watson Branch Culvert Rehabilitation	222.0	130.0	16.0	76.0
1.0	Data Collection and Preliminary Alternative Analysis				
1.1	Investigate existing conditions related to the deterioration of a 72 inch arched CMP and concrete entrance and exit ditches in the Maplewood Subdivision in the vicinity of Watson Branch	4.0	4.0		
1.2	Research to obtain existing utility, property, drainage area, and rehabilitation information	16.0	16.0		
1.3	Provide surveying services needed for hydraulic design, plans preparation, and easement preparation.	40.0	8.0	16.0	16.0
1.4	Preliminary alternative analysis, scoping, and presentation of proposal	16.0	16.0		
2.0	Design Development and Stakeholder Review				
2.1	Provide hydraulic calculations to confirm that hydraulic culvert performance is not impaired by rehabilitation, including consideration of inlet/outlet control. Provide consideration of inlet and outlet concrete ditch replacement or repair, including consideration of water undercutting and surrounding scour.	16.0	16.0		
2.2	Include consideration of seasonal construction needs, construction sequencing, construction materials and equipment staging, storm water permitting, temporary stormwater routing needs, and easement needs.	8.0	8.0		
2.3	Detail selected alternatives and related cost estimates	8.0	8.0		
2.4	Prepare a PowerPoint presentation of selected alternatives for consideration by the CoF, HOA, and permitting agencies.	8.0	8.0		
3.0	Final Design				
3.1	Adjust scope/fee/schedule based on input/results from above meetings.	4.0	4.0		
3.2	Complete final design and prepare construction documents.	48.0	8.0		40.0
4.0	Project Management				
4.1	Coordination Meetings	18.0	18.0		
4.2	Quality Control	4.0	4.0		
4.3	Project Management	4.0	4.0		

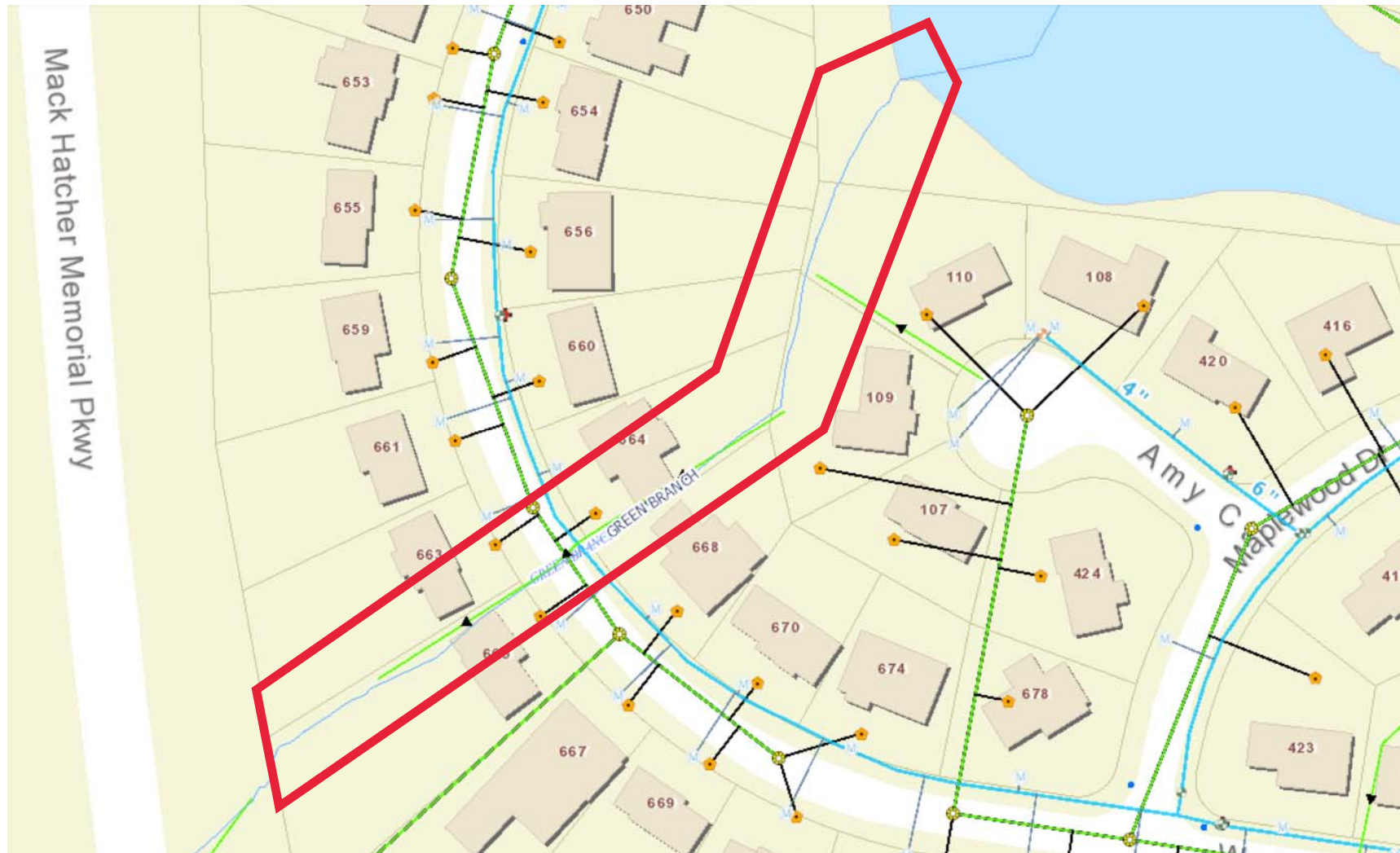
COF 2016-0320
Attachment A
PG 2 of 5

4.3	Bidding Assistance	28.0	8.0		20.0
-----	--------------------	------	-----	--	------

COF 2016-0320
Attachment A
PG 3 of 5

Watson Branch Culvert Replacement

COF 2016-0320
Attachment A
PG 4 of 5



Watson Branch Culvert Replacement

COF 2016-0320
Attachment A
PG 5 of 5



**CITY OF FRANKLIN, TENNESSEE
PROFESSIONAL SERVICES AGREEMENT
COF Contract No. 2016-0325**

THIS PROFESSIONAL SERVICES AGREEMENT ("Agreement") is by and between the City of Franklin, Tennessee, hereinafter referenced as City, and **ALFRED BENESCH AND COMPANY** hereinafter referenced as Consultant, who mutually agree as follows:

DECLARATIONS. City desires to retain Consultant to provide engineering, related technical, and other services in connection with City's project hereinafter referenced as Project. The Project is described as follows:

SR96W Multiuse Trail (Vera Valley Dr. to 5th Ave North)

1. SCOPE OF SERVICES. Consultant shall provide engineering related technical services for the Project in accordance with the Scope of Services (Services) as found in Attachment A which shall be considered as an integral part hereof.
2. Consultant shall submit as a part of Attachment A an individual Fee Schedule and a Completion Schedule for the Project based on the detailed Scope of Services.
3. In event of a conflict between this Agreement and the attached document(s), this Agreement shall supersede conflicting terms and conditions.
4. Consultant shall be paid on a monthly basis for work performed based on the Fee Schedule as contained in Attachment A in the Amount of ONE HUNDRED TWENTY-ONE THOUSAND THREE HUNDRED ELEVEN AND NO/100 DOLLARS (\$121,311.00).

The Board of Mayor and Aldermen Approved this Agreement on the _____ Day of _____ 201__.

TERMS AND CONDITIONS FOR PROFESSIONAL SERVICES

ARTICLE 1. SERVICES. Consultant will:

- 1.1 Act for City in a professional manner, using that degree of care and skill ordinarily exercised by and consistent with standards of competent consultants using the standards in the industry:
- 1.2 Consider all reports to be confidential and distribute copies of the same only to those persons specifically designated by the City.
- 1.3 Perform all services under the general direction of a senior professional employee, licensed and/or registered in the State of Tennessee, when appropriate.
- 1.4 Designate, in writing, the sole Project representative to coordinate with City the Services to be provided, including all contact information.
- 1.5 Unless provided for in the Project Scope of Services (Attachment A), Consultant shall perform all Services with his own forces (employees). Should sub-consultants be proposed to be used in the Project, a listing of said sub-consultants with Services to be performed shall be provided. After approval of this Agreement, no substitute for sub-consultants shall be allowed unless approved by City.
- 1.6 Retain pertinent records relating to the services performed for a period of seven (7) years following the completion of the work; during this period the records shall be available for review by City at all reasonable times.

ARTICLE 2. CITY'S RESPONSIBILITIES. City, or its authorized representative, will:

- 2.1 Provide Consultant with all information regarding the Project, which is available to, or reasonably obtainable by, the City.
- 2.2 Furnish right-of-entry onto the Project site for Consultant's necessary field studies and surveys. Consultant will endeavor to restore the site to its original condition and shall remain solely liable for all damages, costs and expenses, including reasonable attorneys' fees, for failure to make such restoration.
- 2.3 Designate, in writing, the sole Project representative to coordinate with and direct the Consultant, including all contact information.
- 2.4 Guarantee to Consultant that it has the legal capacity to enter into this contract and that sufficient monies are available to fund Consultant's compensation.

ARTICLE 3. GENERAL CONDITIONS.

- 3.1 Consultant, by the performance of services covered hereunder, does not in any way assume, abridge or abrogate any of those duties, responsibilities or authorities customarily vested in other professionals or agencies participating in the Project.

- 3.2 Consultant shall be responsible for the acts or omissions of any party involved in concurrent or subsequent phases of the Project acting upon written instruction issued by the Consultant.
- 3.3 Neither City nor Consultant may assign or transfer its duties or interest in this Agreement without written consent of the other party.
- 3.4 **ALLOCATION OF RISK AND LIABILITY; GENERAL.** Considering the potential liabilities that may exist during the performance of the services of this Agreement, the relative benefits and risks of the Project, and the Consultant's fee for the services rendered, and in consideration of the promises contained in this Agreement, the City and the Consultant agree to allocate and limit such liabilities in accordance with this Article.
- 3.5 **INDEMNIFICATION.** Consultant agrees to indemnify and hold City harmless from and against legal liability for all judgments, losses, damages, and expenses to the extent such judgments, losses, damages, or expenses are caused by Consultant's negligent act, error or omission in the performance of the services of this Agreement. In the event judgments, losses, damages, or expenses are caused by the joint or concurrent negligence of Consultant and City, they shall be borne by each party in proportion to its own negligence.
- 3.5.1 **SURVIVAL.** The terms and conditions of this paragraph shall survive completion of this services agreement.
- 3.6 **LIMITATIONS OF RESPONSIBILITY.** Consultant shall not be responsible for (a) construction means, methods, techniques, sequences, procedures, or safety precautions and programs in connection with the Project unless specifically undertaken in Attachment A, Scope of Services ; (b) the failure of any contractor, subcontractor, Consultant, or other Project participant, not under contract to Consultant, to fulfill contractual responsibilities to City or to comply with federal, state, or local laws, regulations, and codes; or (c) procuring permits, certificates, and licenses required for any construction unless such procurement responsibilities are specifically assigned to Consultant in Attachment A, Scope of Services.

ARTICLE 4. TERMINATION BY THE CITY. The City may terminate this Agreement in accordance with the following terms and conditions:

- 4.1 **Termination for Convenience.** The City may, when in the interests of the City, terminate performance under this Agreement with the Consultant, in whole or in part, for the convenience of the City. The City shall give written notice of such termination to the Consultant specifying when termination becomes effective. The Consultant shall incur no further obligations in connection with the work so terminated, other than warranties and guarantees for completed work and installed equipment, and the Consultant shall stop work when such

termination becomes effective. The Consultant shall also terminate outstanding orders and subcontracts for the affected work. The Consultant shall settle the liabilities and claims arising out of the termination of subcontracts and orders. The City may direct the Consultant to assign the Consultant's right, title and interest under termination orders or subcontracts to the City or its designee. The Consultant shall transfer title and deliver to the City such completed or partially completed work and materials, equipment, parts, fixtures, information and Contract rights as the Consultant has in its possession or control. When terminated for convenience, the Consultant shall be compensated as follows:

- (1) The Consultant shall submit a termination claim to the City specifying the amounts due because of the termination for convenience together with costs, pricing or other data required by the City. If the Consultant fails to file a termination claim within one (1) year from the effective date of termination, the City shall pay the Consultant the amount the City deems the Consultant is due.
- (2) The City and the Consultant may agree to the compensation, if any, due to the Consultant hereunder.
- (3) Absent agreement to the amount due to the Consultant, the City shall pay the Consultant the following amounts:
 - (a) Contract costs for labor, materials, equipment and other services accepted under this Agreement;
 - (b) Reasonable costs incurred in preparing to perform and in performing the terminated portion of the work, and in terminating the Consultant's performance, plus a fair and reasonable allowance for direct job site overhead and earned profit thereon (such profit shall not include anticipated profit or consequential damages); provided however, that if it reasonably appears that the Consultant would have not profited or would have sustained a loss if the entire Agreement would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss, if any;

The total sum to be paid the Consultant under this Section shall not exceed the total Agreement Price, as properly adjusted, reduced by the amount of payments otherwise made, and shall in no event include duplication of payment.

- 4.2 Termination for Cause. If the Consultant does not perform the work, or any part thereof, in a timely manner, supply adequate labor, supervisory personnel or proper equipment or materials, or if it fails to timely discharge its obligations for labor, equipment and materials, or proceeds to disobey applicable law, or otherwise commits a violation of a material provision of this Agreement, then the City, in addition to any other rights it may have against the Consultant or others, may terminate the performance of the Consultant, in whole or in part at the City's sole option, and assume possession of the Project Plans and materials and may complete the work.

In such case, the Consultant shall not be paid further until the work is complete. After Completion has been achieved, if any portion of the Contract Price, as it may be modified hereunder, remains after the cost to the City of completing the work, including all costs and expenses of every nature incurred, has been deducted by the City, such remainder shall belong to the Consultant. Otherwise, the Consultant shall pay and make whole the City for such cost. This obligation for payment shall survive the termination of the Agreement.

In the event the employment of the Consultant is terminated by the City for cause pursuant to this Section and it is subsequently determined by a Court of competent jurisdiction that such termination was without cause, such termination shall thereupon be deemed a Termination for Convenience under this Section and the provisions of Section 4.1 shall apply.

- 4.3 Termination for Non-Appropriation. The City may also terminate this Agreement, in whole or in part, for non-appropriation of sufficient funds to complete or partially complete the Project, regardless of the source of such funds, and such termination shall be on the terms of Section 4.1.
- 4.4 The City's rights under this Section shall be in addition to those contained elsewhere herein or provided by law.

ARTICLE 5. SCOPE OF SERVICES. Consultant shall provide the Services as described in Attachment A, Scope of Services.

- 5.1 By mutual agreement, this Agreement and scope can be amended by the parties. The scope and fee for any additional tasks or services under such

amendment shall be mutually negotiated and agreed to in writing prior to beginning such additional tasks or services.

5.2 ENVIRONMENTAL RESPONSIBILITY.

Where drilling/sampling services are involved, the samples obtained from the Project site are the property of the City. Should any of these samples be recognized by the Consultant to be contaminated, the City shall remove them from the Consultant's custody and transport them to a disposal site, all in accordance with applicable government statutes, ordinances, and regulations. For all other samples, the Consultant shall retain them for a sixty (60)-day period following the submission of the drilling/sampling report unless the City directs otherwise; thereafter, the Consultant shall discard the samples in accordance with all federal, state and local laws.

ARTICLE 6. SCHEDULE.

6.1 TIME OF THE ESSENCE. The parties agree that time is of the essence with respect to the parties' performance of all provisions of the Agreement.

6.2 Before executing this Agreement, the Consultant shall have prepared and submitted for approval to the City a Completion Schedule for the Project with milestones for the various stages (tasks) of the Services as outlined in the Scope of Services. The Consultant shall submit and obtain the City's approval for any proposed changes to the logic, durations, sequences, or timing of tasks as approved in the Completion Schedule.

6.3 FORCE MAJEURE. Neither party will be liable to the other for any delay or failure to perform any of the services or obligations set forth in this Agreement due to causes beyond its reasonable control, and performance times will be considered extended for a period of time equivalent to the time lost because of such delay plus a reasonable period of time to allow the parties to recommence performance of their respective obligations hereunder. Should a circumstance of force majeure last more than ninety (90) days, either party may by written notice to the other terminate this Agreement. The term "force majeure" as used herein shall mean the following: acts of God; strikes, lockouts or other industrial disturbances; acts of public enemies; orders or restraints of any kind of the government of the United States or of the State or any of their departments, agencies or officials, or any civil or military authority; insurrections, riots, landslides, earthquakes, fires, storms, tornadoes, droughts, floods, explosions, breakage or accident to machinery, transmission pipes or canals; or any other cause or event not reasonably within the control of either party.

- 6.4 Should City request changes in the scope, extent, or character of the Project, the fee and the time of performance of Consultant's Services as indicated in Attachment A shall be adjusted equitably.

ARTICLE 7. USE OF DOCUMENTS, DATA.

- 7.1 All Documents, including, but not limited to, reports, drawings, specifications, and computer software prepared by Consultant pursuant to this Agreement are instruments of service in respect to the Project. Consultant shall retain an ownership and property interest therein (including the right of reuse at the discretion of the Consultant) whether or not the Project is completed.
- 7.1.1 **USE OF DATA SYSTEMS:** Ownership, property interests and proprietary rights in data systems used by Consultant do not extend to the data created by or supplied to Consultant by the City; all rights to that data (including derivative or hidden data such as metadata) shall vest solely in City at the moment of creation.
- 7.1.2 **DISCLOSURE OF DOCUMENTS/DATA.** City may be required to disclose documents or data under state or federal law. City shall notify Consultant if a request for data or documents has been made and shall give Consultant a reasonable opportunity under the circumstances to respond to the request by redacting proprietary or other confidential information. Consultant waives any right to confidentiality of any document, e-mail or file it fails to clearly mark on each page as confidential or proprietary. In exchange, Consultant agrees to indemnify, defend, and hold harmless City for any claims by third parties relating thereto or arising out of (i) the City's failure to disclose such documents or information required to be disclosed by law, or (ii) the City's release of documents as a result of City's reliance upon Consultant representation that materials supplied by Consultant (in full or redacted form) do not contain trade secrets or proprietary information, provided that the City impleads Consultant and Consultant assumes control over that claim.
- 7.2 By execution of this Agreement, Consultant and his sub-consultant(s) grant the City a royalty-free, perpetual, irrevocable, and assignable license to use any and all intellectual property interest Consultant or his sub-consultant(s) possess to any drawings, details, specifications, documents, and other information created before each of their first involvement with the Project and subsequently incorporated into the Project's documents. City-furnished data that may be relied upon by Consultant is limited to the printed copies that are delivered to the Consultant pursuant to Article 2 of this Agreement. Any copyrighted electronic files furnished by City shall be used by Consultant only for

the Project as described herein. City's posting or publication of such documents created by Consultant for City shall constitute fair use and shall not constitute an infringement of Consultant's copyright, if any.

- 7.3 Documents that may be relied upon by City are limited to the printed copies (also known as hard copies) that are signed or sealed by the Consultant. Files in electronic media format of text, data, graphics, or of other types that are furnished by Consultant to City are only for convenience of City, unless the delivery of the Project in electronic media format has been dictated in Attachment A, Scope of Services. Any conclusion or information obtained or derived from electronic files provided for convenience will be at the user's sole risk.
- 7.4 Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within sixty (60) days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the party delivering the electronic files. Unless stated otherwise herein, Consultant shall not be responsible to maintain documents stored in electronic media format after acceptance by City.
- 7.5 When transferring documents in electronic media format, Consultant makes no representations as to long term compatibility, usability, or readability, of documents resulting from the use of software application packages, operating systems, or computer hardware differing from that as required of, and used by, Consultant at the beginning of this Project.
- 7.6 City may make and retain copies of Documents for information and reference in connection with use on the Project by the City, or his authorized representative. Such Documents are not intended or represented to be suitable for reuse by City or others on extensions of the Project or on any other project. Any such reuse or modifications without written verification or adaptation by Consultant, as appropriate for the specific purpose intended, will be at City's sole risk and without liability or legal exposure to the Consultant or to Consultant's sub-consultants.
- 7.7 If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- 7.8 Any verification or adaptation of the Documents for extensions of the Project or for any other project will entitle Consultant to further compensation at rates to be agreed upon by City and Consultant.

ARTICLE 8. INSURANCE.

- 8.1 During the performance of the Services under this Agreement, Consultant shall maintain the following minimum insurance:
- a) General Liability Insurance with a combined single limit of \$1,000,000 per occurrence and \$2,000,000 annual aggregate.
 - b) Automobile Liability Insurance with a combined single limit of \$1,000,000 for each person and \$1,000,000 for each accident.
 - c) Workers' Compensation Insurance Coverage A in accordance with statutory requirements and Coverage B, Employer's Liability Insurance, with a limit of \$500,000 for each occurrence.
 - d) Professional Liability Insurance with a limit of \$1,000,000 annual aggregate.
- 8.2 Consultant shall add the City an additional insured on all policies unless otherwise prohibited.
- 8.3 Consultant shall, upon execution of this Agreement, furnish City certificates of insurance, which shall include a provision that such insurance shall not be canceled without at least thirty (30) days' written notice to City.
- 8.4 No insurance, of whatever kind or type is to be considered as in any way limiting other parties' responsibility for damages resulting from their activities in the execution of the Project. City agrees to include, or cause to be included, in the Project's construction contract, such requirements for insurance coverage and performance bonds by the Project's construction contractor as City deems adequate to indemnify City, Consultant, and other concerned parties against claims for damages and to insure compliance of work performance and materials with Project requirements.

ARTICLE 9. PAYMENT.

- 9.1 City will pay Consultant for services and expenses in accordance with the Fee Schedule proposal submitted for the Project as part of the Scope of Services. Consultant's invoices will be presented at the completion of the work or monthly and will be payable upon receipt. Payment is due upon presentation of invoice and is past due thirty (30) days from invoice date. City shall give prompt written notice of any disputed amount and shall pay the remaining amount.
- 9.2 Consultant shall be paid in full for all services under this Agreement, including City authorized overruns of the Project budget or unforeseen need for Consultant's services exceeding the original Scope of Services.
- 9.3 **TRAVEL; EXPENSES**
City shall reimburse reasonable expenses, including travel and meals, when specified in the Scope of Services, but only in accordance with the City's Travel and Expense Policy and Procedures Manual. The maximum amount will be applied as of the date of travel and as listed

in the per diem reimbursement rates on the “CONUS” website developed by the United States General Services Administration, located at www.gsa.gov [click on ‘per diem rates’ under the ‘etools’ category].

ARTICLE 10. MISCELLANEOUS PROVISIONS

- 10.1 **EQUAL EMPLOYMENT OPPORTUNITY.** In connection with this Agreement and the Project, City and Consultant shall not discriminate against any employee or applicant for employment because of race, color, sex, national origin, disability or marital status. City and Consultant will take affirmative action to ensure that the contractor used for the Project does not discriminate against any employee and employees are treated during employment without regard to their race, age, religion, color, gender, national origin, disability or marital status. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination, rates of pay or other forms of compensation; and selection for training, including apprenticeship.
- 10.1.1 Consultant shall insert the foregoing provision in all contracts relating to this Project.
- 10.2 **TITLE VI – CIVIL RIGHTS ACT OF 1964.** City and Consultant shall comply with all the requirements imposed by Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d), 49 C.F.R., Part 21, and related statutes and regulations.
- 10.2.1 Consultant shall insert the foregoing provision in all contracts relating to this Project.
- 10.3 **NO THIRD PARTY RIGHTS CREATED.** City and Consultant each binds itself and its successors, executors, administrators, permitted assigns, legal representatives and, in the case of a partnership, its partners, to the other party to this Agreement and to their successors, executors, administrators, permitted assigns, legal representatives and partners of such other party in respect to all provisions of this Agreement. The Services provided for in this Agreement are for the sole use and benefit of City and Consultant. Nothing in this Agreement shall be construed to give any rights or benefits to anyone other than City and Consultant.
- 10.4 **WARRANTIES/LIMITATION OF LIABILITY/WAIVER.** City reserves all rights afforded to local governments under law for all general and implied warranties. City does not waive any rights it may have to all remedies provided by law and therefore any attempt by Consultant to limit its liability shall be void and unenforceable.

ARTICLE 11. EXTENT OF AGREEMENT.

- 11.1 **APPLICABLE LAW/CHOICE OF FORUM AND VENUE.** This Agreement is made under and will be construed in accordance with the laws of the State of Tennessee without giving effect to that state's choice of law rules. The parties' choice of forum and venue shall be exclusively in the courts of Williamson County, Tennessee. Any provision of this Agreement held to violate a law or regulation shall be deemed void, and all remaining provisions shall continue in force.
- 11.2 **ENTIRE AGREEMENT.** This Agreement, including these terms and conditions, represent the entire Agreement between City and Consultant for this Project and supersedes all prior negotiations, representations or agreements, written or oral. This Agreement may be amended only by written instrument signed by City and Consultant.

ARTICLE 12. DISPUTE RESOLUTION, BREACH.

- 12.1 If a dispute should arise relating to the performance of or payment for the Services under this Agreement, the aggrieved party shall notify the other party of the dispute within a reasonable time after such dispute arises. During the pendency of any dispute, the parties shall continue diligently to fulfill their respective obligations hereunder. No arbitration or mediation shall be required as a condition precedent to filing any legal claim arising out of or relating to this Agreement. No arbitration or mediation shall be binding.
- 12.2 **BREACH.** Upon deliberate breach of the Agreement by either party, the non-breaching party shall be entitled to terminate the Agreement with notice, with all of the remedies it would have in the event of termination, and may also have such other remedies as it may be entitled to in law or in equity.

ARTICLE 13. SURVIVAL.

The provisions contained in this Professional Services Agreement shall survive the completion of or any termination of the Agreement, contract or other document to which it may accompany or incorporate by reference or which subsequently may be modified, unless expressly excepted from this Article upon consent of both parties.

CONSULTANT

CITY OF FRANKLIN, TENNESSEE

BY: _____

Consultant's Signature

TITLE: _____

Date: _____

BY: _____

Eric S. Stuckey

City Administrator

Date: _____

Approved as to Form:

Kristen L. Corn, Assistant City Attorney



Alfred Benesch & Company
8 Cadillac Drive, Suite 250
Brentwood, Tennessee 37027
www.benesch.com
P 615-370-6079
F 615-627-4066

October 17, 2016

Mr. H. Gupta Borra, PE
Traffic Engineer
City of Franklin
109 Third Avenue South, Suite 142
Franklin, TN 37064

RE: Scope and Man-day Estimate to Provide Engineering Services
For SR 96 West Multi-Use Path from Vera Valley Road
To 5th Avenue North in Downtown Franklin, TN

Dear Mr. Borra:

As requested we have completed a scope and man-day estimate to provide professional engineering services for the above named project, we appreciate the opportunity to submit information. We understand our firm will be required to provide preliminary engineering, producing PS&E documents, right-of-way plans, permitting assistance, bidding assistance, and construction documents on the project described above for the City of Franklin. Our sub-consultant, Adams & Company Surveyors will provide the surveying service, Griggs and Maloney will provide the environmental NEPA documentation and TTL, Inc. will provide the geotechnical services should they be required.

Contact Person: Thomas M. Clinard, P.E.
Title: Senior Vice President
Firm Name: Alfred Benesch & Company
Address: 8 Cadillac Drive, Suite 250
Brentwood, Tennessee 37027
Phone: 615.370.6079
Email: tclinard@benesch.com

Sincerely,

A handwritten signature in blue ink that reads "Thomas M. Clinard, P.E.".

Thomas M. Clinard
Senior Vice President

STREET SCOPE OF SERVICES
SR 96 West Multi-use Path – From 5th Avenue to Vera Valley Drive
Alfred Benesch and Company
October 17, 2016

The Scope of Services as detailed below is to provide the City of Franklin “CLIENT” complete Roadway Construction Plans for the proposed SR 96 West Multi-use path from 5th Avenue to Vera Valley Drive. The improvements are anticipated to include the addition of a 10' multi-use path along the north side of the existing alignment of SR 96. Between 5th Avenue and Glass Street this is anticipated to be behind curb and gutter. From Glass Street to Vera Valley Drive this is anticipated to be an independent alignment. Along with these improvements it is anticipated to include closed drainage associated with the new curb and gutter.

The services to be performed (hereinafter referred to as “Services”) by Alfred Benesch and Company “CONSULTANT” shall be as follows:

Design Phase:

- 1.1 Project Administration and Coordination by the CONSULTANT will involve general project management, field inspections/site visits, and attendance at up to 3 separate progress meetings throughout the duration of the project, monthly conference calls with the City, agency coordination, and overall QA/QC of the deliverables.
- 1.2 Throughout the design phase the CONSULTANT will adhere to the TDOT Local Programs programmatic requirements as prescribed in the Local Government Guidelines for Management of Federal and State Funded Projects. Design plans for each phase of development (Preliminary, ROW, Construction) will be developed in accordance to the format; standards and specifications required by TDOT and further defined in the current version of the TDOT Roadway Design Division – Roadway Design Guidelines and other design guidance provided by TDOT.
- 1.3 The CONSULTANT will develop the necessary documents for completion of the Programmatic or C-List CE and Agency Coordination for the project. See the attached scope to be completed by Griggs and Maloney. Based on initial consultation with TDOT this scope includes completion of an archaeological report and the paperwork necessary for the PCE and Agency Coordination.
- 1.4 The CONSULTANT shall develop PRELIMINARY PLANS for the project based upon the approved alignment. The roadway design parameters for the project will be based upon current versions of the following design guides; “A Policy on Geometric Design of Highways and Streets”, American Association of State Highway and Transportation Officials; “TDOT Standards Specifications for Road and Bridge Construction”; City of Franklin Street Standards. These technical guidelines and specifications shall be followed unless superseded by the standard for the City of Franklin. During the PRELIMINARY PLANS phase of the project, the CONSULTANT will coordinate as necessary with the Tennessee Department of Transportation (TDOT).
- 1.5 Upon review and approval of the PRELIMINARY PLANS by the CLIENT, the CONSULTANT shall assist and attend one (1) Public Meeting with the CLIENT to inform local citizens of the proposed improvement project. Public meeting displays

and a PowerPoint presentation shall also be developed by the CONSULTANT for use in this meeting.

- 1.6 The CONSULTANT shall develop RIGHT-OF-WAY PLANS for the project at the direction of the CLIENT. During this phase the CONSULTANT will develop preliminary quantities and a preliminary estimate of probable cost.
- 1.7 The CONSULTANT shall develop the Deeds and Exhibits for use by the CLIENT in acquiring the additional right-of-way needed for the proposed project.
- 1.8 The CONSULTANT shall develop CONSTRUCTION PLANS for the project as directed by the CLIENT. In addition to the development of the final roadway plans, the CONSULTANT shall develop the required documents to obtain the required environmental permits for the project. All permit fees required will be paid directly by the CLIENT. Upon substantial completion (95%) of the project CONSTRUCTION PLANS by the CONSULTANT, the plans will be submitted for review by the CLIENT. Following receipt of all comments, final CONSTRUCTION PLANS will be completed and submitted for final review by the CLIENT. With the final submittal the quantities for the project will be finalized and the estimate of probable cost will be updated.
- 1.9 The CONSULTANT shall assist the CLIENT through-out the BIDDING phase of the project. This will include supplying the CLIENT with all required documents in Portable Document Format (PDF) suitable for printing. The CONSULTANT shall assist with preparation of the bid notice and advertisement, organize and lead the pre-bid meeting and assist the CLIENT as necessary with opening and evaluating the bids once received.
- 1.10 The CONSULTANT shall assist the CLIENT with organizing and leading the project pre-construction meeting during the Construction Phase of the project.
- 1.11 The CONSULTANT shall provide the CLIENT with final CADD documents for the project. These documents will be the final design documents utilized for Bidding.

Sub Consultants

- 2.1 TTL, Inc. will provide geotechnical services on an as needed basis, including up to eight borings to a depth up to 20 feet or auger refusal, laboratory testing to determine soil properties, stability analysis of existing slopes (if needed), and the preparation of a geotechnical report documenting our findings and recommendations.
- 2.2 Adams and Company Survey will provide the topographic survey and property line information for the project limits. This survey will be performed to TDOT standards and be tied to TDOT State Plane Coordinates.

For clarification and information the following services are specifically not included as part of the SCOPE OF SERVICES as previously described but can be added via a revised scope if deemed necessary by the CLIENT: Transportation Planning Report (TPR), traffic counts or analysis, utility design or relocation plan development, lighting design, signal design, right-of-way negotiation/acquisition services, offsite analysis of the existing drainage system, flood studies, mitigation design, pavement design, Construction Engineering and Inspections (CEI) to TDOT standards, advertisement of bid, printing of City review plans or bid documents, and landscape design.



P.O. Box 2968
Murfreesboro, TN 37133-2968
(615) 895-8221
Fax: (615) 895-0632

October 10, 2016

Mr. Sammie McCoy P.E., Vice-President
Alfred Benesch & Company
Creeside Crossing III
8 Cadillac Drive, Suite 250
Nashville, Tennessee 37027

**RE: QUOTATION – NEPA DOCUMENTS FOR STATE ROUTE 96 ENHANCEMENT PROJECT
FRANKLIN, TENNESSEE**

Dear Sammie:

Griggs & Maloney, Inc. (G&M) is pleased to provide the following quotation to provide NEPA documentation for the above referenced project. I have reviewed the information you provided and it is anticipated that the project will qualify as a Categorical Exclusion (CE) project with minimal environmental concerns.

G&M will coordinate with TDOT and prepare the NEPA documentation to include the tasks below:

Task 1. Completion of TDOT Agency Coordination Request to include Letters and responses to:

- U.S. Fish & Wildlife Service
- U.S Army Corps of Engineers
- Tennessee Wildlife Resources Agency
- Floodplain Management (FEMA)
- NRCS Soil Map and National Wetland Inventory
- Wetlands and Streams
- Wild & Scenic Rivers
- Air Quality
- Noise
- Section 4(f)
- Section (6f)
- Cultural Resources
- Native American Coordination
- Hazardous Materials
- Environmental Justice

Task 2. Streamline Documentation Checklist for NEPA Programmatic or C List Categorical Exclusion

Task 3. Cultural Resources – Archaeological/Historical workups to include:

- Section 106 National Historic Preservation Act Assessment
- Archaeology (Prehistoric)

Presented below is G&M's estimated cost to conduct the above work:

Task 1:	TDOT Agency Coordination Request Letters and responses	\$ 6,000
Task 2:	Streamline Documentation Checklist	included in Task 1
Task 3:	Cultural Resources – Archaeological/Historical workups	<u>\$ 2,500</u>

Estimated Total NEPA Cost¹	\$ 8,500
--	-----------------

G&M appreciates the opportunity to provide this proposal. If you have any questions or need additional information, please advise.

Sincerely,

GRIGGS & MALONEY, INC.


Steve Maloney

Approved By: _____

Signature

Date

¹ Other than site inspection, field investigations are not anticipated for this project and are not included in the estimated cost. Any field investigations such as jurisdictional waters, archaeological, or threatened and endangered species required by the regulatory agencies would be an added cost.



CITY OF FRANKLIN

MANDAY ESTIMATE AND FEE PROPOSAL

For Survey and Design

SR 96 West Multi-use Path

From 5th Ave. to Vera Valley Drive

Williamson County

General Comments:

Fee Proposal for adding a 10' multi-use path along one side or the route.

Alfred Benesch & Company

Thomas M. Clinard, PE

8 Cadillac Dr, Suite 250 Brentwood, TN
tclinard@benesch.com

Prepared By:

S. McCoy, PE

Date prepared:

10/14/2016

DESIGN MANDAY ESTIMATE



ROUTE: SR 96 West Multi-use Path
DESCRIPTION: From 5th Ave. to Vera Valley Drive
COUNTY: Williamson
CONSULTANT: Alfred Benesch & Company
Prepared By: S. McCoy, PE
Date Prepared: 10/14/2016

DESIGN TASKS	
1 Survey Office Work	14.0 MANDAYS
2 Design Development	60.0 MANDAYS
3 Plans Development	26.0 MANDAYS
4 Retaining Wall Concept Plans	3.0 MANDAYS
5 Easement Preparation & Exhibits	4.0 MANDAYS
6 Public Involvement	2.0 MANDAYS
7 Special Displays for Public Meeting	3.0 MANDAYS
8 TDOT Local Program Coordination & Submittals	3.0 MANDAYS
9 Preparation of Project Specifications and Bid Documents	2.0 MANDAYS
10 Preparation for Project Bid	2.0 MANDAYS
11 Organize and Lead Project Pre-Bid Meeting, RFI Response and assist with Bid Evaluation	4.0 MANDAYS
12 Organize and Lead Project Pre-Construction Meeting	2.0 MANDAYS
TOTAL DESIGN MANDAYS	125.0 MANDAYS

☒ Remove X to display instructions.

LABOR RATES

ROUTE: SR 96 West Multi-use Path
DESCRIPTION: From 5th Ave. to Vera Valley Drive
COUNTY: Williamson
CONSULTANT: Alfred Benesch & Company
 Prepared By: S. McCoy, PE
 Date Prepared: 10/14/2016



PERSONNEL	MANDAY RATE
PROJECT MANAGER II (\$128/hr)	\$ 1,024.00
PROJECT ENGINEER II (\$108/hr)	\$ 864.00
PROJECT ENGINEER I (\$92/hr)	\$ 736.00
DESIGNER II (\$78/hr)	\$ 624.00
DESIGNER I (\$72/hr)	\$ 576.00

TOTAL MANDAYS	125.00 M.D.
----------------------	-------------

PERCENTAGE OF TOTAL PROJECT	
PRELIMINARY PLANS	45.0 %
RIGHT-OF-WAY PLANS	30.0 %
CONSTRUCTION PLANS	25.0 %
TOTAL PROJECT	100.0 %

PRELIMINARY PLANS 45.0 % OF TOTAL PROJECT			
		MANDAYS	LABOR COSTS
PROJECT MANAGER II	4.0 % PREL. PLANS	2.3 M.D.	\$ 2,355.20
PROJECT ENGINEER II	16.0 % PREL. PLANS	9.0 M.D.	\$ 7,776.00
PROJECT ENGINEER I	30.0 % PREL. PLANS	16.9 M.D.	\$ 12,438.40
DESIGNER II	30.0 % PREL. PLANS	16.9 M.D.	\$ 10,545.60
DESIGNER I	20.0 % PREL. PLANS	11.3 M.D.	\$ 6,508.80
100.0 %			
TOTALS PRELIMINARY PLANS		56.3 M.D.	\$ 39,624.00
RIGHT-OF-WAY PLANS 30.0 % OF TOTAL PROJECT			
		MANDAYS	LABOR COSTS
PROJECT MANAGER II	4.0 % R.O.W. PLANS	1.5 M.D.	\$ 1,536.00
PROJECT ENGINEER II	16.0 % R.O.W. PLANS	6.0 M.D.	\$ 5,184.00
PROJECT ENGINEER I	20.0 % R.O.W. PLANS	7.5 M.D.	\$ 5,520.00
DESIGNER II	30.0 % R.O.W. PLANS	11.3 M.D.	\$ 7,051.20
DESIGNER I	30.0 % R.O.W. PLANS	11.3 M.D.	\$ 6,508.80
100.0 %			
TOTALS RIGHT-OF-WAY PLANS		37.5 M.D.	\$ 25,800.00
CONSTRUCTION PLANS 25.0 % OF TOTAL PROJECT			
		MANDAYS	LABOR COSTS
PROJECT MANAGER II	4.0 % CONST. PLANS	1.3 M.D.	\$ 1,331.20
PROJECT ENGINEER II	16.0 % CONST. PLANS	5.0 M.D.	\$ 4,320.00
PROJECT ENGINEER I	20.0 % CONST. PLANS	6.3 M.D.	\$ 4,636.80
DESIGNER II	30.0 % CONST. PLANS	9.4 M.D.	\$ 5,865.60
DESIGNER I	30.0 % CONST. PLANS	9.4 M.D.	\$ 5,414.40
100.0 %			
TOTAL MANDAYS CONSTRUCTION PLANS		31.3 M.D.	\$ 21,568.00
TOTAL LABOR COSTS			\$ 86,992.00

☒ Remove X to display instructions.

**DESIGN DIRECT EXPENSES**

ROUTE: SR 96 West Multi-use Path
DESCRIPTION: From 5th Ave. to Vera Valley Drive
COUNTY: Williamson
CONSULTANT: Alfred Benesch & Company
Prepared By: S. McCoy, PE
Date Prepared: 10/14/2016

				Item Subtotal	Item Total Cost
Reproduction Costs:					
Item Description		Number / Unit	Unit Price		
Photo-copies		0	\$ 0.10	\$ -	
Full size bond		0	\$ 1.00	\$ -	
Half size bond		0	\$ 1.00	\$ -	
Full size vellum		0	\$ 3.00	\$ -	
Half size vellum		0	\$ 10.00	\$ -	
Color Printing		0	\$ 0.73	\$ -	
Travel:					
Number of Trips		No. of Miles/No. of People	RATE *		
Per Diem (75%)			\$ 0.00 Per Day	\$ -	
Per Diem			\$ 0.00 Per Day	\$ -	
Transportation		X 70.00 Miles X	\$ 0.55 Per Day	\$ -	
Lodging			\$ 0.00 Per Person	\$ -	
Other Expenses:					
Sub-Consultants		Unit Price			
Griggs and Maloney, Inc. (Agency Coordination, NEPA CE, Cultural)		\$	8,500.00	\$ 8,500.00	
Adams and Company Surveyors (field work & deed research)		\$	16,518.56	\$ 16,518.56	
TTL, Inc.		\$	9,300.00	\$ 9,300.00	
				\$	34,318.56
TOTAL DIRECT EXPENSES					\$ 34,318.56

	DIRECT EXPENSES PRELIMINARY PLANS	\$ 25,018.56
	DIRECT EXPENSES ROW PLANS	\$ 9,300.00
	DIRECT EXPENSES CONSTRUCTION PLANS	\$ -

FEE PROPOSAL

ROUTE: SR 96 West Multi-use Path
 DESCRIPTION: From 5th Ave. to Vera Valley Drive
 COUNTY: Williamson
 CONSULTANT: Alfred Benesch & Company
 Prepared By: S. McCoy, PE
 Date Prepared: 10/14/2016

**Preliminary Design**

Labor	=	\$	39,624.00
Direct Expense	=	\$	25,018.56
Total Preliminary Plans	=	\$	64,642.56

Right-of-Way Design

Labor	=	\$	25,800.00
Direct Expense	=	\$	9,300.00
Total Right-of-Way Plans	=	\$	35,100.00

Construction Design

Labor	=	\$	21,568.00
Direct Expense	=	\$	-
Total Construction Plans	=	\$	21,568.00

Totals

Labor	=	\$	86,992.00
Direct Expense	=	\$	34,318.56
Total Project	=	\$	121,310.56

Total Lump Sum Fee:	\$ 121,310.56
----------------------------	----------------------



CITY OF FRANKLIN TENNESSEE

REVISION TO 2014 ROAD IMPACT FEE STUDY

Prepared by
Duncan Associates

August 2016

Table of Contents

INTRODUCTION AND SUMMARY	1
BACKGROUND AND LEGAL FRAMEWORK	3
BENEFIT DISTRICTS.....	7
MAJOR ROADWAY SYSTEM	8
METHODOLOGY	10
TRAVEL DEMAND SCHEDULE	13
COST PER SERVICE UNIT.....	17
NET COST PER SERVICE UNIT.....	20
POTENTIAL FEE SCHEDULES	23
APPENDIX	24

List of Tables

Table 1. Current and Updated Fees for Arterials and All Major Roads	2
Table 2. History of Road Impact Fees, 2005-2013	4
Table 3. Road Capacity by Classification	11
Table 4. Expected Vehicle-Miles of Travel.....	14
Table 5. Actual Existing Vehicle-Miles of Travel.....	14
Table 6. Local Trip Length Adjustment Factors.....	15
Table 7. Average Trip Length by Trip Purpose.....	15
Table 8. Travel Demand by Land Use	16
Table 9. Road Improvement Costs.....	17
Table 10. Road Improvement Cost per Lane-Mile.....	17
Table 11. Average Capacity per Lane	18
Table 12. Cost per Vehicle-Mile of Capacity	18
Table 13. Existing Level of Service	19
Table 14. Outstanding Road Debt Issues	20
Table 15. Replacement Value of Excess Arterial Capacity.....	21
Table 16. Road Improvements and Funding, FY 2011-2017	21
Table 17. State/Federal Funding Credit.....	22
Table 18. Net Cost per Vehicle-Mile of Travel	22
Table 19. Potential Fee Schedules, Arterial and All Major Roads	23
Table 20. Existing Major Roadway Inventory	24

INTRODUCTION AND SUMMARY

The City of Franklin's current road impact fee covers only the cost of arterial roads. The road impact fee update study completed in 2014¹ calculated an option to include collector roads as well. It recommended that if collector road costs are included in the fee, the City should consider dividing its jurisdiction into four benefit districts in order to recognize the more localized benefit of collector roads. The City has not yet adopted updated road impact fees based on the 2014 study, but would like to have the option to include major collectors, rather than all collectors. This report revises the 2014 study in two ways: (1) updating the classification of roadways to reflect the City's current functional classification, and (2) removing minor collector roads from the fee calculations. The other study inputs are unchanged from the 2014 study.

Approach and Findings

The 2014 study revised the road impact fee calculations by incorporating the most current data, including the most recent road improvement costs and the latest version of the *Trip Generation* manual. The inclusion of collector roads in the road impact fee was the major policy option provided in the 2014 update. It would require the City to provide credit against the fees for developer's who dedicate right-of-way or construct collectors within their subdivisions. Finally, it would require the restriction of the collector portion of fees collected to be earmarked to be spent in the same benefit district in which it was paid.

In contrast, the inclusion of major collectors only, which is the option provided in this revision, would not require the City to provide developer credits for internal subdivision collector roads, and would not require the creation of benefit districts. Major collectors, some of which are four-lane roads, are similar in function to minor arterials and can reasonably be included in a city-wide service area and benefit district.

The 2014 update proposed two significant changes to the methodology: design costs were added to construction and right-of-way costs, and the debt credit was eliminated. Design costs are a necessary component of road improvements, averaging about 6% of total project costs. The debt credit was eliminated because the City's outstanding road-related debt was for previous arterial street improvements that had created excess capacity for growth, and road impact fees are being used to retire this debt.

The updated arterial fees are generally somewhat higher than current fees, although there is some variation by land use based on updated travel demand factors (trip generation rates and average trip lengths). The increase is primarily due to increased construction costs and the addition of design costs. If major collector roads are added to the city-wide arterial road fee, the resulting fee for all major roads would be significantly higher than the current arterial road fee for all land use categories, as shown in Table 1 below. The City could adopt the updated fees at less than 100% of the of the maximum fees calculated in this study, and/or phase-in the updated fees based on an increasing percentage of the maximum fees over a period of time.

¹ Duncan Associates, *Road Impact Fee Update*, March 2014.

Table 1. Current and Updated Fees for Arterials and All Major Roads

Land Use Type	Unit	Current Fee	Arterials Only		All Major Roads	
			Updated Fee	Percent Change	Potential Fee	Percent Change
Single-Family Detached	Dwelling	\$4,227	\$4,833	14%	\$6,327	50%
Multi-Family	Dwelling	\$2,766	\$3,066	11%	\$4,011	45%
Mobile Home Park	Site	\$2,079	\$2,302	11%	\$3,010	45%
Congregate Care Facility	Dwelling	\$943	\$1,078	14%	\$1,408	49%
Hotel/Motel	Room	\$2,350	\$2,525	7%	\$3,313	41%
Retail/Commercial						
Shopping Center/Gen. Retail	1,000 sq. ft.	\$5,996	\$6,381	6%	\$8,366	40%
Restaurant, Quality	1,000 sq. ft.	\$11,104	\$11,878	7%	\$15,578	40%
Restaurant, Fast Food	1,000 sq. ft.	\$16,171	\$17,240	7%	\$22,523	39%
Office/Institutional						
Office, General	1,000 sq. ft.	\$4,045	\$4,570	13%	\$5,978	48%
Hospital	1,000 sq. ft.	\$5,779	\$5,288	-8%	\$6,916	20%
Nursing Home	1,000 sq. ft.	\$2,654	\$3,040	15%	\$3,974	50%
Church	1,000 sq. ft.	\$2,406	\$3,218	34%	\$4,208	75%
Elementary/Sec. School	1,000 sq. ft.	\$1,185	\$1,584	34%	\$2,073	75%
Industrial						
Manufacturing	1,000 sq. ft.	\$1,776	\$2,002	13%	\$2,622	48%
Industrial Park	1,000 sq. ft.	\$3,237	\$3,586	11%	\$4,692	45%
Business Park	1,000 sq. ft.	\$5,934	\$6,524	10%	\$8,534	44%
Warehouse	1,000 sq. ft.	\$1,655	\$1,868	13%	\$2,441	47%
Mini-Warehouse	1,000 sq. ft.	\$809	\$869	7%	\$1,142	41%

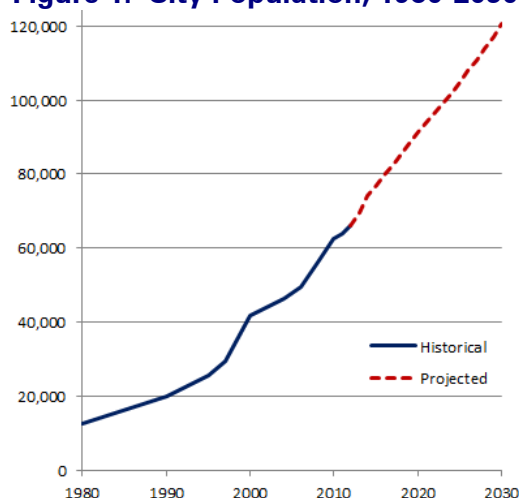
Source: Current fees from Table 2; updated and potential fees from Table 19.

BACKGROUND AND LEGAL FRAMEWORK

Growth Context

Impact fees are most appropriate for communities that are experiencing rapid growth. The City of Franklin added over 20,000 new residents in each of the last two decades, and is projected to add about 29,000 more in each of the next two decades, as illustrated in Figure 1.² This strong growth will necessitate numerous capacity-expanding improvements to the major roadway system. The City's *Major Thoroughfare Plan* projects that the population of the city and its urban growth area will increase from 74,650 in 2008 to 138,819 by 2035, and recommends 80 road construction and road widening projects, most of which will expand capacity to accommodate the resulting increase in traffic.³

Figure 1. City Population, 1980-2030



Background

Impact fees are charges that are assessed on new development to help pay for the capital facility costs they impose on the community. Unlike other types of developer exactions, impact fees are based on a standard formula and a pre-determined fee schedule. Essentially, impact fees require that each new residential or commercial project pay its pro-rata share of the cost of new infrastructure facilities required to serve that development.

The City of Franklin has assessed road impact fees since 1988. The road impact fee ordinance requires the City to “revise the road impact fee study and the schedule of impact fees at least once every five years.” In addition, when the impact fees were reviewed in 2005, the Board requested subsequent reviews every two to three years. The purpose of this study is to update the City of Franklin’s road impact fee based on the most appropriate methodology and the most current data.

In 1987, the City of Franklin sought and obtained authority from the Tennessee legislature to enact road impact fees. That same year, Duncan Associates was commissioned to prepare an impact fee study to calculate the maximum road impact fees that the City could charge. Ordinance 1037 enacting road impact fees was adopted by the City in June 1988. The fees were adopted at 60 percent of the maximum fees calculated in the original study.

Duncan Associates prepared five subsequent updates of Franklin’s road impact fees, as described below.

²City of Franklin, Planning and Sustainability Department, 2012 *Development Report*.

³Wilbur Smith and Associates, *City of Franklin Major Thoroughfare Plan*, adopted September 23, 2010.

2000. Twelve years after the initial adoption, the City updated the road impact fees, based on a study prepared in 2000. The updated fees were adopted in July 2000 with the increase phased in over two years. No significant changes to the methodology were made in this update.

2005. Five years later, the road fees were updated based on a new study. No significant changes to the methodology were made in this update.

2007. Prior to the 2007 update, the road fees were based the cost of arterial roads, excluding I-65 and the Mack Hatcher expressway, and were based on peak hour travel. The 2007 update added Mack Hatcher to the definition of the major road system and based the fees on average daily travel.

2010-2013. Fees calculated in a study by Duncan Associates in 2010 were adopted in 2011, but phased in over two years (25% on July 1, 2011, 65% on July 1, 2012, and 100% of July 1, 2013). The 2010 update provided the options of including right-of-way (ROW) costs and adding collector costs. The City opted to add ROW costs but to continue to exclude collectors.

2014. A study prepared in 2014 added design costs, and calculated an option that would add the cost of collector roads. The fee schedules have not been modified based on the 2014 study.

The fees that have been in effect from 2005 to present are summarized in Table 2.

Table 2. History of Road Impact Fees, 2005-2013

Land Use Type	Unit	2005	2007	2011	2012	2013
Single-Family Detached	Dwelling	\$1,617	\$2,191	\$2,700	\$3,514	\$4,227
Multi-Family	Dwelling	\$896	\$1,537	\$1,844	\$2,336	\$2,766
Mobile Home Park	Site	\$1,003	\$1,144	\$1,378	\$1,752	\$2,079
Congregate Care Facility	Dwelling	\$221	\$440	\$566	\$767	\$943
Hotel/Motel	Room	\$649	\$1,126	\$1,432	\$1,922	\$2,350
Retail/Commercial						
Shopping Center/Gen. Retail	1,000 sq. ft.	\$3,508	\$2,681	\$3,510	\$4,836	\$5,996
Restaurant, Quality	1,000 sq. ft.	\$3,773	\$4,964	\$6,499	\$8,955	\$11,104
Restaurant, Fast Food	1,000 sq. ft.	\$5,609	\$7,177	\$9,426	\$13,023	\$16,171
Office/Institutional						
Office, General	1,000 sq. ft.	\$2,716	\$1,891	\$2,430	\$3,291	\$4,045
Hospital	1,000 sq. ft.	\$1,199	\$2,867	\$3,595	\$4,760	\$5,779
Nursing Home	1,000 sq. ft.	\$449	\$996	\$1,411	\$2,074	\$2,654
Church	1,000 sq. ft.	\$754	\$1,127	\$1,447	\$1,958	\$2,406
Elementary/Sec. School	1,000 sq. ft.	\$749	\$543	\$704	\$960	\$1,185
Industrial						
Manufacturing	1,000 sq. ft.	\$1,529	\$830	\$1,067	\$1,445	\$1,776
Industrial Park	1,000 sq. ft.	\$1,497	\$1,513	\$1,944	\$2,634	\$3,237
Business Park	1,000 sq. ft.	\$1,998	\$2,773	\$3,563	\$4,828	\$5,934
Warehouse	1,000 sq. ft.	\$704	\$1,078	\$1,222	\$1,453	\$1,655
Mini-Warehouse	1,000 sq. ft.	\$417	\$388	\$493	\$662	\$809

Notes: Fees effective July 1, 2011 based on 25% of increase from 2007 fees to 2013 fees; fees effective July 1 2012 based on 65% of increase from 2007 fees to 2013 fees; fees effective July 1, 2013 based on Duncan Associates, *Road Impact Fee Update*, November 2010 (which included right-of-way costs).

Legal Framework

Franklin received special authorization to impose a road impact fee from House Bill 1311, which was passed during the 1987 session of the Tennessee legislature. While Franklin’s authorizing act provides a broad grant of authority, impact fees must also comply with constitutional standards that have been developed by the courts to ensure that local governments do not abuse their power to regulate the development of land. The courts have gradually developed guidelines for constitutionally valid impact fees, based on a “rational nexus” that must exist between the regulatory fee or exaction and the activity that is being regulated. The standards set by court cases generally require that an impact fee meet a two-part test:

- 1) The fees must be proportional to the need for new facilities created by the new development; and
- 2) The expenditure of impact fee revenues must provide benefit to the fee-paying development.

Impact fees for various types of developments should be proportional to the impact of each development on the need to construct additional or expanded facilities. The fees do not have to recover the full cost, but if the fees are reduced by a percentage from the full cost, the percentage reduction should apply evenly to all types of developments.

Impact fees were pioneered by local governments long before state legislatures passed explicit enabling acts. The authority to adopt such fees was found in local government’s “police power” to regulate development so as to protect the health, safety and welfare of its citizens. Developers challenged early impact fees, and state court decisions gradually developed a body of case law setting out the standards that should govern impact fees. This section spells out our understanding of the general principles of impact fees and some implications for calculating Franklin’s impact fees.

A fundamental principle of impact fees, rooted in both case law and norms of equity, is that impact fees should not charge new development for a higher level of service than is provided to existing development. While the impact fees could be based on a higher level of service than the one existing at the time of the adoption of the fees, two things are required if this is done. First, another source of funding other than impact fees must be identified and committed to fund the capacity deficiency created by the higher level of service. Second, the impact fees must generally be reduced to ensure that new development does not pay twice for the same level of service, once through impact fees and again through general taxes that are used to remedy the capacity deficiency for existing development. In order to avoid these complications, our general practice is to base the impact fees on the existing level of service.

A corollary principle is that new development should not have to pay twice for the same level of service. As noted above, if impact fees are based on a higher-than-existing level of service, the fees should be reduced by a credit that accounts for the contribution of new development toward remedying the existing deficiencies. A similar situation arises when the existing level of service has not been fully paid for. Outstanding debt on existing facilities that are counted in the existing level of service will be retired, in part, by revenues generated from new development. To avoid requiring new development to pay more than its proportional share, impact fees should be reduced to account for future tax payments that will retire outstanding debt on existing facilities.

In general, credit against impact fees is not required for funding that has historically been used for, or that is committed to be used for growth-related, capacity-expanding improvements. While new development may contribute toward such funding, so does existing development, and both existing and new development benefit from the higher level of service that the additional funding makes possible. However, consistent with past studies and standard impact fee practice, credit is provided in this update for State and Federal funding.

The City's road impact fee ordinance allows developers to receive offsets against their impact fees for right-of-way (ROW) dedication or construction of a thoroughfare shown on the Major Thoroughfare Plan map. Prior to the 2010 update, ROW costs had been excluded from the impact fee calculation, because the City required developers to dedicate a minimum of 60-foot ROW width without credit against the impact fee. The City is now obligated to provide credit for ROW dedication. If major collectors are included in the fee, developers will also need to receive credit for ROW dedications and improvements for major collector road dedications and improvements.

BENEFIT DISTRICTS

The 2014 study proposed benefit districts to acknowledge that collector roads serve a more limited area than arterials. It recommended that if collector roads were included, the collector road portion of the fees should be restricted to be spent in a subarea of the city, thus ensuring a stronger nexus between fee payment and benefit received.

Impact fee case law states that impact fees must be spent so as to provide a reasonable benefit to the fee-paying development. One way of ensuring reasonable benefit is to create multiple benefit districts to ensure that the development fees paid by a development are spent closer to the development than would be the case under a single jurisdiction-wide benefit district. The need for multiple benefit districts increases with the geographic size of the community. On the other hand, the larger the number of benefit districts, the more difficult it is to accumulate sufficient funds in any one district to make any significant improvements. Deciding on the appropriate number and location of benefit districts requires balancing the need to show reasonable benefit to fee payers with the need to maintain sufficient flexibility in impact fee expenditures to address priority improvement needs.

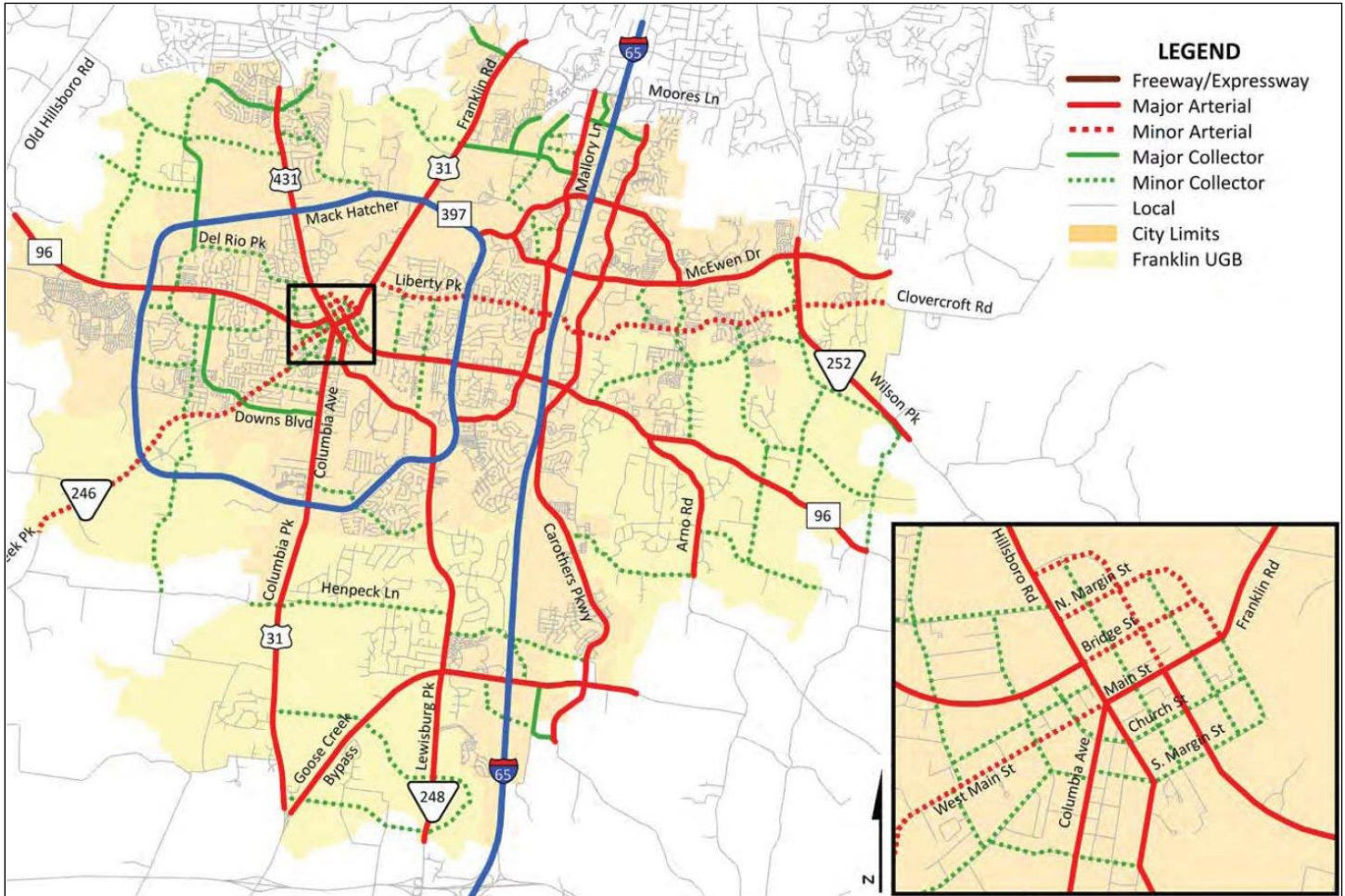
The City's current impact fee ordinance designates the entire area within the corporate boundaries as a single benefit district. The fact that the City's road impact fees are currently limited to funding improvements to major thoroughfares (expressways and arterials) strengthens the case for a single benefit district. Major thoroughfares are designed to move traffic from one part of the city to another, and the entire network acts as an integrated system. While minor collector roads often serve small areas, major collectors are very close in function to minor arterials. Most of the City's existing major collectors have 3-4 lanes. Major collectors can reasonably be included in the definition of the city-wide major roadway system. Consequently, no benefit districts are proposed as part of the current revision.

MAJOR ROADWAY SYSTEM

A road impact fee system should include a clear definition of the major roadway system that is to be funded with the impact fees. In the City's current ordinance, the use of impact fee proceeds is restricted to arterial road improvements, which is defined as "any capital improvement, including but not limited to new roads, additional lanes, widened lanes, intersection improvements, turn lanes, bridges, traffic signals, intelligent transportation system (ITS) improvements, and associated drainage facilities, that expands the capacity of the city's arterial road system." The arterial road system is defined as "all existing and planned arterials, excluding Interstate 65, identified on the city's adopted Major Thoroughfare Plan map." The major roadway system includes State roads as well as City roads. The current ordinance and impact fee excludes major and minor collector roads from the impact fee calculations. As mentioned in the introduction, this revision includes the option of expanding the impact fee to include major collector roads. Including major collector roads in the calculation of the impact fee update will allow the City to program future impact fee revenue for planned major collector road improvements. If this option is adopted, the City would need to amend the impact fee ordinance to allow for the expenditure of impact fee funds for major collector road improvements by amending the definition of major roadway system.

The major roadway system is thus currently defined as existing and planned arterials identified on the adopted Major Thoroughfare Plan map (illustrated in Figure 2 on the following page) within the city limits. Interstate 65, which primarily serves through traffic rather than local traffic, is excluded from the arterial roadway system to be funded with the road impact fees. The Major Thoroughfare Plan map also identifies the major collector roads that are included in this update. Capacity-expanding improvements include any improvements to major roadways, including signalization and intersection improvements, which primarily have the effect of expanding capacity of the arterial roadway system, rather than providing greater access to a particular development or promoting safety.

Figure 2. Major Thoroughfare Plan Map



METHODOLOGY

Key components of the road impact fee methodology described in this chapter include service units, roadway capacity and the overall formula for calculating the fees. Subsequent chapters address the travel demand schedule, cost per service unit and net cost per service unit (revenue credits). The final chapter presents the updated road impact fee schedule.

Service Units

Service units create the link between supply (roadway capacity) and demand (traffic generated by new development). An appropriate service unit basis for road impact fees is vehicle-miles of travel (VMT). Vehicle-miles is a combination of the number of vehicles traveling during a given time period and the distance (in miles) that these vehicles travel.

The two time periods most often used in traffic analysis are the 24-hour day (average daily trips or ADT) and the single hour of the day with the highest traffic volume (peak hour trips or PHT). As in the prior impact fee study, this update utilizes the ADT for calculating the road cost component of the impact fee and ADT for calculating the credit component of the impact fee. While peak hour trip (PHT) generation rates are appropriate for assessing the impact of a new development on the need for road improvements during the evening peak hour, they tend to be more variable than average daily trips depending on size and demographic make-up of a community. Average daily trips is also the best measure for the amount of motor fuel tax that will be generated by new development, which is used to calculate the revenue credit for each land use type. The Tennessee Department of Transportation measures traffic counts on major roads using average daily trips; as a result, utilizing the ADT for both the cost and credit component of the impact fee eliminates the need to convert available traffic counts and projected volumes into PHT. For these reasons, the consultant recommends continuing to use average daily VMT as the service unit for the road impact fee update.

Roadway Capacity

Nationally-accepted transportation levels of service (LOS) categories have been developed by the transportation engineering profession. Six categories, ranging from LOS A to LOS F, generally describe driving conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. LOS A represents free flow, while LOS F represents the breakdown of traffic flow, characterized by stop-and-go conditions.

In contrast to LOS, service volume capacity is a quantitative measure, expressed in terms of the rate of flow (vehicles passing a point during a period of time). Service volume capacity represents the maximum rate of flow that can be accommodated by a particular type of roadway while still maintaining a specified LOS. The service volume capacity at LOS E represents the maximum volume that can be accommodated before the flow breaks down into stop-and-go conditions that characterize LOS F, and thus represents the ultimate capacity of the roadway.

As stated in the City's *Major Thoroughfare Plan*, LOS C is generally considered to be the minimum acceptable LOS for the City of Franklin. This is consistent with the City's road impact fees, which are based on LOS C. The City's 2004 *Major Thoroughfare Plan Update* identifies maximum daily service volumes at LOS C that are appropriate for planning purposes for a wide variety of roadway facilities (see Table 3).

Table 3. Road Capacity by Classification

Functional Classification	No. of Lanes	Vehicles/Day (LOS C)	Capacity/Lane
Collector	2	9,100	4,550
Collector	3	11,300	3,767
Collector	4	14,900	3,725
Collector	5	19,000	3,800
Arterial	2	11,600	5,800
Arterial	3	14,400	4,800
Arterial	4	19,000	4,750
Arterial	5	21,900	4,380
Expressway	2	28,100	14,050
Expressway	4	56,200	14,050
Expressway	6	84,300	14,050

Source: RPM Transportation Consultants, *City of Franklin Major Thoroughfare Plan Update*, August 2004.

Formula

The methodology used in Franklin's current road impact fee system is based on a "consumption-based" approach. The consumption-based model simply charges a new development the cost of replacing the capacity that it consumes on the major roadway system. That is, for every vehicle-mile of travel (VMT) generated by the development, the road impact fee charges the net cost to construct an additional vehicle-mile of capacity (VMC). The consumption-based methodology is maintained in this update, and credits continue to be provided for outstanding road-related debt and outside funding.

Since travel is never evenly distributed throughout a roadway system, actual roadway systems require more than one unit of capacity for every unit of demand in order for the system to function at an acceptable level of service. Suppose for example, that the City completes a major arterial widening project. The completed arterial is likely to have a significant amount of excess capacity for some period of time. If the entire system has just enough capacity to accommodate all of the vehicle-miles of travel, then the excess capacity on this segment must be balanced by another segment being over-capacity. Clearly, roadway systems in the real world need more total aggregate capacity than the total aggregate demand, because the traffic does not always precisely match the available capacity. Consequently, the standard consumption-based model generally underestimates the full cost of accommodating new development at the existing level of service. Nevertheless, it is a conservative, legally-defensible methodology that is simpler to update and provides more flexibility in the expenditure of funds than the alternative improvements-driven approach.

In most rapidly growing communities, some of the roadways will be experiencing an unacceptable level of congestion at any given point in time. However, it is not necessary to address segment-specific existing deficiencies in a consumption-based system, which, unlike an improvements-driven system, is not designed to recover the full costs to maintain the desired LOS on all roadway segments. Instead, it is only designed to maintain a minimum one-to-one overall ratio between system demand and system capacity. As discussed above, virtually all major roadway systems have more capacity (VMC) than demand (VMT) on a system-wide basis. Consequently, under a consumption-based system, the level of service standard is really a system-wide VMC/VMT ratio of 1.00. Since Franklin's major roadway system currently operates at better than this level of service (see Table 13 on page 19), there are no existing deficiencies on a system-wide basis.

The recommended impact fee formula is presented in Figure 3.

Figure 3. Road Impact Fee Formula

$$\text{Impact Fee} = \text{VMT} \times \text{NET COST/VMT}$$

$$\text{VMT} = \text{TRIPS} \times \% \text{NEW} \times \text{LENGTH} \div 2$$

$$\text{NET COST/VMT} = \text{COST/VMC} \times \text{VMC/VMT} - \text{CREDIT/VMT}$$

Where:

$$\text{TRIPS} = \text{Trip ends during an average weekday}$$

$$2 = \text{Dividing by two avoids double-counting trips for origin and destination}$$

$$\% \text{ NEW} = \text{Percent of trips that are primary trips, as opposed to pass-by or diverted-linked trips}$$

$$\text{LENGTH} = \text{Average length of a trip on the major road system}$$

$$\text{COST/VMC} = \text{Average cost to add a new daily vehicle-mile of capacity}$$

$$\text{VMC/VMT} = \text{System-wide ratio of VMC to VMT on major road system (assumed 1:1)}$$

$$\text{CREDIT/VMT} = \text{Revenue credit per VMT}$$

TRAVEL DEMAND SCHEDULE

The travel demand generated by specific land use types is a product of three factors: 1) trip generation, 2) percent primary trips and 3) trip length. The first two factors are well documented in the professional literature, and the average trip generation characteristics identified in studies of communities around the nation should be reasonably representative of trip generation characteristics in Franklin. In contrast, trip lengths are much more likely to vary between communities, depending on the geographic size and shape of the community and its major roadway system.

Trip Generation

Trip generation rates are based on information published in the most recent edition of the Institute of Transportation Engineers' (ITE) Trip Generation manual. Trip generation rates represent trip ends, or driveway crossings from the site of a land use. Thus, a one-way trip from home to work counts as one trip end for the residence and one trip end for the work place. To avoid over-counting, all trip rates have been divided by two. This places the burden of travel equally between the origin and destination of the trip and eliminates double-charging for any particular trip.

Primary Trip Factor

Trip rates also need to be adjusted by a "primary trip factor" to exclude pass-by and diverted trips. This adjustment is intended to reduce the possibility of over-counting additional travel induced by the new development. Pass-by trips are those trips that are already on a particular route for a different purpose and simply stop at a development on that route. For example, a stop at a convenience store on the way home from the office is a pass-by trip for the convenience store. A pass-by trip does not create an additional burden on the street system and therefore should not be counted in the assessment of impact fees. A diverted-linked trip is similar to a pass-by trip, but a diversion is made from the regular route to make an interim stop. The reduction for pass-by and diverted trips utilized in this study was drawn from the ITE *Trip Generation Handbook* and other published information.

Average Trip Length

The average trip length is the most difficult travel demand factor to determine. In the context of a road impact fee using a consumption-based methodology, the relevant input is the average length of a trip on the major roadway system within the city limits. The starting point is national data for average trip length for specific land uses and trip purposes. However, these national trip lengths are likely to be unrepresentative of travel on the City's major roadway system. An adjustment factor can be derived by dividing the VMT actually observed on the major roadway system by the VMT that would be expected using national average trip lengths and trip generation rates.

The first step in developing the adjustment factor for the local trip length is to estimate the total VMT that would be expected on Franklin's major roadway system based on national travel demand characteristics. Existing land use data for the City were compiled using information from the Franklin Planning Department.

Existing land uses are multiplied by trip generation rates, percent primary trips and average trip lengths and summed to estimate total city-wide VMT. As shown in Table 4, existing land uses within the city limits, using national trip length data, would be expected to generate approximately 2.28 million VMT every day.

Table 4. Expected Vehicle-Miles of Travel

Land Use Type	Unit	Existing Units	Trip Rates	Primary Trips	Daily Trips	Length (miles)	Daily VMT
Single-Family Detached	Dwelling	16,746	4.76	100%	79,711	9.16	730,153
Multi-Family	Dwelling	11,080	3.33	100%	36,896	8.30	306,237
Mobile Home	Dwelling	408	2.50	100%	1,020	8.30	8,466
Gen. Retail/Commercial	1,000 sq. ft.	12,320	21.35	43%	113,104	6.27	709,162
Office/Institutional	1,000 sq. ft.	8,479	5.52	75%	35,103	9.96	349,626
Industrial/Warehouse	1,000 sq. ft.	5,334	3.42	95%	17,330	9.96	172,607
Total					283,164		2,276,251

Source: Existing residential and nonresidential units from City of Franklin, 2012 Development Report, December 2012; daily trip rates and primary trip factors from Table 8; daily trips is product of trip rate and primary trips; national average trip length from Table 7; daily VMT is product of trips and trip length.

The next step in developing the local trip length adjustment factor is to determine actual daily VMT on the City's major roadway system. An inventory of the existing major roadway system was prepared as part of this study (see Table 20 in the Appendix). Roadway segment lengths and recent traffic volumes are used to estimate actual daily VMT. Since counts were not available for all segments, total VMT must be estimated from VMT for segments for which counts are available. As shown in Table 5, the City's major roadway system has an estimated 1,003,055 total daily VMT.

Table 5. Actual Existing Vehicle-Miles of Travel

Functional Classification	Road Segments w/Counts			Total Ln-Mi.	Total VMT
	VMT	Ln-Mi.	Veh./Ln		
Expressway	138,462	17.60	7,867	17.60	138,459
Other Arterial	612,268	120.59	5,077	146.91	745,862
Subtotal, Arterial					884,321
Major Collector	43,185	10.99	3,929	30.22	118,734
Total	793,915	149.18		194.73	1,003,055

Source: VMT and lane-miles of segments with traffic counts and total lane-miles from Table 20 in the Appendix; vehicles per lane is VMT on segments with counts divided by lane-miles with counts; total VMT is product of vehicles per lane and total lane-miles.

Comparing the results of the last two tables, it can be seen that expected VMT using existing land use data and national travel demand characteristics significantly over-estimates VMT actually observed on the major roadway system. This result is not surprising, since the VMT estimate does not include travel on local roads, the Interstate or on any roadways outside of the Franklin city limits. Consequently, it is necessary to develop an adjustment factor to account for this variation. The local travel demand adjustment factor is the ratio of actual to expected VMT on the major roadway system. As shown in Table 6, the national average trip length should be multiplied by a local adjustment factor of 0.388 if the major road system continues to be defined as arterials, and 0.441 if major collector roads are included in the impact fee. The difference between the two reflects the share of traffic attributable to major collector roads.

Table 6. Local Trip Length Adjustment Factors

	Arterials Only	All Major Roads
Actual Daily Vehicle-Miles of Travel (VMT)	884,321	1,003,055
÷ Expected Daily Vehicle-Miles of Travel (VMT)	2,276,251	2,276,251
Local Adjustment Factor	0.388	0.441

Source: Actual VMT from Table 5; expected VMT from Table 4.

The national average trip lengths derived from the U.S. Department of Transportation's 2009 *National Household Travel Survey* for a variety of trip purposes, including home-to-work, doctor/dentist, school/church, shopping, and other personal trips, have been adjusted by the local trip length adjustment factor. Since this study provides an option to include major collector roads, the study includes two separate travel demand schedules: one that reflects travel on arterial roads only and one that reflects travel on both arterial and major collector roads. The localized trip lengths are shown in Table 7.

Table 7. Average Trip Length by Trip Purpose

Trip Purpose	National Trip Length (miles)	Arterials Only		All Major Roads	
		Local Adjustment Factor	Local Trip Length (miles)	Local Adjustment Factor	Local Trip Length (miles)
To or from work	11.98	0.388	4.65	0.441	5.28
Office/Industrial	9.96	0.388	3.86	0.441	4.39
Medical/Dental	9.61	0.388	3.73	0.441	4.24
Average	9.28	0.388	3.60	0.441	4.09
Single-Family Det.	9.16	0.388	3.55	0.441	4.04
Multi-Family	8.30	0.388	3.22	0.441	3.66
School/Church	8.47	0.388	3.29	0.441	3.74
Family/Personal	6.61	0.388	2.56	0.441	2.92
Shopping	6.27	0.388	2.43	0.441	2.77

Source: National trip lengths from U.S. Department of Transportation, *National Household Travel Survey*, 2009 (office/industrial is 25% work trip length and 75% average trip length); local adjustment factors from Table 6.

Travel Demand Schedule

The result of combining trip generation rates, primary trip factors and average trip lengths is a travel demand table that establishes the vehicle-miles of travel (VMT) during the average weekday generated by various land use types per unit of development. The recommended travel demand schedules associated with both of the road impact fee options are presented in Table 8.

Table 8. Travel Demand by Land Use

Land Use Type	Unit	Daily Trips/ Unit	% Primary Trips	Arterials Only		All Major Roads	
				Trip Length	Daily VMT	Trip Length	Daily VMT
Single-Family Detached	Dwelling	4.76	100%	3.55	16.90	4.04	19.23
Multi-Family	Dwelling	3.33	100%	3.22	10.72	3.66	12.19
Mobile Home Park	Site	2.50	100%	3.22	8.05	3.66	9.15
Congregate Care Facility	Dwelling	1.01	100%	3.73	3.77	4.24	4.28
Hotel/Motel	Room	3.45	100%	2.56	8.83	2.92	10.07
Retail/Commercial							
Shopping Center/Gen. Retail	1,000 sq. ft.	21.35	43%	2.43	22.31	2.77	25.43
Restaurant, Quality	1,000 sq. ft.	44.98	38%	2.43	41.53	2.77	47.35
Restaurant, Fast Food	1,000 sq. ft.	248.06	30%	0.81	60.28	0.92	68.46
Office/Institutional							
Office, General	1,000 sq. ft.	5.52	75%	3.86	15.98	4.39	18.17
Hospital	1,000 sq. ft.	6.61	75%	3.73	18.49	4.24	21.02
Nursing Home	1,000 sq. ft.	3.80	75%	3.73	10.63	4.24	12.08
Church	1,000 sq. ft.	4.56	75%	3.29	11.25	3.74	12.79
Elementary/Sec. School	1,000 sq. ft.	7.02	24%	3.29	5.54	3.74	6.30
Industrial							
Manufacturing	1,000 sq. ft.	1.91	95%	3.86	7.00	4.39	7.97
Industrial Park	1,000 sq. ft.	3.42	95%	3.86	12.54	4.39	14.26
Business Park	1,000 sq. ft.	6.22	95%	3.86	22.81	4.39	25.94
Warehouse	1,000 sq. ft.	1.78	95%	3.86	6.53	4.39	7.42
Mini-Warehouse	1,000 sq. ft.	1.25	95%	2.56	3.04	2.92	3.47

Source: Trips are 1/2 of average daily trip ends on a weekday from ITE, *Trip Generation*, 9th ed., 2012 (hotel/motel based on average of two; elementary/secondary based on average of elementary, middle and high school); primary trips for retail/commercial from ITE, *Trip Generation Handbook*, 2004; primary trips for schools from on Preston Hitchens, "Trip Generation for Day Care Centers," ITE *1990 Compendium of Technical Papers*, 1990; primary trips for office and industrial assumed; average trip length from Table 7 (fast food restaurant uses one-third shopping trip length).

COST PER SERVICE UNIT

The cost per vehicle-mile in this update is based on a set of recent actual major road construction projects that add capacity to the roadway system. Unlike the previous update, the road construction costs include the costs of design. Recent road improvement project costs are summarized in Table 9. These recent projects added lanes and measurable capacity to the roadway system.

Table 9. Road Improvement Costs

Project Name	Improvement	Year	Design/ Construction	ROW	Total Cost
Carothers Pkwy, S Carothers-Ladd Pk	New 2 Lane	2014	\$13,818,227	\$344,000	\$14,162,227
Carothers Pkwy, Liberty Pike-McEwen	New 4 Lane	2009	\$6,628,430	\$4,000,000	\$10,628,430
Mack Hatcher, Hillsoboro-SR 96 W	New 4 Lane	2012	\$73,500,000	\$12,500,000	\$86,000,000
McEwen, Carothers-Cool Spgs	New 4 Lane	2012	\$10,172,167	\$1,770,384	\$11,942,551
McEwen, Cool Spgs-Jordan	Widen 3-5 Lns	2009	\$1,444,450	\$237,680	\$1,682,130
McEwen Dr Temporary Connector	New 4 Lane	2013	\$2,263,322	\$361,253	\$2,624,575
S Carothers Parkway	New 4 Lane	2012	\$16,335,000	\$1,942,000	\$18,277,000
Subtotal, Arterial			\$107,826,596	\$19,213,317	\$145,316,913
3rd Ave N, N Margin-5th Ave	New 2 Lane	2014	\$4,856,330	\$186,500	\$5,042,830
Nichol Mill Ln, Seaboard-Mallory	New 2 Lane	2012	\$1,372,742	\$800,975	\$2,173,717
Subtotal, Collectors			\$6,229,072	\$987,475	\$7,216,547
Total, All Major Roads			\$114,055,668	\$20,200,792	\$152,533,460

Source: City of Franklin, Engineering Department.

The average cost to create an additional lane-mile of roadway can be derived by dividing the cost of the recent capacity-expanding road improvement projects by the additional lane-miles created by the improvements. Based on the cost of recent and current arterial and collector road improvements, the average costs per lane-mile are calculated in Table 10.

Table 10. Road Improvement Cost per Lane-Mile

Project Name	Miles	New Lanes	Lane- Miles	Total Cost	Cost per Lane-Mile
Carothers Pkwy, S Carothers-Ladd Pk	2.00	2	4.00	\$14,162,227	\$3,540,557
Carothers Pkwy, Liberty Pike-McEwen	0.74	4	2.96	\$10,628,430	\$3,590,686
Mack Hatcher, Hillsoboro-SR 96 W	3.22	4	12.88	\$86,000,000	\$6,677,019
McEwen, Carothers-Cool Spgs	0.97	4	3.88	\$11,942,551	\$3,077,977
McEwen, Cool Spgs-Jordan	0.15	2	0.30	\$1,682,130	\$5,607,100
McEwen Dr Temporary Connector	0.33	4	1.32	\$2,624,575	\$1,988,314
S Carothers Parkway	1.70	4	6.80	\$18,277,000	\$2,687,794
Subtotal, Arterial	7.41		32.14	\$145,316,913	\$4,521,373
3rd Ave N, N Margin-5th Ave	0.26	2	0.52	\$5,042,830	\$9,697,749
Nichol Mill Ln, Seaboard-Mallory	0.37	2	0.74	\$2,173,717	\$2,937,455
Subtotal, Collectors	0.63		1.26	\$7,216,547	\$5,727,418
Total, All Major Roads	8.04		33.40	\$152,533,460	\$4,566,870

Source: Miles and number of lanes from City of Franklin Engineering Department; lane-miles is product of new lanes and miles; total cost from Table 9; cost per lane-mile is cost divided by lane-miles.

The average cost per unit of capacity added to the major roadway system can be determined by dividing the average cost of a new lane-mile by the average daily capacity per lane at LOS C. The average daily capacities per new lane added by the set of recent projects are calculated in Table 11.

Table 11. Average Capacity per Lane

Project Name	Improvement	Miles	New Capacity	New VMC	New Ln-Mi.	Capacity/Lane
Carothers Pkwy, S Carothers-Ladd Pk	New 2 Lane	2.00	11,600	23,200	4.00	5,800
Carothers Pkwy, Liberty Pike-McEwen	New 4 Lane	0.74	19,000	14,060	2.96	4,750
Mack Hatcher, Hillsboro-SR 96 W	New 4 Lane	3.22	56,200	180,964	12.88	14,050
McEwen, Carothers-Cool Spgs	New 4 Lane	0.97	19,000	18,430	3.88	4,750
McEwen, Cool Spgs-Jordan	Widen 3-5 Lns	0.15	7,500	1,125	0.30	3,750
McEwen Dr Temporary Connector	New 4 Lane	0.33	19,000	6,270	1.32	4,750
S Carothers Parkway	New 4 Lane	1.70	19,000	32,300	6.80	4,750
Subtotal, Arterial		9.11		276,349	32.14	8,598
3rd Ave N, N Margin-5th Ave	New 2 Lane	0.26	9,100	2,366	0.52	4,550
Nichol Mill Ln, Seaboard-Mallory	New 2 Lane	0.37	9,100	3,367	0.74	4,550
Subtotal, Collectors		0.63		5,733	1.26	4,550
Total, All Major Roads		9.74		282,082	33.40	8,446

Source: Improvement length and new lane-miles from Table 10; new capacity added derived from Table 3; new VMC is product of miles and new capacity; capacity per lane is new VMC divided by new lane-miles.

The cost per service unit is calculated by dividing the average cost per lane-mile by the average daily capacity added. As shown in Table 12, the arterial cost per service unit is \$526 per VMC. If major collectors are included, the major road cost per service unit is \$541 per VMC.

Table 12. Cost per Vehicle-Mile of Capacity

Arterials Only	
Average Cost per Lane-Mile	\$4,521,373
÷ Average Daily Capacity per Lane at LOS C	8,598
Arterial Cost per Vehicle-Mile of Capacity (VMC)	\$526
All Major Roads	
Average Cost per Lane-Mile	\$4,566,870
÷ Average Daily Capacity per Lane at LOS C	8,446
Major Road Cost per Vehicle-Mile of Capacity (VMC)	\$541

Source: Average cost per lane-mile from Table 10; average capacity per lane from Table 11.

As discussed in the methodology section, the modified consumption-based approach does not calculate the cost to have all roadways functioning at LOS C, only the cost to replace capacity consumed so that a 1:1 ratio of capacity to demand is maintained system-wide. Dividing the road capacity (VMC) by demand (VMT) yields the system-wide VMC/VMT ratios for the arterial system and for the major road system if it is expanded to include major collectors.

As shown in Table 13, the major roadway system provides 1.12 units of capacity (at LOS C) for every unit of demand on the arterial system, and 1.11 when major collectors are included. The cost per VMC does not need to be adjusted by the actual VMC/VMT ratio if it is greater than one-to-one, because a ratio of one-to-one is assumed in this study. Consequently, the cost per VMT is the same as the cost per VMC calculated above.

Table 13. Existing Level of Service

Functional Class	Total VMC	Total VMT	VMC/VMT
Arterials/Expressways	988,580	884,321	1.12
Major Collectors	123,059	118,734	1.04
Total Major Roads	1,111,639	1,003,055	1.11

Source: VMC from Table 20 in the Appendix; estimated VMT from Table 5.

NET COST PER SERVICE UNIT

As discussed in the Legal Framework chapter, credit is due against impact fees under three situations: (1) there are existing deficiencies, (2) there is outstanding debt on facilities serving existing development, or (3) there are dedicated local revenues or outside funding for the same improvements. These are each addressed below. The resulting revenue credits are deducted from the cost per service unit calculated in the previous chapter in the conclusion to this chapter to calculate the net cost per service unit.

Existing Deficiencies

From an impact fee perspective, there are no existing deficiencies. The fees are based on a system-wide level of service, defined as a 1-to-1 ratio of system-wide capacity (VMC) to system-wide demand (VMT). There are no existing deficiencies on a system-wide basis as long as the VMC/VMT ratio is greater than 1.00. The actual existing major roadway level of service is a 1.12 VMC/VMT ratio for arterials, and a ratio of 1.11 if major collector roads are included (see Table 13 above). Because the fees are based on a LOS that is lower than the actual existing LOS, no deficiency credit is warranted.

Outstanding Debt

The City of Franklin currently has seven outstanding debt issues that have been used to fund improvements on the arterial system. As shown in Table 14, the road-related balance for these outstanding debt issues is \$41.3 million.

Table 14. Outstanding Road Debt Issues

Bond Issue	Outstanding Balance	Road-Related	Road-Related Balance
General Obligation Refunding Bonds 2004	\$1,375,000	55.0%	\$756,250
County Club & McEwen Reimbursement 2005	\$2,715,000	45.0%	\$1,221,750
Capital Improvement Bonds 2007	\$20,000,000	43.0%	\$8,600,000
Capital Improvement Bonds 2009A	\$8,060,000	34.6%	\$2,788,760
Capital Improvement Bonds 2009B	\$30,625,000	34.6%	\$10,596,250
Capital Improvement Bonds 2010	\$15,725,000	40.0%	\$6,290,000
Capital Improvement Refunding Bonds 2012	\$21,710,000	51.0%	\$11,072,100
Outstanding Road Debt	\$100,210,000		\$41,325,110

Source: City of Franklin, December 19, 2013.

In cases where outstanding debt is for improvements that are serving existing development, a credit is due for future taxes that new development will generate that will be used to retire that debt. In the case of Franklin's road impact fees, however, no such credit is warranted. As noted above, the road fees are based on a lower level of service. The cost of the excess capacity in the arterial system alone is significantly greater than the amount of the outstanding road-related debt. The replacement value of the excess arterial capacity is \$54.8 million (see Table 15 below), compared to only \$41.3 million in outstanding debt.

From the facts presented above, it is clear that the outstanding road debt is for improvements that have built excess capacity into the system to accommodate growth, not improvements that are serving existing development at the level of service on which the impact fees are based. In addition, new development will not be paying the debt. The City is using road impact fees, not ad valorem taxes or general funds, to retire the road-related debt. For these reasons, no debt credit against the road impact fees is warranted.

Table 15. Replacement Value of Excess Arterial Capacity

Existing Arterial Vehicle-Miles of Capacity (VMC)	988,580
– Existing Arterial Vehicle-Miles of Travel (VMT)	-884,321
Existing Excess Arterial Capacity (VMC)	104,259
x Average Arterial Cost per VMC	\$526
Replacement Cost of Arterial Excess Capacity	\$54,840,234

Source: Arterial VMC and VMT from Table 13; cost per VMC from Table 12.

Outside Funding

The amount of intergovernmental revenue that is applied toward funding capacity-expanding capital improvements in Franklin is based on anticipated funding over a 7-year period covered by the last two adopted regional Transportation Improvement Programs. Only improvements that are both capacity-expanding and on the major road network are eligible for credit. For example, improvements on I-65 are unrelated to the major roadway system that the fees are designed to fund. The non-local share includes funds programmed from the portion of State gas tax revenues that the City receives through the State Street Aid program. The improvements and funding are summarized in Table 16 below. The creditable funding over the 7-year period totaled \$116.7 million.

Table 16. Road Improvements and Funding, FY 2011-2017

Project Name	Description	Total Cost	Non-Local Cost	
			Total	Creditable
Columbia South, Downs to SR 397	New Road	\$5,000,000	\$0	\$0
Franklin Greenway	Multi-Use Path	\$1,147,500	\$630,000	\$0
Franklin Traffic Operations	ITS Infrastructure	\$6,000,000	\$4,800,000	\$4,800,000
Goose Creek Bypass at I-65	New Interchange	\$30,000,000	\$30,000,000	\$0
Goose Creek Bypass	New Road	\$2,050,000	\$0	\$0
Hillsboro Rd, Hwy 96-M. Hatcher	New Road	\$25,000,000	\$1,250,000	\$1,250,000
I-65 Widening from SR 96-SR840	Freeway Widening	\$70,000,000	\$70,000,000	\$0
Mack Hatcher NE Widening	Widen Road	\$15,800,000	\$15,800,000	\$15,800,000
Mack Hatcher NW Extension	Extend Existing Road	\$76,500,000	\$76,500,000	\$76,500,000
Mack Hatcher SE Widening	Widen Road	\$15,000,000	\$15,000,000	\$15,000,000
McEwen Drive Phase 3	Widen Existing Road	\$15,000,000	\$0	\$0
McEwen Drive Phase 4	Widen Existing Road	\$17,500,000	\$0	\$0
McEwen Drive Extension	Extend Existing Road	\$12,500,000	\$0	\$0
Lewisburg Pike, SR 397-Donnellson	Widen Existing Road	\$2,800,000	\$0	\$0
Lewisburg Pike, Donnellson-Old Peyton	Widen Existing Road	\$1,000,000	\$0	\$0
Lewisburg Pike, Old Peyton-Goose Ck	Widen to 4 Lane Divided	\$8,010,000	\$0	\$0
Lewisburg Pike, I-65 to 0.3 mi. west	Widen 2-4 lanes	\$1,500,000	\$1,500,000	\$1,500,000
Franklin ITS Infrastructure	ITS infrastructure	\$2,300,000	\$1,840,000	\$1,840,000
Total, FY 2011-2017		\$307,107,500	\$217,320,000	\$116,690,000

Source: Nashville Area Metropolitan Planning Organization, *Transportation Improvement Program*, FY 2011-2014 and FY 2014-2017.

The State and Federal funding credit is shown in Table 17. At the current cost of borrowing, the present value of State and Federal funding revenue that can be anticipated over the next 20 years, which is the typical long-term debt repayment period, is about \$240 per daily vehicle-mile of travel on the arterial system, and \$212 per VMT when major collectors are included.

Table 17. State/Federal Funding Credit

	Arterials Only	All Major Roads
Total Federal/State Capacity Funding, FY 2011-2016	\$116,690,000	\$116,690,000
÷ Years	7	7
Annual Federal/State Capacity Funding	\$16,670,000	\$16,670,000
÷ Daily Vehicle-Miles of Travel (VMT)	884,321	1,003,055
Average Annual Funding per VMT	\$18.85	\$16.62
x Net Present Value Factor (20 Years @ 4.73%)	12.75	12.75
State/Federal Funding Credit per VMT	\$240	\$212

Source: Total Federal/State capacity funding from Table 16; daily VMT from Table 5; present value factor based on 20 years at 4.73% discount rate based on average interest rate on state and local bonds in December 2013 from the Federal Reserve at <http://www.federalreserve.gov/releases/h15/data.htm>.

Net Cost Summary

As shown in Table 18, reducing the cost per service unit associated by the State and Federal funding credit leaves a net cost of \$286 per VMT for the arterial system and \$329 per VMT if major collectors are included.

Table 18. Net Cost per Vehicle-Mile of Travel

Average Cost per VMT, Arterials Only	\$526
– State/Federal Funding Credit per VMT	-\$240
Arterial Net Cost per Daily VMT	\$286
Average Cost per VMT, All Major Roads	\$541
– State/Federal Funding Credit per VMT	-\$212
All Major Roads Net Cost per Daily VMT	\$329

Source: Average cost per VMT based on cost per VMC from Table 12; State/Federal funding credit from Table 17.

POTENTIAL FEE SCHEDULES

The net cost per unit of development is the product of daily vehicle-miles of travel generated by a unit of development and the net cost per VMT. The option of including major collector roadways in this update results in two potential impact fee schedules. The final two columns in Table 19 present the updated fees for arterials only and for the total major roadway system, including collector roads. These represent the maximum fees that can be adopted based on this study.

Table 19. Potential Fee Schedules, Arterial and All Major Roads

Land Use Type	Unit	VMT/Unit		Net Cost/VMT		Potential Fee	
		Arterials	Total	Arterials	Total	Arterials	Total
Single-Family Detached	Dwelling	16.90	19.23	\$286	\$329	\$4,833	\$6,327
Multi-Family	Dwelling	10.72	12.19	\$286	\$329	\$3,066	\$4,011
Mobile Home Park	Site	8.05	9.15	\$286	\$329	\$2,302	\$3,010
Congregate Care Facility	Dwelling	3.77	4.28	\$286	\$329	\$1,078	\$1,408
Hotel/Motel	Room	8.83	10.07	\$286	\$329	\$2,525	\$3,313
Retail/Commercial							
Shopping Center/Gen. Retail	1,000 sq. ft.	22.31	25.43	\$286	\$329	\$6,381	\$8,366
Restaurant, Quality	1,000 sq. ft.	41.53	47.35	\$286	\$329	\$11,878	\$15,578
Restaurant, Fast Food	1,000 sq. ft.	60.28	68.46	\$286	\$329	\$17,240	\$22,523
Office/Institutional							
Office, General	1,000 sq. ft.	15.98	18.17	\$286	\$329	\$4,570	\$5,978
Hospital	1,000 sq. ft.	18.49	21.02	\$286	\$329	\$5,288	\$6,916
Nursing Home	1,000 sq. ft.	10.63	12.08	\$286	\$329	\$3,040	\$3,974
Church	1,000 sq. ft.	11.25	12.79	\$286	\$329	\$3,218	\$4,208
Elementary/Sec. School	1,000 sq. ft.	5.54	6.30	\$286	\$329	\$1,584	\$2,073
Industrial							
Manufacturing	1,000 sq. ft.	7.00	7.97	\$286	\$329	\$2,002	\$2,622
Industrial Park	1,000 sq. ft.	12.54	14.26	\$286	\$329	\$3,586	\$4,692
Business Park	1,000 sq. ft.	22.81	25.94	\$286	\$329	\$6,524	\$8,534
Warehouse	1,000 sq. ft.	6.53	7.42	\$286	\$329	\$1,868	\$2,441
Mini-Warehouse	1,000 sq. ft.	3.04	3.47	\$286	\$329	\$869	\$1,142

Source: Daily VMT per unit from Table 8; net cost per VMT from Table 18.

APPENDIX

Table 20. Existing Major Roadway Inventory

Roadway	From	To	Lns	Mi.	Lane-Miles		ADT	Cap.	VMC	VMT
					Total	w/Ct.				
Mack Hatcher	Hillsboro Rd	Franklin Rd	4	1.70	6.80	6.80	17,933	56,200	95,540	30,486
Mack Hatcher	Franklin Rd	Liberty Pike	2	1.50	3.00	3.00	21,950	28,100	42,150	32,925
Mack Hatcher	Liberty Pike	Murfreesboro	2	0.85	1.70	1.70	13,340	28,100	23,885	11,339
Mack Hatcher	Murfreesboro	Lewisberg Av	2	1.30	2.60	2.60	25,057	28,100	36,530	32,574
Mack Hatcher	Lewisberg Av	Columbia Av	2	1.75	3.50	3.50	17,793	28,100	49,175	31,138
Subtotal, Expressways				7.10	17.60	17.60			247,280	138,462
1st Ave, N	Bridge St	E. Main St	2	0.12	0.24	-	-	11,600	1,392	-
3rd Ave, N	5th Ave N	Main St	2	0.34	0.68	-	-	11,600	3,944	-
3rd Ave, S	Main St	S Margin St	2	0.24	0.48	0.48	6,142	11,600	2,784	1,474
5th Ave, N	3rd Ave N	Main St	4	0.38	1.52	1.52	17,515	19,000	7,220	6,656
5th Ave, S	Main St	S Margin St	2	0.24	0.48	0.48	5,752	11,600	2,784	1,380
Bridge St.	5th Ave N	1st Ave N	2	0.33	0.66	-	-	11,600	3,828	-
Carothers Pkwy	S of Moores Ln	Cool Springs	4	1.08	4.32	4.32	22,213	19,000	20,520	23,990
Carothers Pkwy	Cool Springs	Murfreesboro	4	2.45	9.80	9.80	11,703	19,000	46,550	28,672
Carothers Pw S	Murfreesboro	S Carothers Rd	3	1.12	3.36	3.36	6,040	14,400	16,128	6,765
Carters Cr Pike	Downs Blvd	SW City Limit	2	0.86	1.72	1.72	6,591	11,600	9,976	5,668
Columbia Ave	Mack Hatcher	Fairground St	3	1.25	3.75	3.75	19,090	14,400	18,000	23,863
Columbia Ave	Fairground St	Five Points	3	1.00	3.00	3.00	10,542	14,400	14,400	10,542
Columbia Pike	S Boundary	Mack Hatcher	2	1.10	2.20	2.20	15,264	11,600	12,760	16,790
Cool Springs	Mack Hatcher	Carothers Pky	4	1.93	7.72	7.72	26,217	19,000	36,670	50,599
Cool Springs	Carothers	E McEwen Dr	4	1.35	5.40	-	-	19,000	25,650	-
Franklin Rd	E Main St	Mack Hatcher	2	1.59	3.18	3.18	16,392	11,600	18,444	26,063
Franklin Rd	Mack Hatcher	Moores Lane	2	2.11	4.22	4.22	12,975	11,600	24,476	27,377
Goose Creek By	Lewisburg Pike	I-65	4	0.84	3.36	3.36	13,685	19,000	15,960	11,495
Hwy 96 W	W Bndry	11th Ave	2	2.72	5.44	5.44	17,541	11,600	31,552	47,712
Hwy 96 W	11th Ave	5th Ave	3	0.43	1.29	1.29	18,962	14,400	6,192	8,154
Hillsboro Rd	3rd Ave N	Mack Hatcher	3	1.12	3.36	3.36	17,515	14,400	16,128	19,617
Hillsboro Rd	Mack Hatcher	Fieldstone Pw	5	1.00	5.00	5.00	16,740	21,900	21,900	16,740
Hillsboro Rd	Fieldstone Pw	N Boundary	5	0.93	4.65	4.65	18,710	21,900	20,367	17,400
Lewisburg Ave	S Margin St	Mack Hatcher	2	2.10	4.20	4.20	5,165	11,600	24,360	10,847
Lewisburg Pike	Mack Hatcher	Bowman Rd	2	1.09	2.18	2.18	9,359	11,600	12,644	10,201
Lewisburg Pike	Old Peytonsville	Goose Cr Byps	4	0.55	2.20	-	-	19,000	10,450	-
Liberty Pike	Waverly Pl	Turning Wheel	2	1.47	2.94	-	-	11,600	17,052	-
Liberty Pike	Turning Wheel	Carothers Pky	2	0.86	1.72	-	-	11,600	9,976	-
Liberty Pike	Carothers Pky	Mallory Lane	4	0.51	2.04	-	-	19,000	9,690	-
Liberty Pike	Mallory Lane	Mack Hatcher	3	0.95	2.85	2.85	14,238	14,400	13,680	13,526
Liberty Pike	Mack Hatcher	Franklin Rd	3	1.15	3.45	3.45	7,528	14,400	16,560	8,657
Main St	1st Ave S	5th Ave	2	0.34	0.68	0.68	10,362	11,600	3,944	3,523
N Margin St.	5th Ave N	2nd Ave N	2	0.26	0.52	-	-	11,600	3,016	-
W Main St	5th Ave	11th Ave	2	0.43	0.86	0.86	7,389	11,600	4,988	3,177
W Main St	11th Ave	Downs Blvd	2	1.11	2.22	2.22	7,692	11,600	12,876	8,538
Mallory Lane	Moores Lane	Cool Springs	4	1.36	5.44	5.44	24,542	19,000	25,840	33,377
Mallory Lane	Cool Springs	Liberty Pike	4	1.50	6.00	6.00	18,279	19,000	28,500	27,419

Continued on next page

Table 20. Existing Major Roadway Inventory, continued

Roadway	From	To	Lns	Mi.	Lane-Miles		ADT	Cap.	VMC	VMT
					Total	w/Ct.				
W McEwen Dr	Cool Springs	I-65	4	0.93	3.72	-	-	19,000	17,670	-
E McEwen Dr	I-65	Cool Springs	4	1.38	5.52	-	-	19,000	26,220	-
E McEwen Dr	Cool Springs	Wilson Pike	2	1.55	3.10	3.10	6,442	11,600	17,980	9,985
Murfreesboro Rd	S Margin St	Mack Hatcher	2	1.32	2.64	2.64	17,935	11,600	15,312	23,674
Murfreesboro Rd	Mack Hatcher	I-65	5	1.13	5.65	5.65	24,796	21,900	24,747	28,019
Murfreesboro Rd	I-65	E Boundary	2	1.87	3.74	3.74	23,343	11,600	21,692	43,651
Peytonsville Rd	I-65	Long Lane	4	0.17	0.68	-	-	19,000	3,230	-
N Royal Oaks	Liberty Pike	Hwy 96	3	0.81	2.43	2.43	15,077	14,400	11,664	12,212
S Royal Oaks	Hwy 96	Mack Hatcher	4	1.18	4.72	4.72	19,435	19,000	22,420	22,933
Wilson Pike	N Boundary	Clovercroft Rd	2	0.79	1.58	1.58	1,987	11,600	9,164	1,570
Subtotal, Major and Minor Arterials				49.34	146.91	120.59			741,300	612,268
Bakers Bridge Ave	Mallory Ln	Carothers Pkwy	4	0.77	3.08	-	-	14,900	11,473	-
Del Rio Pike	Carlisle Ln	90° bend	2	1.55	3.10	-	-	9,100	14,105	-
Downs Blvd	Columbia Ave	SR 96 W	2	2.67	5.34	5.34	8,224	9,100	24,297	21,958
Fieldstone Pwy	Bexley Park Dr	Hillsboro Rd	3	0.53	1.59	-	-	11,300	5,989	-
Fieldstone Pwy	Hillsboro Rd	Lexington Pkwy	4	0.53	2.12	-	-	14,900	7,897	-
Fieldstone Pwy	Lexington Pkwy	Cotton Ln	2	0.42	0.84	-	-	9,100	3,822	-
Mallory Sta. Rd	Franklin Rd	Mallory Ln	3	1.49	4.47	4.47	10,490	11,300	16,837	15,630
Gen. Patton Dr	City Limits	Mallory Station	3	0.60	1.80	-	-	11,300	6,780	-
Galleria Blvd	Bakers Brdg Av	Moorse Ln	3	0.38	1.14	-	-	11,300	4,294	-
Lynnwood Way	Franklin Rd	West City Limits	2	0.59	1.18	1.18	9,486	9,100	5,369	5,597
Peytonsville Rd	Long Lane	South City Limits	2	0.80	1.60	-	-	9,100	7,280	-
Seaboard Ln	Aspen Grove Dr	Bakers Bridge Av	3	1.32	3.96	-	-	11,300	14,916	-
Subtotal, Major Collectors				11.65	30.22	10.99			123,059	43,185
Total				68.09	194.73	149.18			1,111,639	793,915

Source: Segment descriptions, lanes and miles from City of Franklin Engineering Department, December 19, 2013; collector road service areas from Duncan Associates based on review of Google maps; average daily traffic counts (ADT) from Tennessee Department of Transportation traffic history (<http://www.tdot.state.tn.us/traffichistory/>), 2013; "w/ct." indicates lane-miles for which counts are available; "VMT" is vehicle-miles of travel, which is product of miles and ADT for segments with counts; "VMC" is vehicle-miles of capacity, which is product of daily capacity and ADT.



Road Impact Fee Discussion

Board of Mayor & Aldermen Work Session

11/22/2016



What are Road Impact Fees?



Road Impact Fee – Fees that are assessed on new development to help pay for the capital facility cost they impose on the community. Essentially, impact fees require that each new residential or commercial project pay its pro-rata share of the cost of new infrastructure facilities required to serve the development.

Legal Framework – courts have gradually developed guidelines for constitutionally valid impact fees, based on a “rational nexus” that must exist between the regulatory fee or exaction and the activity that is being regulated. Generally, impact fee need to meet a two-part test:

- 1) The fee must be proportional to the need for a new facilities created by the new development; and
- 2) The expenditure of impact fee revenues must provide benefit to the fee-paying development.

Road Impact Fees History



In 1987, the city of Franklin sought and obtained authority from the Tennessee legislature to enact road impact fees.

6/16/1988	Ordinance 88-13, "AN ORDINANCE TO AMEND ORDINANCE 87-32 AND CHAPTER 4 OF TITLE 12 OF THE FRANKLIN MUNICIPAL CODE, ESTABLISHING A ROAD IMPACT FEE ON NEW DEVELOPMENT TO OFFSET CAPITAL IMPROVEMENTS COSTS FOR RAODS GENERATED BY SUCH DEVELOPMENT."
9/12/2000	Ordinance 2000-24, "AN ORDINANCE TO AMEND THE CITY CODE OF ORDINANCES, TITLE 16, CHAPTER 4, ROAD IMPACT FEES
5/10/2005	Ordinance 2005-27, "AN ORDINANCE TO AMEND TITLE 16, CHAPTER 4 OF THE FRANKLIN MUNICIPAL CODE CONCERNING ROAD IMPACT FEES."
11/13/2007	Ordinance 2007-104, "AN ORDINANCE TO AMEND CHAPTER 4 OF TITLE 16 OF THE FRANKLIN MUNICIPAL CODE CONCERNING ROAD IMPACT FEES."
4/26/2011	Ordinance 2011-07, "AN ORDINACE TO AMEND CHAPTER 4 OF TITLE 16 OF THE FRANKLIN MUNICIPAL CODE CONCERNING ROAD IMPACT FEES."
2/8/2014	Ordinance 2014-09, "AN ORDINANCE TO AMEND VARIOUS SECTIONS OF CHAPTER 4 OF TITLE 16 OF THE FRANKLIN MUNICIPAL CODE CONCERNING ROAD IMPACT FEES."

Road Impact Fee History



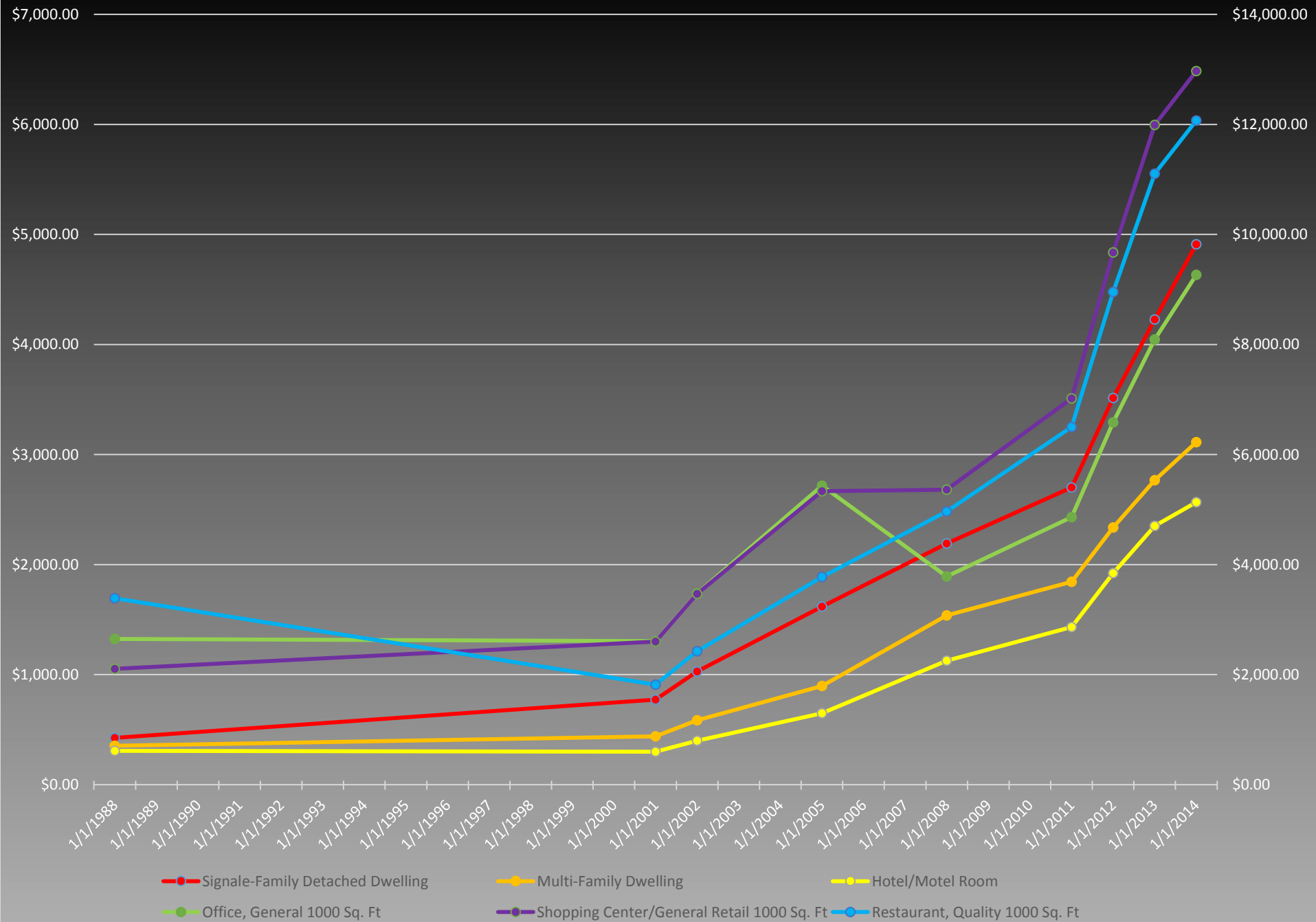
Ord 88-13	Ord 2000-24	Ord 2005-27	Ord 2007-104	Ord 2011-07	Ord 2014-09	Use of proceeds of Impact Fee Accounts
Yes	Yes	Yes	Yes	Yes	Yes	Professional services associated with updating road impact fee study
Yes	No	No	No	No	No	Construction and engineering cost associated with collector roadways
Yes	Yes	Yes	Yes	Yes	Yes	Construction and engineering cost associated with arterial roadways
Yes	No	No	No	Yes	Yes	Arterial right-of-way cost
Yes	No	No	No	No	No	Collector right-of-way cost
Yes	Yes	Yes	Yes	Yes	Yes	Principal sum and interest and other finance cost on bonds, notes or other obligations issued by or on behalf of the city to finance such road improvements
2	0	0	0	0	0	Benefit districts
No	No	No	No	No	No	Utility relocations cost

Road Impact Fee History



Effective Date		6/2/1988	1/1/2001	1/1/2002	5/10/2005	1/1/2008	2/1/2011	2/1/2012	2/1/2013	9/1/2014
Single-Family Detached	Dwelling	\$425.00	\$771.60	\$1,028.80	\$1,617.00	\$2,191.00	\$2,700.00	\$3,514.00	\$4,227.00	\$4,911.00
Multi-Family	Dwelling	\$352.00	\$438.00	\$584.00	\$896.00	\$1,537.00	\$1,844.00	\$2,336.00	\$2,766.00	\$3,112.00
Hotel/Motel	Room	\$306.00	\$298.80	\$398.40	\$649.00	\$1,126.00	\$1,432.00	\$1,922.00	\$2,350.00	\$2,567.00
Office, General	1000 Sq. Ft	\$1,323.00	\$1,303.80	\$1,738.40	\$2,716.00	\$1,891.00	\$2,430.00	\$3,291.00	\$4,045.00	\$4,632.00
Restaurant, Quality	1000 Sq. Ft	\$3,386.00	\$1,816.80	\$2,422.40	\$3,773.00	\$4,964.00	\$6,499.00	\$8,955.00	\$11,104.00	\$12,069.00
Shopping Center/General Retail	1000 Sq. Ft	\$1,052.00	\$1,299.60	\$1,732.80	\$2,666.00	\$2,681.00	\$3,510.00	\$4,836.00	\$5,996.00	\$6,484.00

Impact Fee History



Road Impact Fee Update



			Study Updated January 23, 2014				Study Update August 2016
			Arterials and Collectors ^{NOTE 1}				Arterials and Major Collectors
Land Use Type	Unit	Current Fee	100% Arterial Fee 100% Collector Fee	100% Arterial Fee 75% Collector Fee	100% Arterial Fee 50% Collector Fee	100% Arterial Fee 25% Collector Fee	100% Arterial Fee 100% Major Collector Fee
Single-Family Detached	Dwelling	\$4,911.00	\$8,251.00	\$7,416.00	\$6,581.00	\$5,746.00	\$6,327.00
Multi-Family	Dwelling	\$3,112.00	\$5,233.00	\$4,702.75	\$4,172.50	\$3,642.25	\$4,011.00
Mobile Home Park	Site	\$2,338.00	\$3,930.00	\$3,532.00	\$3,134.00	\$2,736.00	\$3,010.00
Congregate Care Facility	Dwelling	\$1,093.00	\$1,836.00	\$1,650.25	\$1,464.50	\$1,278.75	\$1,408.00
Hotel/Motel	Room	\$2,567.00	\$4,317.00	\$3,879.50	\$3,442.00	\$3,004.50	\$3,313.00
Retail/Commercial							
Shopping Center / Gen. Retail	1,000 SQ. FT.	\$6,484.00	\$10,878.00	\$14,173.50	\$8,681.00	\$7,582.50	\$8,366.00
Restaurant, Quality	1,000 SQ. FT.	\$12,069.00	\$20,255.00	\$26,394.50	\$16,162.00	\$14,115.50	\$15,578.00
Restaurant, Fast Food	1,000 SQ. FT.	\$17,442.00	\$29,304.00	\$38,200.50	\$23,373.00	\$20,407.50	\$22,523.00
Office/Institutional							
Office, General	1,000 SQ. FT.	\$4,632.00	\$7,802.00	\$7,009.50	\$6,217.00	\$5,424.50	\$5,978.00
Hospital	1,000 SQ. FT.	\$5,359.00	\$9,012.00	\$11,751.75	\$7,185.50	\$6,272.25	\$6,916.00
Nursing Home	1,000 SQ. FT.	\$3,082.00	\$5,181.00	\$6,755.25	\$4,131.50	\$3,606.75	\$3,974.00
Church	1,000 SQ. FT.	\$3,258.00	\$5,476.00	\$7,139.50	\$4,367.00	\$3,812.50	\$4,208.00
Elementary / Sec. School	1,000 SQ. FT.	\$1,606.00	\$2,697.00	\$3,515.25	\$2,151.50	\$1,878.75	\$2,073.00
Industrial							
Manufacturing	1,000 SQ. FT.	\$2,030.00	\$3,419.00	\$3,071.75	\$2,724.50	\$2,377.25	\$2,622.00
Industrial Park	1,000 SQ. FT.	\$3,636.00	\$6,120.00	\$5,499.00	\$4,878.00	\$4,257.00	\$4,692.00
Business Park	1,000 SQ. FT.	\$6,613.00	\$11,132.00	\$10,002.25	\$8,872.50	\$7,742.75	\$8,534.00
Warehouse	1,000 SQ. FT.	\$1,893.00	\$3,187.00	\$2,863.50	\$2,540.00	\$2,216.50	\$2,441.00
Mini-Warehouse	1,000 SQ. FT.	\$885.00	\$1,487.00	\$1,336.50	\$1,186.00	\$1,035.50	\$1,142.00

NOTE 1 - Collector Impact fees shall be spent in the same benefit district in which it was paid.

NOTE 2 - Revision to the Cities MTP resulted in a negligible decrease in Arterial Road Impact Fees.

Collector Impact Fee Summary



- Collector impact fees should be established based on the approved Major Thoroughfare Plan.
- Collector impact fees can pay for the engineering, right-of-way and construction cost associated with collector roadways. Collector roadways would need to be designed to meet City of Franklin Street Standards. (Ex: right-of-way width, access management, width, design speed, etc.)
- Collector impact fees can provide compensation for right-of-way dedications associated with development.
- Benefit districts would be recommended if impact fees include both Major and Minor Collectors. Benefit districts would not be recommended for impact fees that include Major Collectors only.
- Impact fees would not pay for utility relocations.
- In no event may the city apply an offset which is greater than the applicable impact fees due from the development project.

Collector Roads



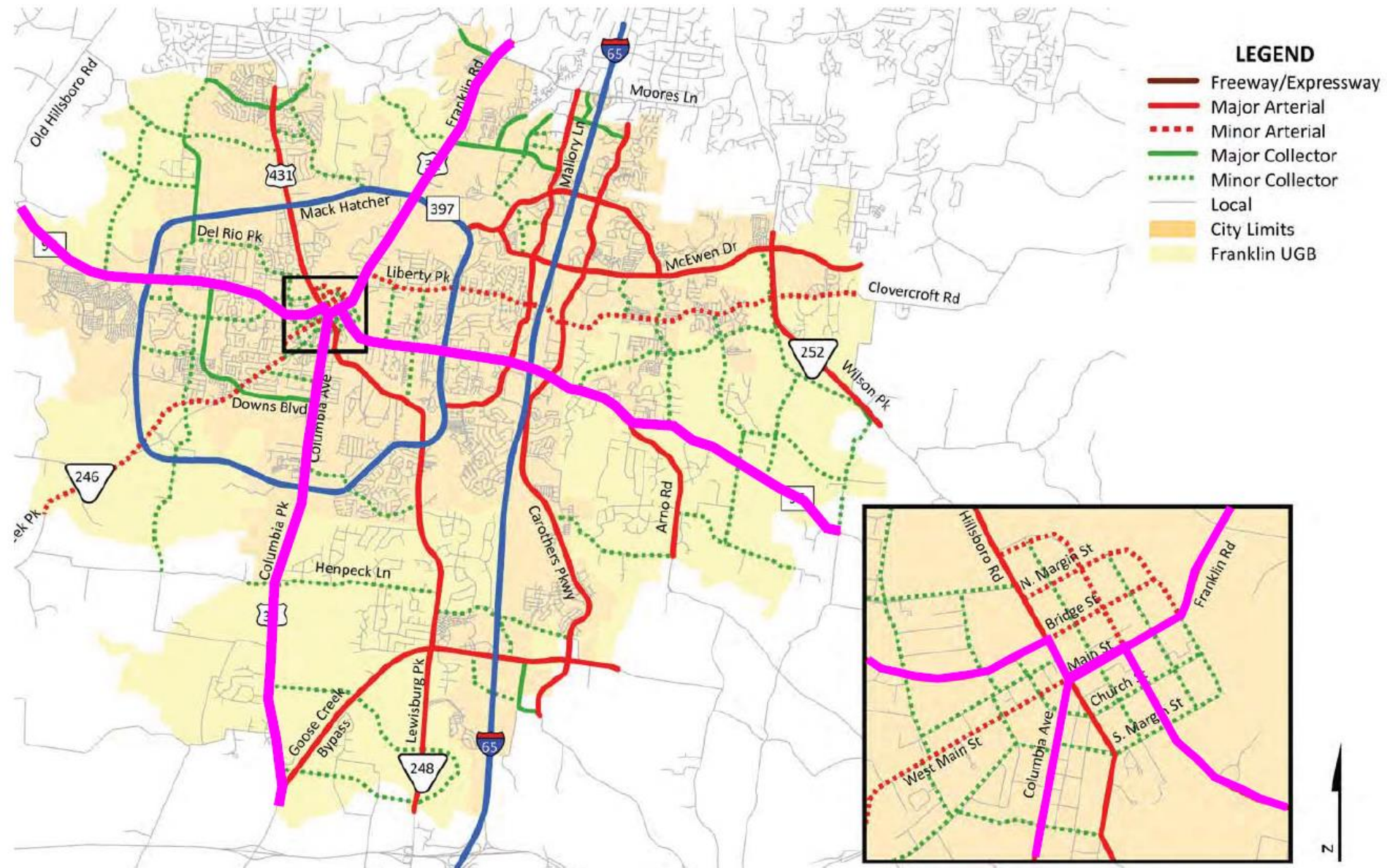
Major Collector

- 4 -5 Lane Roadway.
- No on street parking allowed.
- Limited Driveway & Street Access.
- Design Speed = 40MPH
- Posted Speed = 30-35 MPH
- Design Vehicle = WB-50 must be able to physically travers the street and remain in the correct lane for each street.

Minor Collector

- 2-3 lane Roadway.
- on street parking allowed.
- Frequent Driveway & Street Access.
- Design Speed = 35 MPH
- Posted Speed = 25-30 MPH
- Design Vehicle = WB-50 must be able to physically travers the street by using the full width of the traveled way if necessary.

Collector Benefit Districts







Access

Jordan Rd

100 m

400 ft

City of Franklin, N.J. GIS Data

**CONTRACT FOR THE RECEIPT OF COMMUNITY BASED DEVELOPMENT
ORGANIZATION PROGRAM FUNDING, FISCAL YEAR 2016-17 FROM THE CITY
OF FRANKLIN
COF Contract No. 2016-0244**

This Contract, made and entered into this ____ day of ____, 2016, is by and between the City of Franklin, (hereinafter "THE CITY") and Hard Bargain Association hereinafter called "THE ORGANIZATION").

WITNESSETH:

WHEREAS, THE CITY has identified a need to conduct a Community Based Development Organization (CBDO) Program funding; and

WHEREAS, THE ORGANIZATION is experienced in developing Affordable Housing projects, as defined by the United States Department of Housing and Urban Development and has met the certification requirements of becoming a CBDO; and

WHEREAS, THE ORGANIZATION replied to a publicly advertised Request For Proposals and was selected to participate as a CBDO in THE CITY'S Community Development Block Grant Program;

NOW, THEREFORE, in consideration of the mutual promises as contained herein, the parties hereto have agreed and hereby enter into this Contract according to the provisions as set forth herein.

SECTION 1 - SCOPE OF SERVICES

THE ORGANIZATION will carry out activities necessary for acquisition, rehabilitation and resale, new construction, or conversion of a non-residential structure for low to moderate income owner occupants in the City of Franklin. Low to moderate income is defined as households with incomes equal to or less than 80% of median family income for the Metropolitan Statistical Area. Any property acquired and transferred pursuant to this Contract shall be encumbered by title restrictions in a form acceptable to the THE CITY.

When applicable, the work will also include testing, remediating, and clearing structures for lead-based paint hazards. All structures constructed pre-1978 must be tested and cleared for lead-based paint hazards. In the presence of lead-based paint hazards, contractors/workers are required to be certified in and use safe-work practices. **A United States Department of Housing and Urban Development (HUD) Environmental Review Report will be required.**

Incorporated into this contract is Exhibit A, the proposal by THE ORGANIZATION, which is attached hereto and made a part hereof.

SECTION 2 - RESPONSIBILITIES OF PARTIES

- A. THE ORGANIZATION will perform the duties described above and in Exhibit A and take other actions necessary to accomplish the spirit of this Contract.
- B. THE ORGANIZATION will submit regular reports (not less often than quarterly) as directed by THE CITY detailing the progress of their project.
- C. At the request of THE CITY, THE ORGANIZATION will periodically send a representative to neighborhood or other public meetings to discuss and promote their project.
- D. THE CITY will provide funding for the program from the Community Development Block Grant program as set forth in Section 3 of this contract.

SECTION 3 – COMPENSATION

THE ORGANIZATION will receive up to Sixty Thousand and No/100 Dollars (\$60,000.00) for the services outlined above and contained in Exhibit A from the approved Community Development Block Grant program for eligible expenses.

SECTION 4 – TIME OF PERFORMANCE

Services shall start within ninety (90) days of this signed agreement and end no later than 18 months after.

SECTION 5 - PAYMENT TERMS AND CONDITIONS

- A. THE CITY shall reimburse THE ORGANIZATION for services rendered based on submittal of valid invoices for project costs with a description and documentation of work performed. The CITY has the option of inspecting the completed work prior to making any payments.
- B. Invoices shall be submitted monthly.
- C. Final payment will be subject to receipt of a final report that is satisfactory to THE CITY.

SECTION 6 - NOTICES

All notices under this Agreement shall be in writing and sent by U.S. mail to the address listed below for each party.

Kathleen L. Sauseda	Brant Bousquet, Executive Director
City of Franklin	Hard Bargain Association
109 3rd Avenue South	P.O. Box 545
Franklin, TN 37064	Franklin, TN 37065-0545

SECTION 7 - PROGRAM PROCEEDS

THE ORGANIZATION is acting as a Community Based Development Organization (CBDO) and not as a subrecipient under the terms of this agreement. Revenues generated by activities undertaken by THE ORGANIZATION with funds provided through this agreement are not considered to be program income. The City of Franklin does require THE ORGANIZATION to use program proceeds to continue THE ORGANIZATION'S mission of providing affordable housing. Toward that end, the City of Franklin requires THE ORGANIZATION to submit a written statement within thirty (30) days of receipt of any initial program proceeds outlining their intended future use.

SECTION 8 - REVERSION OF ASSETS.

Upon termination of this agreement, THE ORGANIZATION shall transfer to the City of Franklin any unused program funds on hand at the time of expiration and any accounts receivable attributable to the use of program funds. Any real property under THE ORGANIZATION control that was acquired or improved in whole or in part with program funds in excess of \$25,000 is either: (i) used to meet one of the national objectives in 24 CFR 570.208 until five years after expiration of the agreement; or(ii) not used in accordance with the above paragraph (i) of this section, in which event THE ORGANIZATION shall pay to the City of Franklin an amount equal to the current market value of the property less any portion of the value attributable to expenditures of non-program funds for the acquisition of, or improvement to, the property.

SECTION 9 - STANDARD TERMS AND CONDITIONS

A. COMPLIANCE WITH FEDERAL LAWS/REGULATIONS

THE ORGANIZATION shall comply with all applicable Federal and State laws and regulations in the performance of this Contract.

B. ANTIDISCRIMINATION/AFFIRMATIVE ACTION AND EQUAL EMPLOYMENT OPPORTUNITY

No person on the grounds of handicap, age, race, color, religion, sex, national origin, disability, or marital/familial status or any other classification protected by Federal and/or State of Tennessee constitutional and/or statutory law-shall be excluded from participation in, or be denied benefits or, or be otherwise subjected to discrimination in the performance of this Contract.

C. AUDIT REQUIREMENTS

- i. This Contract, as well as any sub-agreement made with other participating agencies, is subject to all of the administrative requirements in OMB Circulars A-110 and A-122.
- ii. THE CITY hereby notifies THE ORGANIZATION that a single audit is required for non-profit agencies receiving \$300,000 or more in federal funds in any single fiscal year. This requirement is in accordance with OMB Circulars A-110 and A-133. If required, a copy of the single audit report will be kept on file and made available to THE CITY staff during sub-recipient monitoring visits and appropriate officials as requested.

D. CONFLICT OF INTEREST

THE ORGANIZATION agrees to abide by the following requirements with respect to conflicts of interest, and covenants that it presently has no interest, direct or indirect, and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of services required under this Agreement. THE ORGANIZATION further covenants that in the performance of this Agreement no person having such an interest, direct or indirect, shall be employed or retained by THE ORGANIZATION hereunder. These conflict of interest provisions apply to any person who is an employee, agent, consultant, officer, or elected official or appointed official of THE ORGANIZATION or of any designated public agencies or sub-recipients that are receiving funds under this program.

E. PROCUREMENT STANDARDS AND METHODS

THE ORGANIZATION shall comply with THE CITY's current policy concerning the purchase of equipment and shall maintain inventory records of all non-expendable personal property as defined by such policy as may be procured with funds herein.

THE ORGANIZATION shall procure all materials, property, or services in accordance with the requirements of Attachment O of OMB Circular A-110, Procurement Standards.

F. VENUE

In the event of a dispute or litigation arising out of said Contract, it is understood and agreed and that this Contract was executed and performed in Williamson County, Tennessee, and as such, it is agreed by both parties that venue of said litigation, including an action for Declaratory Judgment, will be in Williamson County, Tennessee.

G. ASSIGNMENT

Neither THE CITY nor THE ORGANIZATION may assign its rights or delegate its responsibilities under this contract.

H. ENTIRE CONTRACT AND MODIFICATION

The Contract between the parties and supersedes any prior or contemporaneous communications, representations or agreements between the parties, whether oral or written, regarding the subject matter of the entire Contract. The terms and conditions of this Contract may not be changed except by an amendment expressly referencing this Contract by section number and signed by an authorized representative of each party.

If seeking any addition or modification to the Contract, the parties agree to reference the specific paragraph number sought to be changed on any future document or purchase order issued in furtherance of the Contract, however, an omission of the reference to same shall not affect its applicability. In no event shall either party be bound by any terms contained in any purchase order, acknowledgement, or other writings unless: (a) such purchase order, acknowledgement, or other writings specifically refer to the Contract or to the specific clause they are intended to modify; (b) clearly indicate the intention of both parties to override and modify the Contract; and (c) such purchase order, acknowledgement, or other writings are signed, with specific material clauses separately initialed, by authorized representatives of both parties.

I. SEVERABILITY

If any provision of this Contract is held invalid, the remainder of the Contract shall not be affected thereby and all other parts of this Contract shall nevertheless be in full force and effect.

J. TIME OF THE ESSENCE

The parties agree that TIME IS OF THE ESSENCE with respect to the parties' performance of all provisions of the Agreement.

K. NO TAXES, NO INTEREST PAYMENTS

As a tax-exempt entity, THE CITY shall not be responsible for sales or use taxes incurred for products or services. THE CITY shall supply THE ORGANIZATION with its Sales and Use Tax Exemption Certificate upon THE ORGANIZATION's request. THE ORGANIZATION shall bear the burden of providing its suppliers with a copy of THE CITY's tax exemption certificate and shall assume all liability for such taxes, if any, that should be incurred. THE CITY does not agree to pay any interest for late payments, having agreed to pay in a timely manner.

L. WAIVER

Neither party's failure or delay to exercise any of its rights or powers under the Contract will constitute or be deemed a waiver or forfeiture of those rights or powers. For a waiver of a right or power to be effective, it must be in writing signed by the waiving party. An effective waiver of a right or power shall not be construed as either (a) a future or continuing waiver of that same right or power, or (b) the waiver of any other right or power.

M. TERMINATION

This Agreement may be terminated upon thirty (30) days written notice by either party.

Upon deliberate breach of the Contract by either party, the non-breaching party shall be entitled to terminate the Contract without notice, with all of the remedies it would have in the event of termination, and may also have such other remedies as it may be entitled to in law or in equity..

SECTION 10 – SIGNATURES

THE CITY OF FRANKLIN

By: _____
Dr. Ken Moore, Mayor

Date: _____

Attest:

Eric S. Stuckey, City Administrator

Date: _____

Approved as to Form:

Kristen Corn, Assistant City Attorney

Date: _____

Hard Bargain Association:

By: _____
Its: _____

Date: _____

Exhibit A

The proposed Scope of Services and Costs are enclosed on the following pages and are incorporated by reference into the agreement.

ATTACHMENT A

COMPANY INFORMATION

Name of Organization	Hard Bargain Mt. Hope Redevelopment (DBA, Hard Bargain Association)
Business Address	608 Mt. Hope St. Franklin, TN 37064
Mailing Address	P.O. Box 545 Franklin, TN 37065-0545
Phone Number	615-591-0504 office 615-406-5822 cell
Name of Principal Owners (leave blank if publicly owned)	Brant Bousquet, Executive Director
Number of Years in Business	12
Location of office which would service THE CITY	Franklin- Hard Bargain

Attach any additional information regarding your firm's background, which would be useful in assessing your proposal.

Hard Bargain Mt. Hope Redevelopment

Costs

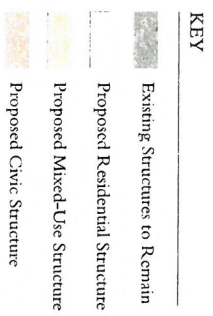
HBMHR has control of the subject property. Funding from this award contract will be used for construction costs for three single family homes for low to moderate income families on the Bungalow Court of the Mt. Hope Street PUD.

Request for CBDG Funds for Infrastructure Costs on 3 Homes \$180,000

HBMHR is requesting \$180,000 from the City of Franklin for construction costs for 3 single family homes for low income families as a part of the PUD's Bungalow Court on Mt. Hope Street in the Hard Bargain neighborhood. This will be completed within the required one year time frame.

This award will be a tremendous blessing to our organization, and more importantly, to the low to moderate income families who purchase the homes. Because we are a non-profit affordable housing organization, we do not wrap up the infrastructure costs and the construction costs into the price of each home we build. We have to cover these costs with grants and fundraising. We would love to use the CBDG funds to partner with the City of Franklin to provide affordable housing for three low and moderate income families in the Franklin.

Master Plan



**CONTRACT FOR THE RECEIPT OF COMMUNITY BASED DEVELOPMENT
ORGANIZATION PROGRAM FUNDING, FISCAL YEAR 2016-17 FROM THE CITY
OF FRANKLIN
COF Contract No. 2016-0245**

This Contract, made and entered into this ____ day of ____, 2016, is by and between the City of Franklin, (hereinafter "THE CITY") and Community Housing Partnership hereinafter called "THE ORGANIZATION").

WITNESSETH:

WHEREAS, THE CITY has identified a need to conduct a Community Based Development Organization (CBDO) Program funding; and

WHEREAS, THE ORGANIZATION is experienced in developing Affordable Housing projects, as defined by the United States Department of Housing and Urban Development and has met the certification requirements of becoming a CBDO; and

WHEREAS, THE ORGANIZATION replied to a publicly advertised Request For Proposals and was selected to participate as a CBDO in THE CITY'S Community Development Block Grant Program;

NOW, THEREFORE, in consideration of the mutual promises as contained herein, the parties hereto have agreed and hereby enter into this Contract according to the provisions as set forth herein.

SECTION 1 - SCOPE OF SERVICES

THE ORGANIZATION will carry out activities necessary for acquisition, rehabilitation and resale, new construction, or conversion of a non-residential structure for low to moderate income owner occupants in the City of Franklin. Low to moderate income is defined as households with incomes equal to or less than 80% of median family income for the Metropolitan Statistical Area. Any property acquired and transferred pursuant to this Contract shall be encumbered by title restrictions in a form acceptable to the THE CITY.

When applicable, the work will also include testing, remediating, and clearing structures for lead-based paint hazards. All structures constructed pre-1978 must be tested and cleared for lead-based paint hazards. In the presence of lead-based paint hazards, contractors/workers are required to be certified in and use safe-work practices. **A United States Department of Housing and Urban Development (HUD) Environmental Review Report will be required.**

Incorporated into this contract is Exhibit A, the proposal by THE ORGANIZATION, which is attached hereto and made a part hereof.

SECTION 2 - RESPONSIBILITIES OF PARTIES

- A. THE ORGANIZATION will perform the duties described above and in Exhibit A and take other actions necessary to accomplish the spirit of this agreement.
- B. THE ORGANIZATION will submit regular reports (not less often than quarterly) as directed by THE CITY detailing the progress of their project.
- C. At the request of THE CITY, THE ORGANIZATION will periodically send a representative to neighborhood or other public meetings to discuss and promote their project.
- D. THE CITY will provide funding for the program from the Community Development Block Grant program as set forth in Section 3 of this contract.

SECTION 3 – COMPENSATION

THE ORGANIZATION will receive up to One-Hundred Twenty Thousand and No/100 Dollars (\$120,000.00) for the services outlined above and contained in Exhibit A from the approved Community Development Block Grant program for eligible expenses.

SECTION 4 – TIME OF PERFORMANCE

Services shall start within ninety (90) days of this signed agreement and end no later than 18 months after. on or before the 365 day after.

SECTION 5 - PAYMENT TERMS AND CONDITIONS

- A. THE CITY shall reimburse THE ORGANIZATION for services rendered based on submittal of valid invoices for project costs with a description and documentation of work performed. The CITY has the option of inspecting the completed work prior to making any payments.
- B. The Schedule of Payments, if applicable, is attached as Exhibit B.
- C. Invoices shall be submitted monthly.
- D. Final payment will be subject to receipt of a final report that is satisfactory to THE CITY.

SECTION 6 - NOTICES

All notices under this Agreement shall be in writing and sent U.S. mail to the address listed below for each party.

Kathleen L. Sauseda	Stephen Murray, Executive Director
City of Franklin	Community Housing Partnership
109 3rd Avenue South	129 West Fowlkes Street, Suite 128
Franklin, TN 37064	Franklin, TN 37064-3562

SECTION 7 - PROGRAM PROCEEDS

THE ORGANIZATION is acting as a Community Based Development Organization (CBDO) and not as a subrecipient under the terms of this agreement. Revenues generated by activities undertaken by THE ORGANIZATION with funds provided through this agreement are not considered to be program income. The City of Franklin does require THE ORGANIZATION to use program proceeds to continue THE ORGANIZATIONS mission of providing affordable housing. Toward that end, the City of Franklin requires THE ORGANIZATION to submit a written statement within thirty (30) days of receipt of any initial program proceeds outlining their intended future use.

SECTION 8 - REVERSION OF ASSETS.

Upon termination of this agreement, THE ORGANIZATION shall transfer to the City of Franklin any unused program funds on hand at the time of expiration and any accounts receivable attributable to the use of program funds. Any real property under THE ORGANIZATION control that was acquired or improved in whole or in part with program funds in excess of \$25,000 is either: (i) used to meet one of the national objectives in 24 CFR 570.208 until five years after expiration of the agreement; or (ii) not used in accordance with the above paragraph (iii) of this section, in which event THE ORGANIZATION shall pay to the City of Franklin an amount equal to the current market value of the property less any portion of the value attributable to expenditures of non-program funds for the acquisition of, or improvement to, the property.

SECTION 9 - STANDARD TERMS AND CONDITIONS

A. COMPLIANCE WITH FEDERAL LAWS/REGULATIONS

THE ORGANIZATION shall comply with all applicable Federal and State laws and regulations in the performance of this Contract.

B. ANTIDISCRIMINATION/AFFIRMATIVE ACTION AND EQUAL EMPLOYMENT OPPORTUNITY

No person on the grounds of handicap, age, race, color, religion, sex, national origin, disability, or marital/familial status or any other classification protected by Federal and/or State of Tennessee constitutional and/or statutory law-shall be excluded from participation in, or be denied benefits or, or be otherwise subjected to discrimination in the performance of this Contract.

C. AUDIT REQUIREMENTS

- i. This Contract, as well as any sub-agreement made with other participating agencies, is subject to all of the administrative requirements in OMB Circulars A-110 and A-122.
- ii. THE CITY hereby notifies THE ORGANIZATION that a single audit is required for non-profit agencies receiving \$300,000 or more in federal funds in any single fiscal year. This requirement is in accordance with OMB Circulars A-110 and A-133. If required, a copy of the single audit report will be kept on file and made available to THE CITY staff during sub-recipient monitoring visits and appropriate officials as requested.

D. CONFLICT OF INTEREST

THE ORGANIZATION agrees to abide by the following requirements with respect to conflicts of interest, and covenants that it presently has no interest, direct or indirect, and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of services required under this Agreement. THE ORGANIZATION further covenants that in the performance of this Agreement no person having such an interest, direct or indirect, shall be employed or retained by THE ORGANIZATION hereunder. These conflict of interest provisions apply to any person who is an employee, agent, consultant, officer, or elected official or appointed official of THE ORGANIZATION or of any designated public agencies or sub-recipients that are receiving funds under this program.

E. PROCUREMENT STANDARDS AND METHODS

THE ORGANIZATION shall comply with THE CITY's current policy concerning the purchase of equipment and shall maintain inventory records of all non-expendable personal property as defined by such policy as may be procured with funds herein.

THE ORGANIZATION shall procure all materials, property, or services in accordance with the requirements of Attachment O of OMB Circular A-110, Procurement Standards.

F. VENUE

In the event of a dispute or litigation arising out of said Contract, it is understood and agreed and that this Contract was executed and performed in Williamson County, Tennessee, and as such, it is agreed by both parties that venue of said litigation, including an action for Declaratory Judgment, will be in Williamson County, Tennessee.

G. ASSIGNMENT

Neither THE CITY nor THE ORGANIZATION may assign its rights or delegate its responsibilities under this contract.

H. ENTIRE CONTRACT AND MODIFICATION

The Contract between the parties and supersedes any prior or contemporaneous communications, representations or agreements between the parties, whether oral or written, regarding the subject matter of the entire Contract. The terms and conditions of this Contract may not be changed except by an amendment expressly referencing this Contract by section number and signed by an authorized representative of each party.

If seeking any addition or modification to the Contract, the parties agree to reference the specific paragraph number sought to be changed on any future document or purchase order issued in furtherance of the Contract, however, an omission of the reference to same shall not affect its applicability. In no event shall either party be bound by any terms contained in any purchase order, acknowledgement, or other writings unless: (a) such purchase order, acknowledgement, or other writings specifically refer to the Contract or to the specific clause they are intended to modify; (b) clearly indicate the intention of both parties to override and modify the Contract; and (c) such purchase order, acknowledgement, or other writings are signed, with specific material clauses separately initialed, by authorized representatives of both parties.

I. SEVERABILITY

If any provision of this Contract is held invalid, the remainder of the Contract shall not be affected thereby and all other parts of this Contract shall nevertheless be in full force and effect.

J. TIME OF THE ESSENCE

The parties agree that TIME IS OF THE ESSENCE with respect to the parties' performance of all provisions of the Agreement.

K. NO TAXES, NO INTEREST PAYMENTS

As a tax-exempt entity, THE CITY shall not be responsible for sales or use taxes incurred for products or services. THE CITY shall supply THE ORGANIZATION with its Sales and Use Tax Exemption Certificate upon THE ORGANIZATION's request. THE ORGANIZATION shall bear the burden of providing its suppliers with a copy of THE CITY's tax exemption certificate and shall assume all liability for such taxes, if any, that should be incurred. THE CITY does not agree to pay any interest for late payments, having agreed to pay in a timely manner.

L. WAIVER

Neither party's failure or delay to exercise any of its rights or powers under the Contract will constitute or be deemed a waiver or forfeiture of those rights or powers. For a waiver of a right or power to be effective, it must be in writing signed by the waiving party. An effective waiver of a right or power shall not be construed as either (a) a future or continuing waiver of that same right or power, or (b) the waiver of any other right or power.

M. TERMINATION

This Agreement may be terminated upon thirty (30) days written notice by either party.

Upon deliberate breach of the Contract by either party, the non-breaching party shall be entitled to terminate the Contract without notice, with all of the remedies it would have in the event of termination, and may also have such other remedies as it may be entitled to in law or in equity.

SECTION 10 – SIGNATURES

THE CITY OF FRANKLIN

By: _____
Dr. Ken Moore, Mayor

Date: _____

Attest:

Eric S. Stuckey, City Administrator

Date: _____

Approved as to Form:

Kristen L. Corn, Assistant City Attorney

Date: _____

COMMUNITY HOUSING PARTNERSHIP

By: _____
Its: _____

Date: _____

Exhibit A

The proposed Scope of Services and Costs are enclosed on the following pages and are incorporated by reference into the agreement.

Exhibit B

**Community Housing Partnership of Williamson County (CHP)
Proposed Scope of Services (CBDO)**

CHP is proposing (if funded) with this CBDO program to use \$180,000 to buy, rehabilitate and sell (to low income homebuyers) four houses within the city limits of Franklin. This program will perform two basic functions for the City of Franklin. First, it will enable the purchase of a house that will most likely be a deteriorated structure within the city, often times in codes violation or foreclosure and a problem for the City Staff. Second, it will enable a low income homebuyer to purchase an entirely rehabilitated house that would be next to impossible for them to accomplish without this program. This program will take a problem piece of property and make it a productive, tax producing property for the City of Franklin while providing a homeownership opportunity for a low income family. It should be noted that this grant, if funded, will be used for housing that has not already received any funding from the City of Franklin. CHP will not double dip on any house that has already received funding from Franklin. This will enable the City of Franklin to count all housing done with this grant as new numbers to report to HUD.

CHP has an extensive history in programs similar to this. CHP has successfully administered the Neighborhood Stabilization Program for Tennessee Housing Development Agency in the past. Within this program CHP has bought, rehabbed and sold twelve houses. CHP successfully administers the HUD HOME program and generates approximately 5 purchase, rehabs and sales per year for the last seven years. CHP uses the Federal Home Loan Bank of Atlanta's Affordable Housing program to provide homeownership opportunities in the rural sections of Williamson County, successfully providing low income homebuyers in 45 instances over the years. Finally, CHP has completed 5 houses in three different years using the City of Franklin CDBG CBDO programs. Additionally, CHP is constantly finding housing opportunities to buy, rehabilitate and resell house and does this on a consistent basis. CHP has an extensive history of providing low income homeownership opportunities under programs exactly as described under this "Request for Proposals for Affordable Housing Development by Community Based Development Organizations" as issued by the City of Franklin.

Please note that information in the Cost section of this proposal is an integral part of CHP's Scope of Services. CHP proposes to follow the following format in this program:

Purchase:

CHP will purchase the first house within 60 days of the opening of a funding line under this program. Purchase will come through research on various properties including HUD or other foreclosed properties (including the courthouse steps) where CHP may receive a discounted price. Additional input from Hard Bargain Association will be solicited to see if houses within their market areas are on the market and rehabilitation of such property would help in their activities. All environmental procedures will be conducted prior to any close on the property. Additionally, any lead based paint testing and planning will be conducted prior to the close. Finally, all work write ups, cost estimating and construction bidding will be conducted prior to the close on the property. Feasibility of the project within the guidelines of low income purchase will be maintained at all times. The marketing of the property to a low income homebuyer will start immediately upon the purchase contract by CHP to buy the property. If a customer is qualified, selected and mortgage approved then they will be able to strongly participate in the construction phase with all selections within CHP budgets. The second house will be purchase and follow a similar time line within 120 days of the contract signing. The third house will be purchased and follow a similar time line within 180 days of the contract signing. The fourth house will be purchased and follow a similar time line within 240 days of the contract signing.

It should be noted that while CHP is showing the rehabilitation and sale of housing under this grant we will not preclude the development of new housing should lots become available that would allow us to partner with a developer or contractor to build a new house similar to what CHP has done with the City of Franklin at 254 Natchez Street. While that might influence the timeline, we do not think it would do so extensively. At the writing of this application no lots were available at a price that would facilitate such construction so we did not use any examples of this.

Construction:

Construction services will be performed by licensed, bonded and insured State of Tennessee contractors and should start immediately upon the purchase (close) of the houses by CHP after a bidding process is completed. All work will be performed per a work write up specifying the necessary services and under a direct contract with CHP. All construction activity shall require all necessary permits and insurance by the contractor. The contractor shall provide progress schedules on a monthly basis or on any draw request. All items listed in paragraphs 8.0, 9.0, 10.0 and 12.0 in the Request for Proposals by the City of Franklin shall be incorporated in any agreement by the contractor and the City of Franklin.

Contracts should take no more than 120 days to complete and will be signified as completed by a "Certificate of Occupancy" issued by the City of Franklin Codes Department.

Program implementation and supervision:

CHP proposes to serve as the program administrator for the program, providing the following services:

1. Marketing the program through outreach to the neighborhood associations, direct press releases and advertising through all local media outlets, direct outreach to all social service agencies who might have clients within these neighborhoods, direct contact with the residents of these neighborhoods through flyers or other means and direct contact with the other not for profits operating in these neighborhoods (Hard Bargain Association and United Community Resource Foundation).
2. Performing Intake functions and record keeping of all homebuyer applicants for the funding. This includes the initial application documents certifying (but not limited to) income verification (insuring income compliance per the CDBG guidelines), home mortgage approval certification (insuring that the homebuyer has concluded homebuyers class and secured a reasonable mortgage), Deeds of Trust and Notes for the CDBG grant connected with the property (Insuring the proper compliance documents are prepared and properly registered).
3. Inspecting the property jointly with the homeowner and City of Franklin staff. Composing with the approved homeowner a comprehensive Work Write Up. This includes all necessary inspections and certifications including (but not limited to):
 - A. Lead Based Paint inspections by certified inspector
 - B. Flood Plain certification with appropriate map and panel
 - C. National Park Service Standards of Rehabilitation (Historic) submittals to the appropriate agent whether it be a State Historic Preservation Officer (SHPO) at the City of Franklin or directly to the Tennessee Historic Commission.
 - D. Thermal/ Explosive verifications with the Fire Marshall of the City of Franklin
4. Controlling the contract by bidding out the contract to the appropriate Contractors, conducting the public bid opening, consolidating the bids to present to CHP Board of Directors for final contract decisions. At the point of Notice to Proceed CHP will conduct the following:

- A. Provide the homeowner the necessary guidance for participating in decision in the construction
 - B. Provide the contractor the necessary communications to begin the work
 - C. Do initial inspections that all permits have been obtained
 - D. Provide scheduled inspections to insure that the work is being conducted correctly and within time constraints
 - E. Provide inspections on draw requests to insure that the contractor is only drawing what they have in the job. Evaluate and authorize payments.
 - F. Provide final inspections and certify completion of the project.
5. Record keeping will be maintained by CHP with a complete project book for each individual project and all records regarding the intake, facilitation, inspections, contracts and draw requests during construction and all mortgage related documents regarding the homebuyer and the close on said property. All record keeping will be maintained to insure that CDBG compliance is maintained by both CHP and the City of Franklin.
6. Complaints and Grievances will be addressed by CHP with representation of the City of Franklin where applicable. CHP will maintain an individual file regarding any complaint and grievances by either the homeowner, contractor or interested party. CHP will act as the negotiator to address any issues arising and if CHP can resolve the problem we will do so. However if the problem cannot be resolved we would suggest that the City of Franklin have other resources, such as arbitration possibilities.

CHP has all the internal systems available to begin this program immediately as we will follow the successful format from similar homeownership programs that we have successfully conducted. Inspection systems exist within programs to do all initial inspections and staff is available and certified in all compliance and inspection areas. Indeed this program is very similar to programs performed by CHP staff for HUD HOMES and Tennessee Housing Development Agencies Neighborhood Stabilization Program. As well CHP has successfully administered the CDBG CBDO program over three different program years. Additionally, CHP has conducted the first six years of the CDBG programs for the City of Franklin showing our ability to successfully administer CDBG in a TIMELY method.

CHP will close out the project after final reporting and record keeping to the City of Franklin and will keep all records available for 10 years after the completion of each project. Additionally, CHP will be available and help the City of Franklin on all compliance reporting regarding this CDBG program to the US Department of Housing Urban Development.

Notes:

- 1. The Cost section of this proposal is an integral part of the Scope of Services
- 2. Development and sale pro formas and sources and use statements are in the Cost Section
- 3. Properties have not been optioned at this point although within the Cost Section, 3 possible properties are shown. Additional properties are usually available. It would not be prudent for CHP to option any properties in conjunction with this application until funding is secured.
- 4. No property that is not zoned correctly for single family housing will be considered
- 5. The CHP staff will serve as the Development team to control cost and keep the house affordable
- 6. Architectural Plans and elevations will not be necessary as this is rehabilitation of an existing structure
- 7. Landmark Bank has preapproved the purchase and construction funding for this application (see attached letter).

City of Franklin, Tennessee
Tabulation of Submittals*

Purchasing Office Solicitation No.:		2017-004 (sanitary sewer pretreatment program support services)								
Notice to proposers published in the Williamson Herald on:		9/8/16								
Number of potential proposers that were notified of / that submitted a proposal in response to this request for proposals:		8 / 1								
Date and time proposal due and publicly opened:		10/11/16 2:00 PM								
Present at opening of proposals:		Natalie Keene, Suzanne Ward and Brian Wilcox of the City of Franklin Purchasing Office								
Target meeting of BOMA at which recommendation is scheduled to be considered:		11/22/16								
Proposals received from:	Does the proposal include all required documents?	Does the proposal take any exceptions to the City's procurement solicitation? / If so, how many?	Average points allocated by proposal evaluation team (out of a possible 100, utilizing evaluation criteria as listed in RFP):	Service category	Service subcategory	Estimated annual quantities	Quoted unit pricing:	Estimated annual pricing:	Payment terms:	Proposal is valid and may be accepted through:
Monitoring & Management Services, LLC	Yes	Proposal takes no exceptions	100.00	Fats, Oils & Grease (FOG) Program Support	Food Service Establishment (FSE) inspections	400	\$85.00	\$34,000.00	net 30 days	1/15/2017
1812 Old Natchez Trace					Noncompliance Notification (NCN) follow-up inspections	40	\$85.00	\$3,400.00		
Franklin, TN 37069					Residential FOG Control Education and Awareness	1	\$750.00	\$750.00		
Byron Ross, Principal					Consultation as necessary	60	\$80.00	\$4,800.00		
615-218-8801					Optional web-based FOG tracking database	12	\$80.00	\$960.00		
byron@mmsontheweb.com					Total estimated annual FOG Program Support pricing			\$43,910.00		
				Industrial Pretreatment (IPP) Program Support	Industrial inspections	12	\$375.00	\$4,500.00		
					TDEC annual IPP report	1	\$750.00	\$750.00		
					Other IPP-related work	20	\$80.00	\$1,600.00		
					Total estimated annual IPP Program Support pricing			\$6,850.00		
										</

*Shaded submittal is the submittal scored highest by the interview team



December 9, 2016

**City of Franklin
Board of Mayor and Alderman
Franklin, Tennessee**

Regarding: Ashcroft Valley PUD Subdivision Proposal

Dear Mayor and Alderman,

My client has filed a proposal for Ashcroft Valley, a Master Planned Neighborhood with 376 homes proposed on 226 acres. On November 22, 2016, the Board of Mayor and Alderman voted to approve the Plan of Services, approve the Annexation request, and establish a zoning for the property of R1. As a result of the decision by BOMA to zone the property as R1, my client elected to defer the vote on the Development Plan to the December 13th meeting.

We have reviewed our application and the decision by the Board to rezone the property to R1. We are pleased that City will annex the property and will establish a zone for the property. Since the proposed Development Plan for Ashcroft Valley no longer complies with this base zone of R1, it will need to be withdrawn.

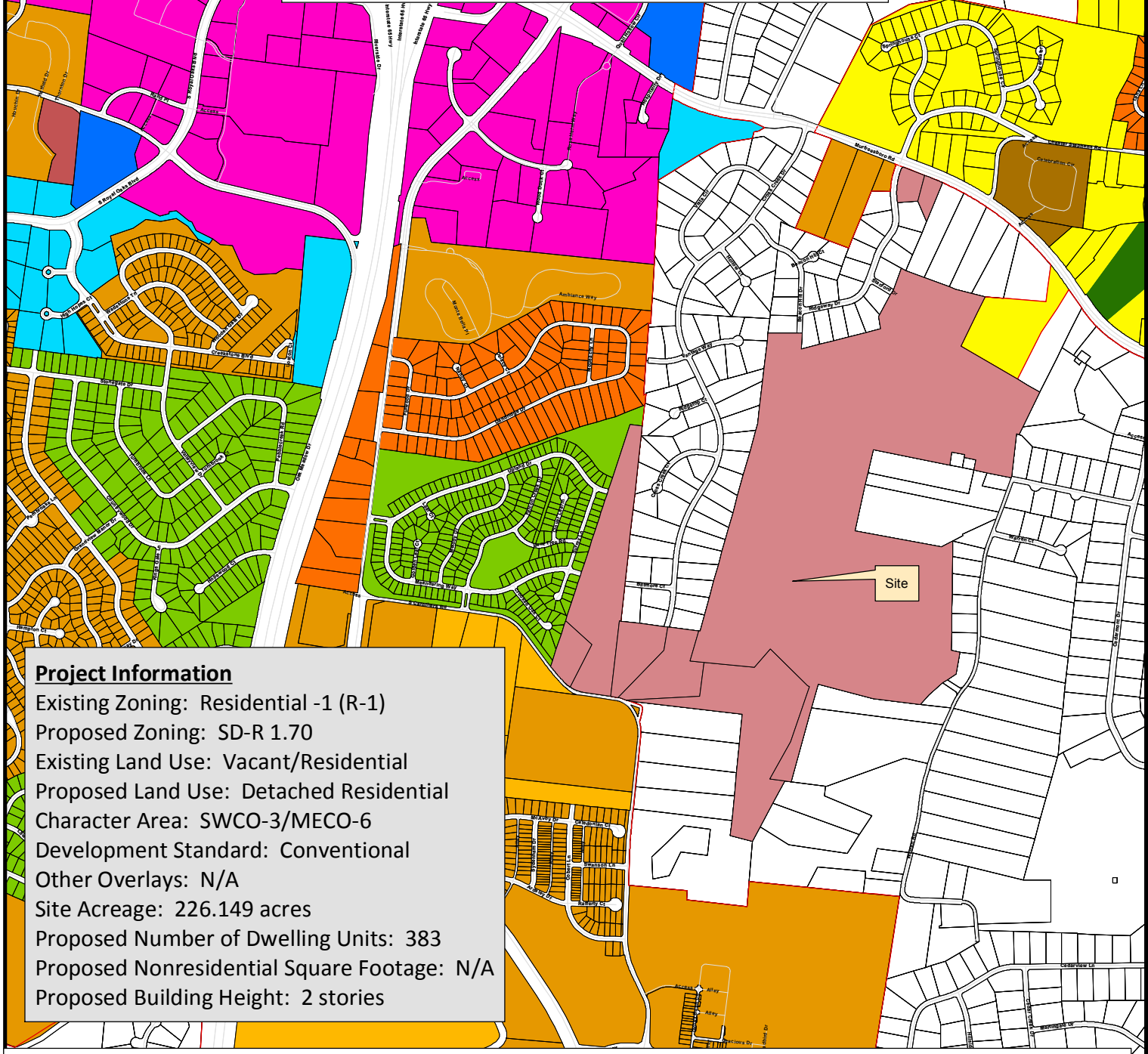
Please accept this letter as notice to withdraw the Development Plan.

Sincerely yours,

A handwritten signature in black ink, appearing to read 'Greg Gamble', is written over a light blue horizontal line.

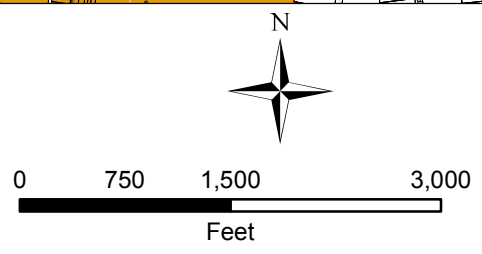
Greg Gamble
Gamble Design Collaborative

ASHCROFT VALLEY PUD SUBDIVISION, DEVELOPMENT PLAN
 RESOLUTION 2016-42
 FRANKLIN MUNICIPAL PLANNING COMMISSION
 9/22/2016



Project Information
 Existing Zoning: Residential -1 (R-1)
 Proposed Zoning: SD-R 1.70
 Existing Land Use: Vacant/Residential
 Proposed Land Use: Detached Residential
 Character Area: SWCO-3/MECO-6
 Development Standard: Conventional
 Other Overlays: N/A
 Site Acreage: 226.149 acres
 Proposed Number of Dwelling Units: 383
 Proposed Nonresidential Square Footage: N/A
 Proposed Building Height: 2 stories

- | | |
|--|---------------------------------------|
| Ashcroft Valley Subdivision | SD-R Specific Development-Residential |
| AG Agricultural District | SD-X Specific Development-Variety |
| ER Estate Residential | OR Office Residential District |
| R-1 Residential District | GO General Office District |
| R-2 Residential District | CC Central Commercial District |
| R-3 Residential District | NC Neighborhood Commercial District |
| R-6 Residential District | GC General Commercial District |
| RM-10 Attached 10 Residential District | LI Light Industrial District |
| RM-15 Attached 15 Residential District | HI Heavy Industrial District |
| RM-20 Attached 20 Residential District | CI Civic and Institutional District |



This map was created by the Franklin Planning Department. It was compiled from the most authentic information available. The City is not responsible for any errors or omissions contained hereon. All data and materials (c) copyright 2016. All rights reserved.

RESOLUTION 2016-42

TO BE ENTITLED: "A RESOLUTION APPROVING A DEVELOPMENT PLAN FOR ASHCROFT VALLEY PUD SUBDIVISION WITH 6 MODIFICATIONS OF DEVELOPMENT STANDARDS (CHARACTER AREA LOT SIZE, WARREN ROAD CONNECTION, BEACON HILL DRIVE STREET CONNECTION, INTERNAL STREET CONNECTION, CROSS CREEK DRIVE STREET CONNECTION, AND BILTMORE COURT STREET CONNECTION), FOR THE PROPERTY LOCATED SOUTH OF MURFREESBORO ROAD AND NORTH OF SOUTH CAROTHERS DRIVE."

WHEREAS, Glenn Adams, Rob Adams, James E. Adams Jr, George Durnin, Patti Sue Watkins, Ralph H. Peden Jr, ("Owner(s)") of property located as described below ("Property") petitioned the Board of Mayor and Aldermen (BOMA) of the City of Franklin, Tennessee ("City"), to annex 204.081 acres adjoining the City limits and located within the Franklin Urban Growth Boundary (UGB); and

WHEREAS, Jean Marie Glass and Harry Gregory Glass ("Owner(s)") of property located at 4338 and 4340 South Carothers Road ("Property") consisting of 22.068 acres, are located within the Franklin City Limits; and

WHEREAS, the BOMA has adopted a Plan of Services and annexed the Property as described in Resolution 2016-41 and Resolution 2016-40/Ordinance 2016-27; and

WHEREAS, the BOMA has, or will, approve zoning for the Property as part of Ordinance 2016-28; and

WHEREAS, the Planned Unit Development (PUD) process is a review procedure that is intended to encourage innovative land planning and design and avoid the monotony sometimes associated with large developments by:

- (a) Reducing or eliminating the inflexibility that sometimes results from strict application of zoning standards that were designed primarily for individual lots;
- (b) Allowing greater freedom in selecting the means to provide access, light, open space, and design amenities;
- (c) Encouraging a sensitive design that respects the surrounding established land use character and natural or man-made features of the site including, but not limited to, trees, historic features, streams, hillsides, and floodplains;
- (d) Promoting quality design and environmentally sensitive development by allowing development to take advantage of special site characteristics, locations, and land uses; and
- (e) Allowing deviations from certain zoning standards that would otherwise apply if not contrary to the general spirit and intent of this ordinance; and

WHEREAS, the PUD process requires the approval of a Development Plan that is reviewed and approved by BOMA, after a public hearing and a recommendation by the Franklin Municipal Planning Commission (FMPC); and

WHEREAS, in accordance with the provisions of *Tennessee Code Annotated* § 13-4-310, as amended, and subject to the exceptions set forth in said statute, the approval of the Development Plan by the BOMA will initiate a vesting period during which the development standards adopted by the City

and in effect on the date of approval shall remain the standards applicable to the approved Development Plan.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF MAYOR AND ALDERMEN OF THE CITY OF FRANKLIN, TENNESSEE, AS FOLLOWS:

SECTION I. That the legal description of the Property included in the Development Plan is as follows:

PREMISES CONSIDERED	
Map-Parcel	Acres
079M---B02800	2.7
079M---B02900	
089---05500	201.381
089---04304	
089---04303	
089---04302	
089---03001	22.068
089---03000	
Total	226.149

LEGAL DESCRIPTION – PARCELS 28.00 AND 29.00 ON MAP 79 M GROUP B

LAND LYING IN THE FOURTEENTH CIVIL DISTRICT OF WILLIAMSON COUNTY, BEING LOTS 127 AND 128 ON THE FINAL PLAT FOR SECTION 1 OF FRANKLIN EAST, OF RECORD IN PLAT BOOK 6, PAGE 91, REGISTER'S OFFICE OF WILLIAMSON COUNTY, TENNESSEE, AND CONTAINING 2.7 ACRES MORE OR LESS.

LEGAL DESCRIPTION – PARCELS 43.02, 43.03, 43.04, 55.00 ON MAP 89

THE FOLLOWING LEGAL DESCRIPTION IS FOR LAND IN THE FOURTEENTH CIVIL DISTRICT OF WILLIAMSON COUNTY, LOCATED ON THE LANDS OF JAMES E. ADAMS, JR., OF RECORD IN DEED BOOK 2008, PAGE 702, R.O.W.C., TN, RALPH H PEDEN, JR., OF RECORD IN DEED BOOK 4590, PAGE 436, R.O.W.C., TN, PATTI SUE WATKINS, OF RECORD IN DEED BOOK 6074, PAGE 249, R.O.W.C., TN, AND GEORGE V. DURNIN, OF RECORD IN DEED BOOK 1607, PAGE 1006, R.O.W.C., TN, AND MORE PARTICULARLY DESCRIBED IN AS FOLLOW:

BEGINNING AT A POINT IN THE NORTH MARGIN OF SOUTH CAROTHERS ROAD, APPROXIMATELY 1600 FEET SOUTHEAST OF THE INTERSECTION OF FALCON CREEK DRIVE AND SAID SOUTH CAROTHERS ROAD;

THENCE, LEAVING THE NORTH MARGIN OF SAID SOUTH CAROTHERS ROAD, NORTH 06 DEGREES 20 MINUTES 18 SECONDS EAST, A DISTANCE OF 716.81 FEET TO A POINT;

THENCE SOUTH 82 DEGREES 56 MINUTES 59 SECONDS EAST, A DISTANCE OF 753.05 FEET TO A POINT;

THENCE NORTH 15 DEGREES 32 MINUTES 59 SECONDS EAST, A DISTANCE OF 2,025.58 FEET TO A POINT;

THENCE NORTH 06 DEGREES 33 MINUTES 34 SECONDS EAST, A DISTANCE OF 861.42 FEET TO A POINT;

THENCE SOUTH 89 DEGREES 39 MINUTES 10 SECONDS EAST, A DISTANCE OF 319.84 FEET TO A POINT;

THENCE SOUTH 02 DEGREES 23 MINUTES 32 SECONDS WEST, A DISTANCE OF 149.73 FEET TO A POINT;

THENCE NORTH 75 DEGREES 48 MINUTES 17 SECONDS EAST, A DISTANCE OF 768.48 FEET TO A POINT;
THENCE NORTH 09 DEGREES 39 MINUTES 11 SECONDS WEST, A DISTANCE OF 117.87 FEET TO A POINT;
THENCE NORTH 29 DEGREES 14 MINUTES 05 SECONDS EAST, A DISTANCE OF 293.60 FEET TO A POINT;
THENCE NORTH 20 DEGREES 05 MINUTES 58 SECONDS EAST, A DISTANCE OF 210.10 FEET TO A POINT;
THENCE SOUTH 62 DEGREES 38 MINUTES 15 SECONDS EAST, A DISTANCE OF 48.00 FEET TO A POINT;
THENCE SOUTH 69 DEGREES 38 MINUTES 11 SECONDS EAST, A DISTANCE OF 509.70 FEET TO A POINT;
THENCE SOUTH 76 DEGREES 09 MINUTES 25 SECONDS EAST, A DISTANCE OF 277.18 FEET TO A POINT;
THENCE SOUTH 26 DEGREES 11 MINUTES 34 SECONDS WEST, A DISTANCE OF 520.34 FEET TO A POINT;
THENCE SOUTH 59 DEGREES 49 MINUTES 41 SECONDS EAST, A DISTANCE OF 862.61 FEET TO A POINT;
THENCE SOUTH 26 DEGREES 16 MINUTES 06 SECONDS WEST, A DISTANCE OF 444.04 FEET TO A POINT;
THENCE NORTH 70 DEGREES 59 MINUTES 36 SECONDS WEST, A DISTANCE OF 28.01 FEET TO A POINT;
THENCE SOUTH 06 DEGREES 10 MINUTES 51 SECONDS WEST, A DISTANCE OF 403.96 FEET TO A POINT;
THENCE SOUTH 20 DEGREES 12 MINUTES 18 SECONDS WEST, A DISTANCE OF 14.56 FEET TO A POINT;
THENCE NORTH 78 DEGREES 25 MINUTES 28 SECONDS WEST, A DISTANCE OF 356.81 FEET TO A POINT;
THENCE NORTH 09 DEGREES 56 MINUTES 19 SECONDS EAST, A DISTANCE OF 100.04 FEET TO A POINT;
THENCE NORTH 78 DEGREES 25 MINUTES 28 SECONDS WEST, A DISTANCE OF 110.05 FEET TO A POINT;
THENCE NORTH 09 DEGREES 56 MINUTES 27 SECONDS EAST, A DISTANCE OF 25.01 FEET TO A POINT;
THENCE NORTH 78 DEGREES 25 MINUTES 30 SECONDS WEST, A DISTANCE OF 125.05 FEET TO A POINT;
THENCE SOUTH 09 DEGREES 56 MINUTES 17 SECONDS WEST, A DISTANCE OF 125.05 FEET TO A POINT;
THENCE NORTH 78 DEGREES 25 MINUTES 29 SECONDS WEST, A DISTANCE OF 734.65 FEET TO A POINT;
THENCE SOUTH 12 DEGREES 44 MINUTES 58 SECONDS WEST, A DISTANCE OF 784.89 FEET TO A POINT;
THENCE SOUTH 79 DEGREES 24 MINUTES 14 SECONDS EAST, A DISTANCE OF 830.08 FEET TO A POINT;
THENCE NORTH 62 DEGREES 28 MINUTES 37 SECONDS EAST, A DISTANCE OF 119.56 FEET TO A POINT;
THENCE SOUTH 00 DEGREES 37 MINUTES 45 SECONDS WEST, A DISTANCE OF 1,031.05 FEET TO A POINT;
THENCE SOUTH 76 DEGREES 31 MINUTES 22 SECONDS EAST, A DISTANCE OF 81.00 FEET TO A POINT;
THENCE SOUTH 09 DEGREES 52 MINUTES 41 SECONDS WEST, A DISTANCE OF 206.49 FEET TO A POINT;

THENCE SOUTH 57 DEGREES 04 MINUTES 46 SECONDS WEST, A DISTANCE OF 151.05 FEET TO A POINT;
 THENCE SOUTH 49 DEGREES 16 MINUTES 17 SECONDS WEST, A DISTANCE OF 170.39 FEET TO A POINT;
 THENCE SOUTH 41 DEGREES 39 MINUTES 12 SECONDS WEST, A DISTANCE OF 123.05 FEET TO A POINT;
 THENCE NORTH 83 DEGREES 17 MINUTES 12 SECONDS WEST, A DISTANCE OF 441.91 FEET TO A POINT;
 THENCE NORTH 75 DEGREES 19 MINUTES 30 SECONDS WEST, A DISTANCE OF 540.96 FEET TO A POINT;
 THENCE SOUTH 15 DEGREES 23 MINUTES 08 SECONDS WEST, A DISTANCE OF 951.14 FEET TO A POINT;
 THENCE NORTH 82 DEGREES 39 MINUTES 38 SECONDS WEST, A DISTANCE OF 60.79 FEET TO A POINT;
 THENCE SOUTH 28 DEGREES 07 MINUTES 56 SECONDS WEST, A DISTANCE OF 646.53 FEET TO A POINT;
 THENCE NORTH 75 DEGREES 15 MINUTES 25 SECONDS WEST, A DISTANCE OF 215.00 FEET TO A POINT;
 THENCE NORTH 05 DEGREES 42 MINUTES 26 SECONDS EAST, A DISTANCE OF 1,148.85 FEET TO A POINT;
 THENCE NORTH 83 DEGREES 26 MINUTES 21 SECONDS WEST, A DISTANCE OF 1,067.76 FEET TO A POINT, SAID POINT BEING IN THE NORTH MARGIN OF SAID SOUTH CAROTHERS ROAD;
 THENCE, WITH THE NORTH MARGIN OF SAID SOUTH CAROTHERS ROAD, NORTH 71 DEGREES 12 MINUTES 56 SECONDS WEST, A DISTANCE OF 97.37 FEET TO A POINT;
 THENCE NORTH 81 DEGREES 09 MINUTES 29 SECONDS WEST, A DISTANCE OF 74.53 FEET TO THE POINT OF BEGINNING, AND CONTAINING 8,772,174.99 SQUARE FEET OR 201.381 ACRES.

LEGAL DESCRIPTION – PARCELS 30.00 AND 30.01 ON MAP 89

THE FOLLOWING LEGAL DESCRIPTION IS FOR LAND IN THE FOURTEENTH CIVIL DISTRICT OF WILLIAMSON COUNTY, BEING A TRACT OF LAND OWNED BY HARRY GREGORY GLASS, JEAN MARIE GILES GLASS AND GEORGIA ANN SPENCER, OF RECORD IN DEED BOOK 6156, PAGE 670, R.O.W.C., TN, AND DEED BOOK 6526, PAGE 568, R.O.W.C., TN, AND BEING MORE PARTICULARLY DESCRIBED PER A SURVEY PROVIDED BY CLINT T. ELLIOTT, TN R.L.S. NUMBER 2347, DATED NOVEMBER 16, 2015, AND AS FOLLOWS:

BEGINNING AT A POINT IN THE CENTERLINE OF SOUTH CAROTHERS ROAD, SAID POINT BEING THE SOUTHEAST CORNER OF FALCON CREEK PUD SUBDIVISION, SECTION ONE, REVISION ONE, OF RECORD IN PLAT BOOK 19, PAGE 10, R.O.W.C., TN;
 THENCE, LEAVING THE CENTERLINE OF SAID SOUTH CAROTHERS ROAD AND FOLLOWING THE EAST LINE OF SAID FALCON CREEK, NORTH 18 DEGREES 55 MINUTES 35 SECONDS EAST, A DISTANCE OF 303.81 FEET TO A POINT;
 THENCE NORTH 19 DEGREES 01 MINUTES 53 SECONDS EAST, A DISTANCE OF 159.41 FEET TO A POINT;
 THENCE NORTH 17 DEGREES 49 MINUTES 04 SECONDS EAST, A DISTANCE OF 139.57 FEET TO A POINT;
 THENCE NORTH 18 DEGREES 23 MINUTES 37 SECONDS EAST, A DISTANCE OF 301.52 FEET TO A POINT;
 THENCE NORTH 18 DEGREES 27 MINUTES 42 SECONDS EAST, A DISTANCE OF 298.99 FEET TO A POINT;
 THENCE NORTH 18 DEGREES 12 MINUTES 19 SECONDS EAST, A DISTANCE OF 113.92 FEET TO A POINT;

THENCE NORTH 18 DEGREES 15 MINUTES 25 SECONDS EAST, A DISTANCE OF 499.41 FEET TO A POINT;
 THENCE NORTH 18 DEGREES 06 MINUTES 31 SECONDS EAST, A DISTANCE OF 292.79 FEET TO A POINT;
 THENCE NORTH 17 DEGREES 52 MINUTES 06 SECONDS EAST, A DISTANCE OF 298.64 FEET TO A POINT;
 THENCE SOUTH 83 DEGREES 16 MINUTES 42 SECONDS EAST, A DISTANCE OF 129.60 FEET TO A POINT, SAID POINT BEING IN THE WEST LINE OF CROSS CREEK SUBDIVISION SECTION THREE, PHASE TWO, OF RECORD IN PLAT BOOK 9, PAGE 17, R.O.W.C., TN;
 THENCE, LEAVING THE EAST LINE OF SAID FALCON CREEK AND FOLLOWING THE WEST LINE OF SAID CROSS CREEK, SOUTH 06 DEGREES 56 MINUTES 52 SECONDS WEST, AND ALONG THE WAY FOLLOWING THE WEST LINES OF CROSS CREEK SUBDIVISION SECTION FOUR, OF RECORD IN PLAT BOOK 9, PAGE 39, R.O.W.C., TN, CROSS CREEK SUBDIVISION SECTION FIVE, OF RECORD IN PLAT BOOK 9, PAGE 49, R.O.W.C., TN, AND RALPH H. PEDEN, JR., OF RECORD IN DEED BOOK 4590, PAGE 436, R.O.W.C., TN, A TOTAL DISTANCE OF 2,579.78 FEET TO A POINT, SAID POINT BEING IN THE CENTERLINE OF SAID SOUTH CAROTHERS ROAD;
 THENCE, WITH THE CENTERLINE OF SAID SOUTH CAROTHERS ROAD, NORTH 80 DEGREES 55 MINUTES 37 SECONDS WEST, A DISTANCE OF 239.49 FEET TO A POINT;
 THENCE ALONG A CURVE TO THE RIGHT, HAVING A DELTA OF 41 DEGREES 25 MINUTES 37 SECONDS, A RADIUS OF 400.00 FEET, A TANGENT OF 151.25 FEET, AN ARC LENGTH OF 289.21 FEET, A CHORD BEARING OF NORTH 60 DEGREES 12 MINUTES 48 SECONDS WEST, AND A CHORD LENGTH OF 282.96 FEET TO A POINT;
 THENCE NORTH 39 DEGREES 30 MINUTES 00 SECONDS WEST, A DISTANCE OF 145.14 FEET TO THE POINT OF BEGINNING, AND CONTAINING 961,263.34 SQUARE FEET OR 22.068 ACRES.

SECTION II: That the attached Location Map shall serve the purpose of further delimiting the geographical boundaries as described by this Resolution.

SECTION III: That the overall entitlements for the Ashcroft Valley PUD Subdivision are as follows:

Entitlements	Ashcroft Valley PUD Subdivision
Base Zone District	Specific Development – Residential District (SD-R 1.66)
Character Area Overlay	MECO-6, SWCO-3
Other Zoning Overlays	N/A
Development Standard	Conventional
Number of Dwelling Units	376
Connectivity Index	1.47
Open Space Requirements	33.90 Acres
Number of Phases in Development	8

SECTION IV: That the Development Plan, the exhibits accompanying the Development Plan, and all conditions and restrictions placed upon the Development Plan by the Franklin Municipal Planning Commission and this Board shall be made a part of this Resolution as though copied verbatim herein,

and that a permanent record of the Development Plan, the exhibits accompanying the Development Plan, and all such conditions and restrictions shall be kept in the Franklin Planning and Sustainability Department.

SECTION V: That the following Modifications of Development Standards (MOS) were requested and acted upon by the Board of Mayor and Aldermen, after review and recommendation by the Franklin Municipal Planning Commission:

MOS 1: Character Area Lot Size Requirement Approved: _____ Denied: _____	Request to Approve. <i>Staff recommended approval.</i>
MOS 2: Warren Road Connection Approved: _____ Denied: _____	Request to Approve. <i>Staff recommended approval.</i>
MOS 3: Beacon Hill Drive Connection Approved: _____ Denied: _____	Request to Approve. <i>Staff recommended denial.</i>
MOS 4: Internal Street Connection Approved: _____ Denied: _____	Request to Approve. <i>Staff recommended denial.</i>
MOS 5: Cross Creek Drive Connection Approved: _____ Denied: _____	Request to Approve. <i>Staff recommended denial.</i>
MOS 6: Biltmore Court Connection Approved: _____ Denied: _____	Request to Approve. <i>Staff recommended denial.</i>

SECTION VI. That this Resolution shall take effect from and after its passage on its first and final reading, the health, safety, and welfare of the citizens requiring it.

ERIC S. STUCKEY
City Administrator

DR. KEN MOORE
Mayor

Approved as to form by:

Shauna R. Billingsley
City Attorney

PREAPPLICATION CONFERENCE: _____ 6/21/2016

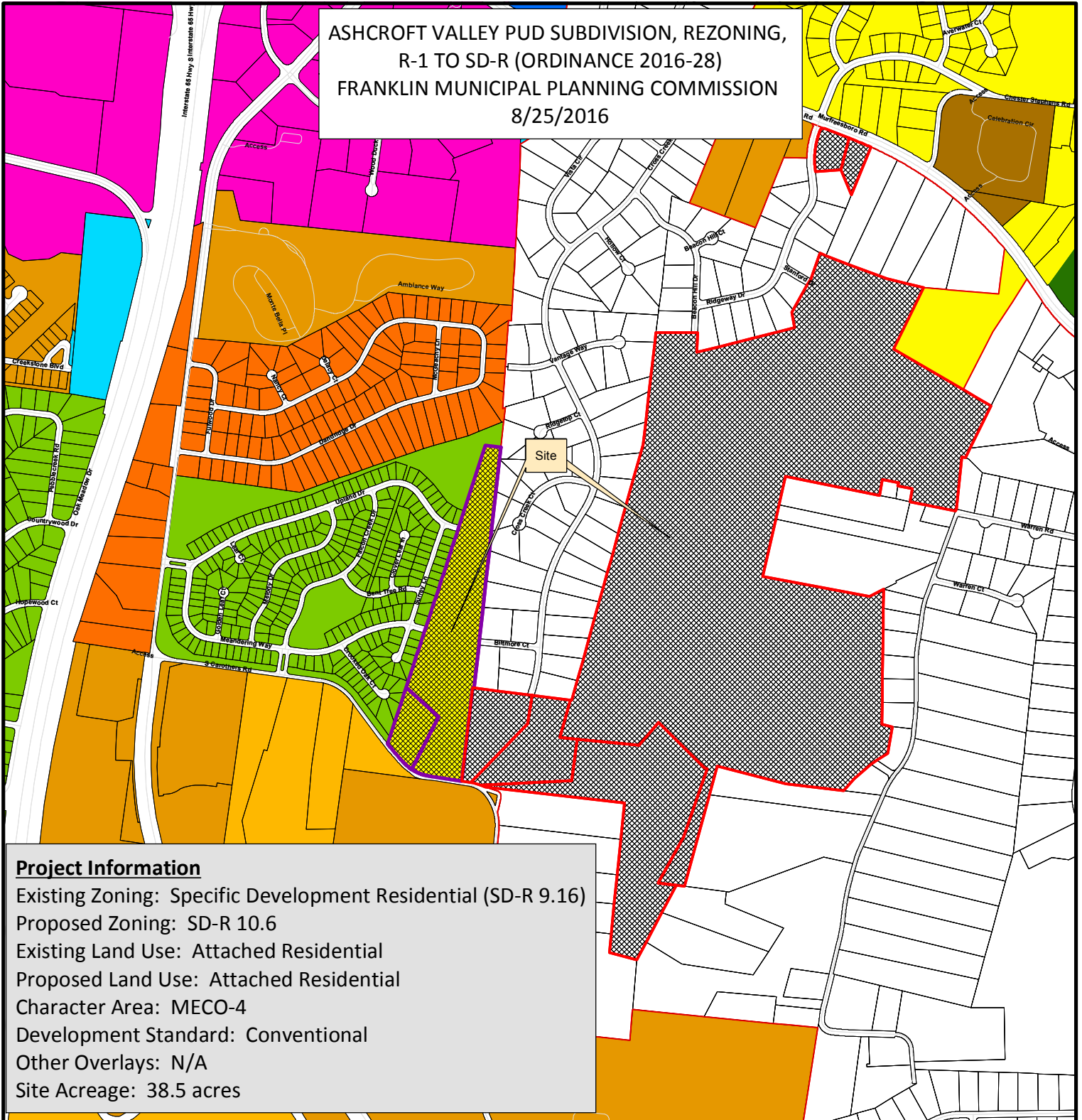
BOMA/FMPC JOINT CONCEPTUAL WORKSHOP: _____ 6/23/2016

NEIGHBORHOOD MEETING: _____ 6/21/2016

PLANNING COMMISSION RECOMMENDED _____: _____

PUBLIC HEARING AND BOMA APPROVAL: _____

ASHCROFT VALLEY PUD SUBDIVISION, REZONING,
R-1 TO SD-R (ORDINANCE 2016-28)
FRANKLIN MUNICIPAL PLANNING COMMISSION
8/25/2016



Project Information

Existing Zoning: Specific Development Residential (SD-R 9.16)
Proposed Zoning: SD-R 10.6
Existing Land Use: Attached Residential
Proposed Land Use: Attached Residential
Character Area: MECO-4
Development Standard: Conventional
Other Overlays: N/A
Site Acreage: 38.5 acres

ANNEXED PROPERTY	SD-R Specific Development-Residential
Glass Parcels	SD-X Specific Development-Variety
AG Agricultural District	OR Office Residential District
ER Estate Residential	GO General Office District
R-1 Residential District	CC Central Commercial District
R-2 Residential District	NC Neighborhood Commercial District
R-3 Residential District	GC General Commercial District
R-6 Residential District	LI Light Industrial District
RM-10 Attached 10 Residential District	HI Heavy Industrial District
RM-15 Attached 15 Residential District	CI Civic and Institutional District
RM-20 Attached 20 Residential District	



0 500 1,000 2,000
Feet

This map was created by the Franklin Planning Department.
It was compiled from the most authentic information available.
The City is not responsible for any errors or omissions contained hereon.
All data and materials (c) copyright 2016. All rights reserved.

CONDITIONS OF APPROVAL:

Open Issues: 14 These issues are currently being filtered

Engineering - PUD Plan Checklist

General Issues

1. F. Development Plan

kevin.long@franklintn.gov The applicant shall address the need for a connection to Cross Creek Drive following the approval or denial of the Modification of Standards Request by BOMA, either with the required connection, or with a right-of-way dedication to allow for such a connection at an indeterminate time in the future. The applicant shall dedicate 50' right-of-way for a future street connection to Cross Creek Drive. In the event that MOS #5 is approved by BOMA, the unimproved right-of-way shall be maintained as open space by the HOA until improved upon by the City.
[Edited By Kevin Long]

2. F. Development Plan

kevin.long@franklintn.gov The applicant shall address the need for a connection to Warren Road following the approval or denial of the Modification of Standards Request by BOMA, either with the required connection or with a permanent access easement.
In the event that MOS #2 is approved by BOMA, the applicant shall dedicate a 30' access easement from Local Road G to Warren Road.
[Edited By Kevin Long]

3. F. Development Plan

kevin.long@franklintn.gov The applicant shall be required to make improvements along South Carothers Road as recommended by the traffic impact analysis and as deemed necessary to bring South Carothers Road up to the necessary standards for public safety, including but not limited to the addition of curb and gutter along with a multi-use trail. This will be addressed at the site plan stage.

4. F. Development Plan

kevin.long@franklintn.gov The applicant shall address the need for a connection to Beacon Hill Drive following the approval or denial of the Modification of Standards Request by BOMA, either with the required connection, or with a right-of-way dedication to allow for such a connection at an indeterminate time in the future. The applicant shall dedicate 50' of right-of-way for a future street connection to Beacon Hill Drive. In the event that MOS #3 is approved by BOMA, the unimproved right-of-way shall be maintained as open space by the HOA until improved upon by the City.
[Edited By Kevin Long]

5. F. Development Plan

kevin.long@franklintn.gov The applicant shall address the need for a connection between Meandering Way and Biltmore Court following the approval or denial of the Modification of Standards Request by BOMA, either with the required connection, or with a right-of-way dedication to allow for such a connection at an indeterminate time in the future. In the event that MOS #6 is approved by BOMA, the applicant shall dedicate 50' right-of-way for a future street connection between Meandering Way and Biltmore Court. The unimproved right-of-way shall be maintained as open space by the HOA until improved upon by the City.
[Edited By Kevin Long]

6. F. Development Plan

lance.fittro@franklintn.gov The previous comment, "*Per Section 5.10.4(1)(b)(i) of the Zoning Ordinance, all development shall achieve a connectivity index score of 1.65 or greater. Applicant shall provide additional connectivity, or request a Design Modification for connectivity which does not meet this standard.*" is to remain open pending BOMA approval of the requested Modification of Standards.

7. H. Stormwater Management Plan

lance.fittro@franklintn.gov Applicant shall show the location of the spring, dam, stream, and wet weather conveyance identified in the revised hydrologic determination for the southern portion of the property on the plans. Applicant shall be advised that any proposed buffer averaging shall be shown as part of a Buffer Management Plan submitted to the City's Stormwater Coordinator, Jeff Willoughby, and approved prior to the Initial Submittal of any associated Site Plan.

8. D. Statement of Impacts

carlb@franklintn.gov The review of this 9-1-2016 TIA by the COF on-call traffic consultant is on hold pending the resolution of several MOS requests by the FMPC.

Engineering - Site Plan Checklist

General Issues

9. E. Roadway Design and Plan & Profile

lance.fittro@franklintn.gov At the scale presented, the turning movements at the T-alley intersections are difficult to evaluate, but the added note regarding the additional concrete apron treatment at these intersections is acknowledged. Applicant shall work with Engineering at Site Plan stage to ensure all necessary service vehicle turning movements are accommodated at these intersections.

Planning

General Issues

10. Modifications of Standards

josh.king@franklintn.gov Applicant shall submit a revised development plan should BOMA deny any of the modification of standards related to connectivity that shows how the roadway network will connect.
[Edited By Joshua King]

josh.king@franklintn.gov Applicant shall submit a revised development plan should BOMA deny any of the modification of standards related to connectivity that shows how the roadway network will connect.

11. Off Site Improvements

josh.king@franklintn.gov Applicant shall refer to memo from Engineering Department regarding off site improvements.

Ashcroft Valley PUD Dev Plan Submittal 7.11.2016.pdf

12. Non-Buildable Lots

josh.king@franklintn.gov Applicant shall at final plat stage provide a written notification for future owners of non buildable lots 1,2, and 3 (Stanford Drive and Beacon Hill Drive) of their status of being in the City Limits of the City of Franklin. These unbuildable lots shall not be combined into the existing county lot(s).
[Edited By Joshua King]

josh.king@franklintn.gov Applicant shall at final plat stage provide a written notification for future owners of non buildable lots 1,2, and 3 (Stanford Drive and Beacon Hill Drive) of their status of being in the City Limits of the City of Franklin. These unbuildable lots shall not be combined into the existing county lot(s).

Planning (Landscape)

General Issues

13. Connectivity

larry.mizell@franklintn.gov This shall remain unto FMPC makes a decision on this request.

Water/Sewer

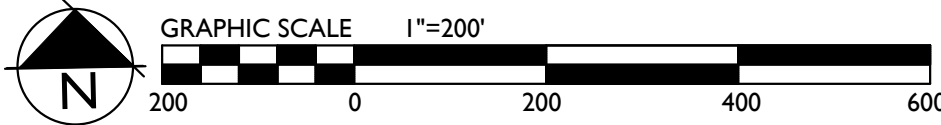
General Issues

14. Sanitary a Sewer Outfall

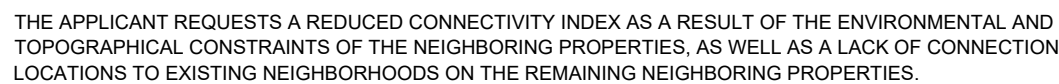
ben.mcneil@franklintn.gov Applicant failed to address the previous comment, due to the comment not being clear. The below comment will be a condition of approval. Applicant shall revise as noted below.

- The sewer system must be designed to prevent excessive sewer line depth. The sewer serving lots 103 – 107 and 125 – 146 must flow into an existing offsite system located west of lot 132. The sewer collection system serving lots 93 – 102 and 147 – 169 may also be served by the same offsite line. Revise the sewer collection system as shown on the development plan to meet these requirements.
- The applicant shall agree to make a gravity connection to Lockwood Glen, removing the existing Falcon Creek pump station and abandoning the existing infrastructure.

[Edited By Lance Fittro]



C 2.0



COF 6189

A



TYPICAL HOME ELEVATION 'A'

- HOME STYLE WITH GARAGE LOCATED AT THE REAR OF THE LOT THAT IS ACCESSED FROM AN ALLEY, OR FROM THE FRONT STREET WITH AN EXTENDED DRIVEWAY.
- ONE TO TWO STORIES IN HEIGHT.
- MATERIALS INCLUDE BRICK, SIMULATED STONE, CEMENTATIOUS SIDING, AND ARCHITECTURAL SHINGLES.
- THESE ELEVATIONS HAVE BEEN DESIGNED TO MEET THE REQUIREMENTS OF THE CITY OF FRANKLIN'S ARCHITECTURAL DESIGN STANDARDS AND THE APPROVAL OF THE PLANNING COMMISSION/CITY OF FRANKLIN. CHANGES SHALL NOT BE MADE TO THE APPROVED ELEVATIONS UNLESS APPROVED BY EITHER THE CODES DIRECTOR OR THE PLANNING COMMISSION.
- ELEVATIONS SHOWN ARE TYPICAL FOR THIS DEVELOPMENT. FINAL DESIGN PLANS SHALL BE SUBMITTED WITH THE REQUEST FOR BUILDING PERMITS AND SHALL INDICATE COMPLIANCE WITH THE CITY OF FRANKLIN'S ARCHITECTURAL DESIGN STANDARDS, SPECIFICALLY THE REQUIREMENT FOR EXPOSED FOUNDATIONS OR WATER TABLES/ELEVATED FINISHED FLOORS AND GARAGE DOOR SEPARATION/MAXIMUM WIDTHS.
- BUILDINGS WITH SIDE ELEVATIONS FACING A PUBLIC RIGHT-OF-WAY SHALL HAVE WINDOWS AND ARCHITECTURAL FEATURES SIMILAR TO THE FRONT ELEVATION.
- SINGLE FAMILY HOME SQUARE FOOTAGE RANGE: 1500 SF TO 2200 SF
- THE FINISHED FLOOR ELEVATION OF THE FRONT FACADE TO BE A MINIMUM OF 18 INCHES ABOVE THE FINISHED GRADE.

C



TYPICAL HOME ELEVATION 'C'

- HOME STYLE WITH GARAGE ACCESSED FROM THE FRONT FACING STREET. GARAGE IS RECESSED A MINIMUM OF 10 FEET FROM THE FRONT ELEVATION AND DRIVEWAYS ARE A MINIMUM OF 22' FROM THE SIDEWALK.
- ONE TO TWO STORIES IN HEIGHT.
- MATERIALS INCLUDE BRICK, SIMULATED STONE, CEMENTATIOUS SIDING, AND ARCHITECTURAL SHINGLES.
- THESE ELEVATIONS HAVE BEEN DESIGNED TO MEET THE REQUIREMENTS OF THE CITY OF FRANKLIN'S ARCHITECTURAL DESIGN STANDARDS AND THE APPROVAL OF THE PLANNING COMMISSION/CITY OF FRANKLIN. CHANGES SHALL NOT BE MADE TO THE APPROVED ELEVATIONS UNLESS APPROVED BY EITHER THE CODES DIRECTOR OR THE PLANNING COMMISSION.
- ELEVATIONS SHOWN ARE TYPICAL FOR THIS DEVELOPMENT. FINAL DESIGN PLANS SHALL BE SUBMITTED WITH THE REQUEST FOR BUILDING PERMITS AND SHALL INDICATE COMPLIANCE WITH THE CITY OF FRANKLIN'S ARCHITECTURAL DESIGN STANDARDS, SPECIFICALLY THE REQUIREMENT FOR EXPOSED FOUNDATIONS OR WATER TABLES/ELEVATED FINISHED FLOORS AND GARAGE DOOR SEPARATION/MAXIMUM WIDTHS.
- BUILDINGS WITH SIDE ELEVATIONS FACING A PUBLIC RIGHT-OF-WAY SHALL HAVE WINDOWS AND ARCHITECTURAL FEATURES SIMILAR TO THE FRONT ELEVATION.
- SINGLE FAMILY HOME SQUARE FOOTAGE RANGE: 2200 SF TO 4500 SF
- THE FINISHED FLOOR ELEVATION OF THE FRONT FACADE TO BE A MINIMUM OF 18 INCHES ABOVE THE FINISHED GRADE.
- FRONT FACING GARAGES ARE REQUIRED TO HAVE GARAGE DOORS NO LARGER THAN 9' IN WIDTH WITH A 2' SEPARATION BETWEEN THE DOORS.

B

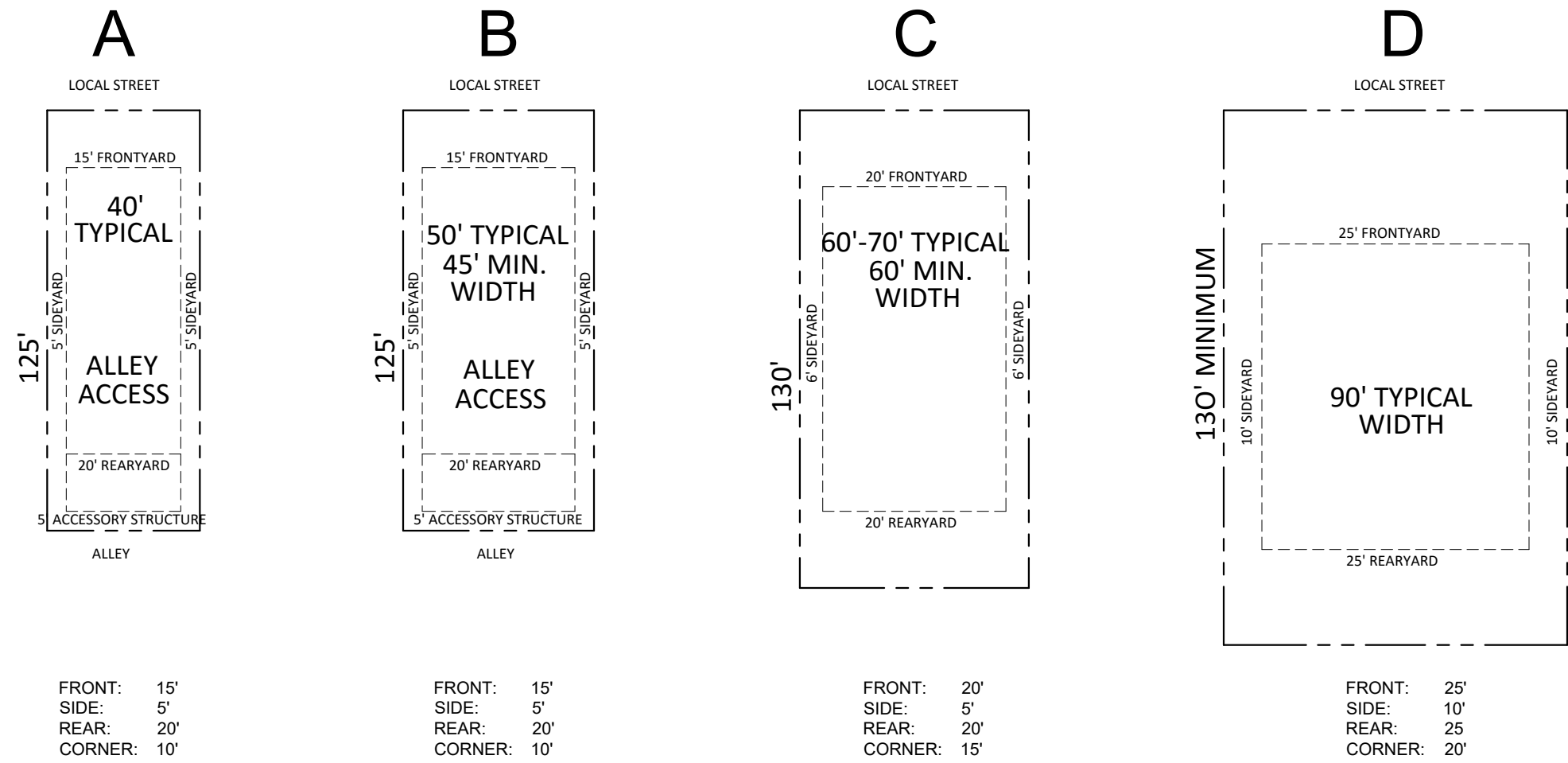


TYPICAL HOME ELEVATION 'B'

- HOME STYLE WITH GARAGE LOCATED AT THE REAR OF THE LOT THAT IS ACCESSED FROM AN ALLEY, OR FROM THE FRONT STREET WITH AN EXTENDED DRIVEWAY.
- ONE TO TWO STORIES IN HEIGHT.
- MATERIALS INCLUDE BRICK, SIMULATED STONE, CEMENTATIOUS SIDING, AND ARCHITECTURAL SHINGLES.
- THESE ELEVATIONS HAVE BEEN DESIGNED TO MEET THE REQUIREMENTS OF THE CITY OF FRANKLIN'S ARCHITECTURAL DESIGN STANDARDS AND THE APPROVAL OF THE PLANNING COMMISSION/CITY OF FRANKLIN. CHANGES SHALL NOT BE MADE TO THE APPROVED ELEVATIONS UNLESS APPROVED BY EITHER THE CODES DIRECTOR OR THE PLANNING COMMISSION.
- ELEVATIONS SHOWN ARE TYPICAL FOR THIS DEVELOPMENT. FINAL DESIGN PLANS SHALL BE SUBMITTED WITH THE REQUEST FOR BUILDING PERMITS AND SHALL INDICATE COMPLIANCE WITH THE CITY OF FRANKLIN'S ARCHITECTURAL DESIGN STANDARDS, SPECIFICALLY THE REQUIREMENT FOR EXPOSED FOUNDATIONS OR WATER TABLES/ELEVATED FINISHED FLOORS AND GARAGE DOOR SEPARATION/MAXIMUM WIDTHS.
- BUILDINGS WITH SIDE ELEVATIONS FACING A PUBLIC RIGHT-OF-WAY SHALL HAVE WINDOWS AND ARCHITECTURAL FEATURES SIMILAR TO THE FRONT ELEVATION.
- SINGLE FAMILY HOME SQUARE FOOTAGE RANGE: 1700 SF TO 3600 SF
- THE FINISHED FLOOR ELEVATION OF THE FRONT FACADE TO BE A MINIMUM OF 18 INCHES ABOVE THE FINISHED GRADE.



TYPICAL LOT DIAGRAMS AND SETBACKS



D



TYPICAL HOME ELEVATION 'D'

- HOME STYLE FOR LOTS WITH GARAGE ACCESSED FROM THE STREET WITH SIDE LOADED GARAGE.
- ONE TO TWO STORIES IN HEIGHT.
- MATERIALS INCLUDE BRICK, SIMULATED STONE, CEMENTATIOUS SIDING, AND ARCHITECTURAL SHINGLES.
- GARAGE IS SETBACK 10 FEET FROM THE FRONT FACADE.
- DRIVEWAY IS A MINIMUM OF 22' FROM THE SIDEWALK TO THE GARAGE DOORS.
- ALL TWO CAR GARAGES SHALL HAVE TWO GARAGE DOORS WITH A MAXIMUM WIDTH OF 9' WIDE WITH A 2 FOOT MINIMUM SEPARATION BETWEEN.
- THESE ELEVATIONS HAVE BEEN DESIGNED TO MEET THE REQUIREMENTS OF THE CITY OF FRANKLIN'S ARCHITECTURAL DESIGN STANDARDS AND THE APPROVAL OF THE PLANNING COMMISSION/CITY OF FRANKLIN. CHANGES SHALL NOT BE MADE TO THE APPROVED ELEVATIONS UNLESS APPROVED BY EITHER THE CODES DIRECTOR OR THE PLANNING COMMISSION.
- ELEVATIONS SHOWN ARE TYPICAL FOR THIS DEVELOPMENT. FINAL DESIGN PLANS SHALL BE SUBMITTED WITH THE REQUEST FOR BUILDING PERMITS AND SHALL INDICATE COMPLIANCE WITH THE CITY OF FRANKLIN'S ARCHITECTURAL DESIGN STANDARDS, SPECIFICALLY THE REQUIREMENT FOR EXPOSED FOUNDATIONS OR WATER TABLES/ELEVATED FINISHED FLOORS AND GARAGE DOOR SEPARATION/MAXIMUM WIDTHS.
- BUILDINGS WITH SIDE ELEVATIONS FACING A PUBLIC RIGHT-OF-WAY SHALL HAVE WINDOWS AND ARCHITECTURAL FEATURES SIMILAR TO THE FRONT ELEVATION.
- SINGLE FAMILY HOME SQUARE FOOTAGE RANGE: 2800 SF TO 5000 SF
- THE FINISHED FLOOR ELEVATION OF THE FRONT FACADE TO BE A MINIMUM OF 18 INCHES ABOVE THE FINISHED GRADE.

The home elevations shown here are representative of the homes planned for Ashcroft Valley. They are the basis for design review by the City of Franklin at the time of Site Plan Submittal. Based on my professional experience, the plans presented meet or exceed the design standards set forth by the City of Franklin.

Greg Gamble, Registered Landscape Architect.

Revisions:

Drawing Notes:

GDC

GAMBLE

DESIGN COLLABORATIVE

DEVELOPMENT PLANNING AND

LANDSCAPE ARCHITECTURE

Date: JUNE 10, 2015

ASHCROFT VALLEY PUD SUBDIVISION
DEVELOPMENT PLAN

Franklin, Williamson County, Tennessee



GAMBLE DESIGN COLLABORATIVE
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TENNESSEE 37064
GREG GAMBLE
gg@gmblecd.com
615.975.5765

TYPICAL
ARCHITECTURE

C 2.3

DEVELOPMENT PLAN

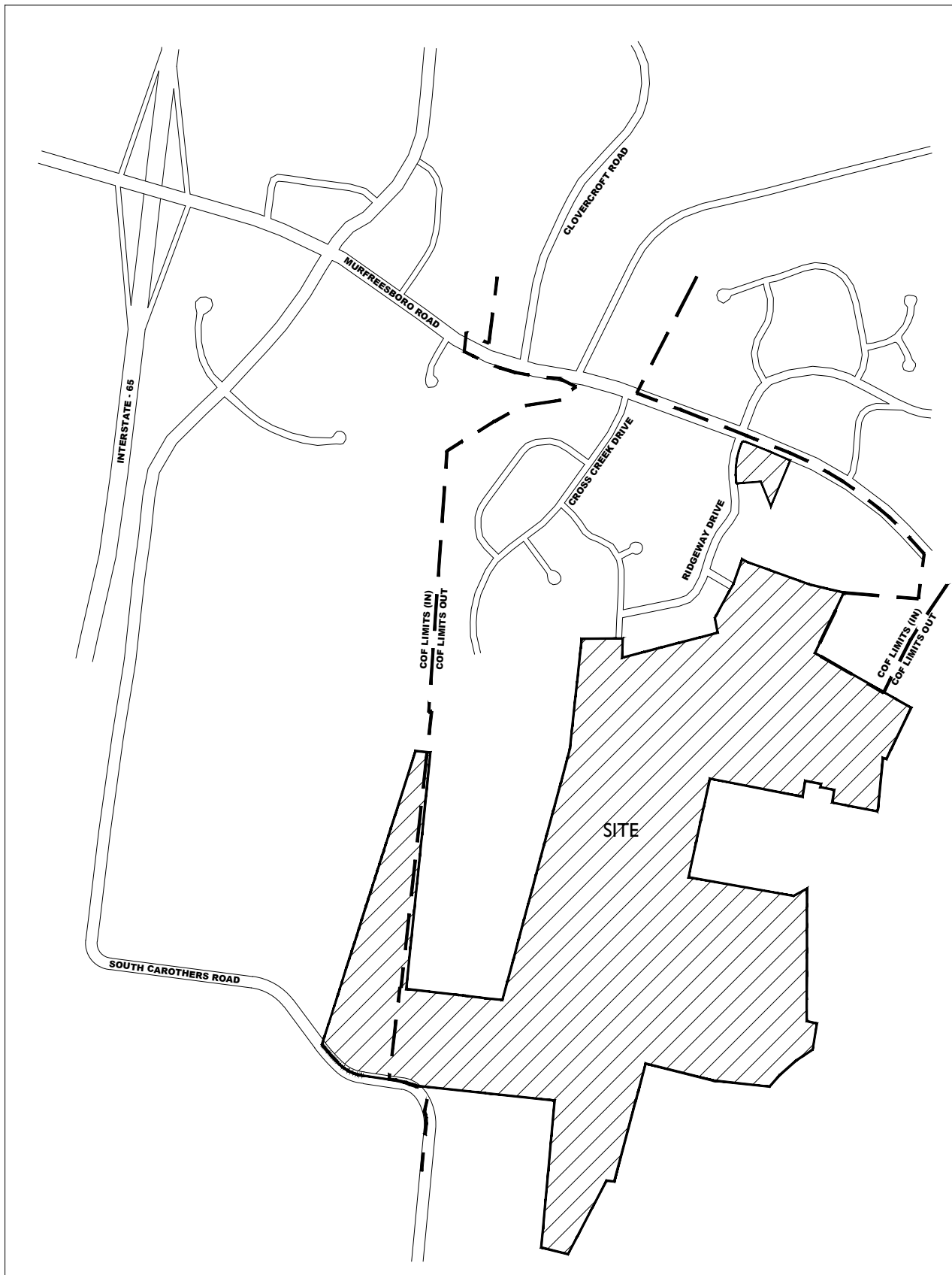
ASHCROFT VALLEY PUD SUBDIVISION

COF # 6189

MAP 89, PARCEL 55.00
MAP 79M B, PARCEL 28.00
MAP 79M B, PARCEL 29.00
MAP 089, PARCEL 30.00
MAP 089, PARCEL 30.01
MAP 089, PARCEL 43.02
MAP 089, PARCEL 43.03
MAP 089, PARCEL 43.04
FRANKLIN, TENNESSEE
CIVIL DISTRICT 14

SHEET INDEX

- C 0.0 COVER SHEET
- C 1.0 NEIGHBORHOOD CONTEXT PLAN
- C 1.1 NEIGHBORHOOD CONTEXT PLAN
- C 1.2 OVERALL EXISTING CONDITIONS PLAN
- C 1.3 OVERALL EXISTING CONDITIONS PLAN
- C 2.0 DEVELOPMENT DEVELOPMENT PLAN
- C 2.1 DEVELOPMENT DEVELOPMENT PLAN
- C 2.2 MODIFICATION OF STANDARDS EXHIBIT
- C 2.3 TYPICAL ARCHITECTURE
- C 3.0 GRADING AND DRAINAGE PLAN
- C 3.1 GRADING AND DRAINAGE PLAN
- C 4.0 OVERALL ROW AND ACCESS PLAN
- C 4.1 OVERALL ROW AND ACCESS PLAN
- C 4.2 AUTOTURN PLAN
- C 5.0 OVERALL UTILITY PLAN
- C 5.1 OVERALL UTILITY PLAN



MODIFICATION OF DESIGN STANDARDS REQUEST

THE APPLICANT REQUESTS A REDUCED CONNECTIVITY INDEX AS A RESULT OF THE ENVIRONMENTAL AND TOPOGRAPHICAL CONSTRAINTS OF THE NEIGHBORING PROPERTIES, AS WELL AS A LACK OF CONNECTION LOCATIONS TO EXISTING NEIGHBORHOODS ON THE REMAINING NEIGHBORING PROPERTIES.

REQUESTED MODIFICATIONS OF STANDARDS
ASHCROFT VALLEY PUD SUBDIVISION

MOS 1

Section 3.5.10 (2)(d)(ii) Request to develop detached residential dwellings on lots with a lot area as proposed in the Development Plan. Item (d)(iv) states that if an applicant can demonstrate that a sufficient buffer will be provided between the existing development and the proposed, or offer other means to mitigate potential conflicts, these alternatives may be approved with a Development Plan.

Item (d)(vi) is consistent with the Land Use Plan for Seward Hall, Special Area 3. Item (d)(iii) is only listed in Chapter 3 of Zoning Ordinance, and is not mentioned in the Land Use Plan.

The Land Use Plan provides the following guiding principles:

1. Density of new development is recognized as being an important consideration in community quality of life, but it is only one factor that must be considered. Of greater concern is the quality and design of development. Low-quality development is undesirable at any density.
2. Land is viewed as a limited resource, and the efficiency of its use must be considered in establishing desired future density.

Ashcroft Valley proposes a diverse mix of residential lot types to foster a greater sense of community. The master plan contains open space buffers along the Development boundaries, and transitions from large lots to smaller lots in the interior. The smallest lots in the proposal are located to the south as a transition to the Carother's corridor neighborhoods. The proposed lots that are smaller than 1 acre in size allow for the preservation of larger expanses of interconnected open space that are made accessible to all residents. The open space preservation is key to the character of the neighborhood and high quality design. The master plan promotes the preservation of large open space areas interconnected with formal neighborhood parks.

The adjacent neighborhoods along Warren Road, in Franklin East, and in Crosscreek were developed at a time when City of Franklin sewer was not available. Today access to City sewer is available to the north on Highway 96 and to the south on South Carothers Road near Simmons Ridge. For this reason, lots smaller than 1 acre are possible so long as transition mitigates potential conflicts with the adjacent neighborhoods.

MOS 2

Section 5.10.4 (2)(b) External street connectivity.

Request to remove external street connection to Warren Road.

Neighbors on Warren Road and the Williamson County Subdivisions of Franklin East and Cross Creek continue to express concern regarding connections to Warren Road, Stanford Drive, Beacon Hill Drive, and Cross Creek Drive.

The concerns on Warren Road include safety issues due to the narrow 18 foot width of the roadway, and steep banks located at the narrow roadway edge. The second concern is the loss of the rural character of Warren Road that is subject to change with the additional connection. On December 2, 2015, the applicant presented the proposed development to the Williamson County Highway Commission. It was made known at the meeting that an emergency only connection would be proposed for the connection to Warren Road. This approach was widely accepted by both the Commission and the neighbors.

Franklin East and Cross Creek subdivisions are established neighborhoods, currently in Williamson County jurisdiction. Full unrestricted connectivity to these neighborhoods will increase through traffic North, South, and through the neighborhoods. This increase will change the character of the communities and will affect the quality of life of the residents.

MOS 3

Section 5.10.4 (2)(a) External street connectivity.

Request to remove connection to existing stub street to the North, Beacon Hill Drive.

Neighbors on Warren Road and the Williamson County Subdivisions of Franklin East and Cross Creek continue to express concern regarding connections to Warren Road, Stanford Drive, Beacon Hill Drive, and Cross Creek Drive.

The Ashcroft Valley PUD proposes a gated secluded neighborhood to the North with only one access connecting to Stanford Drive. This secluded neighborhood will have a gross density of 1 DU/AC and will be completely surrounded by open space and tree preservation buffers.

This limited connection and low impact development approach will reduce the negative relationship with the Franklin East subdivision.

The streets within the gated neighborhood will be built to City of Franklin street standards and will be privately maintained by the Ashcroft Valley HOA.

MOS 4

Section 5.10.4 (1) Internal street connectivity.

Request to remove vehicular, internal street connection between the Northern and Southern proposed neighborhoods.

Neighbors on Warren Road and the Williamson County Subdivisions of Franklin East and Cross Creek continue to express concern regarding connections to Warren Road, Stanford Drive, Beacon Hill Drive, and Cross Creek Drive.

Franklin East and Cross Creek subdivisions are established neighborhoods, currently in Williamson County jurisdiction. Full unrestricted connectivity to these neighborhoods will increase through traffic North, South, and through the neighborhoods. This increase will change the character of the communities and will affect the quality of life of the residents.

The Ashcroft Valley PUD proposes a gated secluded neighborhood to the North with only one access connecting to Stanford Drive. This secluded neighborhood will have a gross density of 1 DU/AC and will be completely surrounded by open space and tree preservation buffers.

This limited connection and low impact development approach will reduce the negative relationship with the Franklin East subdivision.

The streets within the gated neighborhood will be built to City of Franklin street standards and will be privately maintained by the Ashcroft Valley HOA.

Proposed Development Plan shows a 12' asphalt pedestrian trail that will be constructed to the appropriate standards to serve as an emergency access route between the Northern and Southern neighborhoods.

MOS 5

Section 5.10.4 (2)(a) External street connectivity.

Request to remove connection to existing Cross Creek Drive.

Neighbors on Warren Road and the Williamson County Subdivisions of Franklin East and Cross Creek continue to express concern regarding connections to Warren Road, Stanford Drive, Beacon Hill Drive, and Cross Creek Drive.

Franklin East and Cross Creek subdivisions are established neighborhoods, currently in Williamson County jurisdiction. Full unrestricted connectivity to these neighborhoods will increase through traffic North, South, and through the neighborhoods. This increase will change the character of the communities and will affect the quality of life of the residents.

MOS 6

Section 5.10.4 (2)(a) External street connectivity.

Request to remove connection to existing Biltmore Court.

Neighbors on Warren Road and the Williamson County Subdivisions of Franklin East and Cross Creek continue to express concern regarding connections to Warren Road, Stanford Drive, Beacon Hill Drive, and Cross Creek Drive.

Franklin East and Cross Creek subdivisions are established neighborhoods, currently in Williamson County jurisdiction. Full unrestricted connectivity to these neighborhoods will increase through traffic North, South, and through the neighborhoods. This increase will change the character of the communities and will affect the quality of life of the residents.

OWNER: 089 05500
ESTATE OF MARY ETTA ADAMS
32 COLONEL WINSTEAD DRIVE
BRENTWOOD, TN 37027
JOHN E. ADAMS, JR EXECUTOR
(615) 377-3219

OWNER: 079 MB 002800
GLENN R. ADAMS
PO BOX 680098
FRANKLIN, TN 37067

OWNER: 079 MB 002900
ROB C. ADAMS
PO BOX 680098
FRANKLIN, TN 37067

OWNER: 089 03000
JEAN MARIE GILES GLASS
4340 S CAROTHERS ROAD
FRANKLIN, TN 37064

OWNER: 089 03001
GLASS HARRY GREGORY
4338 S CAROTHERS RD
FRANKLIN, TN 37064

OWNER: 089 04302
PEDER RALPH H. JR.
4348 S CAROTHERS RD
FRANKLIN, TN 37064

OWNER: 089 04303
WATKINS PATTIE SUE
4344 S CAROTHERS RD
FRANKLIN, TN 37064

OWNER: 089 04304
DURNIN GEORGE V.
4350 S CAROTHERS RD
FRANKLIN, TN 37064

APPLICANT:
GAMBLE DESIGN COLLABORATIVE
144 SOUTHEAST PARKWAY
SUITE 200
FRANKLIN, TN 37064
615.975.5765
greggambie209@gmail.com
GREG GAMBLE

ENGINEER:
LAND SOLUTIONS COMPANY, LLC
2925 BERRY HILL DRIVE
NASHVILLE, TN 37204
615.300.8496
kevin@landsolutionsco.net
KEVIN ESTES

NOTE: AERIAL PHOTO, PARCEL LINES AND TOPOGRAPHIC INFORMATION
PROVIDED BY CITY OF FRANKLIN G.I.S.



LANDSCAPE ARCHITECT/PLANNER

GAMBLE DESIGN COLLABORATIVE
144 SOUTHEAST PARKWAY SUITE 200
FRANKLIN TN 37064
GREG GAMBLE, RLA (615) 975-5765
EMAIL ADDRESS: greggambie209@gmail.com



DEVELOPMENT PLAN

ASHCROFT VALLEY PUD SUBDIVISION

COF # 6189

FRANKLIN, TENNESSEE

SITE DATA:

PROJECT NAME:
PROJECT NUMBER:
SUBDIVISION:
LOT NUMBER:
ADDRESS:

CITY:
COUNTY:
STATE:
CIVIL DISTRICT:

MAP, GROUP, PARCEL NUMBERS:

EXISTING ZONING:

PROPOSED ZONING:
CHARACTER AREA OVERLAY:
OTHER APPLICABLE OVERLAYS:
APPLICABLE DEVELOPMENT STANDARD:
TOTAL ACREAGE:
TOTAL SQUARE FOOTAGE:

ASHCROFT VALLEY PUD SUBDIVISION

6189

NA

1-376, 501-507, 601-616

1101 RIDGEWAY DRIVE,

MURFREESBORO ROAD

FRANKLIN

WILLIAMSON

TENNESSEE

14TH CIVIL DISTRICT

079 MB 002800

079 MB 002900

089 05500

089 03000

089 03001

089 04302

089 04303

089 04304

WILLIAMSON COUNTY

NC (079079 MB 002800, 079 MB 002900)

MGA-1 (079 05500, 089 04302, 089 04303,

089, 04304)

CITY OF FRANKLIN

R-1 (089 03000, 089 03001)

SD-R (1.67)

MECO-6

NONE

CONVENTIONAL

226.01 AC

9,844,942.09 SF

PRE-APPLICATION SUBMITTAL

INITIAL SUBMITTAL

RESUBMITTAL

RESUBMITTAL

REVISION

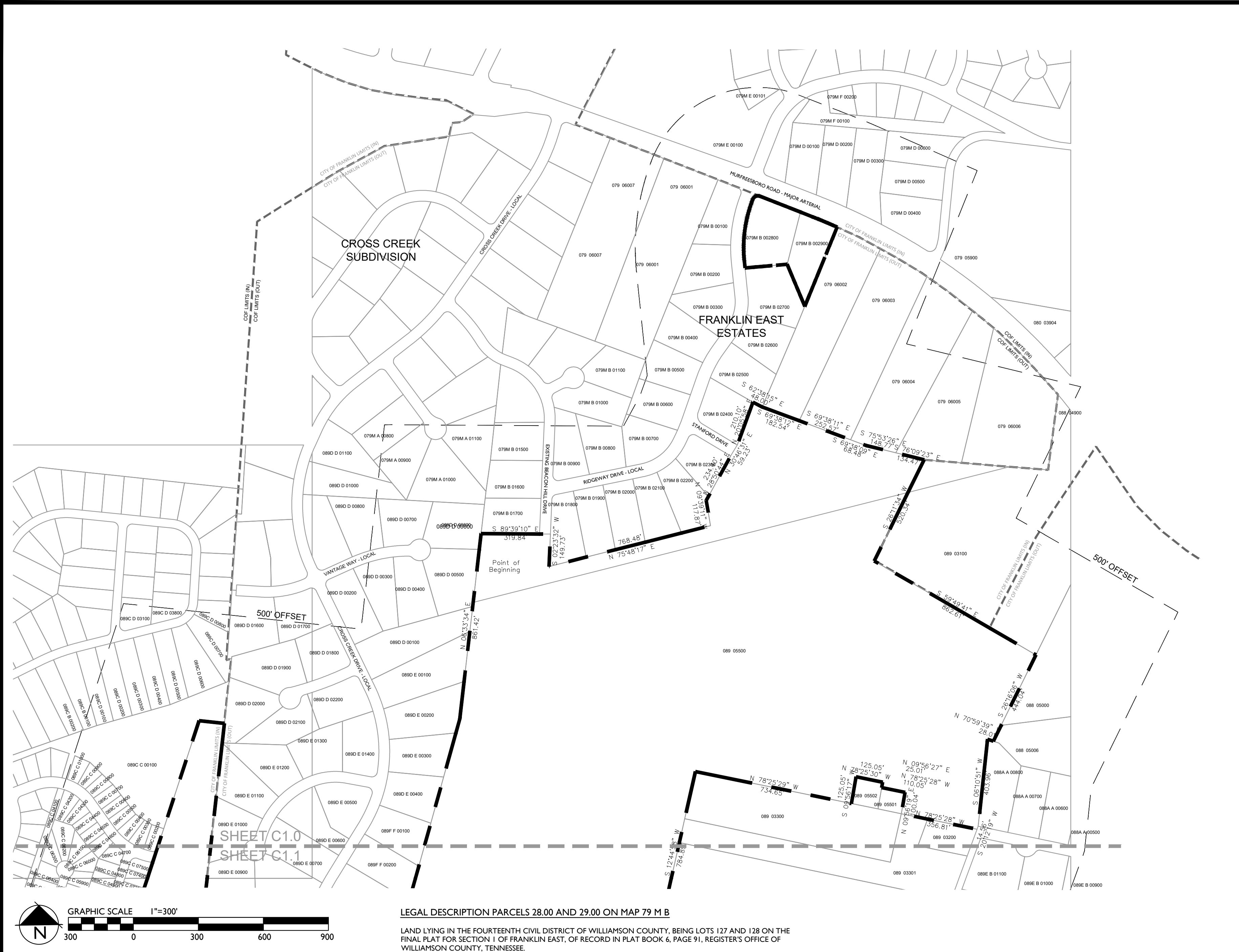
JUNE 10, 2016

JULY 11, 2016

AUGUST 4, 2016

SEPTEMBER 1, 2016

-



LEGAL DESCRIPTION PARCELS 28.00 AND 29.00 ON MAP 79 M B

LAND LYING IN THE FOURTEENTH CIVIL DISTRICT OF WILLIAMSON COUNTY, BEING LOTS 127 AND 128 ON THE FINAL PLAT FOR SECTION 1 OF FRANKLIN EAST, OF RECORD IN PLAT BOOK 6, PAGE 91, REGISTER'S OFFICE OF WILLIAMSON COUNTY, TENNESSEE.

LEGAL DESCRIPTION PARCELS 30.00, 30.01, 43.02, 43.03, 43.04, AND 55.00 ON MAP 89

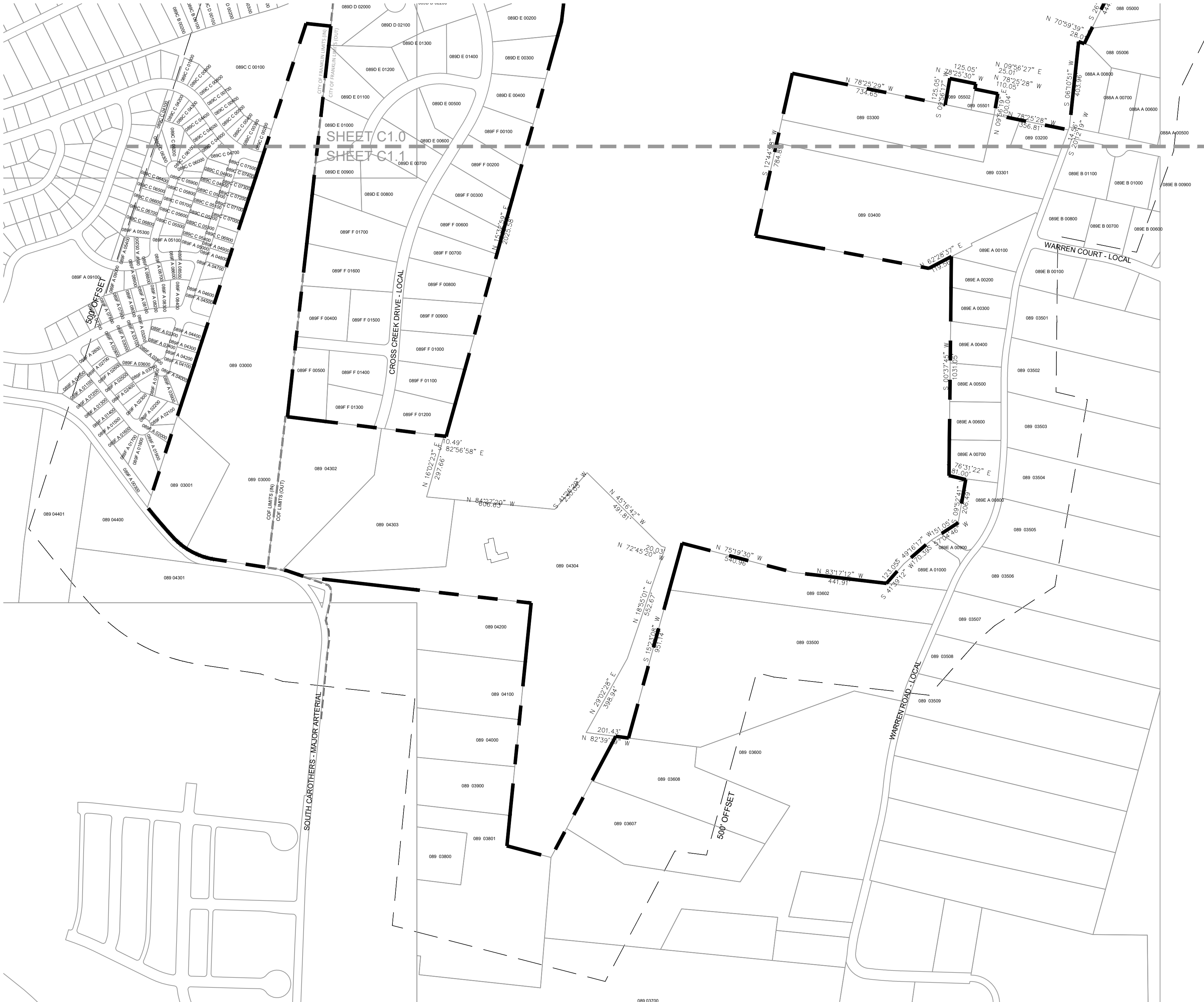
THE FOLLOWING LEGAL DESCRIPTION IS FOR LAND IN THE FOURTEENTH CIVIL DISTRICT OF WILLIAMSON COUNTY, LOCATED ON THE LANDS OF JAMES E. ADAMS, JR., OF RECORD IN DEED BOOK 2008, PAGE 702, R.O.W.C., TN, JEAN MARIE GILES GLASS, OF RECORD IN DEED BOOK 6526, PAGE 568, R.O.W.C., TN, HARRY GREGORY GLASS, OF RECORD IN DEED BOOK 4156, PAGE 670, R.O.W.C., TN, RALPH H. PEDEN, JR., OF RECORD IN DEED BOOK 4590, PAGE 436, R.O.W.C., TN, PATTI SUE WATKINS, OF RECORD IN DEED BOOK 6074, PAGE 249, R.O.W.C., TN, AND GEORGE V. DURNIN, OF RECORD IN DEED BOOK 1607, PAGE 1006, R.O.W.C., TN, AND MORE PARTICULARLY DESCRIBED IN AS FOLLOWS:

BEGINNING AT A POINT IN THE NORTH MARGIN OF SOUTH CAROTHERS ROAD, APPROXIMATELY 1200 FEET SOUTHEAST OF THE INTERSECTION OF FALCON CREEK DRIVE AND SAID SOUTH CAROTHERS ROAD; THENCE, LEAVING THE NORTH MARGIN OF SAID SOUTH CAROTHERS ROAD, NORTH 18 DEGREES 09 MINUTES 26 SECONDS EAST, A DISTANCE OF 2,397.47 FEET TO A POINT; THENCE SOUTH 83 DEGREES 50 MINUTES 54 SECONDS EAST, A DISTANCE OF 117.23 FEET TO A POINT; THENCE SOUTH 06 DEGREES 20 MINUTES 18 SECONDS WEST, A DISTANCE OF 1,850.41 FEET TO A POINT; THENCE SOUTH 82 DEGREES 56 MINUTES 59 SECONDS EAST, A DISTANCE OF 753.05 FEET TO A POINT; THENCE NORTH 15 DEGREES 32 MINUTES 59 SECONDS EAST, A DISTANCE OF 2,025.58 FEET TO A POINT; THENCE NORTH 06 DEGREES 33 MINUTES 34 SECONDS EAST, A DISTANCE OF 861.42 FEET TO A POINT; THENCE SOUTH 89 DEGREES 39 MINUTES 10 SECONDS EAST, A DISTANCE OF 319.84 FEET TO A POINT; THENCE SOUTH 02 DEGREES 23 MINUTES 32 SECONDS WEST, A DISTANCE OF 149.73 FEET TO A POINT; THENCE NORTH 75 DEGREES 48 MINUTES 17 SECONDS EAST, A DISTANCE OF 768.48 FEET TO A POINT; THENCE NORTH 09 DEGREES 39 MINUTES 11 SECONDS WEST, A DISTANCE OF 117.87 FEET TO A POINT; THENCE NORTH 29 DEGREES 14 MINUTES 05 SECONDS EAST, A DISTANCE OF 293.60 FEET TO A POINT; THENCE NORTH 20 DEGREES 05 MINUTES 58 SECONDS WEST, A DISTANCE OF 210.10 FEET TO A POINT; THENCE SOUTH 62 DEGREES 38 MINUTES 15 SECONDS EAST, A DISTANCE OF 48.00 FEET TO A POINT; THENCE SOUTH 69 DEGREES 38 MINUTES 11 SECONDS EAST, A DISTANCE OF 509.70 FEET TO A POINT; THENCE SOUTH 76 DEGREES 09 MINUTES 25 SECONDS EAST, A DISTANCE OF 277.18 FEET TO A POINT; THENCE SOUTH 26 DEGREES 11 MINUTES 34 SECONDS WEST, A DISTANCE OF 403.96 FEET TO A POINT; THENCE SOUTH 59 DEGREES 49 MINUTES 41 SECONDS EAST, A DISTANCE OF 862.61 FEET TO A POINT; THENCE NORTH 26 DEGREES 16 MINUTES 06 SECONDS WEST, A DISTANCE OF 444.04 FEET TO A POINT; THENCE NORTH 70 DEGREES 59 MINUTES 36 SECONDS WEST, A DISTANCE OF 280.01 FEET TO A POINT; THENCE SOUTH 06 DEGREES 10 MINUTES 31 SECONDS WEST, A DISTANCE OF 403.96 FEET TO A POINT; THENCE SOUTH 20 DEGREES 12 MINUTES 18 SECONDS WEST, A DISTANCE OF 14.56 FEET TO A POINT; THENCE NORTH 78 DEGREES 25 MINUTES 28 SECONDS WEST, A DISTANCE OF 356.81 FEET TO A POINT; THENCE NORTH 09 DEGREES 54 MINUTES 19 SECONDS EAST, A DISTANCE OF 100.04 FEET TO A POINT; THENCE NORTH 78 DEGREES 25 MINUTES 28 SECONDS WEST, A DISTANCE OF 110.05 FEET TO A POINT; THENCE NORTH 09 DEGREES 54 MINUTES 27 SECONDS EAST, A DISTANCE OF 250.01 FEET TO A POINT; THENCE NORTH 78 DEGREES 25 MINUTES 30 SECONDS WEST, A DISTANCE OF 125.05 FEET TO A POINT;

THENCE SOUTH 09 DEGREES 54 MINUTES 17 SECONDS WEST, A DISTANCE OF 125.05 FEET TO A POINT; THENCE NORTH 78 DEGREES 25 MINUTES 29 SECONDS WEST, A DISTANCE OF 734.65 FEET TO A POINT; THENCE SOUTH 12 DEGREES 44 MINUTES 58 SECONDS WEST, A DISTANCE OF 784.89 FEET TO A POINT; THENCE SOUTH 79 DEGREES 24 MINUTES 14 SECONDS EAST, A DISTANCE OF 830.08 FEET TO A POINT; THENCE NORTH 62 DEGREES 38 MINUTES 37 SECONDS EAST, A DISTANCE OF 119.56 FEET TO A POINT; THENCE SOUTH 00 DEGREES 37 MINUTES 45 SECONDS WEST, A DISTANCE OF 1,031.05 FEET TO A POINT; THENCE SOUTH 76 DEGREES 31 MINUTES 22 SECONDS EAST, A DISTANCE OF 81.00 FEET TO A POINT; THENCE SOUTH 09 DEGREES 52 MINUTES 41 SECONDS WEST, A DISTANCE OF 206.49 FEET TO A POINT; THENCE SOUTH 57 DEGREES 04 MINUTES 46 SECONDS WEST, A DISTANCE OF 151.05 FEET TO A POINT; THENCE SOUTH 49 DEGREES 16 MINUTES 17 SECONDS WEST, A DISTANCE OF 170.39 FEET TO A POINT; THENCE SOUTH 41 DEGREES 39 MINUTES 12 SECONDS WEST, A DISTANCE OF 123.05 FEET TO A POINT; THENCE NORTH 83 DEGREES 17 MINUTES 12 SECONDS WEST, A DISTANCE OF 441.91 FEET TO A POINT; THENCE NORTH 75 DEGREES 19 MINUTES 30 SECONDS EAST, A DISTANCE OF 540.96 FEET TO A POINT; THENCE SOUTH 15 DEGREES 23 MINUTES 08 SECONDS WEST, A DISTANCE OF 951.14 FEET TO A POINT; THENCE NORTH 82 DEGREES 39 MINUTES 38 SECONDS WEST, A DISTANCE OF 60.79 FEET TO A POINT; THENCE SOUTH 82 DEGREES 07 MINUTES 56 SECONDS WEST, A DISTANCE OF 646.53 FEET TO A POINT; THENCE NORTH 28 DEGREES 15 MINUTES 25 SECONDS WEST, A DISTANCE OF 215.00 FEET TO A POINT; THENCE NORTH 05 DEGREES 42 MINUTES 26 SECONDS EAST, A DISTANCE OF 1,148.85 FEET TO A POINT; THENCE NORTH 83 DEGREES 26 MINUTES 21 SECONDS WEST, A DISTANCE OF 1,067.76 FEET TO A POINT, SAID POINT BEING IN THE NORTH MARGIN OF SAID SOUTH CAROTHERS ROAD; THENCE, WITH THE NORTH MARGIN OF SAID SOUTH CAROTHERS ROAD, NORTH 71 DEGREES 12 MINUTES 56 SECONDS WEST, A DISTANCE OF 97.37 FEET TO A POINT; THENCE NORTH 81 DEGREES 09 MINUTES 29 SECONDS WEST, A DISTANCE OF 342.75 FEET TO A POINT; THENCE ALONG A CURVE TO THE RIGHT, HAVING A DELTA OF 38 DEGREES 34 MINUTES 48 SECONDS, A RADIUS OF 332.15 FEET, A TANGENT OF 116.25 FEET, AN ARC LENGTH OF 223.65 FEET, A CHORD BEARING OF NORTH 61 DEGREES 58 MINUTES 32 SECONDS WEST, AND A CHORD LENGTH OF 219.45 FEET TO A POINT; THENCE ALONG A CURVE TO THE RIGHT, HAVING A DELTA OF 94 DEGREES 21 MINUTES 00 SECONDS, A RADIUS OF 2,458.63 FEET, A TANGENT OF 93.38 FEET, AN ARC LENGTH OF 186.47 FEET, A CHORD BEARING OF NORTH 40 DEGREES 36 MINUTES 59 SECONDS WEST, AND A CHORD LENGTH OF 186.62 FEET TO THE POINT OF BEGINNING, AND CONTAINING 9,726,771.27 SQUARE FEET OR 223.296 ACRES.

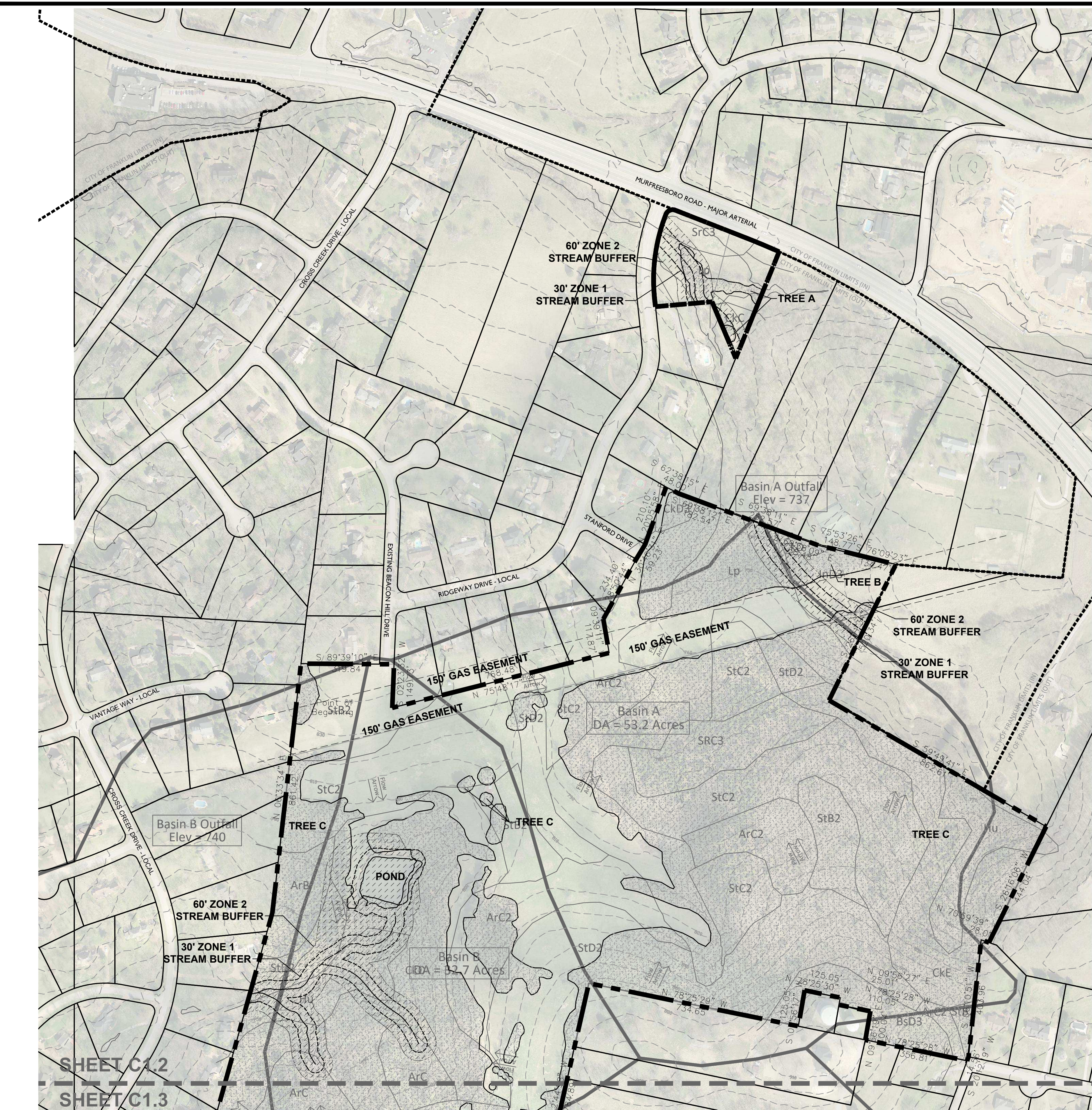
500' NEIGHBORS LIST:

PARCEL ID	OWNER ADDRESS	OWNER	CITY	STATE	ZIP	ZONE	CHARACTER AREA	LAND-USE	DEV STANDARD
1 089F-A-01400	310 CROOKED OAK CT	AHR I TN LLC	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
2 089F-A-03100	1066 MEANDERING WAY	AMH 2014-3 BORROWER LLC	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
3 089F-A-03900	2339 SURREY LN	AHR I TN LLC	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
4 089C-C-05000	2306 SURREY LN	CAFFYN-PARSONS RYAN R	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
5 089F-A-03000	1064 MEANDERING WAY	CAFFYN-PARSONS RYAN	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
6 089-05500	MURFREESBORO RD	ADAMS JAMES E JR	Brentwood	TN	37027	MGA-1	SWCO-3	Vacant	Conventional
7 089C-C-00200	2073 UPLAND DR	RIDINGS DANIEL SCOTT	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
8 089C-C-07300	2305 SURREY LN	RIDINGS DAN	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
9 089F-A-02600	305 CROOKED OAK CT	CONROY PATRICK	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
10 089C-C-07500	2301 SURREY LN	CAFFYN-PARSONS CHRISTOPHER	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
11 089C-C-06500	511 CLOVER LEAF LN	ELIZER CHRISTOPHER DILON	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
12 079-05900	4100 MURFREESBORO RD	FOUNTAINS OF FRANKLIN LLC	Franklin	TN	37064	SD-X	SWCO-3	Multi-Family	Conventional
13 079-06003	MURFREESBORO RD	FRENZEL G CHARLES	Franklin	TN	37067	MGA-1	SWCO-3	Vacant	Conventional
14 079-06004	4091 MURFREESBORO RD	FRENZEL GERALD CHARLES JR	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
15 079-06005	4095 MURFREESBORO RD	GOOD WALTER EARLE SR	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
16 079M-A-00900	109 HOLLOW CT	HALBROOKS TRESA LR	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
17 079M-A-01000	113 HOLLOW CT	KEENAN COLUM	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
18 079M-A-01100	115 HOLLOW CT	LUNA JONES W	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
19 079M-B-00200	1104 RIDGEWAY DR	PEFFEIER LEONARD M	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
20 079M-B-00300	1108 RIDGEWAY DR	BRADSHAW ANTHONY	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
21 079M-B-00500	1112 RIDGEWAY DR	FERGUSON MATTHEW ALLEN	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
22 079M-B-00600	1114 RIDGEWAY DR	LAMBERT OLIVER J	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
23 079M-B-00700	1200 RIDGEWAY DR	O'CONNELL PHILLIP	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
24 079M-B-00800	1206 RIDGEWAY DR	RHEA KATHRYN L	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
25 079M-B-00900	1210 RIDGEWAY DR	HANNIGAN PAUL D	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
26 079M-B-01500	2001 BEACON HILL DR	WILLIS WADE A	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
27 079M-B-01600	1995 BEACON HILL DR	PRUITT JAY R	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
28 079M-B-01700	1991 BEACON HILL DR	CAPLEN BRIAN GEORGE	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
29 079M-B-01800	1211 RIDGEWAY DR	SUNGERLAND RUTH	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
30 079M-B-01900	1209 RIDGEWAY DR	BRITTAIN THOMAS DAVID	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
31 079M-B-02000	1207 RIDGEWAY DR	SHOEMAKE JULIUS S	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
32 079M-B-02100	1205 RIDGEWAY DR	PACKARD DONALD A	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
33 079M-B-02200	1203 RIDGEWAY DR	OWENS MICHAEL A	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
34 079M-B-02300	1101 STANFORD DR	BURNS WILLIAM C JR	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
35 079M-B-02400	1115 RIDGEWAY DR	MOEHLE MARK A	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
36 079M-B-02500	1111 RIDGEWAY DR	RICH DALE	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
37 079M-B-02600	1109 RIDGEWAY DR	BUSELMER NORMAN T III	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
38 079M-B-02700	1105 RIDGEWAY DR	GOERZEN LAURIE	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
39 079M-B-02800	1101 RIDGEWAY DR	ADAMS R GLENN	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
40 079M-B-02900	MURFREESBORO RD	ADAMS ROB G	Franklin	TN	37067	NC	SWCO-3	Vacant	Conventional
41 079M-D-00100	4068 MURFREESBORO RD	BETTS CHRISTOPHER E	Franklin	TN	37067	R-1 (COF)	SWCO-3	Residential	Either
42 079M-D-00200	4072 MURFREESBORO RD	SALAZAR MARY ELLEN	Franklin	TN	37067	R-1 (COF)	SWCO-3	Residential	Either
43 079M-D-00300	4076 MURFREESBORO RD	BOZEWAH H ANDREW	Franklin	TN	37067	R-1 (COF)	SWCO-3	Residential	Either
44 079M-D-00400	107 CHESTER STEPHENS CT	CAVENDER DAVID O	Franklin	TN	37067	R-1 (COF)	SWCO-3	Residential	Either
45 079M-D-00500	111 CHESTER STEPHENS CT	MCQUIRE W GARY AND JANE M REV TRUST	Franklin	TN	37067	R-1 (COF)	SWCO-3	Residential	Either
46 079M-D-00600	115 CHESTER STEPHENS CT	TAYLOR ROBERT P AND JAN J TAYLOR REV TRUST	Franklin	TN	37067	R-1 (COF)	SWCO-3	Residential	Either
47 079M-E-00101	205 SPRINGHOUSE CIR	AWAD GEORGE	Franklin	TN	37067	R-1 (COF)	SWCO-3	Residential	Either
48 079M-F-00200	102 CHESTER STEPHENS RD	BERREY THOMAS S	Franklin	TN	37067	R-1 (COF)	SWCO-2	Residential	Either
49 088-04900	4115 MURFREESBORO RD	WRIGHT GLEN EFFERSON	Franklin	TN	37067	MGA-1	SWCO-2	Residential	Either
50 088-05000	1980 CEDAR MONT DR	MIZELL TROY A	Thompson Station	TN	37179	MGA-1	SWCO-3	Est. Residential	Conventional
51 088-05001	4119 MURFREESBORO RD	CHURCH ST DUNSTANS EPISCOPAL	Franklin	TN	37213	MGA-1	SWCO-2	Residential	Either
52 088-05002	1972 CEDAR MONT DR	MIZELL TROY A	Franklin	TN	37067	MGA-1	SWCO-2	Residential	Either
53 088-05005	1982 CEDAR MONT DR	SLAUGHTER JAMES C	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
54 088-05007	MURFREESBORO RD	CEMETERY HOLY CROSS-MARSHALL	Franklin	TN	37067	MGA-1	SWCO-3	Chrch	Conventional
55 088-05008	MURFREESBORO RD	CEMETERY MARSHALL	Franklin	TN	37067	MGA-1	SWCO-3	CNc	Conventional
56 088A-A-00500	4209 WARREN RD	POMEROY DAVE GLENN JR	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
57 088A-A-00600	4211 WARREN RD	DOSUMMU BASIL OLUWAJIDE	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
58 088A-A-00700	4213 WARREN RD	PORTER JERRI L	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
59 088A-A-00800	4215 WARREN RD	ROBERTS HALL M	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
60 089-03000	4340 S CAROTHERS RD	GLASS JEAN MARIE GILES	Franklin	TN	37067	R-1 (COF)	MECO-6	Agriculture	Conventional
61 089-03001	4338 S CAROTHERS RD	GLASS HARRY GREGORY	Franklin	TN	37067	R-1 (COF)	MECO-6	Residential	Conventional
62 089-03100	4113 MURFREESBORO RD	MIZELL TROY A	Thompson Station	TN	37179	MGA-1	SWCO-3	Est. Residential	Conventional
63 089-03200	4217 WARREN RD	HICKERSON LOU WILLIE	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
64 089-03300	4221 WARREN RD	HICKERSON ROBERT JR	Franklin	TN	37064	MGA-1	SWCO-3	Est. Residential	Conventional
65 089-03301	4223 WARREN RD	HICKERSON LOU WILLIE	Franklin	TN	37067	MGA-1	SWCO-3	Vacant	Conventional
66 089-03500	4269 WARREN RD	KING WILLIAM ROBERT	Franklin	TN	37067	MGA-1	SWCO-3	Agriculture	Conventional
67 089-03501	4240 WARREN RD	HUMPHREY ROALD	Franklin	TN	37067	MGA-1	SWCO-3	Est. Residential	Conventional
68 089-03502	4244 WARREN RD	OFMAN LEE	Franklin	TN	37067	MGA-1	SWCO-3	Est. Residential	Conventional
69 089-03503	4248 WARREN RD	LASTER KELLY D	Franklin	TN	37067	MGA-1	SWCO-3	Est. Residential	Conventional
70 089-03504	4252 WARREN RD	SKAGGS FRANK P IV	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
71 089-03505	4256 WARREN RD	KANDEL MARY E REVOCABLE TRUST	Franklin	TN	37067	MGA-1	SWCO-3	Est. Residential	Conventional
72 089-03506	4260 WARREN RD	DESANTIS DEREK T	Franklin	TN	37067	MGA-1	SWCO-3	Est. Residential	Conventional
73 089-03507	4264 WARREN RD	HOOD JONATHAN S	Franklin	TN	37067	MGA-1	SWCO-3	Est. Residential	Conventional
74 089-03508	4268 WARREN RD	MCGRATH ROBERT PAUL	Franklin	TN	37067	MGA-1	SWCO-3	Est. Residential	Conventional
75 089-03509	4272 WARREN RD	GREGUS JOSEPH A	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
76 089-03600	4279 WARREN RD	HOOD JAMES ROBERT	Franklin	TN	37067	MGA-1	SWCO-3	Agriculture	Conventional
77 089-03602	4261 WARREN RD	PEREZ ANDRES	Franklin	TN	37067	MGA-1	SWCO-3	Est. Residential	Conventional
78 089-03607	4287 WARREN RD	HOOD JAMES ROBERT JR	Franklin	TN	37067	MGA-1	SWCO-3	Est. Residential	Conventional
79 089-03608	4283 WARREN RD	MOORE JERRY ADDISON JR	Franklin	TN	37067	MGA-1	SWCO-3	Est. Residential	Conventional
80 089-03700	4408 S CAROTHERS RD	SIMMONS RIDGE JOINT VENTURE	Franklin	TN	37067	R-2 (COF)	MECO-6	Agriculture	Conventional
81 089-03800	4378 S CAROTHERS RD	SMITH STERLING C	Franklin	TN	37067	MGA-1	SWCO-3	Open Space	Conventional
82 089-03801	4379 S CAROTHERS RD	SMITH STERLING C	Franklin	TN	37064	MGA-1	SWCO-3	Vacant	Conventional
83 089-03900	4372 S CAROTHERS RD	RIEDEL BERNHARD	Franklin	TN	37064	MGA-1	SWCO-3	Residential	Conventional
84 089-04000	4364 S CAROTHERS RD	HEITHCOCK JAMES G	Franklin	TN	37064	MGA-1	SWCO-3	Mixed-Use	Conventional
85 089-04200	4352 S CAROTHERS RD	ANDERSON WILMA JUNE TRUST	Franklin	TN	37064	MGA-1	SWCO-3	Est. Residential	Conventional
86 089-04301	S CAROTHERS RD	LOCKWOOD DEXTER	Franklin	TN	37067	R-2 (COF)	MECO-6	Agriculture	Conventional
87 089-04302	4348 S CAROTHERS RD	PEDEN RALPH H JR	Franklin	TN	37064	MGA-1	SWCO-3	Est. Residential	Conventional
88 089-04303	4344 S CAROTHERS RD	WATKINS PATTI SUE	Franklin	TN	37064	MGA-1	SWCO-3	Est. Residential	Conventional
89 089-04304	4350 S CAROTHERS RD	DURNIN GEORGE V	Franklin	TN	37064	MGA-1	SWCO-3	Agriculture	Conventional
90 089-04400	4341 S CAROTHERS RD	RUSSELL ROBERT	Franklin	TN	37067	ER	MECO-6	Agriculture	Conventional
91 089-04401	4335 S CAROTHERS RD	STRAIN COLLIE	Franklin	TN	37067	ER	MECO-6	Vacant	Conventional
92 089-05501	WARREN RD	MILCROFTON UTILITY DIST	Franklin	TN	37064	MGA-1	SWCO-3	Utilities	Conventional
93 089-05502	MURFREESBORO RD	MILCROFTON UTILITY DIST	Franklin	TN	37064	MGA-1	SWCO-3	Utilities	Conventional
94 089-B-00100	277 DANDRIDGE DR	CHILDS LUGER DAVID L	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
95 089-B-00200	273 DANDRIDGE DR	RINKER JOHN R	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
96 089C-C-00100	UPLAND DR	FIRST TN BANK NATIONAL ASSOC	Franklin	TN	37067	R-3 (COF)	MECO-6	Open Space	Conventional
97 089C-C-00300	2071 UPLAND DR	HENCHY PATRICK J	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
98 089C-C-00400	2069 UPLAND DR	POWELL MELISSA B	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
99 089C-C-00500	2067 UPLAND DR	WHITER HEATHER R	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
100 089C-C-00600	2065 UPLAND DR	DEAN DONNA S	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
101 089C-C-00700	2063 UPLAND DR	RADER MARK A	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
102 089C-C-00800	2061 UPLAND DR	YOUNG REV LIVING TRUST	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
103 089C-C-00900	2059 UPLAND DR	BALDING JONATHON	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
104 089C-C-01000	2057 UPLAND DR	CLAXTON ALICIA	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
105 089C-C-01100	UPLAND DR	FIRST TN BANK NATIONAL ASSOC	Franklin	TN	37067	R-3 (COF)	MECO-6	Open Space	Conventional
106 089C-C-01200	2044 UPLAND DR	WALLACE JENNIFER J	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
107 089C-C-01300	2046 UPLAND DR	SANCHEZ TIFFANY	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
108 089C-C-01400	2048 UPLAND DR	HUNTER KAREN L	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
109 089C-C-01500	2050 UPLAND DR	BRATTON DAVID A	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
110 089C-C-01600	2052 UPLAND DR	HOOD JAMES P	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
111 089C-C-01700	2300 SURREY LN	FRASURE CHEVY SAUNDRA	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
112 089C-C-01800	2302 SURREY LN	FRASURE DOUGLAS	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
113 089C-C-01900	2304 SURREY LN	HERRON LACY	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
114 089C-C-02100	2308 SURREY LN	JONES ANDREW J JR	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
115 089C-C-02200	2310 SURREY LN	STOVAL DAVID W	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
116 089C-C-02300	2312 SURREY LN	JAMES RONALD D	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
117 089C-C-02400	2314 SURREY LN	HOEBS DANIEL V	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
118 089C-C-02500	502 CLOVER LEAF LN	WOODING MATTHEW E	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
119 089C-C-02600	504 CLOVER LEAF LN	GIESIN JAMES W	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
120 089C-C-02700	506 CLOVER LEAF LN	COLEMAN MATTHEW T	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
121 089C-C-02800	508 CLOVER LEAF LN	SPEGLG STEPHEN P	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
122 089C-C-02900	510 CLOVER LEAF LN	MCN							



NOTES:
1. PARCEL LINES PROVIDED BY CITY OF FRANKLIN G.I.S.
2. SITE BOUNDARY PROVIDED BY LAND SOLUTIONS COMPANY

138	089C-D00400	293 DANDRIDGE DR	ROLAND ROBERT LEE	Franklin	TN	37067	R-2 (COF)	MECO-6	Residential	Conventional
139	089C-D00500	297 DANDRIDGE DR	CURLEE SUSAN M	Franklin	TN	37067	R-2 (COF)	MECO-6	Residential	Conventional
140	089C-D00600	301 DANDRIDGE DR	OLSEN KAREN	Franklin	TN	37067	R-2 (COF)	MECO-6	Residential	Conventional
141	089C-D00700	305 DANDRIDGE DR	VALTUTTI THOMAS	Franklin	TN	37067	R-2 (COF)	MECO-6	Residential	Conventional
142	089C-D00800	309 DANDRIDGE DR	KECK LEROY A	Franklin	TN	37067	R-2 (COF)	MECO-6	Residential	Conventional
143	089C-D03100	800 MCGEECHY LN	BOOKER CHARLES	Franklin	TN	37067	R-2 (COF)	MECO-6	Residential	Conventional
144	089C-D03800	284 DANDRIDGE DR	MILLER DAVID C	Franklin	TN	37067	R-2 (COF)	MECO-6	Residential	Conventional
145	089D-D00100	1149 CROSS CREEK DR	CRANSTON WALTER KEITH	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
146	089D-D00200	213 VANTAGE WAY	CHRISTOFFERSEN B MICHON	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
147	089D-D00300	209 VANTAGE WAY	MURPHY JOHN L	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
148	089D-D00400	205 VANTAGE WAY	WEL MICHAEL P	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
149	089D-D00500	201 VANTAGE WAY	RAMOS TIFFANY A	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
150	089D-D00600	200 VANTAGE WAY	JORDAN MARGARET	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
151	089D-D00700	204 VANTAGE WAY	JOHNSON VAL	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
152	089D-D00800	208 VANTAGE WAY	BEASLEY EVERETT L JR	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
153	089D-D01000	1133 CROSS CREEK DR	HASSLER MICHAEL C	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
154	089D-D01100	1133 CROSS CREEK DR	OKERSON ALBERT	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
155	089D-D01600	221 VANTAGE WAY	HOOS RICHARD T	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
156	089D-D01700	1146 CROSS CREEK DR	STRUNCE TODD	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
157	089D-D01800	300 RIDGETOP CT	HUGHES CARROLL L	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
158	089D-D01900	304 RIDGETOP CT	NABER CLIFORD A	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
159	089D-D02000	308 RIDGETOP CT	WINDHAM FORREST GREGORY	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
160	089D-D02100	305 RIDGETOP CT	GITHENS EILEEN S	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
161	089D-D02200	301 RIDGETOP CT	HILL SARAH	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
162	089D-E00100	1153 CROSS CREEK DR	BRASEL MIKE T	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
163	089D-E00200	1151 CROSS CREEK DR	GLEASON ALAN R	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
164	089D-E00300	1159 CROSS CREEK DR	YOUNG CLAYTON S	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
165	089D-E00400	1183 CROSS CREEK DR	MINCHEW ALAN B	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
166	089D-E00500	1162 CROSS CREEK DR	PRUITT TIMOTHY A	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
167	089D-E00600	405 CROSS CREEK CT	CASE STEVEN H	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
168	089D-E00700	409 CROSS CREEK CT	EVANS MICHAEL D	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
169	089D-E00800	1114 CROSS CREEK DR	WOOD CHARLES A JR	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
170	089D-E00900	416 CROSS CREEK CT	MADDUX RICHARD L	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
171	089D-E01000	414 CROSS CREEK CT	WILSON BRADLEY D	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
172	089D-E01100	412 CROSS CREEK CT	PATRICK JOSEPH M	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
173	089D-E01200	408 CROSS CREEK CT	WILSON BRENT A	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
174	089D-E01300	404 CROSS CREEK CT	JOHNSON DAVID E	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
175	089D-E01400	400 CROSS CREEK CT	DONAHOE JOHN R	Concord	MS	37421	NC	SWCO-3	Residential	Conventional
176	089E-A00100	4229 WARREN RD	HENSON HEATHER	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
177	089E-A00200	4233 WARREN RD	REINFRIED DANA	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
178	089E-A00300	4237 WARREN RD	GLMORF JOE H	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
179	089E-A00400	4241 WARREN RD	EBB DANIEL KEVIN	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
180	089E-A00500	4245 WARREN RD	KUEKER MICHAEL	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
181	089E-A00600	4249 WARREN RD	ALLINSON JOHN E	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
182	089E-A00700	4253 WARREN RD	THOMPSON TIMOTHY W	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
183	089E-A00800	4257 WARREN RD	ROMEO CLAUDIO	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
184	089E-A00900	4261 WARREN RD	VALLEY VIEW DEV INC	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
185	089E-A01000	4259 WARREN RD	COGHLAN PATRICK W	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
186	089E-B00100	4201 WARREN CT	KRENGEL NORMAN K	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
187	089E-B00600	4210 WARREN CT	EDGE SAMUEL S	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
188	089E-B00700	4208 WARREN CT	BROWN ROGER LEE	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
189	089E-B00800	4202 WARREN CT	REEVES TOMMY	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
190	089E-B00900	4220 WARREN RD	CARLAND ROBERT MORGAN	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
191	089E-B01000	4218 WARREN RD	CAMERON JAMES	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
192	089E-B01100	4216 WARREN RD	NEWMAN ANDREW J	Franklin	TN	37067	MGA-1	SWCO-3	Residential	Conventional
193	089F-A00300	S CAROTHERS RD	FALCON CREEK HOMEOWNERS ASSOC INC	Franklin	TN	37067	R-3 (COF)	MECO-6	Open Space	Conventional
194	089F-A01000	302 CROOKED OAK CT	GREER WILLIAM P	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
195	089F-A01100	304 CROOKED OAK CT	SCRIPPSHIRE JACOB	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
196	089F-A01200	306 CROOKED OAK CT	ROE MITCHELL GREGG	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
197	089F-A01300	308 CROOKED OAK CT	NANCE MATTHEW	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
198	089F-A01600	314 CROOKED OAK CT	NIX CLYDE M	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
199	089F-A01700	316 CROOKED OAK CT	ASADER GREGG S	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
200	089F-A01800	318 CROOKED OAK CT	SANISTER DEBORAH EVANS	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
201	089F-A01900	320 CROOKED OAK CT	CHEN JAN Z	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
202	089F-A02000	317 CROOKED OAK CT	ZIMMERMAN PHILIP M	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
203	089F-A02100	315 CROOKED OAK CT	FLAGG CRAIG F	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
204	089F-A02200	313 CROOKED OAK CT	UHLER LESTER H	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
205	089F-A02300	311 CROOKED OAK CT	MCGEE AMY B	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
206	089F-A02400	309 CROOKED OAK CT	HOSHIED HAROLD DEAN	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
207	089F-A02500	307 CROOKED OAK CT	MARTIN MARY LOU	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
208	089F-A02700	303 CROOKED OAK CT	YOUNG RUSSELL	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
209	089F-A02800	301 CROOKED OAK CT	FARKAS SUSAN	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
210	089F-A02900	1062 MEANDERING WAY	BROWN AARON L	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
211	089F-A03200	1068 MEANDERING WAY	CLASAMITARO JORDAN L	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
212	089F-A03300	1070 MEANDERING WAY	DUFRECHOU SCOTT J	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
213	089F-A03400	2330 SURREY LN	ARAUJO FRANK JR	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
214	089F-A03500	2332 SURREY LN	RAINES DANIEL R	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
215	089F-A03600	2334 SURREY LN	LAYMAN ROGER W	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
216	089F-A03700	2336 SURREY LN	DALTON AUDREY	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
217	089F-A03800	2338 SURREY LN	SEEVERS MICHAEL E	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
218	089F-A04000	2337 SURREY LN	ELSWICK ROBERT A	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
219	089F-A04100	2335 SURREY LN	COBB REBECCA DAWN	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
220	089F-A04200	2333 SURREY LN	MUNSCAL DON	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
221	089F-A04300	2331 SURREY LN	PAIVA LUISE D	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
222	089F-A04400	2329 SURREY LN	BIES MICHAEL C	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
223	089F-A04500	2323 SURREY LN	WHITE RONALD L	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
224	089F-A04700	2319 SURREY LN	SHELTON CHARLES V	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
225	089F-A04800	2317 SURREY LN	DALESSANDRO FRED J	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
226	089F-A04900	2315 SURREY LN	CHESSMAN CHRISTINE M TR	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
227	089F-A05100	3008 BENT TREE RD	TUTT RONALD	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
228	089F-A05200	3007 BENT TREE RD	AHN BYUNG PIL	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
229	089F-A05300	503 CLOVER LEAF LN	ODEN SETH A	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
230	089F-A05400	3005 BENT TREE RD	KILLAWEE SUSAN L	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
231	089F-A07100	1063 MEANDERING WAY	ZALUD LAWRENCE R	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
232	089F-A07800	1065 MEANDERING WAY	SMITH BRIAN	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
233	089F-A07900	1067 MEANDERING WAY	WATERS MICHAEL	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
234	089F-A08000	1069 MEANDERING WAY	LOCKWOOD PROP LLC	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
235	089F-A08100	1071 MEANDERING WAY	PITTS GLENN S	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
236	089F-A08200	1073 MEANDERING WAY	HUYNH KHANH	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
237	089F-A08400	1071 MEANDERING WAY	ROBINSON ROBERT L	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
238	089F-A08500	2320 SURREY LN	BERNARD LINDA M	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
239	089F-A08600	3016 BENT TREE RD	JENKINS KENNETH	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
240	089F-A08700	3014 BENT TREE RD	MANIER M LISA	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
241	089F-A08800	3012 BENT TREE RD	SAWYER BERNICE B	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
242	089F-A08900	3010 BENT TREE RD	SMITH DENNIS E	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
243	089F-A09000	3008 BENT TREE RD	WEST KEVIN	Franklin	TN	37067	R-3 (COF)	MECO-6	Residential	Conventional
244	089F-A09100	2231 FALCON CREEK DR	FALCON CREEK HOMEOWNERS ASSOC INC	Franklin	TN	37067	R-3 (COF)	MECO-6	Open Space	Conventional
245	089F-F00100	1176 CROSS CREEK DR	SYBERT JAMES G	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
246	089F-F00200	1178 CROSS CREEK DR	MONTEATH DAVID B	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
247	089F-F00300	1182 CROSS CREEK DR	HELTON MICHAEL GLENN	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
248	089F-F00400	504 BLTMOORE CT	DEBOLT SHARON	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
249	089F-F00500	505 BLTMOORE CT	HORECKA DANIEL P	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
250	089F-F00600	501 BLTMOORE CT	JOSLIN REBECCA P	Franklin	TN	37064	NC	SWCO-3	Residential	Conventional
251	089F-F00700	1190 CROSS CREEK DR	JAMESON ZACHARY	Pasadena	CA	91101	NC	SWCO-3	Residential	Conventional
252	089F-F00800	1191 CROSS CREEK DR	STYLYS LAWRENCE G	Franklin	TN	37067	NC	SWCO-3	Residential	Conventional
253	089F-F00900	1187 CROSS CREEK DR	BYRNE DANIEL W	Franklin	TN</					



NOTES:

1. THERE ARE NO FLOODPLAINS EXISTING ON THE SITE BASED ON FEMA MAP 47187C0220F & 47187C0214F.
3. AERIAL PHOTO, PARCEL LINES AND TOPOGRAPHIC INFORMATION PROVIDED BY CITY OF FRANKLIN G.I.S.
4. SITE BOUNDARY CALLS PROVIDED BY LAND SOLUTIONS COMPANY.
5. NO THIRD PARTY MINERAL RIGHTS ARE ASSOCIATED WITH THIS PROPERTY.

EXISTING TREE CANOPY

BASED ON AERIAL PHOTOGRAPHS OF THE PROPERTY THE EXISTING TREE CANOPY IS APPROXIMATELY 151 ACRES WHICH IS 66.83% OF THE TOTAL SITE

TREE CANOPY DATA

TREE AREA	EXISTING
TREE A	20,501 SF
TREE B	184,596 SF
TREE C	5,661,645 SF
TREE D	221,073 SF
TREE E	491,876 SF
TOTAL SF	6,579,691 SF

EXISTING TREE CANOPY: 6,579,691 SF
6,579,691 SF/9,844,942.09 SF = .668 (66.8%) OF TOTAL SITE

REQUIRED CANOPY PRESERVATION =
36% OF TOTAL CANOPY
6,579,691 SF * 36% = 2,368,689 SF

LEGEND

	SLOPES 14%-20%
	SLOPES >20%
	EXISTING TREE CANOPY
	STREAM BUFFER

Map Unit Symbol	Map Unit Name
ArB	Armour silt loam, 2 to 5 percent slopes
ArB2	Armour silt loam, 2 to 5 percent slopes, eroded
ArC	Armour silt loam, 5 to 12 percent slopes
ArC2	Armour silt loam, 5 to 12 percent slopes, eroded
BrB2	Braxton cherty silt loam, 2 to 5 percent slopes, eroded
BrC2	Braxton cherty silt loam, 5 to 12 percent slopes, eroded
BsC3	Braxton cherty silty clay loam, 5 to 12 percent slopes, severely eroded
BsD3	Braxton cherty silty clay loam, 12 to 20 percent slopes, severely eroded
CkC	Culleoka silt loam, 5 to 12 percent slopes
CkD	Culleoka silt loam, 12 to 20 percent slopes
CkD3	Culleoka silt loam, 12 to 20 percent slopes, severely eroded
CkE	Culleoka silt loam, 20 to 35 percent slopes
CkE3	Culleoka silt loam, 20 to 35 percent slopes, severely eroded
Eg	Egam silt loam, phosphatic
Gu	Gullied land
HcC3	Hampshire silty clay loam, 5 to 12 percent slopes, severely eroded
HeB2	Hampshire-colbert silt loams, 2 to 5 percent slopes, eroded
HeC2	Hampshire-colbert silt loams, 5 to 12 percent slopes, eroded
HhC3	Hampshire-colbert silty clay loams, 5 to 12 percent slopes, severely eroded
Hu	Huntington silt loam, phosphatic
InD3	Inman silty clay loam, 12 to 20 percent slopes, severely eroded
Lp	Lindell silt loam, 0 to 2 percent slopes, occasionally flooded
MbC2	Maury silt loam, 5 to 12 percent slopes, eroded
MnE	Mimosa-Rock outcrop complex, 20 to 40 percent slopes
MoD	Ashwood-Mimosa-Rock outcrop complex, 5 to 15 percent slopes
Rc	Rockland
Src3	Stiversville clay loam, 5 to 12 percent slopes, severely eroded
SrD3	Stiversville clay loam, 12 to 20 percent slopes, severely eroded
StB2	Stiversville silt loam, 2 to 5 percent slopes, eroded
StC2	Stiversville silt loam, 5 to 12 percent slopes, eroded
StD2	Stiversville silt loam, 12 to 20 percent slopes, eroded
TvD	Talbott very rocky soils, 2 to 15 percent slopes

EXISTING STORMWATER MANAGEMENT SUMMARY

TOTAL PROPERTY AREA = 226.01 ACRES
TOTAL PROPOSED DISTURBED AREA = 143.51 ACRES

SOIL TYPES: 54.6% TYPE A SOIL
25.8% TYPE B SOIL
17.2% TYPE C SOIL
0.0% TYPE D SOIL
2.4% NON-SOIL AREAS

STORMWATER NARRATIVES

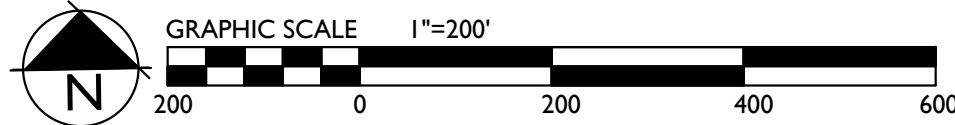
BASIN A:
STORMWATER IS CURRENTLY ROUTED BY WAY OF WET WEATHER CONVEYANCES TO THE NORTHEAST CORNER OF THE SITE, WHERE IT FLOWS INTO A BLUE-LINE STREAM OFFSITE.
BASIN AREA: 53.2 AC.
OUTFALL ELEVATION: 737'

BASIN B:
STORMWATER IS CURRENTLY COLLECTED IN A POND ON THE WEST SIDE OF THE SITE WHERE IT IS CARRIED OFF SITE BY A BLUE-LINE STREAM.
BASIN AREA: 32.7 AC.
OUTFALL ELEVATION: 740'

BASIN C:
STORMWATER IS CURRENTLY ROUTED BY WAY OF A BLUE-LINE STREAM TO THE FAR WEST PROPERTY LINE. THIS BASIN IS AN EXTENSION OF THE PREVIOUS, BASIN B.
BASIN AREA: 80.8 AC.
OUTFALL ELEVATION: 694'

BASIN D:
STORMWATER IS CURRENTLY ROUTED BY WAY OF WET WEATHER CONVEYANCES TO THE SOUTH OF THE SITE ALONG S CAROTHERS ROAD, WHERE IT EVENTUALLY FLOWS INTO THE SAME STREAM AS THE FOLLOWING, BASIN E.
BASIN AREA: 15.2 AC.
OUTFALL ELEVATION: 726'

BASIN E:
STORMWATER IS CURRENTLY ROUTED BY WAY OF WET WEATHER CONVEYANCES TO THE SOUTH SIDE OF THE SITE AND EVENTUALLY FLOWS INTO THE SAME STREAM AS THE PREVIOUS, BASIN D. A BLUE-LINE STREAM COMES ONTO THIS BASIN FROM THE NORTHEAST BUT ENDS IN AN EXISTING SINKHOLE AND DRY POND, WHICH LIES TO THE NORTHEAST OF WHERE LOTS ARE TO BE DEVELOPED.
BASIN AREA: 167.0 AC.
OUTFALL ELEVATION: 673'



Revisions:

Drawing Notes:



GAMBLE

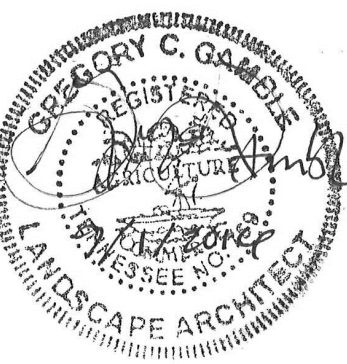
DESIGN COLLABORATIVE

DEVELOPMENT PLANNING AND

LANDSCAPE ARCHITECTURE

Date: JUNE 10, 2016

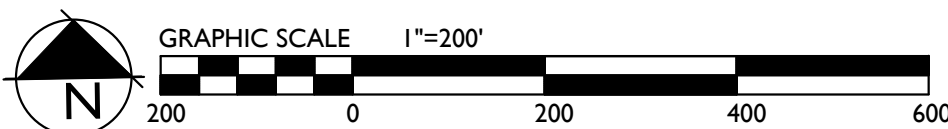
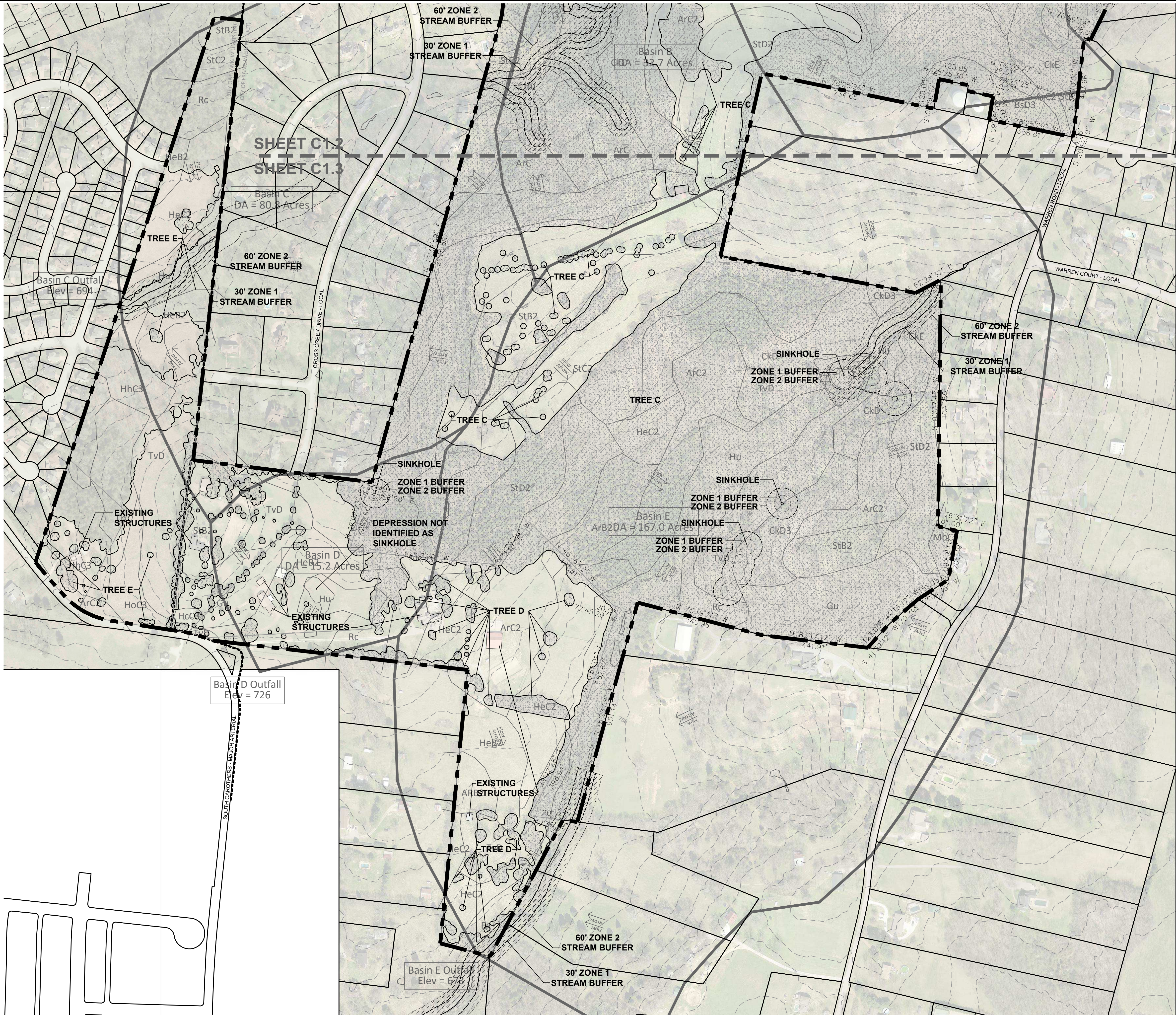
ASHCROFT VALLEY PUD SUBDIVISION
DEVELOPMENT PLAN
Franklin, Williamson County, Tennessee



GAMBLE DESIGN COLLABORATIVE
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TENNESSEE 37064
GREG GAMBLE
gg@gamblecdp@gmail.com
615.975.5765

OVERALL
EXISTING
CONDITIONS
PLAN

C 1.2



NOTES:

1. THERE ARE NO FLOODPLAINS EXISTING ON THE SITE BASED ON FEMA MAP 47187C0220F & 47187C0214F.
2. AERIAL PHOTO, PARCEL LINES AND TOPOGRAPHIC INFORMATION PROVIDED BY CITY OF FRANKLIN G.I.S.
3. SITE BOUNDARY CALLS PROVIDED BY LAND SOLUTIONS COMPANY.
4. NO THIRD PARTY MINERAL RIGHTS ARE ASSOCIATED WITH THIS PROPERTY.

EXISTING TREE CANOPY

BASED ON AERIAL PHOTOGRAPHS OF THE PROPERTY THE EXISTING TREE CANOPY IS APPROXIMATELY 151 ACRES WHICH IS 66.83% OF THE TOTAL SITE

TREE CANOPY DATA	
TREE AREA	EXISTING
TREE A	20,501 SF
TREE B	184,596 SF
TREE C	5,661,645 SF
TREE D	221,073 SF
TREE E	491,878 SF
TOTAL SF	6,579,691 SF

EXISTING TREE CANOPY: 6,579,691 SF
6,579,691 SF/9,844,942.09 SF = .668 (66.8%) OF TOTAL SITE

REQUIRED CANOPY PRESERVATION =
36% OF TOTAL CANOPY
6,579,691 SF * 36% = 2,368,689 SF

LEGEND

	SLOPES 14%-20%
	SLOPES >20%
	EXISTING TREE CANOPY
	STREAM BUFFER

Map Unit Symbol	Map Unit Name
ArB	Armour silt loam, 2 to 5 percent slopes
ArB2	Armour silt loam, 2 to 5 percent slopes, eroded
ArC	Armour silt loam, 5 to 12 percent slopes
ArC2	Armour silt loam, 5 to 12 percent slopes, eroded
BrB2	Braxton cherty silt loam, 2 to 5 percent slopes, eroded
BrC2	Braxton cherty silt loam, 5 to 12 percent slopes, eroded
BsC3	Braxton cherty silty clay loam, 5 to 12 percent slopes, severely eroded
BsD3	Braxton cherty silty clay loam, 12 to 20 percent slopes, severely eroded
CkC	Culleoka silt loam, 5 to 12 percent slopes
CkD	Culleoka silt loam, 12 to 20 percent slopes
CkD3	Culleoka silt loam, 12 to 20 percent slopes, severely eroded
CkE	Culleoka silt loam, 20 to 35 percent slopes
CkE3	Culleoka silt loam, 20 to 35 percent slopes, severely eroded
Eg	Egum silt loam, phosphatic
Gu	Gullied land
HcC3	Hampshire silty clay loam, 5 to 12 percent slopes, severely eroded
HeB2	Hampshire-colbert silt loams, 2 to 5 percent slopes, eroded
HeC2	Hampshire-colbert silt loams, 5 to 12 percent slopes, eroded
HhC3	Hampshire-colbert silty clay loams, 5 to 12 percent slopes, severely eroded
Hu	Huntington silt loam, phosphatic
InD3	Inman silty clay loam, 12 to 20 percent slopes, severely eroded
Lp	Lindell silt loam, 0 to 2 percent slopes, occasionally flooded
MbC2	Maury silt loam, 5 to 12 percent slopes, eroded
MnE	Mimosa-Rock outcrop complex, 20 to 40 percent slopes
MoD	Ashwood-Mimosa-Rock outcrop complex, 5 to 15 percent slopes
Rc	Rockland
SrC3	Stiversville clay loam, 5 to 12 percent slopes, severely eroded
SrD3	Stiversville clay loam, 12 to 20 percent slopes, severely eroded
StB2	Stiversville silt loam, 2 to 5 percent slopes, eroded
StC2	Stiversville silt loam, 5 to 12 percent slopes, eroded
StD2	Stiversville silt loam, 12 to 20 percent slopes, eroded
TvD	Talbott very rocky soils, 2 to 15 percent slopes

Revisions:

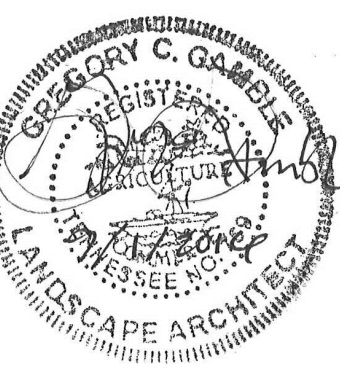
Drawing Notes:



GAMBLE
DESIGN COLLABORATIVE
DEVELOPMENT PLANNING AND
LANDSCAPE ARCHITECTURE
Date: JUNE 10, 2016

ASHCROFT VALLEY PUD SUBDIVISION DEVELOPMENT PLAN

Franklin, Williamson County, Tennessee

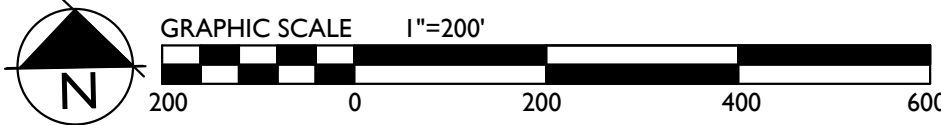


GAMBLE DESIGN COLLABORATIVE
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TENNESSEE 37064
GREG GAMBLE
gg@gamblecdp@gmail.com
615.975.5765

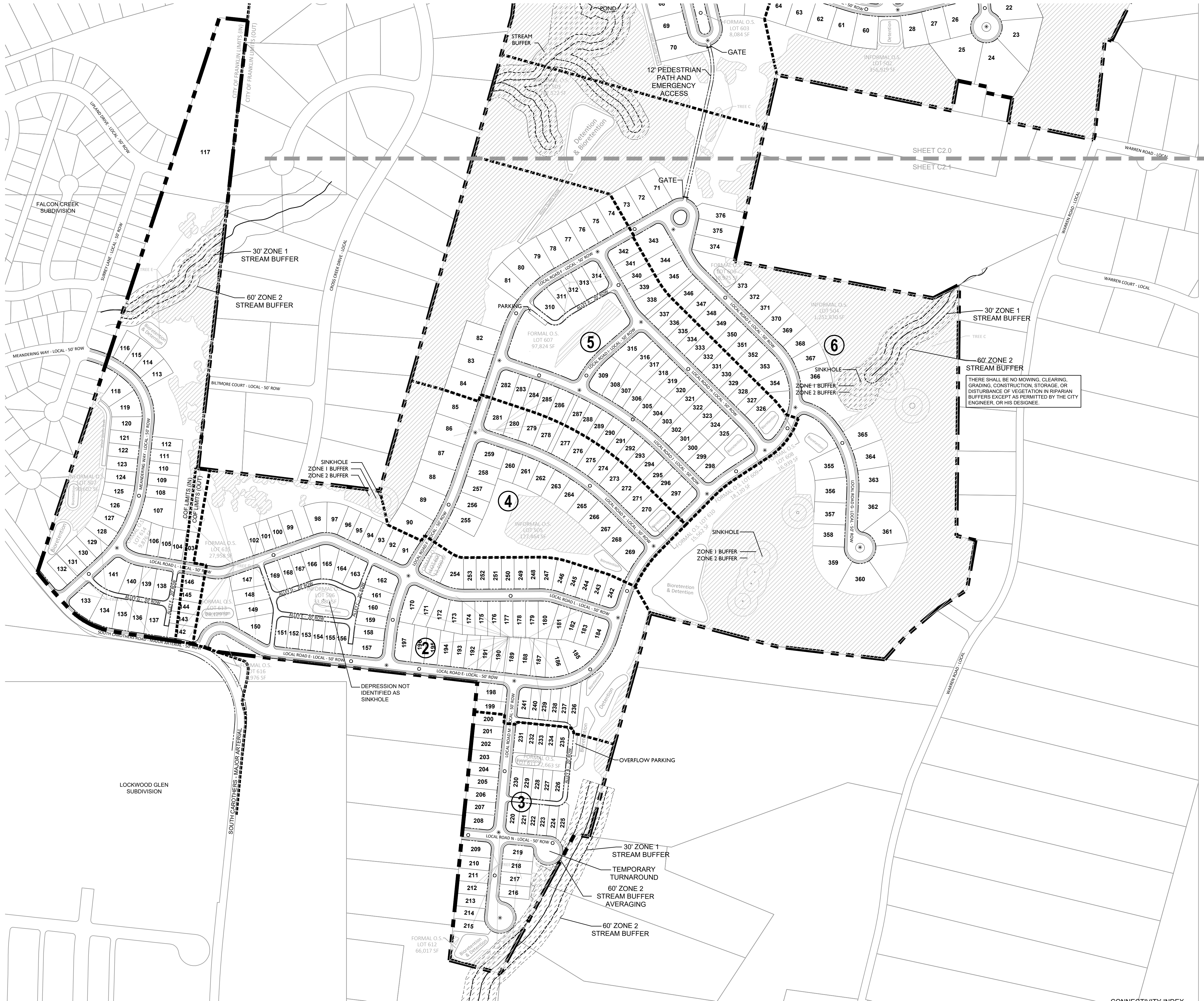
OVERALL EXISTING CONDITIONS PLAN

C 1.3

COF 6189



COF 6189



SITE DATA:

PROJECT NAME: ASHCROFT VALLEY PUD SUBDIVISION
PROJECT NUMBER: 6189
SUBDIVISION: NA
LOT NUMBER: 1-376, 501-507, 601-616
ADDRESS: 1101 RIDGEWAY DRIVE, MURFREESBORO ROAD, FRANKLIN, TENNESSEE
CITY: FRANKLIN
STATE: TENNESSEE
CIVIL DISTRICT: 14TH CIVIL DISTRICT
MAP, GROUP, PARCEL NUMBERS: 079 MB 002800, 079 MB 002900, 089 05500, 089 03000, 089 03001, 089 04302, 089 04303, 089 04304, 089 04304, WILLIAMSON COUNTY
EXISTING ZONING: NG (079079 MB 002800, 079 MB 002900), MGA-1 (079 05500, 089 04302, 089 04303, 089 04304), CITY OF FRANKLIN R-1 (089 03000, 089 03001), SD-R (1.67)
PROPOSED ZONING: MECC-6
CHARACTER AREA OVERLAY: NONE
OTHER APPLICABLE OVERLAYS: CONVENTIONAL
APPLICABLE DEVELOPMENT STANDARD: 226.01 AC
TOTAL ACREAGE: 9,844,942.09 SF
TOTAL SQUARE FOOTAGE: SEE LOT DIAGRAMS - SHEET C2.3
MINIMUM REQUIRED SETBACKS: MINIMUM SETBACKS
FRONT YARD: ARE ESTABLISHED AS PART OF THE P.U.D.
REAR YARD: N/A
SIDE YARD: 2 SPACES PER SINGLE FAMILY HOME
N/A
BUILDING SQUARE FOOTAGE: N/A
BUILDING HEIGHT: 2 STORY
LANDSCAPE SURFACE RATIO: 0.47
MINIMUM LANDSCAPE SURFACE RATIO: 0.30
MINIMUM PARKING REQUIREMENT: 2 SPACES PER SINGLE FAMILY HOME
MAXIMUM PARKING LIMIT: N/A
EXISTING PARKING: N/A
RESIDENTIAL DENSITY: 1.67 DUA
TREE CANOPY: 151.05 AC, 66.8 % OF EXISTING SITE
PARKLAND DEDICATION: FEE IN LIEU (246,600 SF) = 42,000 SF
339 HOMES @ 600SF/HOME = 204,600 SF
33.90 AC (15%) TOTAL REQUIRED
11.53 AC FORMAL REQ.
22.37 AC INFORMAL REQ.

APPLICANT: GAMBLE DESIGN COLLABORATIVE
ADDRESS: 144 SOUTHEAST PARKWAY, SUITE 200, FRANKLIN, TN 37064
OFFICE PHONE: 615.975.5765
EMAIL ADDRESS: greggambledesign@gmail.com
CONTACT: GREG GAMBLE

OPEN SPACE: 1.67 UNITS/AC
NET DENSITY (MINUS ROW): 1.90 UNITS/AC
NET DENSITY (MINUS ROW AND STREAM BUFFERS): 2.03 UNITS/AC
NUMBER OF RESIDENTIAL UNITS BY USE TYPE: 376 SINGLE FAMILY HOMES
40 LOTS: 22
50 LOTS: 198
60-70 LOTS: 72
90 LOTS: 83
ESTATE: 1

NONRESIDENTIAL SQUARE FOOTAGE: N/A
TOTAL ACREAGE BY USE, ENTIRE SITE: 89.7 AC RESIDENTIAL
2.41 AC NON-BUILDABLE LOTS
SECTION 1: 10.6 AC RESIDENTIAL (44 UNITS)
SECTION 2: 9.7 AC OPEN SPACE
SECTION 3: 14.6 AC RESIDENTIAL (84 UNITS)
SECTION 4: 7.2 AC OPEN SPACE
SECTION 5: 5.2 AC RESIDENTIAL (36 UNITS)
SECTION 6: 2.9 AC OPEN SPACE
SECTION 7: 8.0 AC RESIDENTIAL (33 UNITS)
SECTION 8: 4.5 AC OPEN SPACE
SECTION 9: 13.3 AC RESIDENTIAL (72 UNITS)
SECTION 10: 9.1 AC OPEN SPACE
SECTION 11: 9.4 AC RESIDENTIAL (37 UNITS)
SECTION 12: 3.3 AC OPEN SPACE
SECTION 13: 20.5 AC RESIDENTIAL (48 UNITS)
SECTION 14: 22.3 AC OPEN SPACE
SECTION 15: 7.9 AC RESIDENTIAL (22 UNITS)
SECTION 16: 15.9 AC OPEN SPACE

OPEN SPACE REQUIREMENT CHART:

MINIMUM OPEN SPACE REQUIREMENT: 15%
SITE AREA: 226.01 AC
OPEN SPACE ACREAGE REQUIRED: 33.90 AC
FORMAL OPEN SPACE REQUIRED: 34% (11.53 AC)
INFORMAL OPEN SPACE REQUIRED: 66% (22.37 AC)

KEY	CLASSIFICATION	TYPE	AREA OF OPEN SPACE
501	INFORMAL	GREEN BELT	1,086,703 SF
502	INFORMAL	GREEN BELT	356,919 SF
503	INFORMAL	GREEN BELT	1,781,272 SF
504	INFORMAL	GREEN BELT	1,251,830 SF
505	INFORMAL	GREEN BELT	139,078 SF
506	INFORMAL	GREEN BELT	33,880 SF
507	INFORMAL	GREEN BELT	90,602 SF
601	FORMAL	ENTRY	117,885 SF
602	FORMAL	PARK	25,543 SF
603	FORMAL	PARK	8,084 SF
604	FORMAL	ENTRY	24,746 SF
605	FORMAL	PARK	13,589 SF
606	FORMAL	PARK	18,975 SF
607	FORMAL	AMENITY	97,824 SF
608	FORMAL	PARK	22,185 SF
609	FORMAL	PARK	10,423 SF
610	FORMAL	PARK	10,362 SF
611	FORMAL	PARK	12,663 SF
612	FORMAL	PARK	66,017 SF
613	FORMAL	PARK	28,129 SF
614	FORMAL	PARK	9,876 SF
615	FORMAL	AMENITY	27,958 SF
616	FORMAL	PARK	9,978 SF

NON-BUILDABLE LOTS:

KEY	AREA
1	31,744 SF
2	37,038 SF
3	38,085 SF

TOTAL NON-BUILDABLE LOT AREA: 2.41 AC
TOTAL OPEN SPACE PROVIDED: 147.47 AC (64%)
TOTAL FORMAL OPEN SPACE PROVIDED: 11.75 AC
TOTAL INFORMAL OPEN SPACE PROVIDED: 108.82 AC

TREE CANOPY RETENTION:

TREE AREA	EXISTING	REMOVED	RETAINED
TREE A	20,501 SF	0 SF	20,501 SF
TREE B	184,596 SF	53,921 SF	130,675 SF
TREE C	5,661,645 SF	3,043,325 SF	2,618,320 SF
TREE D	221,073 SF	169,300 SF	51,773 SF
TREE E	491,876 SF	329,599 SF	162,277 SF
TOTAL	6,579,691 SF	3,596,145 SF	2,983,546 SF

TREE CANOPY DATA

EXISTING TREE CANOPY: 6,579,691 SF
6,579,691 SF / 9,844,942.09 SF = .668 (66.8%) OF TOTAL SITE

REQUIRED CANOPY PRESERVATION = 36% OF TOTAL CANOPY
6,579,691 SF * .36% = 2,368,889 SF

PROVIDED CANOPY PRESERVED = 2,983,546 SF (45.3%) OF TOTAL EXISTING CANOPY

TREE PRESERVATION AREA

STREAM BUFFER

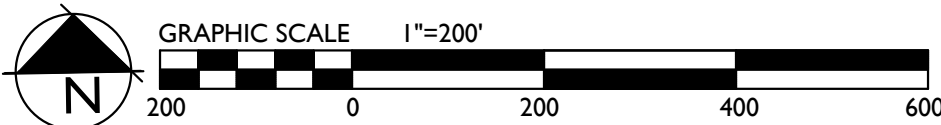
60' STREAM BUFFER

CONNECTIVITY INDEX

○ LINKS 43
* NODES 30
43 / 30 = 1.43 INDEX

MODIFICATION OF DESIGN STANDARDS REQUEST

THE APPLICANT REQUESTS A REDUCED CONNECTIVITY INDEX AS A RESULT OF THE ENVIRONMENTAL AND TOPOGRAPHICAL CONSTRAINTS OF THE NEIGHBORING PROPERTIES, AS WELL AS A LACK OF CONNECTION LOCATIONS TO EXISTING NEIGHBORHOODS ON THE REMAINING NEIGHBORING PROPERTIES.



Revisions:

Drawing Notes:

GDC
GAMBLE
DESIGN COLLABORATIVE
DEVELOPMENT PLANNING AND
LANDSCAPE ARCHITECTURE
Date: JUNE 10, 2016

**ASHCROFT VALLEY PUD SUBDIVISION
DEVELOPMENT PLAN**
Franklin, Williamson County, Tennessee

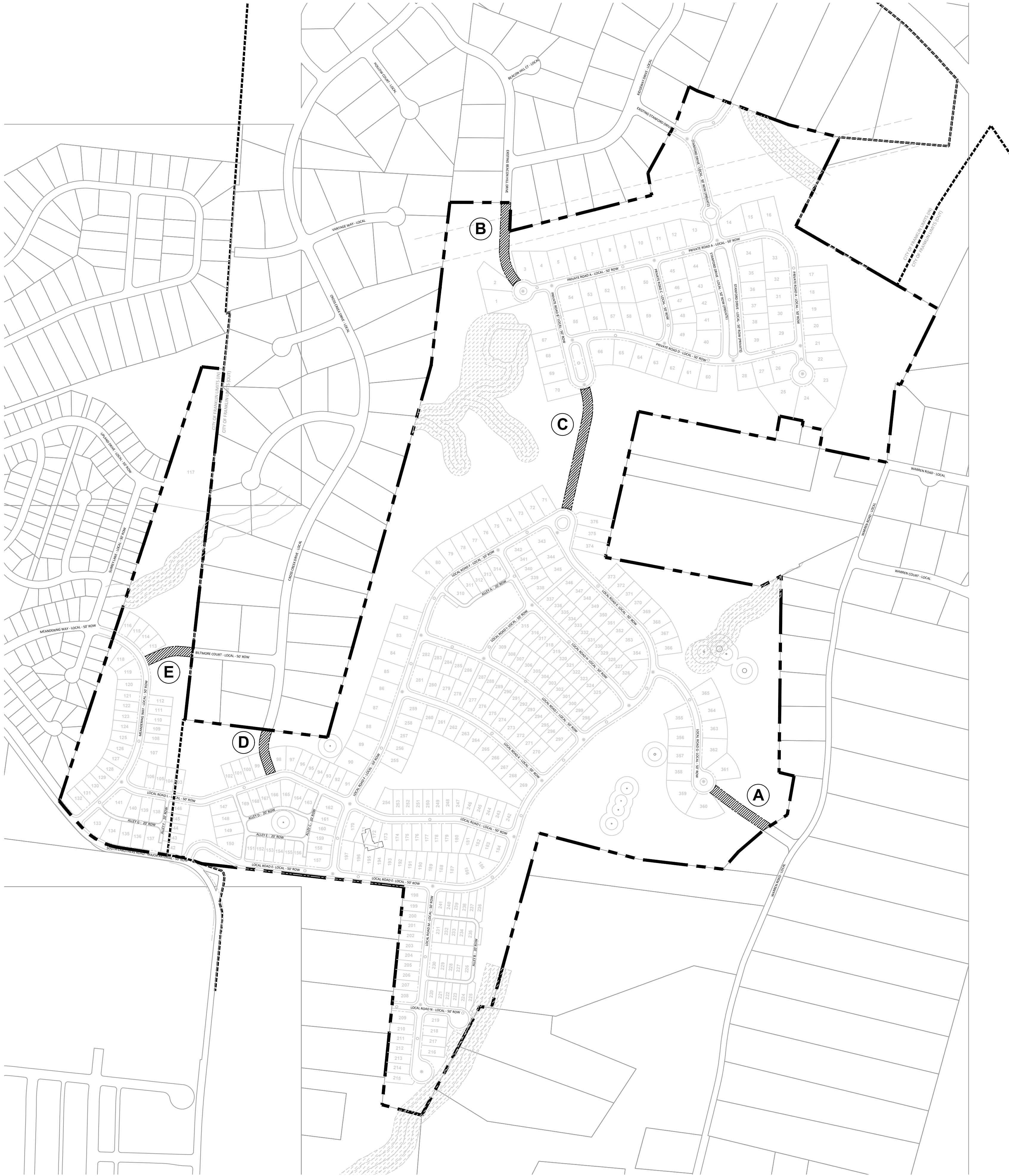


GAMBLE DESIGN COLLABORATIVE
144 SOUTHEAST PARKWAY
SUITE 200
FRANKLIN, TENNESSEE 37064
GREG GAMBLE
greggambledesign@gmail.com
615.975.5765

**DEVELOPMENT
PLAN**

C 2.1

COF 6189



**REQUESTED MODIFICATIONS OF STANDARDS
ASHCROFT VALLEY PUD SUBDIVISION**

MOS 1

Section 3.5.10 (2)(d)(ii) Request to develop detached residential dwellings on lots with a lot area as proposed in the Development Plan. Item (d)(vi) states that if an applicant can demonstrate that a sufficient buffer will be provided between the existing development and the proposed, or offer other means to mitigate potential conflicts, these alternatives may be approved with a Development Plan.

Item (d)(vi) is consistent with the Land Use Plan for Seward Hall, Special Area 3. Item (d)(iii) is only listed in Chapter 3 of Zoning Ordinance, and is not mentioned in the Land Use Plan.

The Land Use Plan provides the following guiding principles:

1. Density of new development is recognized as being an important consideration in community quality of life, but it is only one factor that must be considered. Of greater concern is the quality and design of development. Low-quality development is undesirable at any density.
2. Land is viewed as a limited resource, and the efficiency of its use must be considered in establishing desired future density.

Ashcroft Valley proposes a diverse mix of residential lot types to foster a greater sense of community. The master plan contains open space buffers along the Development boundaries, and transitions from large lots to smaller lots in the interior. The smallest lots in the proposal are located to the south as a transition to the Carrother's corridor neighborhoods. The proposed lots that are smaller than 1 acre in size allow for the preservation of larger expanses of interconnected open space that are made accessible to all residents. The open space preservation is key to the character of the neighborhood and high quality design. The master plan promotes the preservation of large open space areas interconnected with formal neighborhood parks.

The adjacent neighborhoods along Warren Road, in Franklin East, and in Crosscreek were developed at a time when City of Franklin sewer was not available. Today access to City sewer is available to the north on Highway 96 and to the south on South Carothers Road near Simmons Ridge. For this reason, lots smaller than 1 acre are possible so long as transition mitigates potential conflicts with the adjacent neighborhoods.

MOS 2 (See location A on map)

Section 5.10.4 (2)(b) External street connectivity.

Request to remove external street connection to Warren Road.

Neighbors on Warren Road and the Williamson County Subdivisions of Franklin East and Cross Creek continue to express concern regarding connections to Warren Road, Stanford Drive, Beacon Hill Drive, and Cross Creek Drive.

The concerns on Warren Road include safety issues due to the narrow 18 foot width of the roadway, and steep banks located at the narrow roadway edge. The second concern is the loss of the rural character of Warren Road that is subject to change with the additional connection. On December 2, 2015, the applicant presented the proposed development to the Williamson County Highway Commission. It was made known at the meeting that an emergency only connection would be proposed for the connection to Warren Road. This approach was widely accepted by both the Commission and the neighbors.

Franklin East and Cross Creek subdivisions are established neighborhoods, currently in Williamson County jurisdiction. Full unrestricted connectivity to these neighborhoods will increase through traffic North, South, and through the neighborhoods. This increase will change the character of the communities and will affect the quality of life of the residents.

MOS 3 (See location B on map)

Section 5.10.4 (2)(a) External street connectivity.

Request to remove connection to existing stub street to the North, Beacon Hill Drive.

Neighbors on Warren Road and the Williamson County Subdivisions of Franklin East and Cross Creek continue to express concern regarding connections to Warren Road, Stanford Drive, Beacon Hill Drive, and Cross Creek Drive.

The Ashcroft Valley PUD proposes a gated secluded neighborhood to the North with only one access connecting to Stanford Drive. This secluded neighborhood will have a gross density of 1 DU/AC and will be completely surrounded by open space and tree preservation buffers.

This limited connection and low impact development approach will reduce the negative relationship with the Franklin East subdivision.

The streets within the gated neighborhood will be built to City of Franklin street standards and will be privately maintained by the Ashcroft Valley HOA.

MOS 4 (See location C on map)

Section 5.10.4 (1) Internal street connectivity.

Request to remove vehicular, internal street connection between the Northern and Southern proposed neighborhoods.

Neighbors on Warren Road and the Williamson County Subdivisions of Franklin East and Cross Creek continue to express concern regarding connections to Warren Road, Stanford Drive, Beacon Hill Drive, and Cross Creek Drive.

Franklin East and Cross Creek subdivisions are established neighborhoods, currently in Williamson County jurisdiction. Full unrestricted connectivity to these neighborhoods will increase through traffic North, South, and through the neighborhoods. This increase will change the character of the communities and will affect the quality of life of the residents.

The Ashcroft Valley PUD proposes a gated secluded neighborhood to the North with only one access connecting to Stanford Drive. This secluded neighborhood will have a gross density of 1 DU/AC and will be completely surrounded by open space and tree preservation buffers.

This limited connection and low impact development approach will reduce the negative relationship with the Franklin East subdivision.

The streets within the gated neighborhood will be built to City of Franklin street standards and will be privately maintained by the Ashcroft Valley HOA.

Proposed Development Plan shows a 12' asphalt pedestrian trail that will be constructed to the appropriate standards to serve as an emergency access route between the Northern and Southern neighborhoods.

MOS 5 (See location D on map)

Section 5.10.4 (2)(a) External street connectivity.

Request to remove connection to existing Cross Creek Drive.

Neighbors on Warren Road and the Williamson County Subdivisions of Franklin East and Cross Creek continue to express concern regarding connections to Warren Road, Stanford Drive, Beacon Hill Drive, and Cross Creek Drive.

Franklin East and Cross Creek subdivisions are established neighborhoods, currently in Williamson County jurisdiction. Full unrestricted connectivity to these neighborhoods will increase through traffic North, South, and through the neighborhoods. This increase will change the character of the communities and will affect the quality of life of the residents.

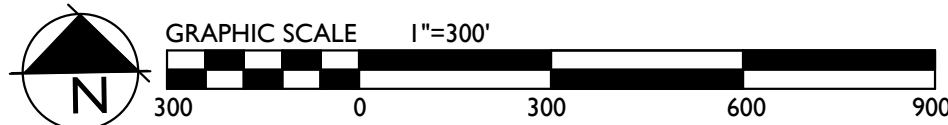
MOS 6 (See location E on map)

Section 5.10.4 (2)(a) External street connectivity.

Request to remove connection to existing Biltmore Court.

Neighbors on Warren Road and the Williamson County Subdivisions of Franklin East and Cross Creek continue to express concern regarding connections to Warren Road, Stanford Drive, Beacon Hill Drive, and Cross Creek Drive.

Franklin East and Cross Creek subdivisions are established neighborhoods, currently in Williamson County jurisdiction. Full unrestricted connectivity to these neighborhoods will increase through traffic North, South, and through the neighborhoods. This increase will change the character of the communities and will affect the quality of life of the residents.



A



TYPICAL HOME ELEVATION 'A'

1. HOME STYLE WITH GARAGE LOCATED AT THE REAR OF THE LOT THAT IS ACCESSED FROM AN ALLEY, OR FROM THE FRONT STREET WITH AN EXTENDED DRIVEWAY.
2. ONE TO TWO STORIES IN HEIGHT.
3. MATERIALS INCLUDE BRICK, SIMULATED STONE, CEMENTATIOUS SIDING, AND ARCHITECTURAL SHINGLES.
4. THESE ELEVATIONS HAVE BEEN DESIGNED TO MEET THE REQUIREMENTS OF THE CITY OF FRANKLIN'S ARCHITECTURAL DESIGN STANDARDS AND THE APPROVAL OF THE PLANNING COMMISSION/CITY OF FRANKLIN. CHANGES SHALL NOT BE MADE TO THE APPROVED ELEVATIONS UNLESS APPROVED BY EITHER THE CODES DIRECTOR OR THE PLANNING COMMISSION.
5. ELEVATIONS SHOWN ARE TYPICAL FOR THIS DEVELOPMENT. FINAL DESIGN PLANS SHALL BE SUBMITTED WITH THE REQUEST FOR BUILDING PERMITS AND SHALL INDICATE COMPLIANCE WITH THE CITY OF FRANKLIN'S ARCHITECTURAL DESIGN STANDARDS, SPECIFICALLY THE REQUIREMENT FOR EXPOSED FOUNDATIONS OR WATER TABLES/ELEVATED FINISHED FLOORS AND GARAGE DOOR SEPARATION/MAXIMUM WIDTHS.
6. BUILDINGS WITH SIDE ELEVATIONS FACING A PUBLIC RIGHT-OF-WAY SHALL HAVE WINDOWS AND ARCHITECTURAL FEATURES SIMILAR TO THE FRONT ELEVATION.
7. SINGLE FAMILY HOME SQUARE FOOTAGE RANGE: 1500 SF TO 2200 SF
8. THE FINISHED FLOOR ELEVATION OF THE FRONT FACADE TO BE A MINIMUM OF 18 INCHES ABOVE THE FINISHED GRADE.

C



TYPICAL HOME ELEVATION 'C'

1. HOME STYLE WITH GARAGE ACCESSED FROM THE FRONT FACING STREET. GARAGE IS RECESSED A MINIMUM OF 10 FEET FROM THE FRONT ELEVATION AND DRIVEWAYS ARE A MINIMUM OF 22' FROM THE SIDEWALK.
2. ONE TO TWO STORIES IN HEIGHT.
3. MATERIALS INCLUDE BRICK, SIMULATED STONE, CEMENTATIOUS SIDING, AND ARCHITECTURAL SHINGLES.
4. THESE ELEVATIONS HAVE BEEN DESIGNED TO MEET THE REQUIREMENTS OF THE CITY OF FRANKLIN'S ARCHITECTURAL DESIGN STANDARDS AND THE APPROVAL OF THE PLANNING COMMISSION/CITY OF FRANKLIN. CHANGES SHALL NOT BE MADE TO THE APPROVED ELEVATIONS UNLESS APPROVED BY EITHER THE CODES DIRECTOR OR THE PLANNING COMMISSION.
5. ELEVATIONS SHOWN ARE TYPICAL FOR THIS DEVELOPMENT. FINAL DESIGN PLANS SHALL BE SUBMITTED WITH THE REQUEST FOR BUILDING PERMITS AND SHALL INDICATE COMPLIANCE WITH THE CITY OF FRANKLIN'S ARCHITECTURAL DESIGN STANDARDS, SPECIFICALLY THE REQUIREMENT FOR EXPOSED FOUNDATIONS OR WATER TABLES/ELEVATED FINISHED FLOORS AND GARAGE DOOR SEPARATION/MAXIMUM WIDTHS.
6. BUILDINGS WITH SIDE ELEVATIONS FACING A PUBLIC RIGHT-OF-WAY SHALL HAVE WINDOWS AND ARCHITECTURAL FEATURES SIMILAR TO THE FRONT ELEVATION.
7. SINGLE FAMILY HOME SQUARE FOOTAGE RANGE: 2200 SF TO 4500 SF
8. THE FINISHED FLOOR ELEVATION OF THE FRONT FACADE TO BE A MINIMUM OF 18 INCHES ABOVE THE FINISHED GRADE.
9. FRONT FACING GARAGES ARE REQUIRED TO HAVE GARAGE DOORS NO LARGER THAN 9' IN WIDTH WITH A 2' SEPARATION BETWEEN THE DOORS.

B



TYPICAL HOME ELEVATION 'B'

1. HOME STYLE WITH GARAGE LOCATED AT THE REAR OF THE LOT THAT IS ACCESSED FROM AN ALLEY, OR FROM THE FRONT STREET WITH AN EXTENDED DRIVEWAY.
2. ONE TO TWO STORIES IN HEIGHT.
3. MATERIALS INCLUDE BRICK, SIMULATED STONE, CEMENTATIOUS SIDING, AND ARCHITECTURAL SHINGLES.
4. THESE ELEVATIONS HAVE BEEN DESIGNED TO MEET THE REQUIREMENTS OF THE CITY OF FRANKLIN'S ARCHITECTURAL DESIGN STANDARDS AND THE APPROVAL OF THE PLANNING COMMISSION/CITY OF FRANKLIN. CHANGES SHALL NOT BE MADE TO THE APPROVED ELEVATIONS UNLESS APPROVED BY EITHER THE CODES DIRECTOR OR THE PLANNING COMMISSION.
5. ELEVATIONS SHOWN ARE TYPICAL FOR THIS DEVELOPMENT. FINAL DESIGN PLANS SHALL BE SUBMITTED WITH THE REQUEST FOR BUILDING PERMITS AND SHALL INDICATE COMPLIANCE WITH THE CITY OF FRANKLIN'S ARCHITECTURAL DESIGN STANDARDS, SPECIFICALLY THE REQUIREMENT FOR EXPOSED FOUNDATIONS OR WATER TABLES/ELEVATED FINISHED FLOORS AND GARAGE DOOR SEPARATION/MAXIMUM WIDTHS.
6. BUILDINGS WITH SIDE ELEVATIONS FACING A PUBLIC RIGHT-OF-WAY SHALL HAVE WINDOWS AND ARCHITECTURAL FEATURES SIMILAR TO THE FRONT ELEVATION.
7. SINGLE FAMILY HOME SQUARE FOOTAGE RANGE: 1700 SF TO 3600 SF
8. THE FINISHED FLOOR ELEVATION OF THE FRONT FACADE TO BE A MINIMUM OF 18 INCHES ABOVE THE FINISHED GRADE.



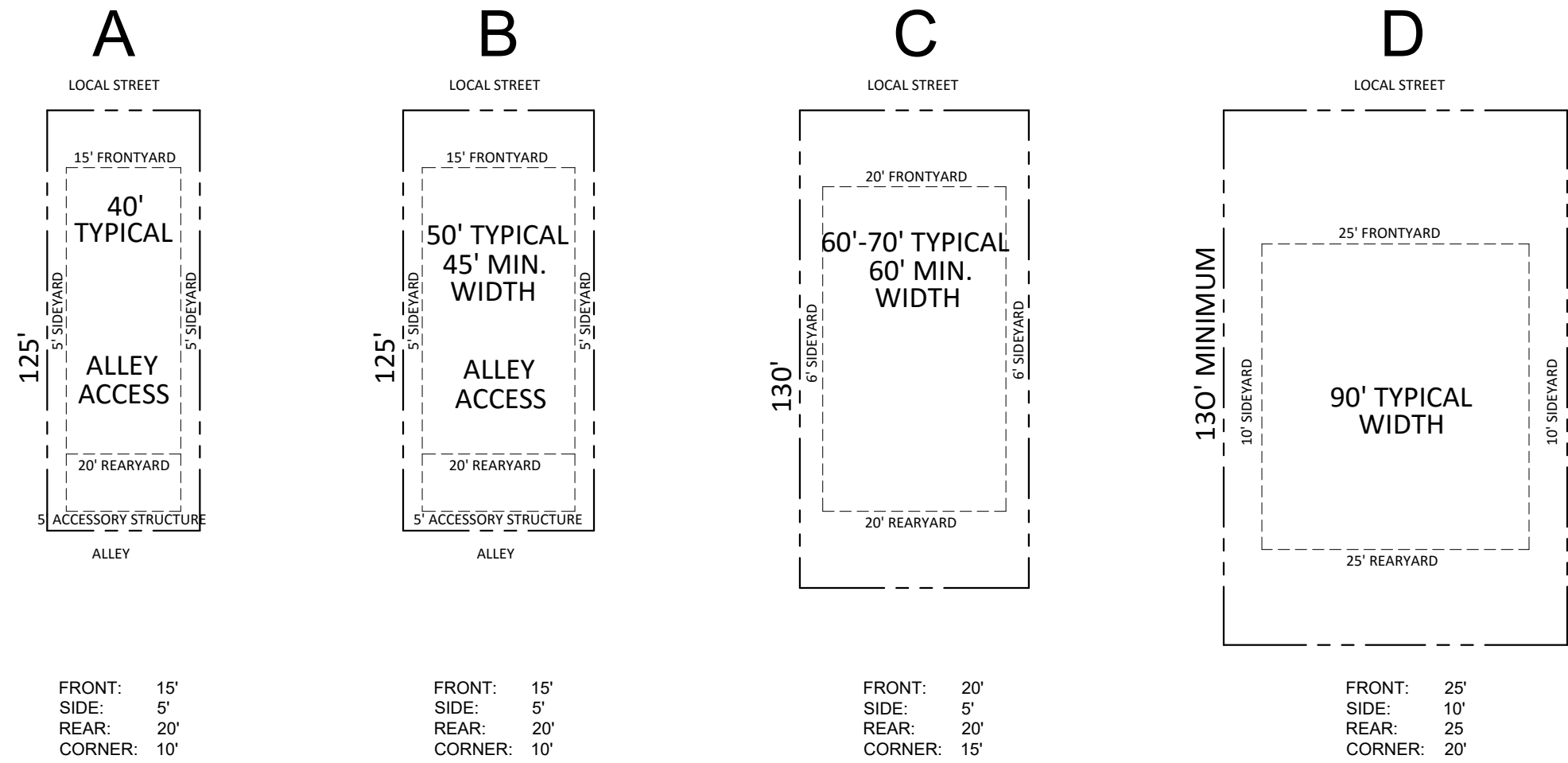
TYPICAL HOME ELEVATION 'D'

1. HOME STYLE FOR LOTS WITH GARAGE ACCESSED FROM THE STREET WITH SIDE LOADED GARAGE.
2. ONE TO TWO STORIES IN HEIGHT.
3. MATERIALS INCLUDE BRICK, SIMULATED STONE, CEMENTATIOUS SIDING, AND ARCHITECTURAL SHINGLES.
4. GARAGE IS SETBACK 10 FEET FROM THE FRONT FACADE.
5. DRIVEWAY IS A MINIMUM OF 22' FROM THE SIDEWALK TO THE GARAGE DOORS.
6. ALL TWO CAR GARAGES SHALL HAVE TWO GARAGE DOORS WITH A MAXIMUM WIDTH OF 9' WIDE WITH A 2 FOOT MINIMUM SEPARATION BETWEEN.
7. THESE ELEVATIONS HAVE BEEN DESIGNED TO MEET THE REQUIREMENTS OF THE CITY OF FRANKLIN'S ARCHITECTURAL DESIGN STANDARDS AND THE APPROVAL OF THE PLANNING COMMISSION/CITY OF FRANKLIN. CHANGES SHALL NOT BE MADE TO THE APPROVED ELEVATIONS UNLESS APPROVED BY EITHER THE CODES DIRECTOR OR THE PLANNING COMMISSION.
8. ELEVATIONS SHOWN ARE TYPICAL FOR THIS DEVELOPMENT. FINAL DESIGN PLANS SHALL BE SUBMITTED WITH THE REQUEST FOR BUILDING PERMITS AND SHALL INDICATE COMPLIANCE WITH THE CITY OF FRANKLIN'S ARCHITECTURAL DESIGN STANDARDS, SPECIFICALLY THE REQUIREMENT FOR EXPOSED FOUNDATIONS OR WATER TABLES/ELEVATED FINISHED FLOORS AND GARAGE DOOR SEPARATION/MAXIMUM WIDTHS.
9. BUILDINGS WITH SIDE ELEVATIONS FACING A PUBLIC RIGHT-OF-WAY SHAL HAVE WINDOWS AND ARCHITECTURAL FEATURES SIMILAR TO THE FRONT ELEVATION.
10. SINGLE FAMILY HOME SQUARE FOOTAGE RANGE: 2800 SF TO 5000 SF
11. THE FINISHED FLOOR ELEVATION OF THE FRONT FACADE TO BE A MINIMUM OF 18 INCHES ABOVE THE FINISHED GRADE.

The home elevations shown here are representative of the homes planned for Ashcroft Valley. They are the basis for design review by the City of Franklin at the time of Site Plan Submittal. Based on my professional experience, the plans presented meet or exceed the design standards set forth by the City of Franklin.

Greg Gamble, Registered Landscape Architect.

TYPICAL LOT DIAGRAMS AND SETBACKS



Revisions:

Drawing Notes:

GDC
GAMBLE
DESIGN COLLABORATIVE
DEVELOPMENT PLANNING AND
LANDSCAPE ARCHITECTURE
Date: JUNE 10, 2015

ASHCROFT VALLEY PUD SUBDIVISION
DEVELOPMENT PLAN
Franklin, Williamson County, Tennessee



GAMBLE DESIGN COLLABORATIVE
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TENNESSEE 37064
GREG GAMBLE
gg@gregmbledc.com
615.975.5765

TYPICAL
ARCHITECTURE

C 2.3

PRELIMINARY STORMWATER MANAGEMENT SUMMARY

Total Property Area = 226.01 Acres
Total Disturbed Area = 143.51 Acres

Soil Types: 54.6% Type A Soil
25.8% Type B Soil
17.2% Type C Soil
0.0% Type D Soil
2.4% Non-Soil Areas

Post-Treatment Stormwater Narrative
Stormwater to be treated via a combination of Bioretention, Water Quality Swales, and Detention Ponds and then released into a Stream or Wet Weather Conveyance.

Basin Area 1
Total Drainage Area = 40.0 Acres
Subbasin A-1: 3.7 Acres
Treatment: Bioretention
Subbasin A-2: 4.3 Acres
Treatment: Bioretention
Subbasin B-1: 6.9 Acres
Treatment: Bioretention
Subbasin B-2: 6.2 Acres
Treatment: Detention Pond
Subbasin C: 9.0 Acres
Treatment: Bioretention

All Subbasins combine and are treated with an additional 9.8 Acres in a Bioretention/Detention Pond

Basin Area 2
Total Drainage Area = 15.3 Acres
Subbasin A: 5.6 Acres
Treatment: Bioretention
Subbasin B: 7.0 Acres
Treatment: Bioretention
Subbasin C: 2.7 Acres
Treatment: Water Quality Swale

Basin Area 3
Drainage Area = 9.3 Acres
Treatment: Bioretention/Detention Pond

Basin Area 4
Total Drainage Area = 69.0 Acres
Subbasin A: 11.0 Acres
Treatment: Bioretention
Subbasin B-1: 9.3 Acres
Treatment: Bioretention
Subbasin B-2: 4.3 Acres
Treatment: Bioretention
Subbasin C: 6.3 Acres
Treatment: Bioretention
Subbasin D: 10.7 Acres
Treatment: Bioretention
Subbasin E: 9.1 Acres
Treatment: Bioretention

All Subbasins combine and are treated with an additional 18.3 Acres in a Bioretention/Detention Pond

Basin Area 5
Total Drainage Area = 33.1 Acres
Subbasin A: 6.7 Acres
Treatment: Bioretention
Subbasin B-1: 4.9 Acres
Treatment: Bioretention
Subbasin B-2: 7.9 Acres
Treatment: Bioretention
Subbasin B-3: 4.7 Acres
Treatment: Bioretention
Subbasin C: 6.1 Acres
Treatment: Bioretention
Subbasin D: 2.8 Acres
Treatment: Bioretention

All Subbasins combine and are treated in a Detention Pond

Basin Area 6
Drainage Area = 3.7 Acres
Treatment: Bioretention Pond

Basin Area 7
Total Drainage Area = 6.8 Acres
Subbasin A: 4.8 Acres
Treatment: Bioretention
Subbasin B: 2.0 Acres
Treatment: Bioretention

Basin Area 8
Total Drainage Area = 6.4 Acres
Subbasin A: 5.3 Acres
Treatment: Bioretention
Subbasin B: 1.1 Acres
Treatment: Water Quality Swale



- Grading & Drainage General Notes**
1. Grading Permit is required for any project disturbing more than 10,000 sf, adding more than 5,000 sf of impervious surface or for any site grading requiring stockpiling of material.
 2. The Developer shall provide the necessary labor and supervision required to support field testing by the independent testing firm and inspections by City officials at no cost to the City. Test reports of field testing if applicable shall be submitted directly to the Street Department. Defects disclosed by tests shall be rectified.
 3. An authorized representative of the City shall make a final inspection of the project after completion to determine acceptability of the work and for release of performance bonds if required. Before this final inspection can be made, the Engineer responsible for the project shall certify in writing to the City Engineer that the work has been completed in accordance with approved plans and specifications.
 4. Drainage facilities including, but not limited to, culverts, detention basins and ditches, as well as the roadway sub-grade, base stone and binder & surface coarse shall be inspected, tested and given approval at each stage of installation prior to proceeding to the next stage of construction. Final construction inspection for approval and acceptance of streets and drainage systems will not be granted until all work has been completed in accordance with the approved plans.
 5. Locating and coordination for the relocation of existing utilities is the responsibility of the contractor. Tennessee's One-Call and the City of Franklin utility location service shall be utilized in addition to coordination with local utility owners. The contractor shall at all times protect existing utilities and will be responsible for costs due to damage caused to any utility lines.

Post-Treatment Stormwater Narrative
Stormwater to be treated via a combination of Bioretention, Water Quality Swales, and Detention Ponds and then released into a Stream or Wet Weather Conveyance.

Statement of Impact
Post Construction Stormwater will have no additional impact on the surrounding drainage basins. Stormwater BMPs will be used to maintain or decrease existing stormwater flows.

Stream Buffer Note:
There shall be no mowing, clearing, grading, construction, storage, or disturbance of vegetation except as permitted by the City Engineer, or his designee.

Grading & Drainage Data Chart
Site Area: 226.01 Ac.
Impervious Area: 61.98 Ac.
Disturbed Area: 143.51 Ac.

Impervious Area Calculations:
The impervious area assumed for each lot type includes building, patio, & driveway.

90' Lot Type: 83 units x 5000 sq.ft. = 9.53 Ac.
70' Lot Type: 72 units x 3800 sq.ft. = 6.28 Ac.
50' Lot Type: 198 units x 3600 sq.ft. = 16.36 Ac.
40' Lot Type: 22 units x 2400 sq.ft. = 1.21 Ac.

ROW Area (includes road & sidewalks) = 28.60 Ac.

Revisions:

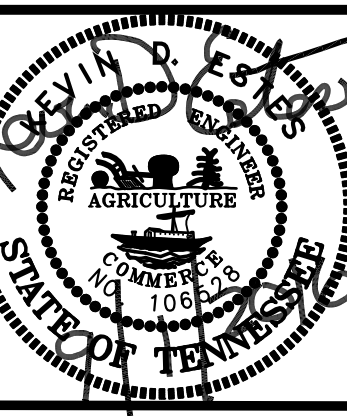
Drawing Notes:

GDC

GAMBLE
DESIGN COLLABORATIVE
DEVELOPMENT PLANNING AND
LANDSCAPE ARCHITECTURE

Date: JULY 11, 2016

ASHCROFT VALLEY PUD SUBDIVISION
DEVELOPMENT PLAN
Franklin, Williamson County, Tennessee



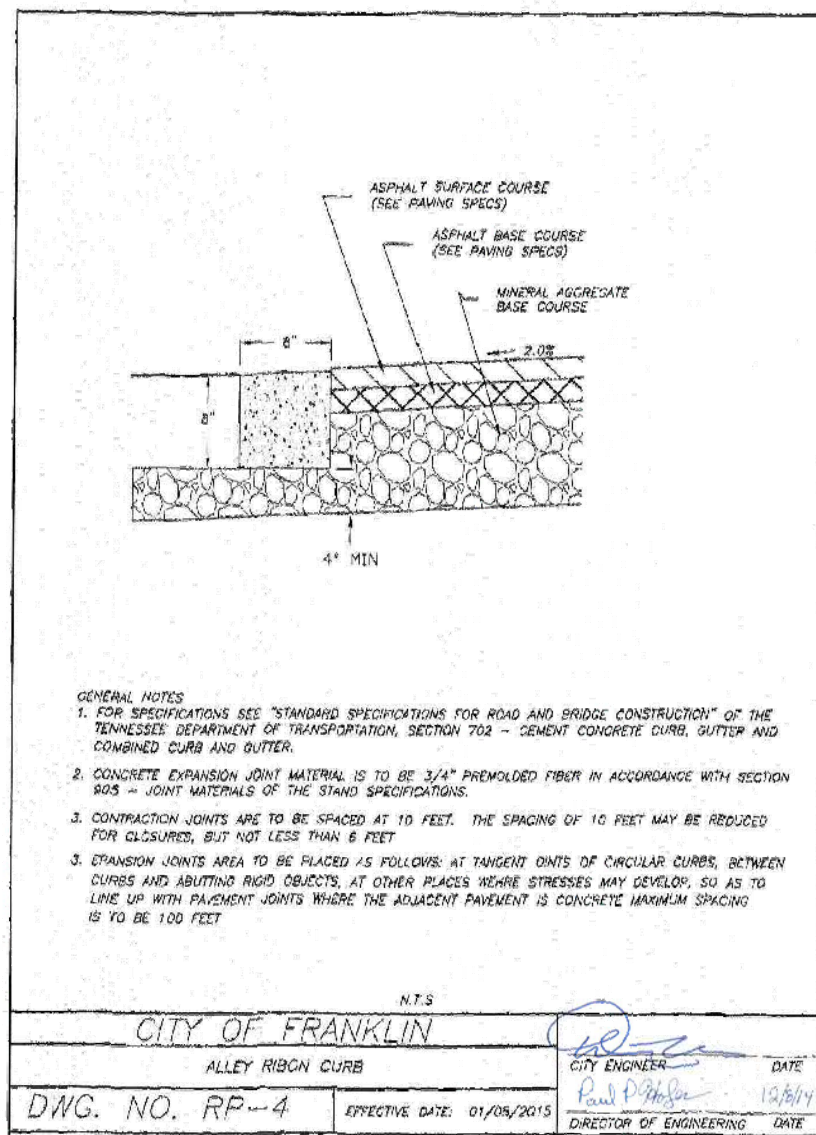
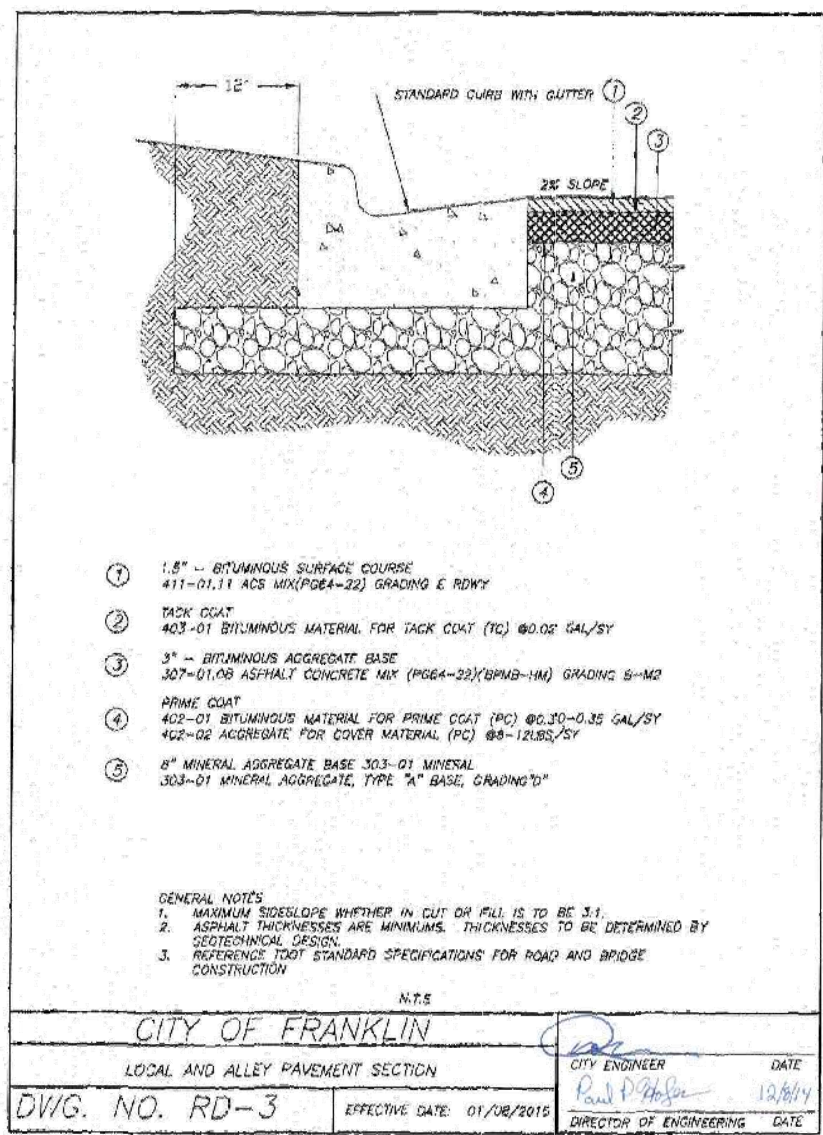
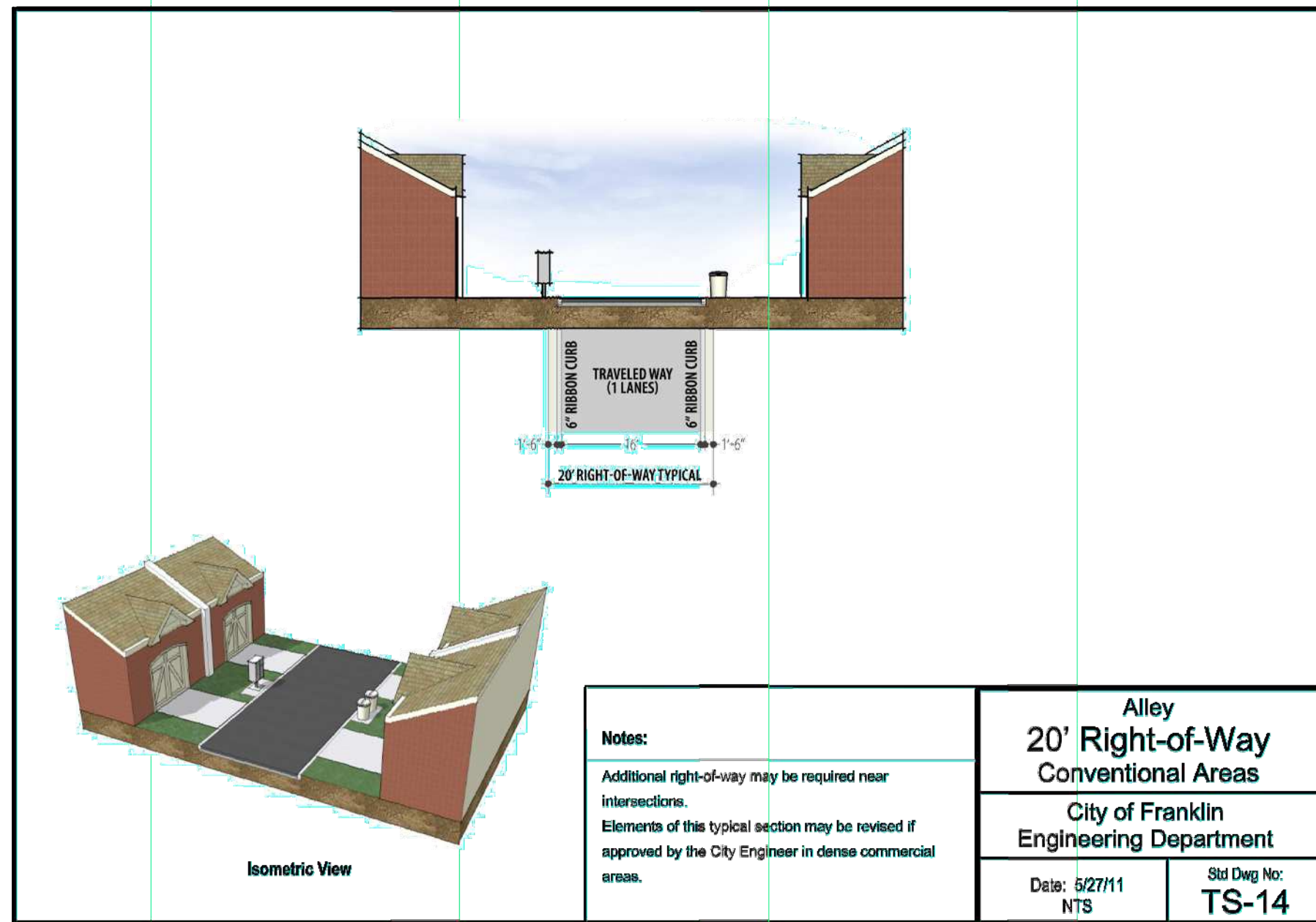
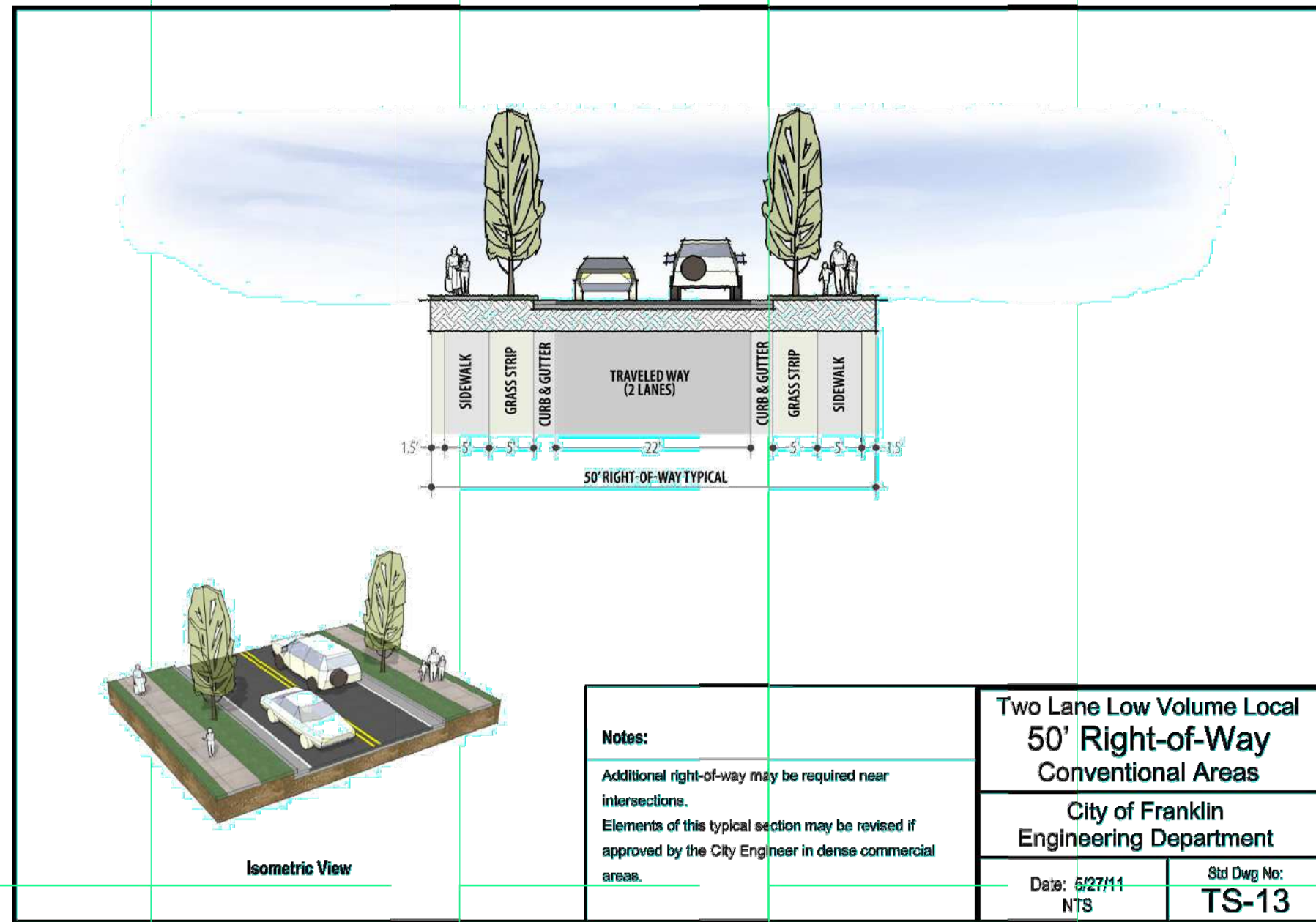
GAMBLE DESIGN COLLABORATIVE
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TENNESSEE 37064
GREG GAMBLE
ggamble20@gmail.com
615.975.5765

**GRADING &
DRAINAGE
PLAN**

C 3.0

COF 6189

1 **2** **3** **4** **5** **6** **7** **8** **9** **10** **11** **12** **13** **14** **15** **16** **17** **18** **19** **20** **21** **22** **23** **24** **25** **26** **27** **28** **29** **30** **31** **32** **33** **34** **35** **36** **37** **38** **39** **40** **41** **42** **43** **44** **45** **46** **47** **48** **49** **50** **51** **52** **53** **54** **55** **56** **57** **58** **59** **60** **61** **62** **63** **64** **65** **66** **67** **68** **69** **70** **71** **72** **73** **74** **75** **76** **77** **78** **79** **80** **81** **82** **83** **84** **85** **86** **87** **88** **89** **90** **91** **92** **93** **94** **95** **96** **97** **98** **99** **100** **101** **102** **103** **104** **105** **106** **107** **108** **109** **110** **111** **112** **113** **114** **115** **116** **117** **118** **119** **120** **121** **122** **123** **124** **125** **126** **127** **128** **129** **130** **131** **132** **133** **134** **135** **136** **137** **138** **139** **140** **141** **142** **143** **144** **145** **146** **147** **148** **149** **150** **151** **152** **153** **154** **155** **156** **157** **158** **159** **160** **161** **162** **163** **164** **165** **166** **167** **168** **169** **170** **171** **172** **173** **174** **175** **176** **177** **178** **179** **180** **181** **182** **183** **184** **185** **186** **187** **188** **189** **190** **191** **192** **193** **194** **195** **196** **197** **198** **199** **200** **201** **202** **203** **204** **205** **206** **207** **208** **209** **210** **211** **212** **213** **214** **215** **216** **217** **218** **219** **220** **221** **222** **223** **224** **225** **226** **227** **228** **229** **230** **231** **232** **233** **234** **235** **236** **237** **238** **239** **240** **241** **242** **243** **244** **245** **246** **247** **248** **249** **250** **251** **252** **253** **254** **255** **256** **257** **258** **259** **260** **261** **262** **263** **264** **265** **266** **267** **268** **269** **270** **271** **272** **273** **274** **275** **276** **277** **278** **279** **280** **281** **282** **283** **284** **285** **286** **287** **288** **289** **290** **291** **292** **293** **294** **295** **296** **297** **298** **299** **300** **301** **302** **303** **304** **305** **306** **307** **308** **309** **310** **311** **312** **313** **314** **315** **316** **317** **318** **319** **320** **321** **322** **323** **324** **325** **326** **327** **328** **329** **330** **331** **332** **333** **334** **335** **336** **337** **338** **339** **340** **341** **342** **343** **344** **345** **346** **347** **348** **349** **350** **351** **352** **353** **354** **355** **356** **357** **358** **359** **360** **361** **362** **363** **364** **365** **366** **367** **368** **369** **370** **371** **372** **373** **374** **375** **376** **377** **378** **379** **380** **381** **382** **383** **384** **385** **386** **387** **388** **389** **390** **391** **392** **393** **394** **395** **396** **397** **398** **399** **400** **401** **402** **403** **404** **405** **406** **407** **408** **409** **410** **411** **412** **413** **414** **415** **416** **417** **418** **419** **420** **421** **422** **423** **424** **425** **426** **427** **428** **429** **430** **431** **432** **433** **434** **435** **436** **437** **438** **439** **440** **441** **442** **443** **444** **445** **446** **447** **448** **449** **450** **451** **452** **453** **454** **455** **456** **457** **458** **459** **460** **461** **462** **463** **464** **465** **466** **467**



Statement of Impacts

The proposed Ashcroft Valley development is located between Major Arterials Highway 96 E and S Carothers Road. The northern portion of the site consists of 70 homes and will connect to Highway 96 E via Local Roads Stanford Drive and Ridgeway Drive. The southern portion of the site consists of 306 homes and will connect directly to S Carothers Road in two places, one by reconstructing the existing 90 degree curve and intersecting into the new, wider curve and the other by extending Meandering Way through the site.

Impact on Local Streets

- At the intersection with Highway 96 E, the northbound approach of Ridgeway Drive should be widened to include two northbound turn lanes.
- At the intersection with Ridgeway Drive, an eastbound right turn lane should be provided on Highway 96 E. This turn lane should include at least 150 feet of storage and should be designated and constructed according to AASHTO standards.
- The western project access on S. Carothers Road should be constructed to include one entering lane and one existing lane.
- The eastern project access on S. Carothers Road should be constructed to include one entering lane and two existing lanes.
- A northbound right turn lane should be provided on Carothers Parkway at the intersection with S. Carothers Road.
- A separate westbound left turn lane should be provided on S. Carothers Road at the intersection with Carothers Parkway.

TIA Report prepared by Fischbach Transportation Group, LLC

- R.O.W & Access General Notes
- Prior to beginning any construction, the Developer and/or Contractor, shall obtain all necessary permits as required by law. Such permits may include, but are not limited to, those required by State of Tennessee, Williamson County and other City of Franklin agencies.
 - All off-site work within the public right-of-way shall require an approved traffic control plan which complies with the MUTCD. No off-site excavation may be undertaken in any street, road, alley or right-of-way of any utility or temporary construction easement of the City of Franklin by any entity unless 72-hour notice has been given to the City of Franklin Traffic Operations Center. The contractor shall have an approved traffic control plan on-site during construction.
 - Construction materials shall be fully tested in accordance with the designations and requirements within the referenced "TDOT Standard Specifications" sections, unless otherwise noted within the "Standard Specifications" section of the City of Franklin Transportation & Street Technical Standards.
 - An authorized representative of the City shall make a final inspection of the project after completion to determine acceptability of the work and for release of performance bonds. If required, before this final inspection can be made, the Engineer responsible for the project shall certify in writing to the City Engineer that the work has been completed in accordance with approved plans and specifications.
 - Locating and coordination for the relocation of existing utilities is the responsibility of the contractor. Tennessee's One-Call and the City of Franklin utility location service shall be utilized in addition to coordination with local utility owners. The contractor shall at all times protect existing utilities and will be responsible for costs due to damage caused to any utility lines.
 - All temporary striping shall conform to "Standard Specifications for Road and Bridge Construction" published by TDOT, the latest revision except as herein amended. When approved, temporary striping shall be required prior to the opening of a street for travel where pavement and/or permanent striping cannot be completed due to weather and/or time constraints.
 - Thermoplastic pavement markings should be used on all public and private City street projects. Thermoplastic traffic striping and pavement markings shall conform to Section 716.03 "Thermoplastic Pavement Markings", of the Tennessee Department of Transportation Specifications (TDOT), and to the City of Franklin Transportation & Street Technical Standards.

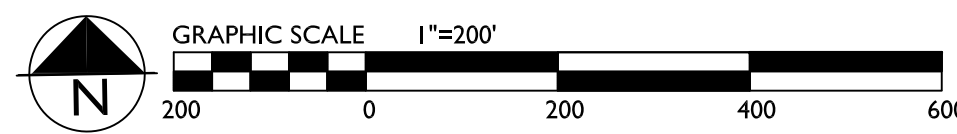
Stream Buffer Note:

There shall be no mowing, clearing, grading, construction, storage, or disturbance of vegetation except as permitted by the City Engineer, or his designee.

Connectivity Index: 1.43
Links (○): 43
Nodes (*): 30
43/30 = 1.43

MODIFICATION OF DESIGN STANDARDS REQUEST

THE APPLICANT REQUESTS A REDUCED CONNECTIVITY INDEX AS A RESULT OF THE ENVIRONMENTAL AND TOPOGRAPHICAL CONSTRAINTS OF THE NEIGHBORING PROPERTIES, AS WELL AS A LACK OF CONNECTION LOCATIONS TO EXISTING NEIGHBORHOODS ON THE REMAINING NEIGHBORING PROPERTIES.



Revisions:

Drawing Notes:

GDC
GAMBLE
DESIGN COLLABORATIVE
DEVELOPMENT PLANNING AND
LANDSCAPE ARCHITECTURE
Date: JULY 11, 2016

**ASHCROFT VALLEY PUD SUBDIVISION
DEVELOPMENT PLAN**
Franklin, Williamson County, Tennessee



GAMBLE DESIGN COLLABORATIVE
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TENNESSEE 37064
GREG GAMBLE
ggamble@gcdp.com
615.975.5765

OVERALL
ROW &
ACCESS
PLAN

C 4.0

COF 6189



Statement of Impacts
The proposed Ashcroft Valley development is located between Major Arterials Highway 96 E and S Carothers Road. The northern portion of the site consists of 70 homes and will connect to Highway 96 E via Local Roads Stanford Drive and Ridgeway Drive. The southern portion of the site consists of 306 homes and will connect directly to S Carothers Road in two places, one by reconstructing the existing 30 degree curve and intersecting into the new, wider curve and the other by extending Meandering Way through the site.

Impact on Local Streets

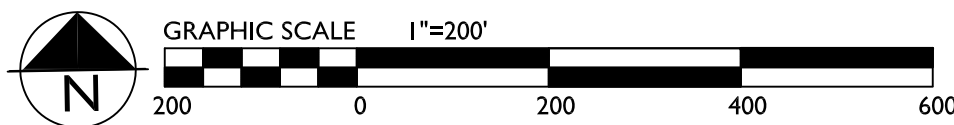
- At the intersection with Highway 96 E, the northbound approach of Ridgeway Drive should be widened to include two northbound turn lanes.
- At the intersection with Ridgeway Drive, an eastbound right turn lane should be provided on Highway 96 E. This turn lane should include at least 150 feet of storage and should be designated and constructed according to AASHTO standards.
- The western project access on S. Carothers Road should be constructed to include one entering lane and one existing lane.
- The eastern project access on S. Carothers Road should be constructed to include one entering lane and two exiting lanes.
- A northbound right turn lane should be provided on Carothers Parkway at the intersection with S. Carothers Road.
- A separate westbound left turn lane should be provided on S. Carothers Road at the intersection with Carothers Parkway.

TIA Report prepared by Fischbach Transportation Group, LLC

- R.O.W & Access General Notes**
- Prior to beginning any construction, the Developer and/or Contractor, shall obtain all necessary permits as required by law. Such permits may include, but are not limited to, those required by State of Tennessee, Williamson County and other City of Franklin agencies.
 - All off-site work within the public right-of-way shall require an approved traffic control plan which complies with the MUTCD. No off-site excavation may be undertaken in any street, road, alley or right-of-way of any utility or temporary construction easement of the City of Franklin by any entity unless 72-hour notice has been given to the City of Franklin Traffic Operations Center. The contractor shall have an approved traffic control plan onsite during construction.
 - Construction materials shall be fully tested in accordance with the designations and requirements within the referenced "TDOT Standard Specifications" sections, unless otherwise noted within the "Standard Specifications" section of the City of Franklin Transportation & Street Technical Standards.
 - An authorized representative of the City shall make a final inspection of the project after completion to determine acceptability of the work and for release of performance bonds if required. Before this final inspection can be made, the Engineer responsible for the project shall certify in writing to the City Engineer that the work has been completed in accordance with approved plans and specifications.
 - Locating and coordination for the relocation of existing utilities is the responsibility of the contractor. Tennessee's One-Call and the City of Franklin utility location service shall be utilized in addition to coordination with local utility owners. The contractor shall at all times protect existing utilities and will be responsible for costs due to damage caused to any utility lines.
 - All temporary striping shall conform to "Standard Specifications for Road and Bridge Construction," published by TDOT, the latest revision except as herein amended. When approved, temporary striping shall be required prior to the opening of a street for travel where pavement and/or permanent striping cannot be completed due to weather and/or time constraints.
 - Thermoplastic pavement markings should be used on all public and private City street projects. Thermoplastic traffic striping and pavement markings shall conform to Section 716.03 "Thermoplastic Pavement Markings", of the Tennessee Department of Transportation Specifications (TDOT), and to the City of Franklin Transportation & Street Technical Standards.
- Stream Buffer Note:**
There shall be no mowing, clearing, grading, construction, storage, or disturbance of vegetation except as permitted by the City Engineer, or his designee.

Connectivity Index: 1.43
Links (○): 43
Nodes (*): 30
 $43/30 = 1.43$

MODIFICATION OF DESIGN STANDARDS REQUEST
THE APPLICANT REQUESTS A REDUCED CONNECTIVITY INDEX AS A RESULT OF THE ENVIRONMENTAL AND TOPOGRAPHICAL CONSTRAINTS OF THE NEIGHBORING PROPERTIES, AS WELL AS A LACK OF CONNECTION LOCATIONS TO EXISTING NEIGHBORHOODS ON THE REMAINING NEIGHBORING PROPERTIES.



Revisions:

Drawing Notes:

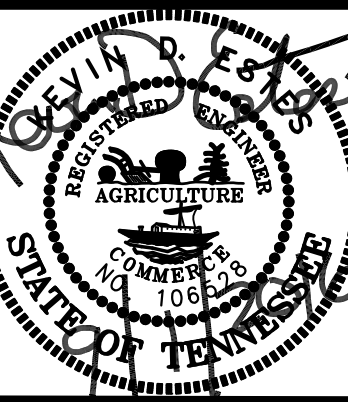
GDC

GAMBLE
DESIGN COLLABORATIVE

DEVELOPMENT PLANNING AND
LANDSCAPE ARCHITECTURE

Date: JULY 11, 2016

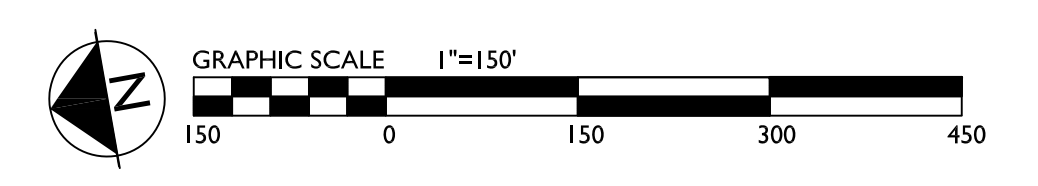
ASHCROFT VALLEY PUD SUBDIVISION
DEVELOPMENT PLAN
Franklin, Williamson County, Tennessee



GAMBLE DESIGN COLLABORATIVE
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TENNESSEE 37064
GREG GAMBLE
gg@gmblecdp@gmail.com
615.975.5765

OVERALL
ROW &
ACCESS
PLAN

C 4.1



Apparatus Specifications
Number of Front Axles 1
Front Track Width = 8'
Wheels on Each Front Axle = 2
Number of Rear Axles = 2
Rear Track Width = 8'
Wheel Base = 21.316'
(Front Axle to Front Rear Axle)
Rear Axle Spacing = 4.417'
Body Length = 50.0417'
Width = 8.333'
Rear Overhang = 22.1424'
Body Style = Fire Truck
Turning Radius Wall to Wall = 42'

Alley Apron to be installed at all T-Alley intersections to COF Standards to allow for increased Emergency Vehicle turning radii.

Alley Apron to be installed at all T-Alley intersections to COF Standards to allow for increased Emergency Vehicle turning radii.

Revisions:

Drawing Notes:

GDC
GAMBLE
DESIGN COLLABORATIVE
DEVELOPMENT PLANNING AND
LANDSCAPE ARCHITECTURE
Date: JULY 11, 2016

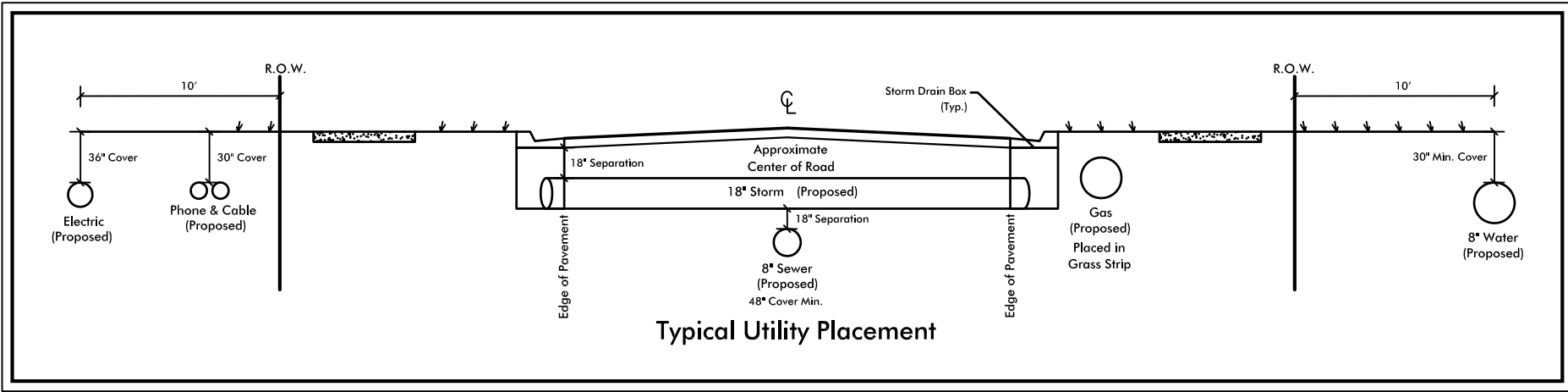
**ASHCROFT VALLEY PUD SUBDIVISION
DEVELOPMENT PLAN**
Franklin, Williamson County, Tennessee

GAMBLE DESIGN COLLABORATIVE
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TENNESSEE 37064
GREG GAMBLE
gg@gamble20p@gmail.com
615.975.5765

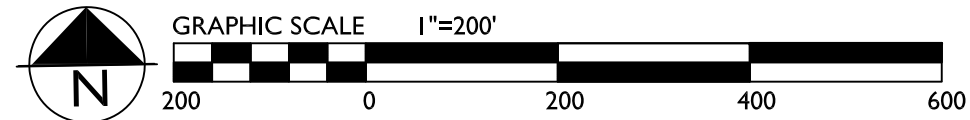
**AUTOTURN
PLAN**

C 4.2

COF 6189



Typical Utility Placement



- Water & Sewer General Notes**
- All persons who undertake the construction of water, sewer and/or reclaimed water lines located in, or affecting services provided by the City of Franklin shall comply with the requirements and regulations set forth in the "General Requirements & Technical Specifications, Water Management Department, City of Franklin, Tennessee" latest edition, along with any amendments, additions, or alteration that may thereafter be adopted by the board of mayor and aldermen by resolution.
 - Contractor shall obtain Water & Sewer Infrastructure Installation Permit prior to scheduling required Pre-Construction Site Meeting. Contractor shall complete the Pre-Construction Site Meeting prior to commencing with construction.
 - Contractor shall obtain and keep all of the following items on the jobsite at all times during construction:
 - Approved, Stamped and Signed Water and/or Sewer Plans
 - Water & Sewer Infrastructure Installation Permit, with all steps completed and signed by appropriate City employees.
 - Copy of approved availability request response letter.
 - A copy of all approved Cut Sheets.
 - Acceptance of City of Franklin public water infrastructure, sanitary sewer infrastructure and/or reclaimed water infrastructure shall become the responsibility of the City of Franklin, TN following approval from the City of Franklin Inspectors and acceptance by the Franklin Municipal Planning Commission. The Acceptance date shall be based on the day maintenance sureties are established by the Franklin Municipal Planning Commission.
 - Prior to the acceptance of City of Franklin public water infrastructure, sanitary sewer infrastructure and/or reclaimed water infrastructure the contractor shall be required to submit as-built drawings to the Water Management Department.
 - All off-site work within the public right-of-way shall require an approved traffic control plan which complies with the MUTCD. No off-site excavation may be undertaken in any street, road, alley or right-of-way of any utility or temporary construction easement of the City of Franklin by any entity unless 72-hour notice has been given to the City of Franklin Traffic Operations Center. The contractor shall have an approved traffic control plan onsite during construction.
 - Any damages caused to existing utilities during construction shall, at his own expense, be replaced or repaired to original condition and quality, as approved by the owner and representative of the appropriate utility company, by the Contractor.
 - Location of Water Line is approximate. True location of water line, fire hydrants, water valves, etc. to be designed by Microfton Utility District during sectional Site Plan phase of development.
 - When required, permanent exclusive easements must be provided with a minimum width of 20 feet. Easement width requirements are as follows:
 - 0'-12' depth requires 20' easement.
 - 13'-20' depth requires 30' easement.
 - Depths greater than 20' requires prior approval.A minimum 10-foot wide temporary construction easement on each side of the permanent easement must also be provided. No trees shall be planted within the permanent easements.
- Water Service Provided by:**
Microfton Utility District
633 Arno Road
Franklin, TN 37064
615-794-5047
- Sewer Service Provided by:**
Water Management
124 Lumber Drive
Franklin, TN 37064
615-794-4554
- Water & Sewer Data Chart**
- | Water: | Unit Flow in GPD: | 350 GPD per [unit] |
|--------------------|-------------------|--------------------|
| Number of Units: | 376 | |
| Total Flow in GPD: | 131,600 GPD | |
- Sewer (to October Park) Unit Flow in GPD:** 350 GPD per [unit]
Number of Units: 70
Total Flow in GPD: 24,500 GPD
- Sewer (Simmons Ridge) Unit Flow in GPD:** 350 GPD per [unit]
Number of Units: 306
Total Flow in GPD: 107,100 GPD
- Stream Buffer Note:**
There shall be no mowing, clearing, grading, construction, storage, or disturbance of vegetation except as permitted by the City Engineer, or his designee.

Revisions:

Drawing Notes:

GDC
GAMBLE
DESIGN COLLABORATIVE
DEVELOPMENT PLANNING AND
LANDSCAPE ARCHITECTURE
Date: JULY 11, 2016

**ASHCROFT VALLEY PUD SUBDIVISION
DEVELOPMENT PLAN**
Franklin, Williamson County, Tennessee



GAMBLE DESIGN COLLABORATIVE
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TENNESSEE 37064
GREG GAMBLE
ggamble20@gmail.com
615.975.5765

**OVERALL
UTILITY
PLAN**

C 5.0



Water & Sewer General Notes

1. All persons who undertake the construction of water, sewer and/or reclaimed water lines located in, or affecting services provided by the City of Franklin shall comply with the requirements and regulations set forth in the "General Requirements & Technical Specifications, Water Management Department, City of Franklin, Tennessee" latest edition, along with any amendments, additions, or alteration that may thereafter be adopted by the board of mayor and aldermen by resolution.
2. Contractor shall obtain Water & Sewer Infrastructure Installation Permit prior to scheduling required Pre-Construction Site Meeting. Contractor shall complete the Pre-Construction Site Meeting prior to commencing with construction.
3. Contractor shall obtain and keep all of the following items on the jobsite at all times during construction:
 - a. Approved, Stamped and Signed Water and/or Sewer Plans
 - b. Water & Sewer Infrastructure Installation Permit, with all steps completed and signed by appropriate City employees.
 - c. Copy of approved availability request response letter.
 - d. A copy of all approved Cut Sheets.
4. Acceptance of City of Franklin public water infrastructure, sanitary sewer infrastructure and/or reclaimed water infrastructure shall become the responsibility of the City of Franklin, TN following approval from the City of Franklin Inspectors and acceptance by the Franklin Municipal Planning Commission. The Acceptance date shall be based on the day maintenance sureties are established by the Franklin Municipal Planning Commission.
5. Prior to the acceptance of City of Franklin public water infrastructure, sanitary sewer infrastructure and/or reclaimed water infrastructure the contractor shall be required to submit as built drawings to the Water Management Department.
6. All off-site work within the public right-of-way shall require an approved traffic control plan which complies with the MUTCD. No off-site excavation may be undertaken in any street, road, alley or right-of-way of any utility or temporary construction easement of the City of Franklin by any entity unless 72-hour notice has been given to the City of Franklin Traffic Operations Center. The contractor shall have an approved traffic control plan onsite during construction.
7. Any damages caused to existing utilities during construction shall, at his own expense, be replaced or repaired to original condition and quality, as approved by the owner and representative of the appropriate utility company, by the Contractor.
8. Location of Water Line is approximate. True location of water line, fire hydrants, water valves, etc. to be designed by Microfton Utility District during sectional Site Plan phase of development.
 1. 0'-12' depth requires 20' easement.
 2. 13'-20' depth requires 30' easement.
 3. Depths greater than 20' requires prior approval.A minimum 10-foot wide temporary construction easement on each side of the permanent easement must also be provided. No trees shall be planted within the permanent easements.
9. When required, permanent exclusive easements must be provided with a minimum width of 20 feet. Easement width requirements are as follows:
 1. 0'-12' depth requires 20' easement.
 2. 13'-20' depth requires 30' easement.
 3. Depths greater than 20' requires prior approval.

Water Service Provided by:
Microfton Utility District
633 Arno Road
Franklin, TN 37064
615-794-5047

Sewer Service Provided by:
Water Management
124 Lumber Drive
Franklin, TN 37064
615-794-4554

Water & Sewer Data Chart

Water:	Unit Flow in GPD: 350 GPD per [unit]
	Number of Units: 376
	Total Flow in GPD: 131,600 GPD
Sewer (to October Park)	Unit Flow in GPD: 350 GPD per [unit]
	Number of Units: 70
	Total Flow in GPD: 24,500 GPD
Sewer (Simmons Ridge)	Unit Flow in GPD: 350 GPD per [unit]
	Number of Units: 308
	Total Flow in GPD: 107,100 GPD

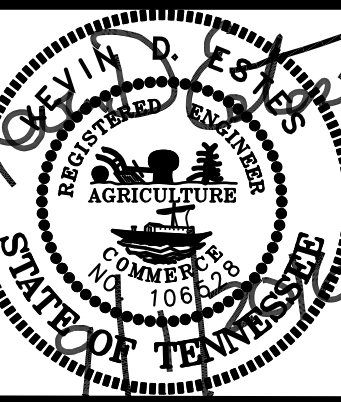
Stream Buffer Note:
There shall be no mowing, clearing, grading, construction, storage, or disturbance of vegetation except as permitted by the City Engineer, or his designee.

Revisions:

Drawing Notes:

GDC
GAMBLE
DESIGN COLLABORATIVE
DEVELOPMENT PLANNING AND
LANDSCAPE ARCHITECTURE
Date: JULY 11, 2016

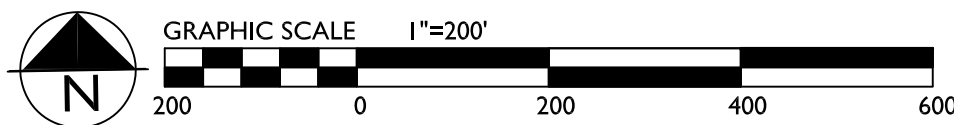
ASHCROFT VALLEY PUD SUBDIVISION
DEVELOPMENT PLAN
Franklin, Williamson County, Tennessee



GAMBLE DESIGN COLLABORATIVE
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TENNESSEE 37064
GREG GAMBLE
ggamble20@gmail.com
615.975.5765

OVERALL
UTILITY
PLAN

C 5.1



COF 6189

F i s c h b a c h
Transportation Group, LLC
Traffic Engineering and Planning

Traffic Impact Study

Ashcroft Valley Residential Development
Highway 96E and S. Carothers Road
Franklin, TN

Prepared September 2016
For Land Solutions Company

FTG, LLC
P.O. Box 682736
Franklin, TN 37068
(615) 771-8022 phone
Gillian@FTGtraffic.com

Traffic Impact Study

Ashcroft Valley Residential Development Highway 96E and S. Carothers Road

Franklin, Tennessee

Prepared September 2016

PREPARED FOR:

Land Solutions, LLC
2925 Berry Hill Rd
Nashville, TN 37204

PREPARED BY:

Ms. Gillian L. Fischbach, P.E., PTOE
Fischbach Transportation Group (FTG, LLC)
P.O. Box 682736
Franklin, TN 37068
Phone: (615) 771-8022
FTG Project Number: 10647



Table of Contents

1.	INTRODUCTION	4
2.	PROJECT DESCRIPTION.....	5
	FIGURE 1. LOCATION OF THE PROJECT SITE.....	6
	FIGURE 2A. CURRENT PROJECT SITE PLAN (NORTHERN PORTION)	7
	FIGURE 2B. CURRENT PROJECT SITE PLAN (SOUTHERN PORTION).....	8
3.	EXISTING CONDITIONS.....	9
3.1	PEAK HOUR TRAFFIC VOLUMES	9
	FIGURE 3. EXISTING LANEAGE WITHIN THE STUDY AREA.....	11
	FIGURE 4. EXISTING PEAK HOUR TRAFFIC VOLUMES.....	12
	TABLE 1. DESCRIPTIONS OF LOS FOR SIGNALIZED INTERSECTIONS	13
	TABLE 2. DESCRIPTIONS OF LOS FOR UNSIGNALIZED INTERSECTIONS	14
	TABLE 3. EXISTING PEAK HOUR LEVELS OF SERVICE.....	15
3.2	TRAFFIC SIGNAL WARRANT ANALYSES	17
	TABLE 4. TRAFFIC SIGNAL WARRANT ANALYSIS	18
4.	PROJECTION OF BACKGROUND TRAFFIC VOLUMES	19
	TABLE 5. HISTORICAL TRAFFIC VOLUMES IN THE STUDY AREA.....	19
	FIGURE 5A. INITIAL BACKGROUND TRAFFIC VOLUMES.....	20
	FIGURE 5B. PEAK HOUR TRAFFIC GENERATED BY OCTOBER WOODS.....	22
	FIGURE 5C. PEAK HOUR TRAFFIC GENERATED BY ECHELON	23
	FIGURE 5D. PEAK HOUR TRAFFIC GENERATED BY WATER’S EDGE	24
	FIGURE 5E. PEAK HOUR TRAFFIC GENERATED BY SILVER GRACE.....	25
	FIGURE 5F. FINAL BACKGROUND TRAFFIC VOLUMES	26
	TABLE 6. BACKGROUND PEAK HOUR LEVELS OF SERVICE.....	27
5.	IMPACTS OF PROPOSED DEVELOPMENT	29
5.1	TRIP GENERATION	29
	TABLE 7. TRIP GENERATION	29
5.2	TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT	30
	FIGURE 6A. DISTRIBUTION OF SITE TRAFFIC (NORTHERN PORTION).....	31
	FIGURE 6B. DISTRIBUTION OF SITE TRAFFIC (SOUTHERN PORTION)	32
	FIGURE 7A. PEAK HOUR SITE TRAFFIC (NORTHERN PORTION)	33
	FIGURE 7B. PEAK HOUR SITE TRAFFIC (SOUTHERN PORTION).....	34

5.3	CAPACITY ANALYSES.....	35
	FIGURE 8. TOTAL PROJECTED PEAK HOUR TRAFFIC VOLUMES.....	36
	TABLE 8. PROJECTED PEAK HOUR LEVELS OF SERVICE	37
5.4	FUTURE GROWTH ON S. CAROTHERS ROAD	40
	TABLE 9. TRIP GENERATION (FUTURE HOMES).....	40
	FIGURE 9A. DISTRIBUTION OF TRAFFIC GENERATED BY FUTURE HOMES.....	41
	FIGURE 9B. PEAK HOUR TRAFFIC VOLUMES GENERATED BY FUTURE HOMES..	42
	FIGURE 9C. FUTURE PEAK HOUR TRAFFIC VOLUMES AT THE MAIN ACCESS.....	43
5.5	TRAFFIC SIGNAL WARRANT ANALYSES	44
	TABLE 10. TRIP GENERATION (APPROVED AND PROPOSED HOMES)	44
	TABLE 11. HOURLY TRAFFIC VOLUMES	46
	TABLE 12. TRAFFIC SIGNAL WARRANT ANALYSIS	47
6.	CONCLUSIONS AND RECOMMENDATIONS	48
	APPENDIX A.....	50
	APPENDIX B.....	59
	APPENDIX C	141
	APPENDIX D.....	146
	APPENDIX E	158
	APPENDIX F.....	161

1. INTRODUCTION

This traffic study has been prepared in order to identify the traffic impacts of a single-family residential development that is proposed to be constructed between Highway 96E and S. Carothers Road in Franklin, Tennessee.

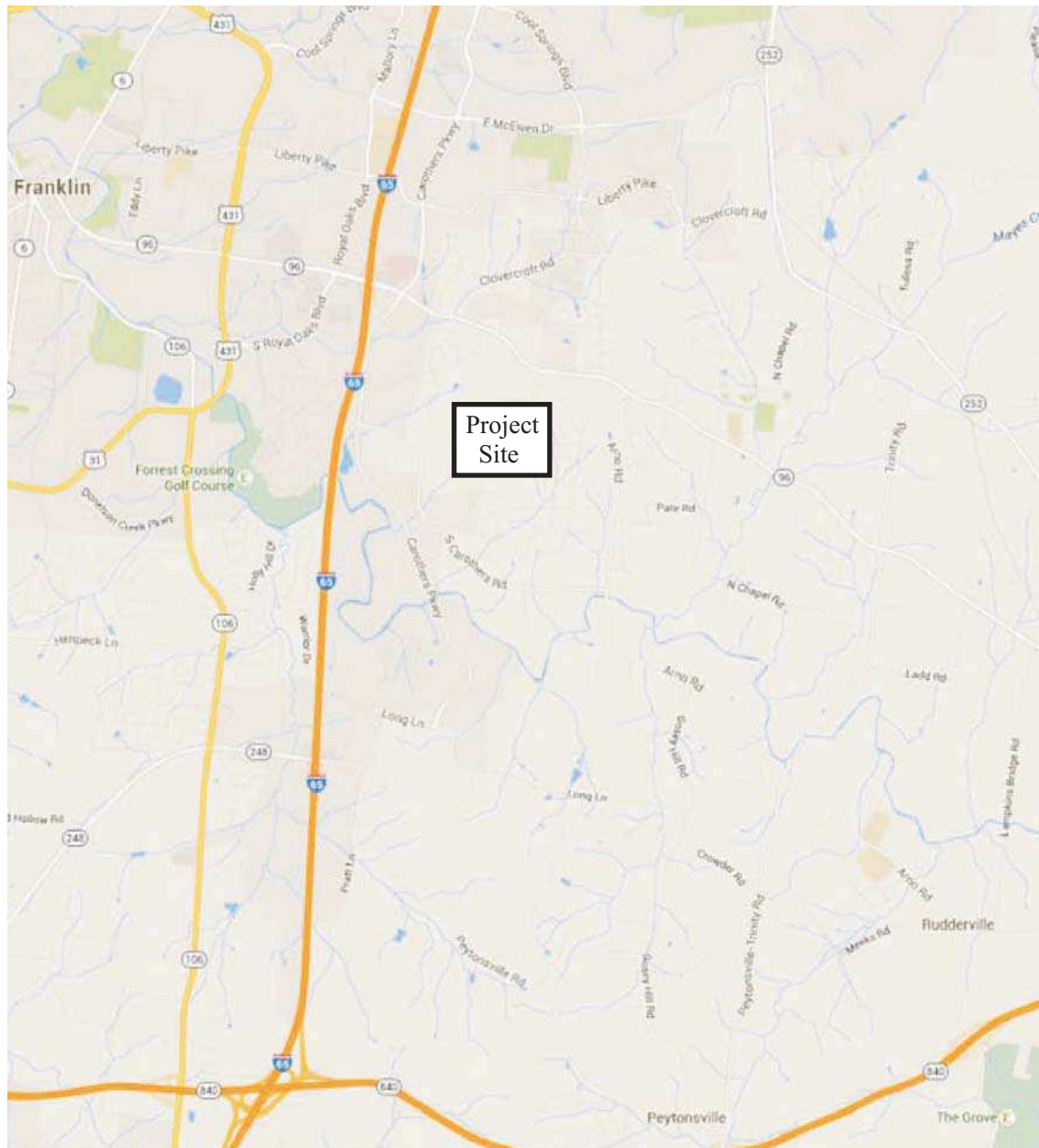
For the purposes of this study, existing and background traffic volumes were established, and capacity analyses were conducted for these conditions. Also, trip generation calculations were performed, and the trips which are expected to be generated by the proposed project were distributed to the roadway system and added to the background traffic volumes. The roadways and intersections which provide access to the site were then re-evaluated to determine the traffic impacts of the proposed project. Access needs for the project were evaluated, and the necessary roadway and/or traffic control improvements were identified. This report presents the results of these analyses and the subsequent recommendations.

2. PROJECT DESCRIPTION

The location of the proposed project is shown in [Figure 1](#). As shown, the project site is located between Highway 96E and S. Carothers Road in Franklin, Tennessee. The current project site plans are shown in [Figures 2A and 2B](#).

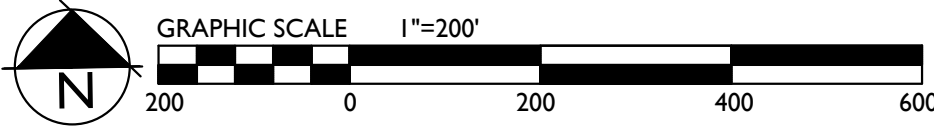
As shown, the northern portion of the project site includes 70 single-family homes. Access for the proposed project will be provided by extending Stanford Drive into the project site. The southern portion of the project site includes 306 single-family homes, and access for the proposed project will be provided at two locations on S. Carothers Road. Also, minor access will be provided by extending Upland Drive and Meandering Way east into the project site.

F i s c h b a c h
Transportation Group, LLC
Traffic Engineering and Planning



No Scale

Figure 1.
Location of the Project Site



NON-BUILDABLE LOTS:

KEY	AREA
1	31,744 SF
2	37,036 SF
3	36,085 SF

TOTAL NON-BUILDABLE LOT AREA: 2.41 AC
TOTAL OPEN SPACE PROVIDED: 121.47 AC (54%)
TOTAL FORMAL OPEN SPACE PROVIDED: 12.65 AC
TOTAL INFORMAL OPEN SPACE PROVIDED: 108.82 AC

STREAM BUFFER

 60' STREAM BUFFER

MODIFICATION OF DESIGN STANDARDS REQUEST

RECREATIONAL FACILITIES:
LIBERTY PARK - 3.0 MILES DRIVING DISTANCE

PROJECTED STUDENT POPULATION:
371 HOMES X .64 STUDENTS = 238 PROJECTED STUDENTS

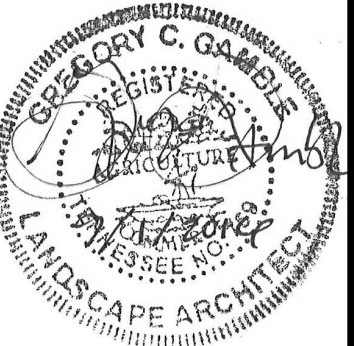
REFUSE COLLECTION:
PROVIDED BY THE CITY OF FRANKLIN SOLID WASTE.

RESTRICTIVE COVENANTS:
A HOME OWNER'S ASSOCIATION WILL BE ESTABLISHED PRIOR TO THE FIRST OCCUPANCY OF RESIDENTS. THE HOA WILL REGULATE ARCHITECTURAL STANDARDS AND THE MAINTENANCE OF THE COMMUNITY. THE HOA WILL MAINTAIN ALL COMMON OPEN SPACE AND RECREATIONAL AREAS. THE HOA WILL MAINTAIN ALL STREETS AND SIDEWALKS WITHIN THE GATED NEIGHBORHOOD WHERE THE STREETS WILL BE PRIVATE.

TOTAL ACREAGE BY USE, PER SECTION:

1.67 UNITS/AC
1.90 UNITS/AC
2.03 UNITS/AC
376 SINGLE FAMILY HOMES
40 LOTS: 22
50 LOTS: 198
60-70 LOTS: 72
90 LOTS: 83
ESTATE: 1
ENVA
10.9 AC RESIDENTIAL
108.4 AC OPEN SPACE
2.41 AC NONBUILDBLE LOTS
10.8 AC RESIDENTIAL (44 UNITS)
7.7 AC OPEN SPACE
SECTION 2
14.6 AC RESIDENTIAL (84 UNITS)
7.2 AC OPEN SPACE
SECTION 3
5.2 AC RESIDENTIAL (36 UNITS)
2.9 AC OPEN SPACE
SECTION 4
8.0 AC RESIDENTIAL (33 UNITS)
1.5 AC OPEN SPACE
SECTION 5
13.3 AC RESIDENTIAL (72 UNITS)
9.1 AC OPEN SPACE
SECTION 6
9.4 AC RESIDENTIAL (37 UNITS)
36.3 AC OPEN SPACE
SECTION 7
25.8 AC RESIDENTIAL (48 UNITS)
22.8 AC OPEN SPACE
SECTION 8
7.9 AC RESIDENTIAL (22 UNITS)
15.9 AC OPEN SPACE

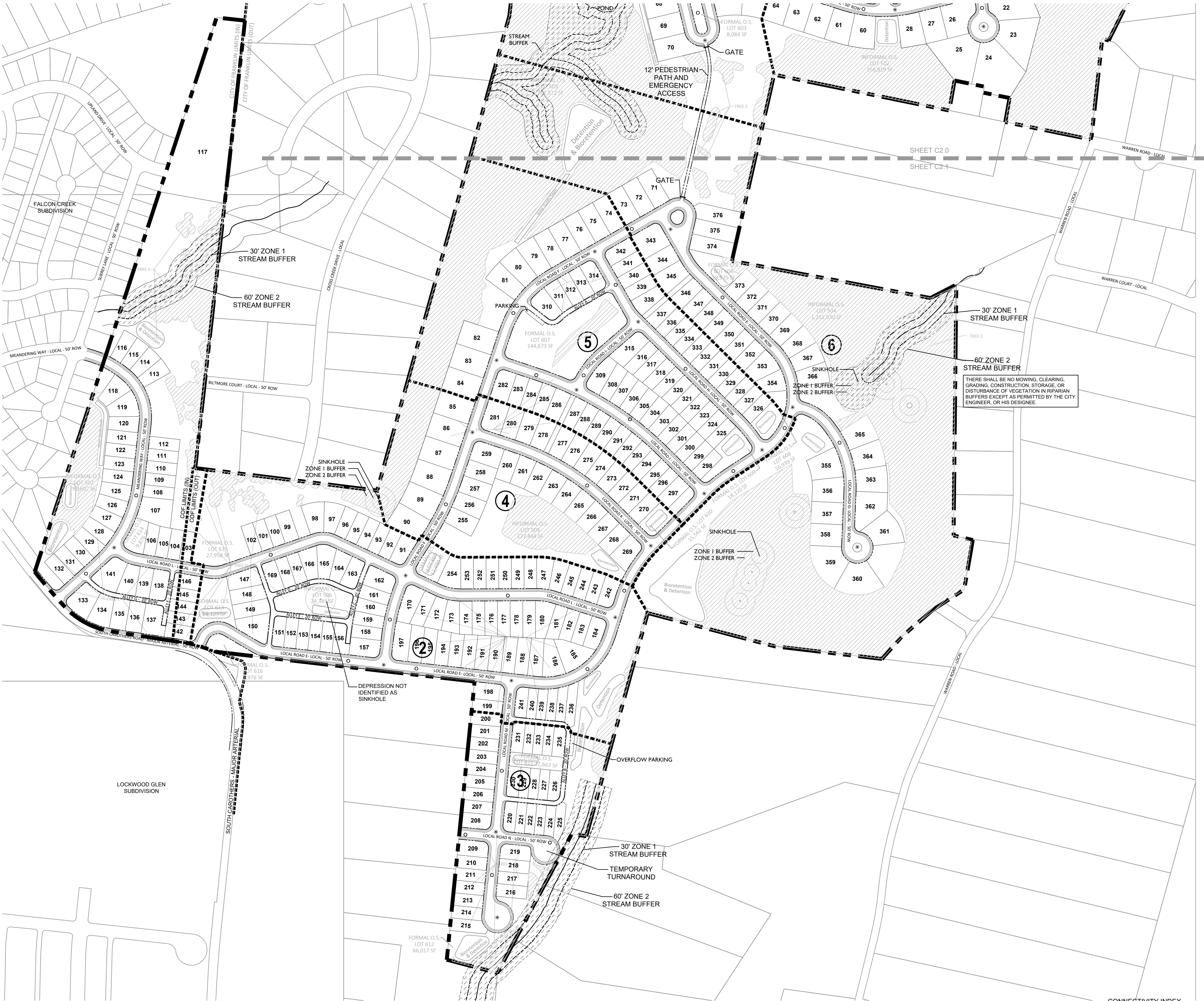
**ASHCROFT VALLEY PUD SUBDIVISION
DEVELOPMENT PLAN**
Franklin, Williamson County, Tennessee



DEVELOPEMENT PLAN

C 2.0

COF 6189



SITE DATA:

PROJECT NAME:
PROJECT NUMBER:
SUBDIVISION:
LOT NUMBER:
ADDRESS:

CITY:
COUNTY:
STATE:
CIVIL DISTRICT:
MAP, GROUP, PARCEL NUMBERS:

ASHCROFT VALLEY PUD SUBDIVISION
6189
NA
1-376, 501-507, 601-616
1101 RIDGEWAY DRIVE,
MURFREESBORO ROAD
FRANKLIN
TENNESSEE
14TH CIVIL DISTRICT
079 MB 002800
079 MB 002900
089 03000
089 03000
089 03001
089 04302
089 04303
089 04304
WILLIAMSON COUNTY
NC (079079 MB 002800, 079 MB 002900),
MGA-1 (079 05500, 089 04302, 089 04303,
089 04304)
CITY OF FRANKLIN
R-1 (089 03000, 089 03001)
SD-R (1.67)
MECO-6
NONE
CONVENTIONAL
226.01 AC
9,844,942.09 SF

EXISTING ZONING:

PROPOSED ZONING:
CHARACTER AREA OVERLAY:
OTHER APPLICABLE OVERLAYS:
APPLICABLE DEVELOPMENT STANDARD:
TOTAL ACREAGE:
TOTAL SQUARE FOOTAGE:

MINIMUM REQUIRED SETBACKS:
FRONT YARD:
REAR YARD:
SIDE YARD:

APPLICANT:
ADDRESS:

OFFICE PHONE
EMAIL ADDRESS
CONTACT

BUILDING SQUARE FOOTAGE:
BUILDING HEIGHT:
LANDSCAPE SURFACE RATIO:
MINIMUM LANDSCAPE SURFACE RATIO:
MINIMUM PARKING REQUIREMENT:
EXISTING PARKING:
RESIDENTIAL DENSITY:
TREE CANOPY:
PARKLAND DEDICATION:

SEE LOT DIAGRAMS - SHEET C2.3
MINIMUM SETBACKS
ARE ESTABLISHED
AS PART OF THE P.U.D.

GAMBLE DESIGN COLLABORATIVE
144 SOUTHEAST PARKWAY
SUITE 200
FRANKLIN, TN 37064
615.975.5765
greggambledesign@gmail.com
GREG GAMBLE

OPEN SPACE:

OVERALL DENSITY:
NET DENSITY (MINUS ROW):
NET DENSITY (MINUS ROW AND STREAM BUFFERS):
NUMBER OF RESIDENTIAL UNITS BY USE TYPE:

1.67 UNITS/AC
1.90 UNITS/AC
2.03 UNITS/AC
376 SINGLE FAMILY HOMES
40' LOTS: 22
50' LOTS: 198
60'-70' LOTS: 72
90' LOTS: 83
ESTATE: 1
N/A
89.7 AC RESIDENTIAL
108.4 AC OPEN SPACE
2.41 AC NON-BUILDABLE LOTS
SECTION 1
10.8 AC RESIDENTIAL (44 UNITS)
9.7 AC OPEN SPACE
SECTION 2
14.6 AC RESIDENTIAL (84 UNITS)
7.2 AC OPEN SPACE
SECTION 3
5.2 AC RESIDENTIAL (36 UNITS)
2.9 AC OPEN SPACE
SECTION 4
8.0 AC RESIDENTIAL (33 UNITS)
4.5 AC OPEN SPACE
SECTION 5
13.3 AC RESIDENTIAL (72 UNITS)
9.1 AC OPEN SPACE
SECTION 6
9.4 AC RESIDENTIAL (37 UNITS)
36.3 AC OPEN SPACE
SECTION 7
20.5 AC RESIDENTIAL (48 UNITS)
22.8 AC OPEN SPACE
SECTION 8
17.9 AC RESIDENTIAL (22 UNITS)
15.9 AC OPEN SPACE

NONRESIDENTIAL SQUARE FOOTAGE:
TOTAL ACREAGE BY USE, ENTIRE SITE:

TOTAL ACREAGE BY USE, PER SECTION:

OPEN SPACE REQUIREMENT CHART:

MINIMUM OPEN SPACE REQUIREMENT: 15%
SITE AREA: 226.01 AC
OPEN SPACE ACREAGE REQUIRED: 33.90 AC
FORMAL OPEN SPACE REQUIRED: 34% (11.53 AC)
INFORMAL OPEN SPACE REQUIRED: 66% (22.37 AC)

OPEN SPACE PROVIDED:

KEY CLASSIFICATION	TYPE	AREA OF OPEN SPACE
501	INFORMAL GREEN BELT	1,086,703 SF
502	INFORMAL GREEN BELT	356,919 SF
503	INFORMAL GREEN BELT	1,781,272 SF
504	INFORMAL GREEN BELT	1,251,830 SF
505	INFORMAL GREEN BELT	139,078 SF
506	INFORMAL GREEN BELT	33,880 SF
507	INFORMAL GREEN BELT	90,802 SF
601	FORMAL ENTRY	117,895 SF
602	FORMAL PARK	25,543 SF
603	FORMAL PARK	8,084 SF
604	FORMAL ENTRY	24,746 SF
605	FORMAL PARK	13,589 SF
606	FORMAL PARK	18,975 SF
607	FORMAL PARK	144,673 SF
608	FORMAL PARK	22,185 SF
609	FORMAL PARK	10,423 SF
610	FORMAL PARK	10,362 SF
611	FORMAL PARK	12,693 SF
612	FORMAL PARK	66,017 SF
613	FORMAL PARK	28,129 SF
614	FORMAL PARK	9,876 SF
615	FORMAL PARK	27,858 SF
616	FORMAL PARK	9,976 SF

NON-BUILDABLE LOTS:

KEY AREA	AREA
1	31,744 SF
2	37,036 SF
3	36,085 SF

TOTAL NON-BUILDABLE LOT AREA: 2.41 AC
TOTAL OPEN SPACE PROVIDED: 121.47 AC (54%)
TOTAL FORMAL OPEN SPACE PROVIDED: 12.65 AC
TOTAL INFORMAL OPEN SPACE PROVIDED: 108.82 AC

TREE CANOPY RETENTION:

TREE AREA	EXISTING	REMOVED	RETAINED
TREE A	20,201 SF	0 SF	20,201 SF
TREE B	184,596 SF	53,921 SF	130,675 SF
TREE C	5,961,646 SF	3,943,325 SF	2,018,320 SF
TREE D	221,073 SF	169,300 SF	51,773 SF
TREE E	491,876 SF	329,599 SF	162,277 SF
TOTAL	6,579,691 SF	3,596,145 SF	2,983,546 SF

TREE CANOPY DATA

EXISTING TREE CANOPY: 6,579,691 SF
6,579,691 SF/9,844,942.09 SF = .668 (66.8%) OF TOTAL SITE

REQUIRED CANOPY PRESERVATION =
36% OF TOTAL CANOPY
6,579,691 SF * 36% = 2,368,689 SF

PROVIDED CANOPY PRESERVED =
2,983,546 SF (45.3%) OF TOTAL EXISTING CANOPY

TREE PRESERVATION AREA

STREAM BUFFER

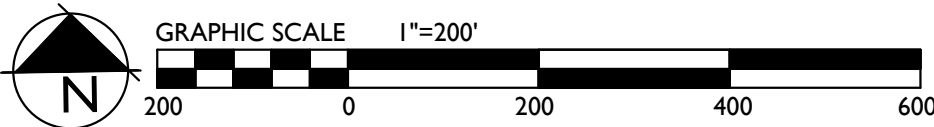
60' STREAM BUFFER

CONNECTIVITY INDEX

○ LINKS 44
* NODES 30
44 / 30 = 1.47 INDEX

MODIFICATION OF DESIGN STANDARDS REQUEST

THE APPLICANT REQUESTS A REDUCED CONNECTIVITY INDEX AS A RESULT OF THE ENVIRONMENTAL AND TOPOGRAPHICAL CONSTRAINTS OF THE NEIGHBORING PROPERTIES, AS WELL AS A LACK OF CONNECTION LOCATIONS TO EXISTING NEIGHBORHOODS ON THE REMAINING NEIGHBORING PROPERTIES.



Revisions:

Drawing Notes:



GAMBLE
DESIGN COLLABORATIVE

DESIGN PLANNING AND
LANDSCAPE ARCHITECTURE
Date: JUNE 10, 2016

**ASHCROFT VALLEY PUD SUBDIVISION
DEVELOPMENT PLAN**
Franklin, Williamson County, Tennessee



GAMBLE DESIGN COLLABORATIVE
144 SOUTHEAST PARKWAY
SUITE 200
FRANKLIN, TENNESSEE 37064
GREG GAMBLE
greggambledesign@gmail.com
615.975.5765

**DEVELOPEMENT
PLAN**

C 2.1

COF 6189

3. EXISTING CONDITIONS

3.1 PEAK HOUR TRAFFIC VOLUMES

In order to provide data for the traffic impact analysis, peak hour traffic volumes were counted at the following locations:

1. Highway 96E and Carothers Parkway
2. Highway 96E and Clovercroft Road
3. Highway 96E and Cross Creek Drive
4. Highway 96E and Ridgeway Drive / Chester Stevens Road
5. Highway 96E and Arno Road
6. Carothers Parkway and S. Carothers Road
7. S. Carothers Road in the vicinity of the project site.

This data was collected during the morning and afternoon peak hours on typical weekdays in March 2015 and February 2016 when schools were in session. The raw traffic volumes are included in [Appendix A](#). The existing laneage at the intersections within the study area is shown in [Figure 3](#), and the existing peak hour traffic volumes are shown in [Figure 4](#).

Using the existing peak hour traffic volumes shown in [Figure 4](#), capacity analyses were conducted for the intersections counted. Specifically, in order to identify current peak hour levels of operation within the study area, the capacity calculations were performed according to the methods outlined in the [Highway Capacity Manual 2010](#) (HCM2010). These analyses result in the determination of a Level of Service (LOS), which is a measure of evaluation is used to describe how well an intersection or roadway operates. LOS A represents free flow traffic operations, and LOS F suggests that the traffic demand exceeds the available capacity. In an urbanized area, LOS D is typically considered to be the minimum acceptable LOS. [Table 1](#) presents the descriptions of LOS for signalized intersections, and [Table 2](#) presents the descriptions of LOS for unsignalized intersections.

The results of the capacity analyses for the existing peak hour traffic volumes are shown in [Table 3](#), and [Appendix B](#) includes the capacity analyses worksheets. These analyses indicate that the existing operations at the signalized intersections within the study area are dominated by the significant westbound through volumes on Highway 96E during the AM peak hour and reciprocal eastbound through volumes during the PM peak hour. For the signalized intersection of Highway 96E and Arno Road, the analyses and field observations indicate that the northbound left turn queue is significantly long during the AM peak hour, and the eastbound through and right turn queues are significantly long during the PM peak hour. Also, it is important to note that the significant eastbound and westbound volumes on Highway 96E, west of Arno Road, are split approximately evenly at the intersection with Arno Road. Specifically, during the AM peak hour, the westbound through volume and the northbound right turn volume are approximately equal. Reciprocally, during the PM peak hour, the eastbound through volume and right turn volume are approximately equal.

At the unsignalized intersections with Cross Creek Drive and Ridgeway Drive / Chester Stevens Road, most of the critical turning movements operate at acceptable LOS during both peak hours. Because of the significant traffic volumes on Highway 96E, the turning movements from the side streets operate at poor LOS, although the northbound and southbound vehicle queues are relatively short.

At the unsignalized intersection of Carothers Parkway and S. Carothers Road, all of the critical turning movements operate at acceptable LOS during both peak hours.

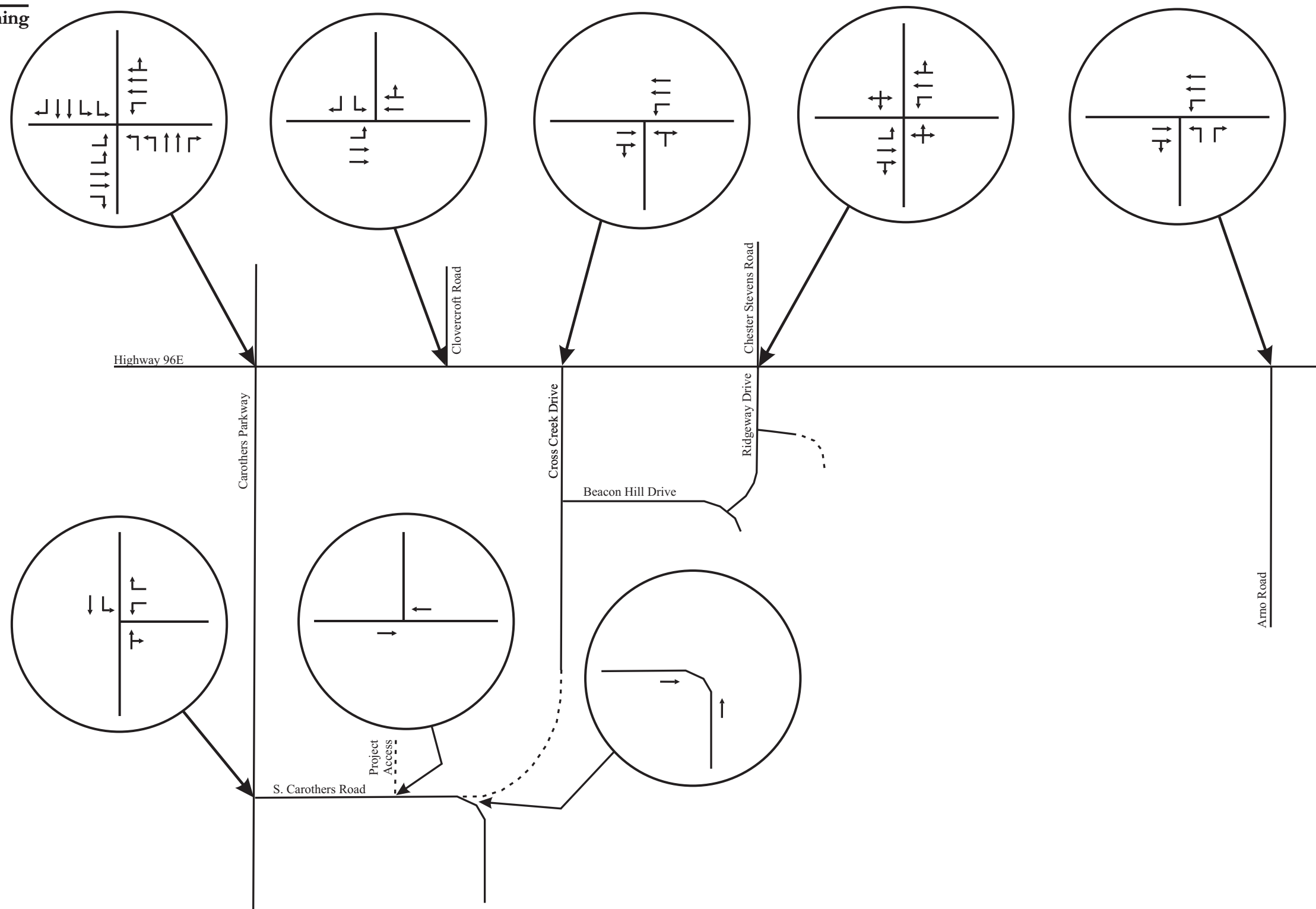
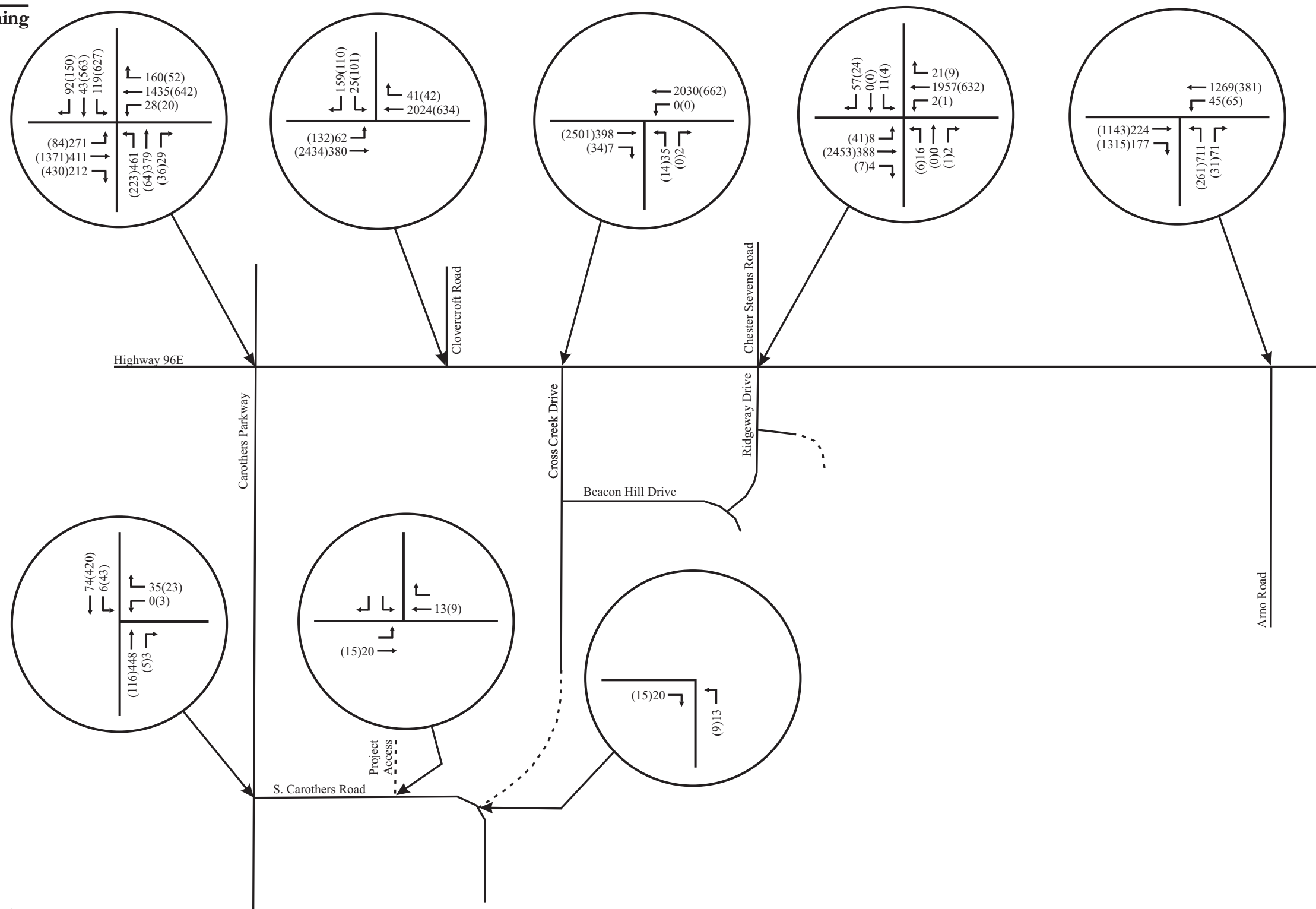


Figure 3.
Existing Laneage within the Study Area

F i s c h b a c h
Transportation Group, LLC
Traffic Engineering and Planning



No Scale

XX - AM Peak Hour Volumes
 (XX) - PM Peak Hour Volumes

Figure 4.
Existing Peak Hour Traffic Volumes

TABLE 1. DESCRIPTIONS OF LOS FOR SIGNALIZED INTERSECTIONS

Level of Service	Description	Average Control Delay per Vehicle (sec)
A	Operations with very low control delay. Progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	≤ 10
B	Operations with stable flows. This generally occurs with good progression, short cycle lengths, or both. More vehicles stop than for LOS A, causing higher levels of average delay.	> 10 and ≤ 20
C	Operations with stable flow. Occurs with fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.	> 20 and ≤ 35
D	Approaching unstable flow. The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop.	> 35 and ≤ 55
E	Unstable flow. In many cases, this is considered to be the limit for acceptable delay. These high delays generally indicate poor progression, long cycle lengths, and high v/c ratios.	> 55 and ≤ 80
F	Unacceptable delay. This condition often occurs with oversaturation or with high v/c ratios. Poor progression and long cycle lengths may also cause such delay levels.	> 80

Source: Highway Capacity Manual 2010 (HCM2010)

TABLE 2. DESCRIPTIONS OF LOS FOR UNSIGNALIZED INTERSECTIONS

Level of Service	Description	Average Control Delay (sec/veh)
A	Minimal delay	≤ 10
B	Brief delay	> 10 and ≤ 15
C	Average delay	> 15 and ≤ 25
D	Significant delay	> 25 and ≤ 35
E	Long delay	> 35 and ≤ 50
F	Extreme delay	> 50

Source: Highway Capacity Manual 2010 (HCM 2010)

TABLE 3. EXISTING PEAK HOUR LEVELS OF SERVICE

INTERSECTION	TURNING MOVEMENT	AM PEAK HOUR		PM PEAK HOUR	
		LEVEL OF SERVICE	95 TH %-ILE QUEUE	LEVEL OF SERVICE	95 TH %-ILE QUEUE
Highway 96E and Carothers Parkway (signalized)	Eastbound Left Turns	LOS F	111 feet	LOS A	18 feet
	Eastbound Thrus	LOS A	64 feet	LOS C	346 feet
	Eastbound Right Turns	LOS A	28 feet	LOS B	142 feet
	Westbound Left Turns	LOS A	7 feet	LOS A	9 feet
	Westbound Thru/Right Turns	LOS B	267 feet	LOS A	49 feet
	Northbound Left Turns	LOS B	93 feet	LOS B	54 feet
	Northbound Thrus	LOS B	71 feet	LOS B	16 feet
	Northbound Right Turns	LOS A	13 feet	LOS A	15 feet
	Southbound Left Turns	LOS B	27 feet	LOS B	136 feet
	Southbound Thrus	LOS B	12 feet	LOS B	106 feet
	Southbound Right Turns	LOS A	37 feet	LOS A	33 feet
	Overall Intersection	LOS B		LOS B	
Highway 96E and Clovercroft Road (signalized)	Eastbound Left Turns	LOS F	131 feet	LOS A	37 feet
	Eastbound Thrus	LOS A	70 feet	LOS B	1065 feet
	Westbound Thrus/Right Turns	LOS B	650 feet	LOS A	44 feet
	Southbound Left Turn Lane	LOS D	38 feet	LOS D	117 feet
	Southbound Right Turn Lane	LOS D	160 feet	LOS B	49 feet
	Overall Intersection	LOS B		LOS B	

Highway 96E and Cross Creek Drive (unsignalized)	Westbound Left Turn Lane	LOS A	1 veh	LOS D	1 veh
	Northbound Left / Right Turn Lane	LOS D	1 veh	LOS F	2 veh
Highway 96E and Ridgeway Drive / Chester Stevens Drive (unsignalized)	Eastbound Left Turn Lane	LOS C	1 veh	LOS A	1 veh
	Westbound Left Turn Lane	LOS A	1 veh	LOS C	1 veh
	Northbound Lane	LOS D	1 veh	LOS F	1 veh
	Southbound Lane	LOS E	2 veh	LOS B	1 veh
Highway 96E and Arno Road (signalized)	Eastbound Thrus / Right Turns	LOS B	82 feet	LOS C	1020 feet
	Westbound Left Turns	LOS B	43 feet	LOS F	90 veh
	Westbound Thrus	LOS D	575 feet	LOS A	53 veh
	Northbound Left Turns	LOS D	684 feet	LOS E	312 veh
	Northbound Right Turns	LOS A	24 feet	LOS B	26 veh
	Overall Intersection	LOS C		LOS C	
Carothers Parkway and S. Carothers Road (unsignalized)	Southbound Left Turns	LOS A	1 veh	LOS A	1 veh
	Westbound Left Turns	LOS B	1 veh	LOS B	1 veh
	Westbound Right Turns	LOS B	1 veh	LOS A	1 veh

3.2 TRAFFIC SIGNAL WARRANT ANALYSES

For the purposes of this study, traffic signal warrant analyses were conducted for the intersection of Carothers Parkway and S. Carothers Road. For these analyses, hourly turning movement counts were collected at this intersection in August 2016 when schools were in session. The raw traffic volumes are included in [Appendix A](#), and the hourly traffic volumes are shown in [Table 4](#).

The Federal Highway Administration has published the Manual on Uniform Traffic Control Devices (MUTCD 2010), which includes traffic signal warrants that help traffic engineering professionals to identify when a traffic signal installation is justified at a particular location. The warrants include minimum conditions that are compared to existing or projected traffic conditions, and typically, traffic signals should not be installed unless at least one of the MUTCD warrants, as described in [Appendix C](#), is met.

The Manual on Uniform Traffic Control Devices (MUTCD 2010) stipulates that the signal warrant thresholds may be reduced by 30% "...if the posted or statutory speed limit or the 85th percentile speed on the major street exceeds 40 mph..." Since a 40 mph speed limit is currently posted on Carothers Parkway, full traffic signal warrant thresholds were considered appropriate for the intersection of Carothers Parkway and S. Carothers Road.

The hourly traffic volumes at the intersection of Carothers Parkway and S. Carothers Road were compared to the full signal warrant thresholds, and the results of these analyses are included in [Table 4](#). These results indicate that the existing traffic volumes do not satisfy any of the volume-related traffic signal warrants.

TABLE 4. TRAFFIC SIGNAL WARRANT ANALYSIS

HOUR	TOTAL VEHICLES BOTH DIRECTIONS OF CAROTHERS PARKWAY	WESTBOUND VEHICLES ON S. CAROTHERS ROAD	SATISFY FULL WARRANTS?		
			Warrant 1 Condition A	Warrant 1 Condition B	Warrant 2
6:00 - 7:00 AM	233	25	---	---	---
7:00 - 8:00 AM	588	41	---	---	---
8:00 - 9:00 AM	552	38	---	---	---
9:00 - 10:00 AM	299	20	---	---	---
10:00 - 11:00 AM	305	20	---	---	---
11:00 - 12:00 N	355	22	---	---	---
12:00 - 1:00 PM	348	30	---	---	---
1:00 - 2:00 PM	334	12	---	---	---
2:00 - 3:00 PM	335	19	---	---	---
3:00 - 4:00 PM	338	18	---	---	---
4:00 - 5:00 PM	496	31	---	---	---
5:00 - 6:00 PM	621	14	---	---	---
6:00 - 7:00 PM	430	23	---	---	---

4. PROJECTION OF BACKGROUND TRAFFIC VOLUMES

In order to account for the traffic growth which will occur within the study area because of typical growth, as well as other approved developments, background traffic volumes were established for the intersections within the study area.

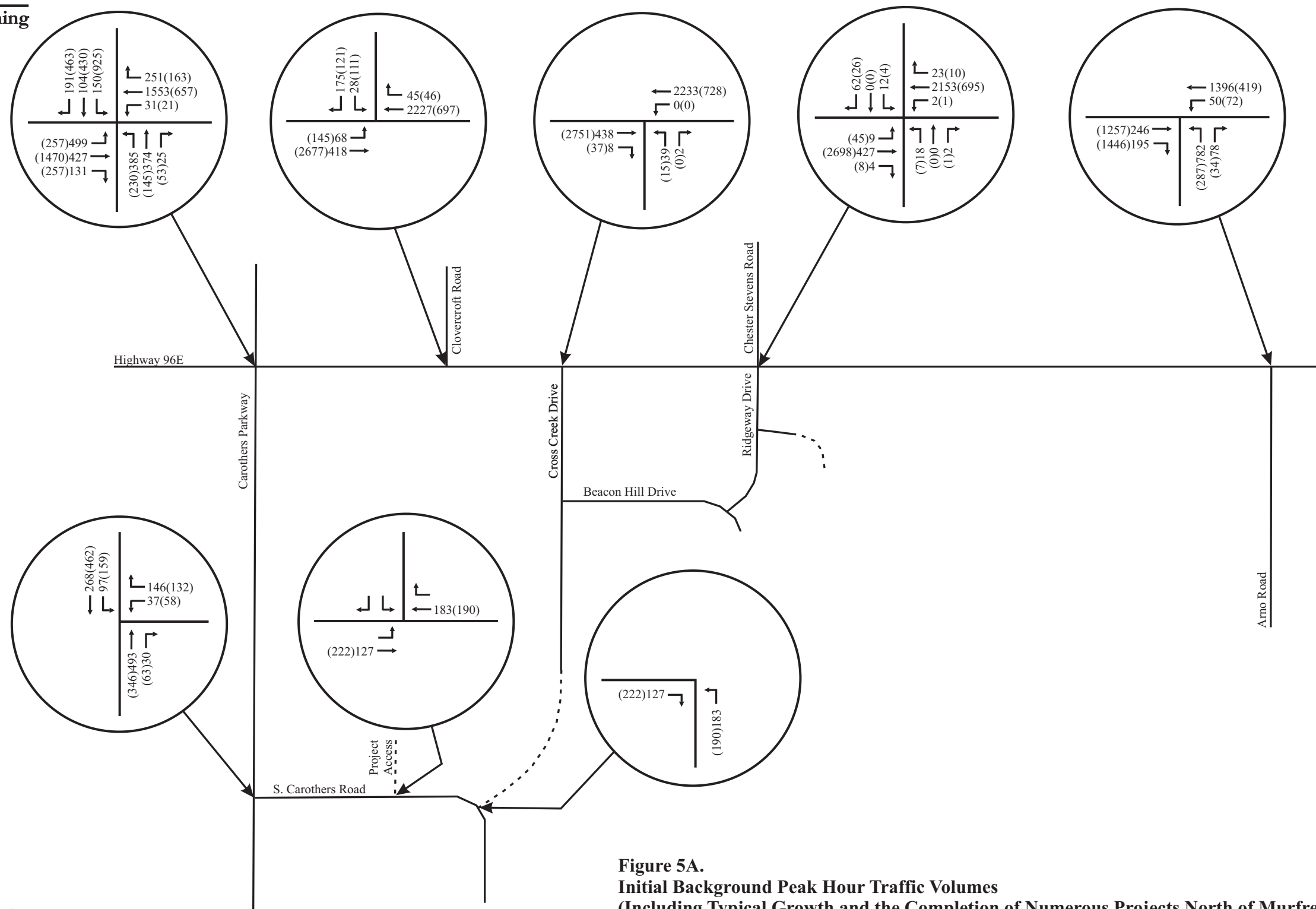
Specifically, in order to account for typical growth within the study area, consideration was given to the historical traffic volumes near the project site. The Tennessee Department of Transportation (TDOT) conducts an annual count program throughout the state. This count program includes the annual collection of average daily traffic (ADT) counts at numerous fixed locations. As shown in [Table 5](#), the daily traffic volumes within the study area have increased marginally since 2004. Based on this information, for the purposes of this study, the existing traffic volumes at the following intersections were increased by 10% to represent initial background traffic volumes, as shown in [Figure 5A](#):

1. Highway 96E and Cross Creek Drive
2. Highway 96E and Ridgeway Drive / Chester Stevens Drive
3. Carothers Parkway and S. Carothers Road

TABLE 5. HISTORICAL TRAFFIC VOLUMES IN THE STUDY AREA

Year	Station 40 Highway 96E ADT	Annual Growth	Overall Growth
2007	19,283		
2008	21,519	11.60%	
2009	19,501	-9.38%	
2010	22,312	14.41%	
2011	23,459	5.14%	
2012	23,343	-0.49%	
2013	23,968	2.68%	4.05%
Year	Station 41 Clovercroft Rd ADT	Annual Growth	Overall Growth
2007	2,570		
2008	2,862	11.36%	
2009	2,554	-10.76%	
2010	2,891	13.19%	
2011	3,092	6.95%	
2012	3,155	2.04%	
2013	3,151	-0.13%	3.77%

F i s c h b a c h
Transportation Group, LLC
Traffic Engineering and Planning



No Scale

XX - AM Peak Hour Volumes
 (XX) - PM Peak Hour Volumes

Figure 5A.
Initial Background Peak Hour Traffic Volumes
(Including Typical Growth and the Completion of Numerous Projects North of Murfreesboro Road,
as well as Nichols Bend/Lockwood Glen and Simmon's Ridge, south of Murfreesboro Road)

Also, it is important to note that background traffic volumes for the intersection of Highway 96E and Carothers Parkway were identified from the Traffic Impact Study that was prepared for the Carothers Crossing project in November 2015 by Fischbach Transportation Group (FTG, LLC). Similarly, background traffic volumes for the intersection of Carothers Parkway and S. Carothers Road were identified from the Traffic Impact Study that was prepared for the Simmons Ridge project in July 2012 by Fischbach Transportation Group (FTG, LLC). These traffic volumes are shown in [Figure 5A](#).

In addition, it is important to note that the following other projects are under construction within the study area:

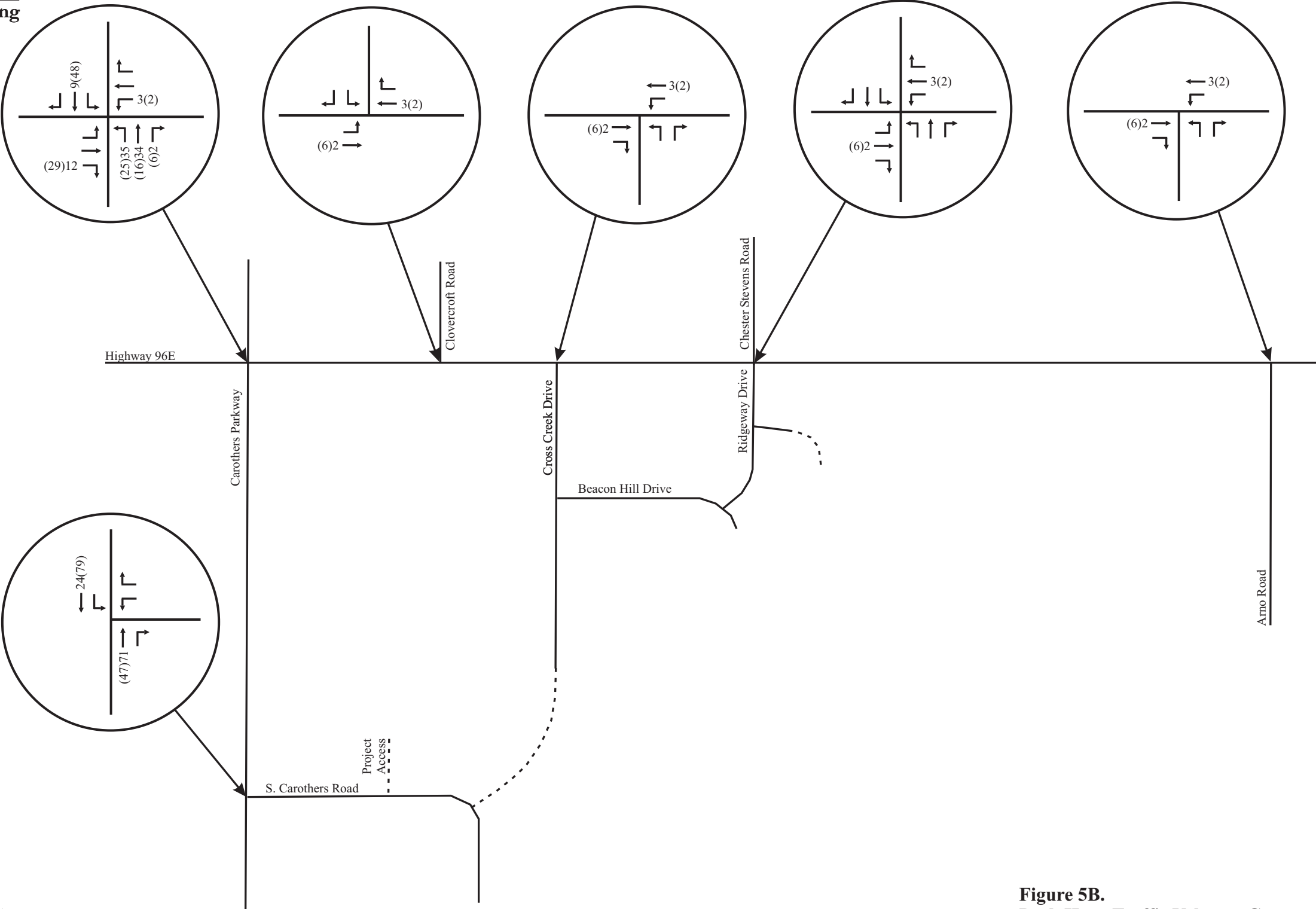
1. Echelon Residential Development, located on the east side of Carothers Parkway, south of S. Carothers Road
2. Water's Edge Residential Development, located on the west side of Carothers Parkway, south of S. Carothers Road
3. October Woods Residential Development, located on the south side of Highway 96E and the west side of Ridgeway Drive
4. Silver Grace Assisted Living Facility, which is located on the north side of Highway 96E, east of Chester Stevens Road.

[Figures 5B, 5C, 5D, and 5E](#) include the peak hour traffic volumes that are expected to be generated by these other residential projects. Information about these other projects is included in [Appendix D](#).

The peak hour traffic volumes shown in [Figures 5B, 5C, 5D, and 5E](#) were added to the traffic volumes shown in [Figure 5A](#) in order to establish the final background traffic volumes shown in [Figure 5F](#). Using the final background peak hour traffic volumes, capacity analyses were conducted for the intersections within the study area. For these analyses, it was assumed that all existing laneage and traffic control will be maintained and no improvements will be provided.

The results of the capacity analyses for the background peak hour traffic volumes are shown in [Table 6](#), and [Appendix B](#) includes the capacity analyses worksheets. These analyses indicate that decreased levels of service are expected at the signalized intersections within the study area. However, the dominant traffic patterns are expected to remain consistent with the existing conditions within the study area.

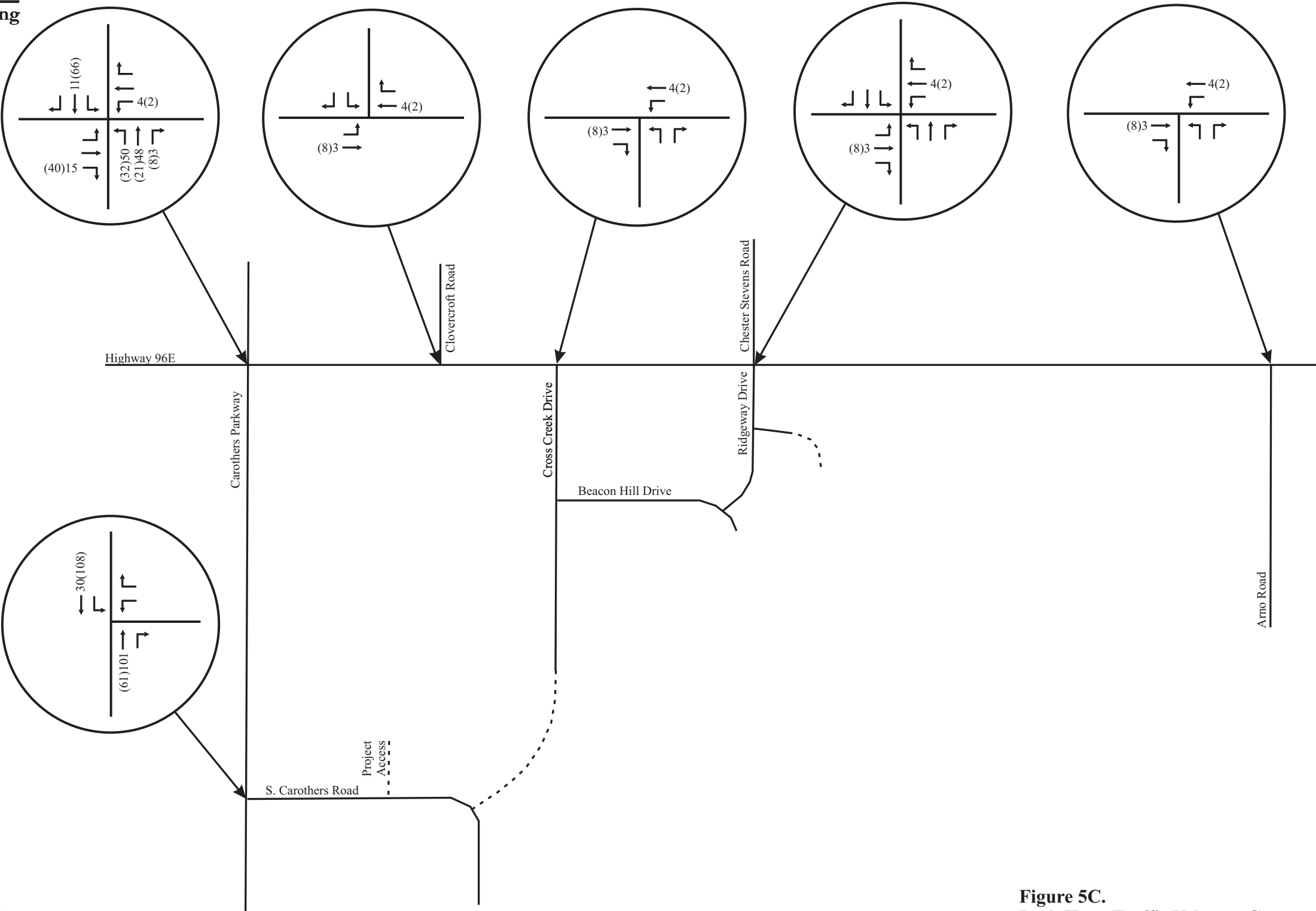
At the unsignalized intersection of Carothers Parkway and S. Carothers Road, the westbound left and right turns are expected to operate at poor LOS and with moderate vehicle queues during both peak hours.



No Scale

XX - AM Peak Hour Volumes
(XX) - PM Peak Hour Volumes

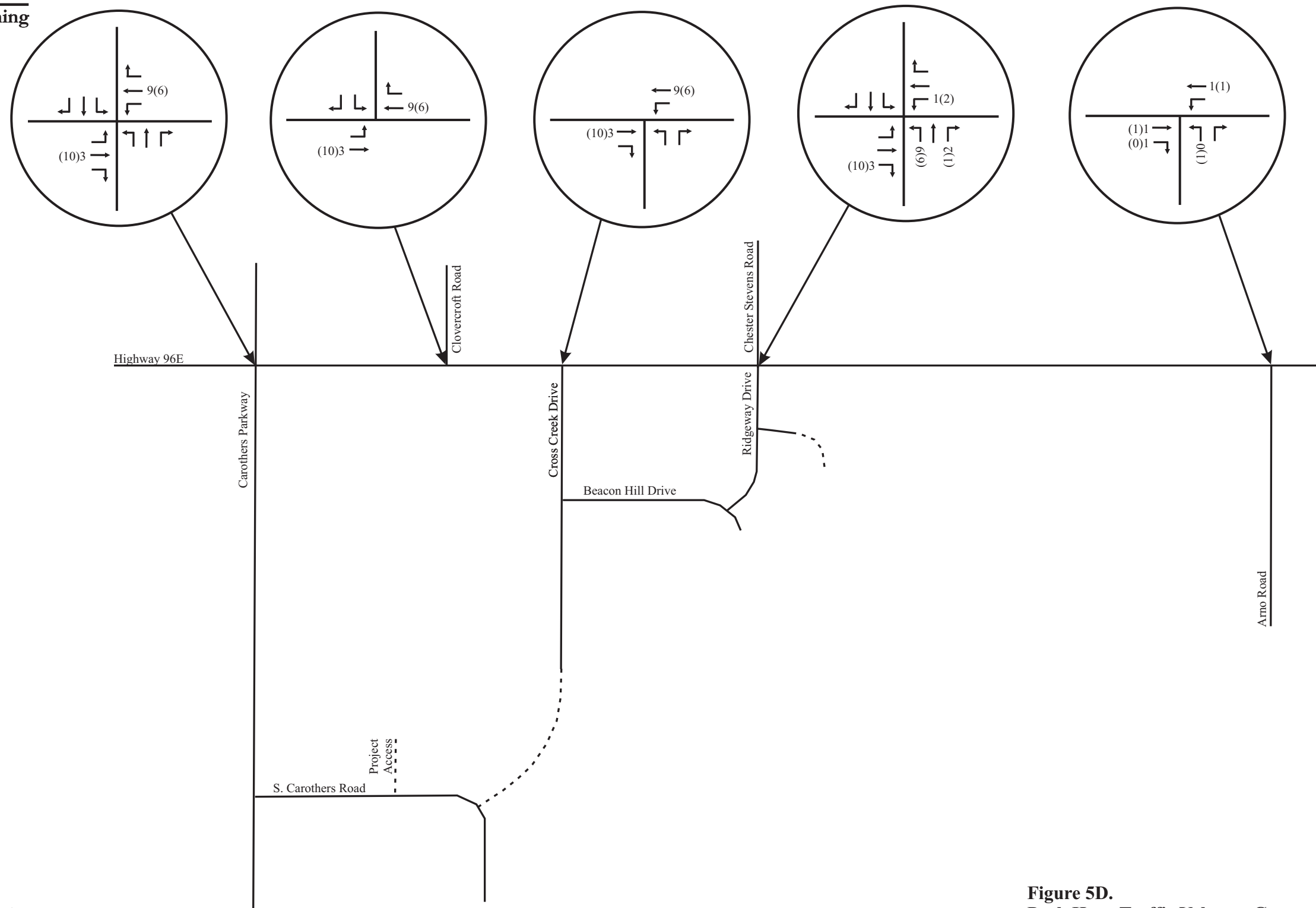
Figure 5B.
Peak Hour Traffic Volumes Generated by the
Echelon Residential Development



No Scale

XX - AM Peak Hour Volumes
(XX) - PM Peak Hour Volumes

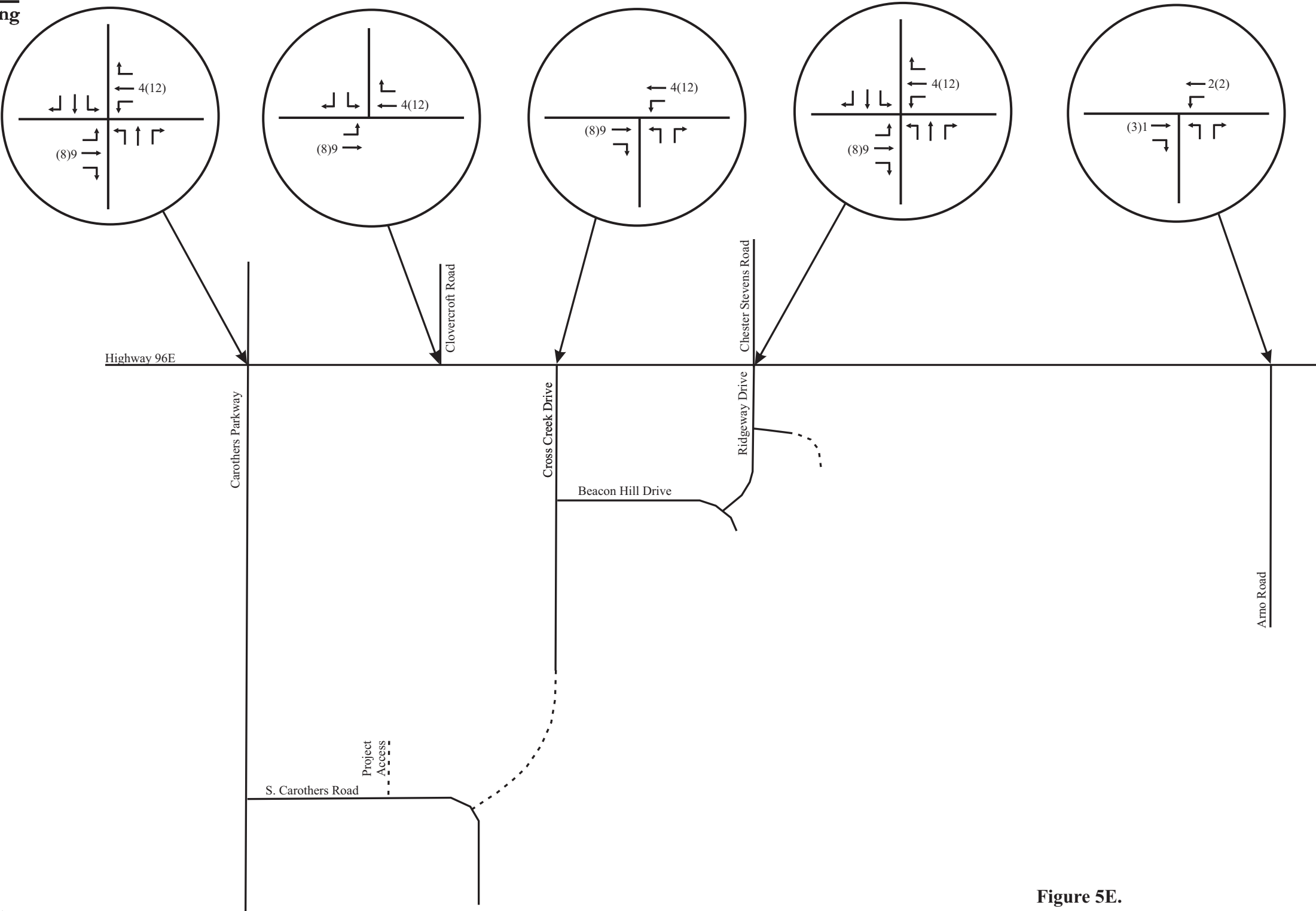
Figure 5C.
 Peak Hour Traffic Volumes Generated by the
 Water's Edge Residential Development



No Scale

XX - AM Peak Hour Volumes
(XX) - PM Peak Hour Volumes

Figure 5D.
Peak Hour Traffic Volumes Generated by the
October Woods Residential Development



No Scale

XX - AM Peak Hour Volumes
(XX) - PM Peak Hour Volumes

Figure 5E.
Peak Hour Traffic Volumes Generated by the
Silver Grace Assisted Living Development

F i s c h b a c h
Transportation Group, LLC
Traffic Engineering and Planning

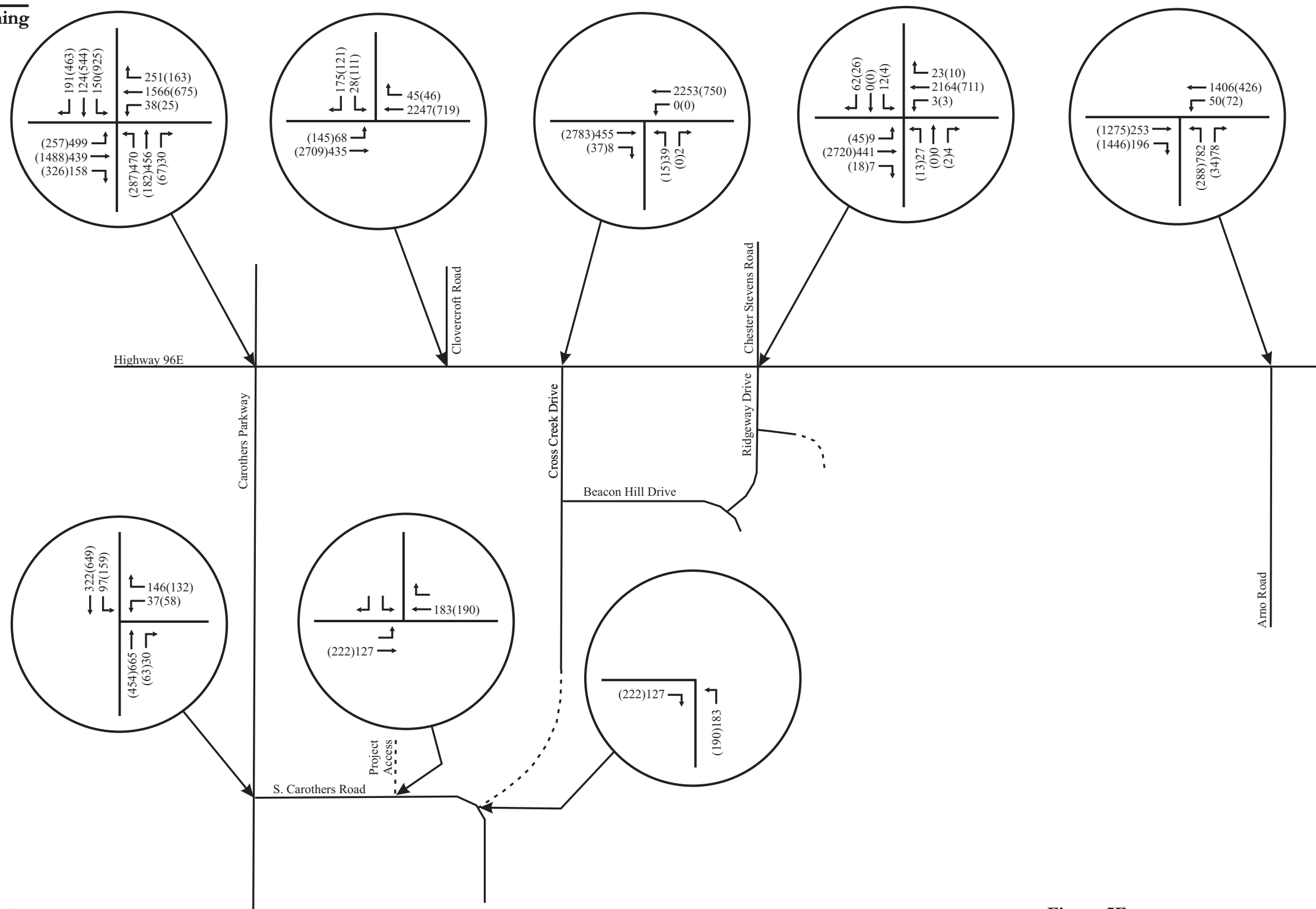


Figure 5F.
Final Background Peak Hour Traffic Volumes

TABLE 6. BACKGROUND PEAK HOUR LEVELS OF SERVICE

INTERSECTION	TURNING MOVEMENT	AM PEAK HOUR		PM PEAK HOUR	
		LEVEL OF SERVICE	95 TH %-ILE QUEUE	LEVEL OF SERVICE	95 TH %-ILE QUEUE
Highway 96E and Carothers Parkway (signalized)	Eastbound Left Turns	LOS F	187 feet	LOS C	129 feet
	Eastbound Thrus	LOS B	68 feet	LOS D	745 feet
	Eastbound Right Turns	LOS A	26 feet	LOS A	137 feet
	Westbound Left Turns	LOS A	9 feet	LOS C	30 feet
	Westbound Thru/Right Turns	LOS C	229 feet	LOS B	80 feet
	Northbound Left Turns	LOS B	83 feet	LOS C	126 feet
	Northbound Thrus	LOS B	72 feet	LOS B	65 feet
	Northbound Right Turns	LOS A	11 feet	LOS B	51 feet
	Southbound Left Turns	LOS B	29 feet	LOS E	506 feet
	Southbound Thrus	LOS A	22 feet	LOS C	186 feet
	Southbound Right Turns	LOS A	64 feet	LOS C	313 feet
	Overall Intersection	LOS D		LOS C	
Highway 96E and Clovercroft Road (signalized)	Eastbound Left Turns	LOS F	132 feet	LOS A	27 feet
	Eastbound Thrus	LOS A	34 feet	LOS C	1303 feet
	Westbound Thrus/Right Turns	LOS B	811 feet	LOS A	50 feet
	Southbound Left Turn Lane	LOS C	37 feet	LOS E	137 feet
	Southbound Right Turn Lane	LOS D	161 feet	LOS B	53 feet
	Overall Intersection	LOS B		LOS C	

Highway 96E and Cross Creek Drive (unsignalized)	Westbound Left Turn Lane	LOS A	1 veh	LOS D	1 veh
	Northbound Left / Right Turn Lane	LOS D	1 veh	LOS F	2 veh
Highway 96E and Ridgeway Drive / Chester Stevens Drive (unsignalized)	Eastbound Left Turn Lane	LOS C	1 veh	LOS A	1 veh
	Westbound Left Turn Lane	LOS A	1 veh	LOS D	1 veh
	Northbound Lane	LOS E	1 veh	LOS F	2 veh
	Southbound Lane	LOS F	3 veh	LOS C	1 veh
Highway 96E and Arno Road (signalized)	Eastbound Thrus / Right Turns	LOS B	101 feet	LOS E	1137 veh
	Westbound Left Turns	LOS B	44 feet	LOS F	118 veh
	Westbound Thrus	LOS E	629 feet	LOS A	56 veh
	Northbound Left Turns	LOS E	732 feet	LOS F	416 veh
	Northbound Right Turns	LOS A	23 feet	LOS B	29 veh
	Overall Intersection	LOS D		LOS E	
Carothers Parkway and S. Carothers Road (unsignalized)	Southbound Left Turns	LOS A	1 veh	LOS A	1 veh
	Westbound Left Turns	LOS E	1 veh	LOS F	3 veh
	Westbound Right Turns	LOS C	2 veh	LOS B	1 veh

5. IMPACTS OF PROPOSED DEVELOPMENT

5.1 TRIP GENERATION

Trip generation calculations were conducted in order to identify how much traffic will be generated by the proposed project. Trip generation data for daily and peak hour trips were identified from Trip Generation, Ninth Edition, which was published by the Institute of Transportation Engineers (ITE) in 2012. [Table 7](#) presents the daily and peak hour trip generations for the proposed homes, and these calculations are included in [Appendix E](#).

TABLE 7. TRIP GENERATION

LAND USE	SIZE	DAILY TRAFFIC	GENERATED TRAFFIC			
			AM PEAK HOUR		PM PEAK HOUR	
			ENTER	EXIT	ENTER	EXIT
Single-Family (LUC 210) Northern Portion	70 homes	756	15	44	48	28
Single-Family (LUC 210) Southern Portion	306 homes	2,938	56	168	181	106
TOTAL	376 homes	3,694	71	212	229	134

5.2 TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT

For the purposes of this study, it was estimated that the trips generated by the proposed project will access the project site according to the directional distributions shown in [Figures 6A and 6B](#). The development of these distributions was based on the following factors:

- existing land use characteristics,
- the directions of approach of the existing traffic,
- the access proposed for the project, and
- the locations of population centers in the area.

The peak hour trip generations and directional distributions were used to add the site-generated trips to the roadway system. [Figures 7A and 7B](#) include the peak hour traffic volumes that are expected to be generated by the proposed project.

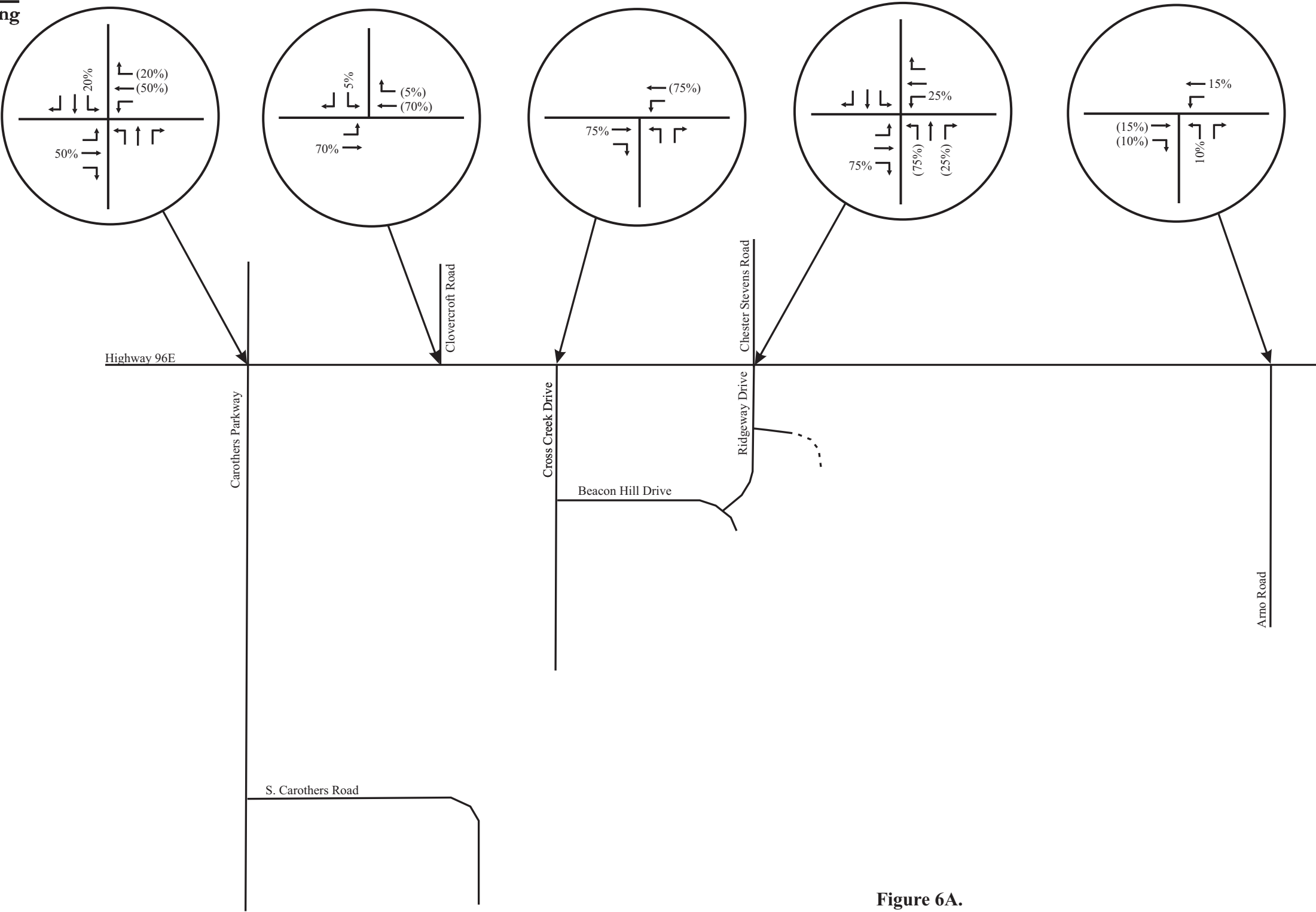


Figure 6A.
Directional Distribution of Peak Hour Traffic Volumes Generated
by the NORTHERN Portion of the Proposed Residential Project



No Scale

XX - Entering Volumes
(XX) - Exiting Volumes

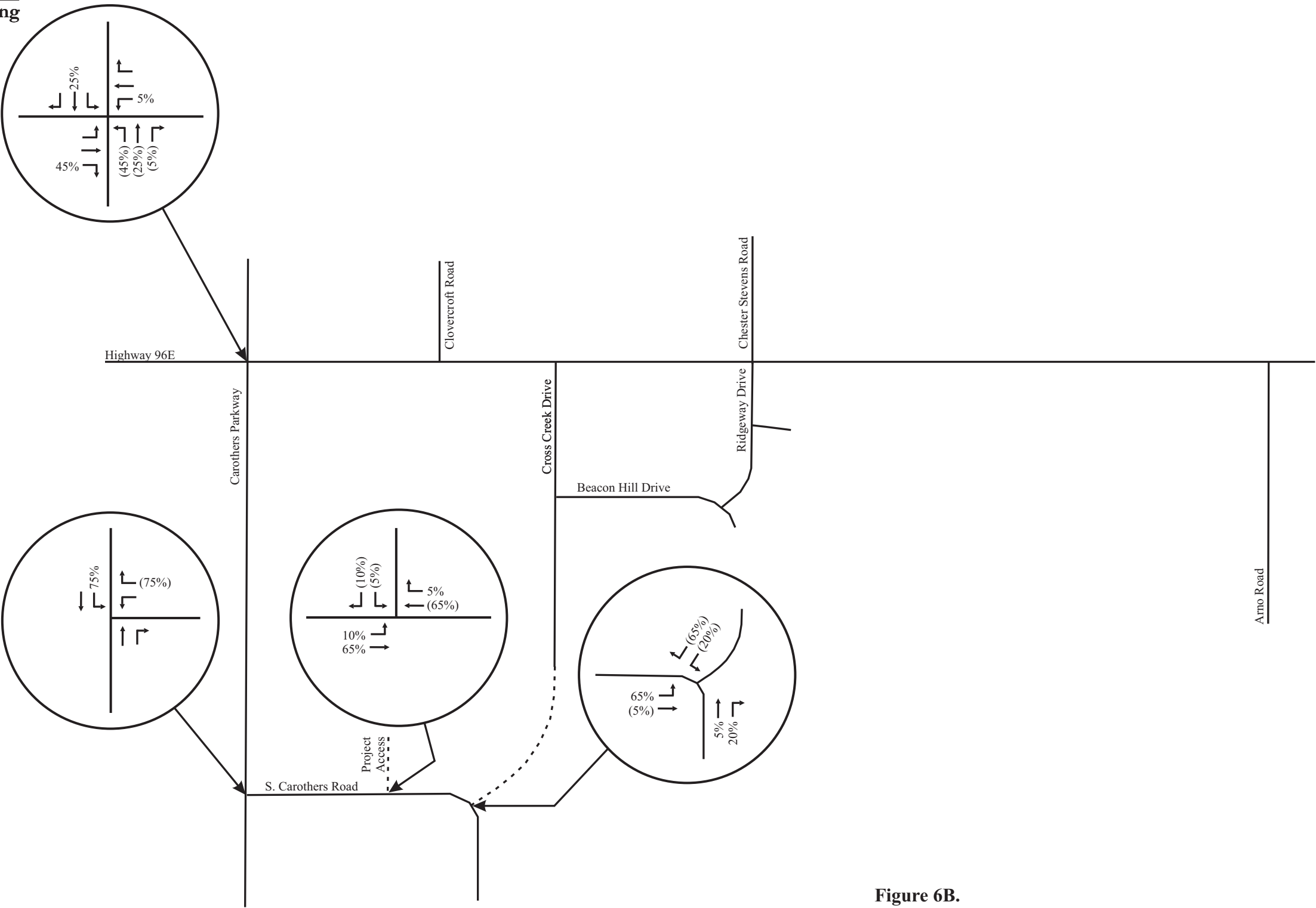
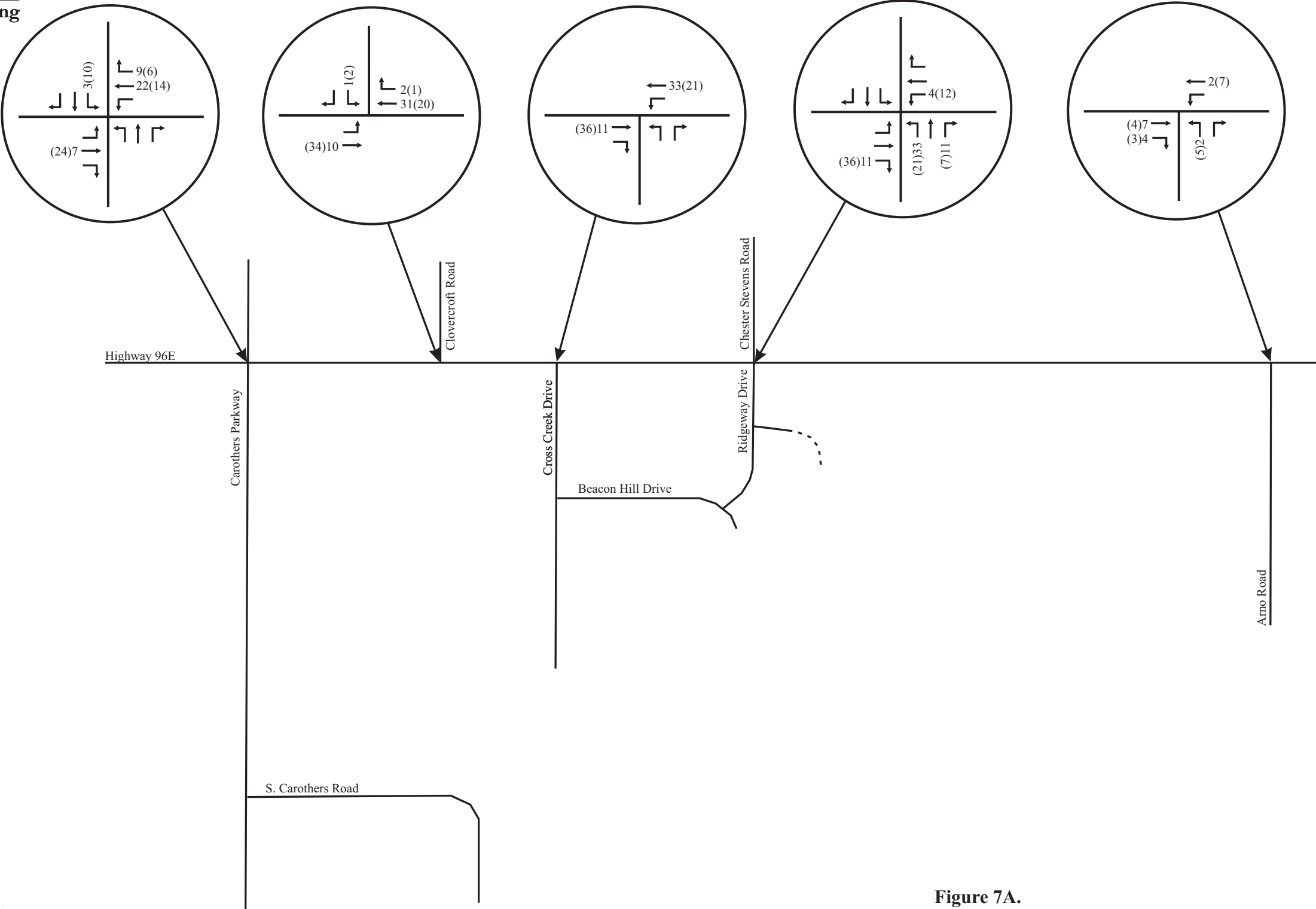


Figure 6B.
Directional Distribution of Peak Hour Traffic Volumes Generated
by the SOUTHERN Portion of the Proposed Residential Project

F i s c h b a c h
Transportation Group, LLC
Traffic Engineering and Planning



No Scale

XX - AM Peak Hour Volumes
(XX) - PM Peak Hour Volumes

Figure 7A.
Peak Hour Traffic Volumes Generated by the
NORTHERN Portion of the Proposed Residential Project



No Scale

XX - AM Peak Hour Volumes
(XX) - PM Peak Hour Volumes

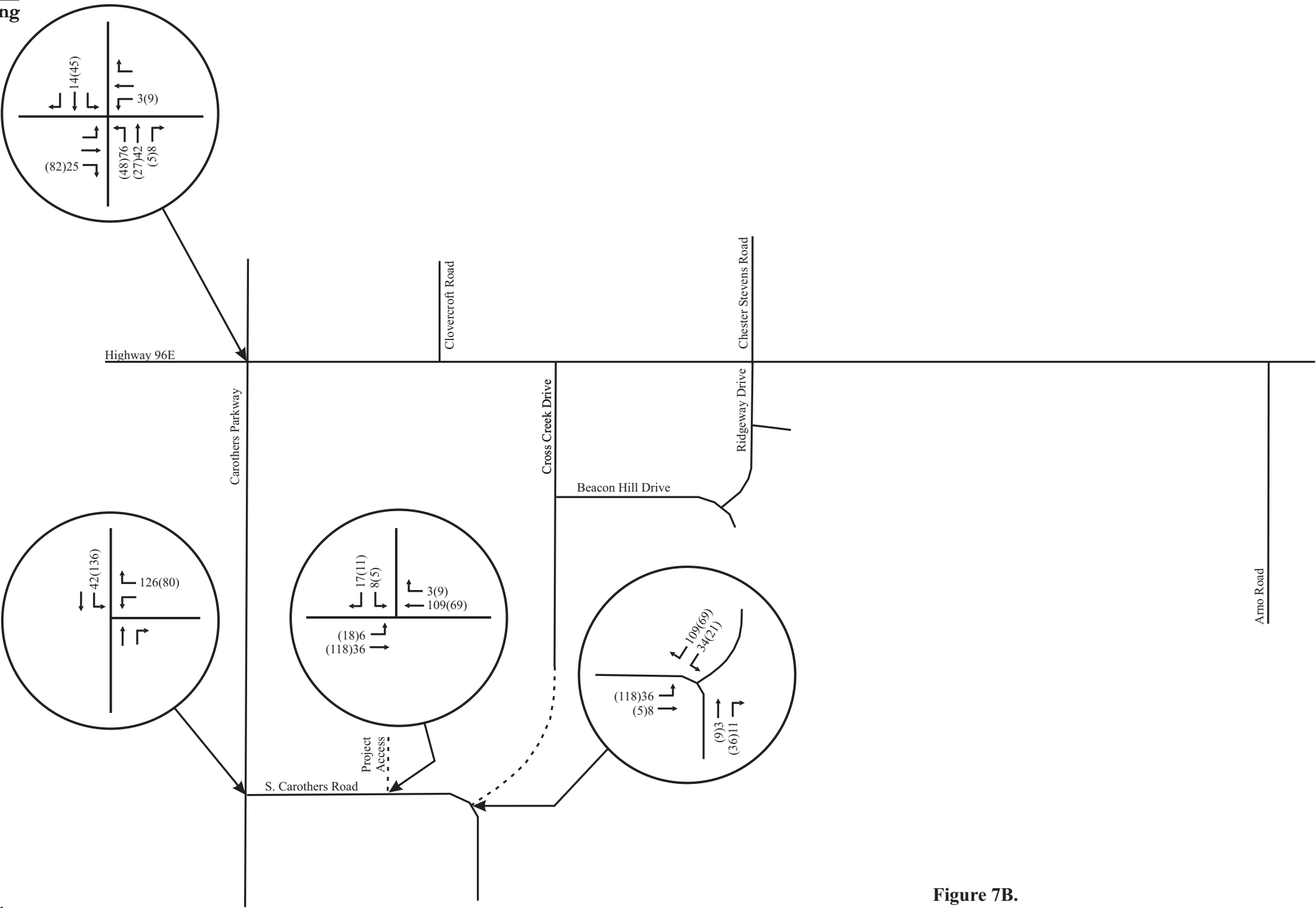


Figure 7B.
Peak Hour Traffic Volumes Generated by the
SOUTHERN Portion of the Proposed Residential Project

5.3 CAPACITY ANALYSES

In order to identify the projected peak hour traffic volumes at the completion of the proposed project, the trips generated by the project were added to the background peak hour traffic volumes. The resulting peak hour volumes are shown in [Figure 8](#).

Using the total projected peak hour traffic volumes, capacity analyses were conducted in order to determine the impact of the project on the roadway system. Specifically, these capacity analyses were used to evaluate the need for roadway and traffic control improvements within the study area. For these analyses, the following assumptions were made:

- All existing laneage and traffic control will be maintained and no improvements will be provided.
- Stanford Drive will be extended as a two-lane local roadway.
- Each of the project accesses on S. Carothers Road will be constructed to include one entering lane and one exiting lane.

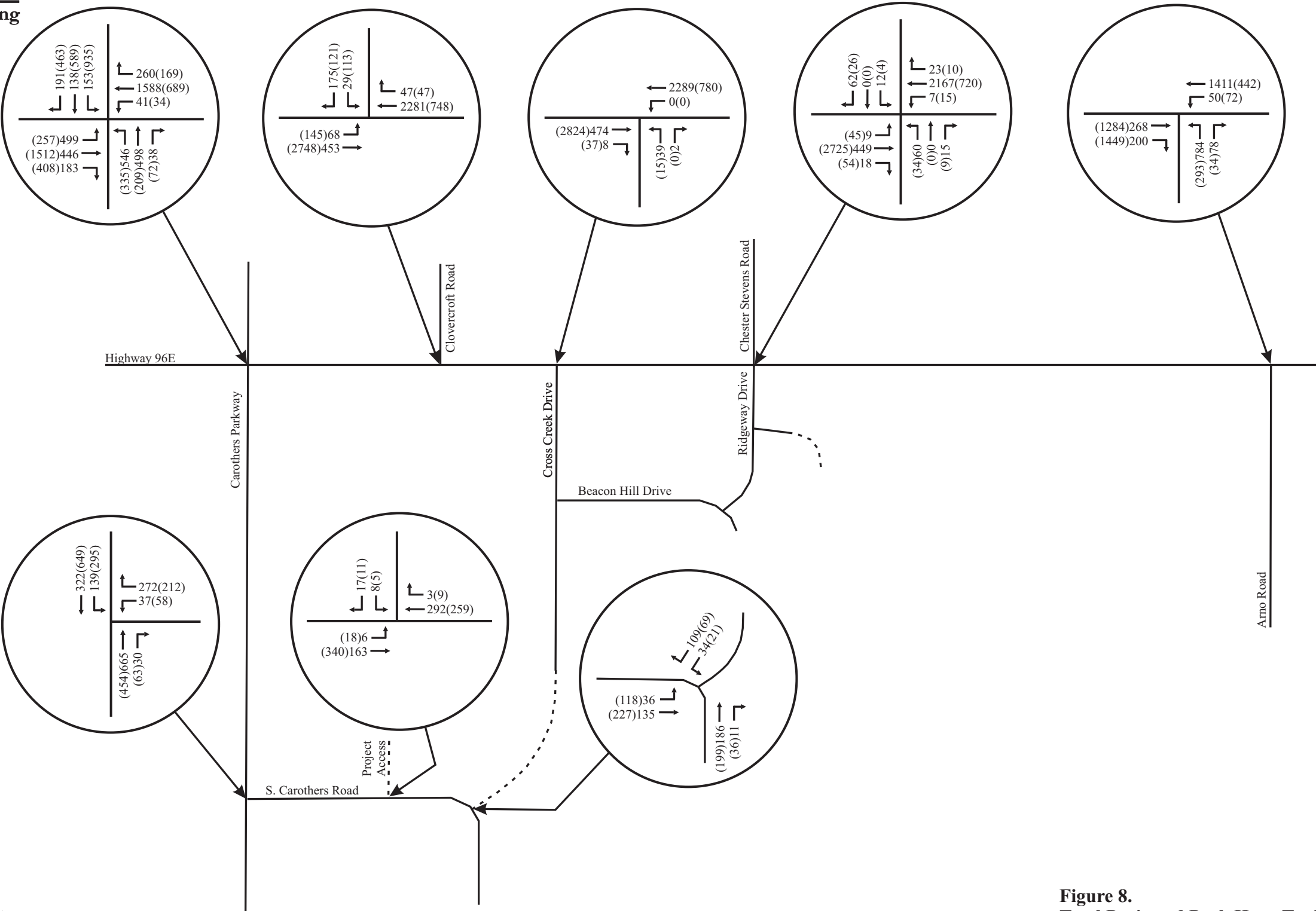
The results of the capacity analyses for the total projected peak hour traffic volumes are shown in [Table 8](#), and [Appendix B](#) includes the capacity analyses worksheets. These analyses indicate that the total projected conditions with full build-out of the project are consistent with the background conditions within the study area. Also, these analyses indicate that all of the critical turning movements at the intersections of S. Carothers Road and the project accesses will operate acceptably during both peak hours.

Further analyses were conducted to determine the need for the following dedicated turn lanes within the study area:

- A dedicated left turn lane on S. Carothers Road at the eastern (main) project access.
- A dedicated right turn lane on S. Carothers Road at the eastern (main) project access.
- A dedicated northbound right turn lane on Carothers Parkway at S. Carothers Road.
- A dedicated eastbound right turn lane on Highway 96E at Ridgeway Drive.

These analyses were based on the method outlined in *NCHRP Report 457: Engineering Study Guide for Evaluating Intersection Improvements*. The relevant charts are included in [Appendix F](#). The results of these analyses indicate that a dedicated right turn lane is not warranted for construction on S. Carothers Road at the eastern (main) project access. However, the other three dedicated turn lanes are warranted.

F i s c h b a c h
Transportation Group, LLC
Traffic Engineering and Planning



No Scale

XX - AM Peak Hour Volumes
(XX) - PM Peak Hour Volumes

Figure 8.
Total Projected Peak Hour Traffic Volumes
at the Completion of the Proposed Project

TABLE 8. PROJECTED PEAK HOUR LEVELS OF SERVICE

INTERSECTION	TURNING MOVEMENT	AM PEAK HOUR		PM PEAK HOUR	
		LEVEL OF SERVICE	95 TH %-ILE QUEUE	LEVEL OF SERVICE	95 TH %-ILE QUEUE
Highway 96E and Carothers Parkway (signalized)	Eastbound Left Turns	LOS F	187 feet	LOS D	168 feet
	Eastbound Thrus	LOS B	70 feet	LOS E	980 feet
	Eastbound Right Turns	LOS A	27 feet	LOS B	278 feet
	Westbound Left Turns	LOS A	10 feet	LOS F	108 feet
	Westbound Thru/Right Turns	LOS C	234 feet	LOS B	156 feet
	Northbound Left Turns	LOS B	100 feet	LOS D	209 feet
	Northbound Thrus	LOS B	78 feet	LOS C	94 feet
	Northbound Right Turns	LOS A	12 feet	LOS C	70 feet
	Southbound Left Turns	LOS B	30 feet	LOS E	681 feet
	Southbound Thrus	LOS A	24 feet	LOS C	267 feet
	Southbound Right Turns	LOS A	64 feet	LOS C	397 feet
	Overall Intersection	LOS D		LOS D	
Highway 96E and Clovercroft Road (signalized)	Eastbound Left Turns	LOS F	131 feet	LOS A	28 feet
	Eastbound Thrus	LOS A	35 feet	LOS C	1681 feet
	Westbound Thrus/Right Turns	LOS B	823 feet	LOS A	55 feet
	Southbound Left Turn Lane	LOS C	39 feet	LOS F	187 feet
	Southbound Right Turn Lane	LOS D	163 feet	LOS B	65 feet
	Overall Intersection	LOS B		LOS B	

Highway 96E and Cross Creek Drive (unsignalized)	Westbound Left Turn Lane	LOS A	0 veh	LOS D	0 veh
	Northbound Left / Right Turn Lane	LOS E	1 veh	LOS F	2 veh
Highway 96E and Ridgeway Drive / Chester Stevens Drive (unsignalized)	Eastbound Left Turn Lane	LOS C	1 veh	LOS A	1 veh
	Westbound Left Turn Lane	LOS A	1 veh	LOS D	1 veh
	Northbound Lane	LOS F	3 veh	LOS F	6 veh
	Southbound Lane	LOS F	3 veh	LOS C	1 veh
Highway 96E and Arno Road (signalized)	Eastbound Thrus / Right Turns	LOS B	102 feet	LOS E	1671 veh
	Westbound Left Turns	LOS B	44 feet	LOS F	173 veh
	Westbound Thrus	LOS E	631 feet	LOS A	74 veh
	Northbound Left Turns	LOS E	735 feet	LOS F	539 veh
	Northbound Right Turns	LOS A	24 feet	LOS B	34 veh
	Overall Intersection	LOS D		LOS E	
Carothers Parkway and S. Carothers Road (unsignalized)	Southbound Left Turns	LOS B	1 veh	LOS B	1 veh
	Westbound Left Turns	LOS F	1 veh	LOS F	6 veh
	Westbound Right Turns	LOS E	7 veh	LOS C	2 veh
S. Carothers Road and Western Project Access (unsignalized)	Eastbound Left Turns/Thrus	LOS A	1 veh	LOS A	1 veh
	Southbound Left and Right Turns	LOS B	1 veh	LOS B	1 veh
S. Carothers Road and Eastern Project Access (unsignalized)	Eastbound/Southbound Left Turns/Thrus	LOS A	1 veh	LOS A	1 veh
	Southbound/Westbound Left and Right Turns	LOS B	1 veh	LOS B	1 veh
S. Carothers Road and Eastern Project Access (unsignalized) FUTURE	Eastbound/Southbound Left Turns/Thrus	LOS A	1 veh	LOS A	1 veh
	Southbound/Westbound	LOS B	1 veh	LOS C	1 veh

	Left and Right Turns				
--	----------------------	--	--	--	--

5.4 FUTURE GROWTH ON S. CAROTHERS ROAD

This eastern (main) project access could be constructed by reconstructing the existing 90-degree curve as a conventional three-legged or four-legged intersection. Alternatively, the free-flowing nature of the traffic on S. Carothers Road could be preserved, and the project access could be constructed at the apex of the horizontal curve. Based on comments provided by the City of Franklin Engineering Department, the developer of the proposed project plans to preserve the free-flowing nature of the traffic on S. Carothers Road and construct the project access at the apex of the horizontal curve.

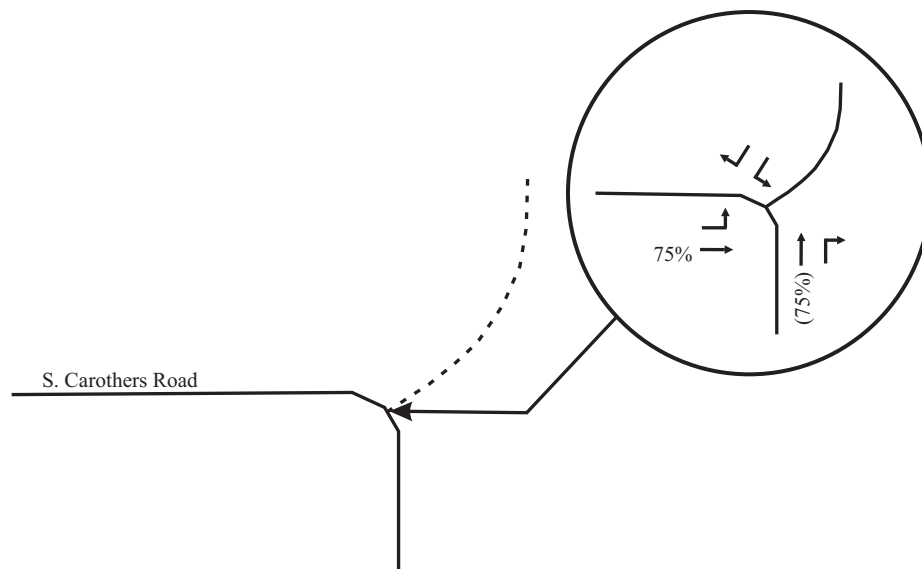
For the purposes of this study, additional analyses were conducted in order to identify how well the intersection of S. Carothers Road and the eastern (main) project access would operate if another 100 single-family homes were constructed on S. Carothers Road in the future. These 100 homes would be in addition to the approved residential projects of Simmon's Ridge, Lockwood Glen, Echelon, and Water's Edge. Trip generation data for daily and peak hour trips were identified from Trip Generation, Ninth Edition, which was published by the Institute of Transportation Engineers (ITE) in 2012. [Table 9](#) presents the daily and peak hour trip generations for 100 single-family homes that could be constructed on S. Carothers Road in the future.

TABLE 9. TRIP GENERATION (FUTURE HOMES)

LAND USE	SIZE	DAILY TRAFFIC	GENERATED TRAFFIC			
			AM PEAK HOUR		PM PEAK HOUR	
			ENTER	EXIT	ENTER	EXIT
Single-Family (LUC 210) Future Development	100 homes	1,050	20	60	66	39

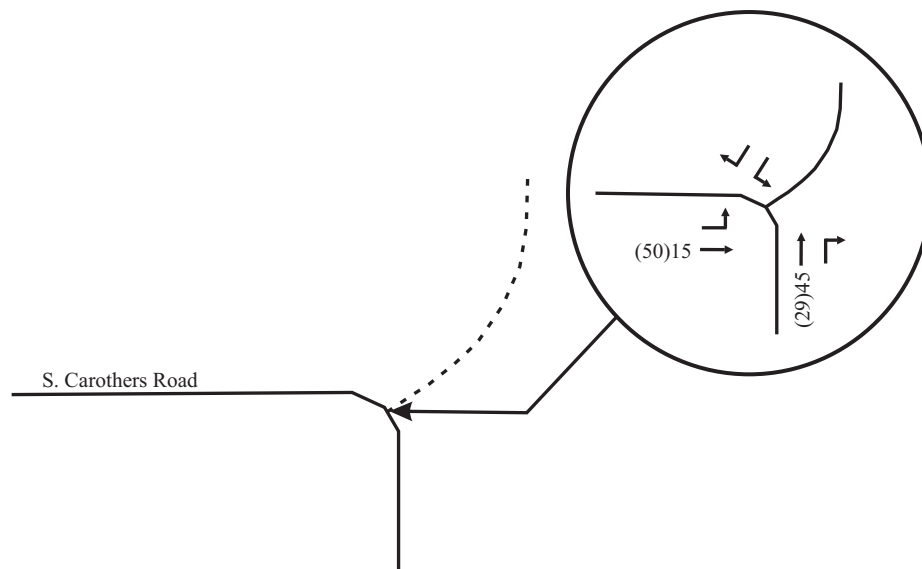
For the purposes of this study, it was estimated that the trips generated by the 100 future homes will travel through the intersection of S. Carothers Road and the eastern (main) project access for Ashcroft Valley according to the directional distribution shown in [Figure 9A](#). The peak hour trip generations and directional distribution were used to add the future trips to this intersection, and [Figure 9B](#) includes the peak hour traffic volumes that are expected to be generated by the future homes. These trips were added to the peak hour traffic volumes shown in [Figure 8](#), and the resulting peak hour volumes are shown in [Figure 9C](#).

Revised capacity analyses were conducted in order to determine the impact of 100 future homes on the intersection of S. Carothers Road and the eastern (main) project access. The results of the revised capacity analyses are shown in [Table 8](#), and [Appendix B](#) includes the capacity analyses worksheets. These analyses indicate that all of the critical turning movements at the intersection of S. Carothers Road and the eastern (main) project access will operate acceptably during both peak hours.



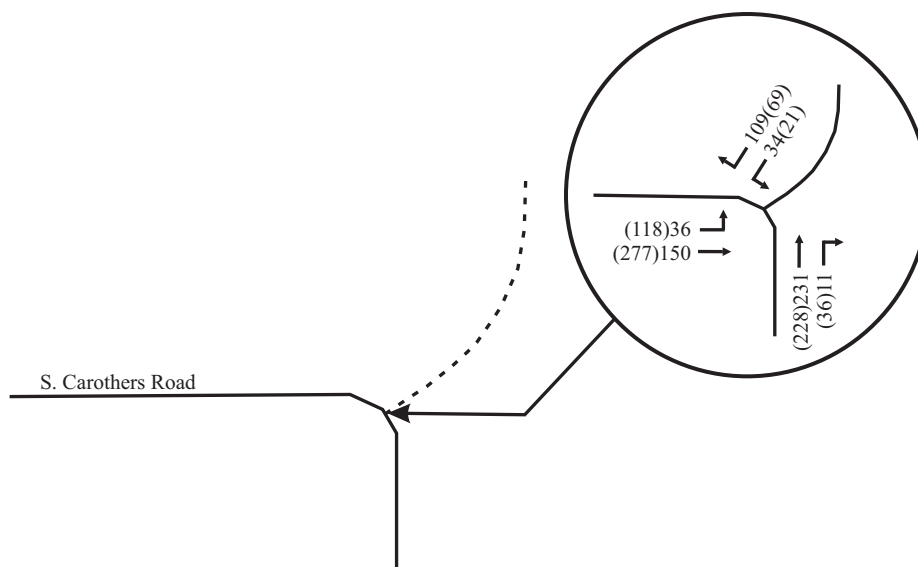
No Scale

Figure 9A.
Peak Hour Traffic Volumes Generated by 100 Future
Single-Family Homes Constructed on S. Carothers Road



No Scale

Figure 9B.
Peak Hour Traffic Volumes Generated by 100 Future
Single-Family Homes Constructed on S. Carothers Road



No Scale

Figure 9C.
Total Peak Hour Traffic Volumes with Ashcroft Valley
and 100 Future Single-Family Homes

5.5 TRAFFIC SIGNAL WARRANT ANALYSES

Based on the total projected conditions with the proposed project, as well as the residential projects that have already been approved for construction, updated traffic signal warrant analyses were conducted for the intersection of Carothers Parkway and S. Carothers Road.

Specifically, for the purposes of this study, it was estimated that the proposed Ashcroft Valley project and the approved residential projects (Simmon's Ridge, Lockwood Glen, Echelon, and Water's Edge) will include a total of 998 single-family homes, 613 townhomes, and 240 apartments, as shown below:

Ashcroft Valley (south) – 306 single-family homes

Simmons Ridge – 421 townhomes

Lockwood Glen – 347 single-family homes, 32 townhomes, and 240 apartments

Water's Edge – 211 single-family homes and 126 townhomes

Echelon – 134 single-family homes and 34 townhomes

Trip generation data for daily and peak hour trips were identified from Trip Generation, Ninth Edition, which was published by the Institute of Transportation Engineers (ITE) in 2012. [Table 10](#) presents the daily and peak hour trip generations for the homes that have been approved for construction on Carothers Parkway and S. Carothers Road.

TABLE 10. TRIP GENERATION (APPROVED AND PROPOSED HOMES)

LAND USE	SIZE	DAILY TRAFFIC	GENERATED TRAFFIC			
			AM PEAK HOUR		PM PEAK HOUR	
			ENTER	EXIT	ENTER	EXIT
Single-Family (LUC 210)	998 homes	9,500	187	561	628	340
Townhomes (LUC 230)	613 homes	3,562	46	224	214	105
Multi-Family (LUC 220)	240 homes	1,596	24	98	97	52
TOTAL	1,851 homes	14,658	257	883	939	527

Based on the daily trip generations shown in [Table 10](#), hourly traffic volumes entering and exiting the project sites were estimated as shown in [Table 11](#).

For the purposes of this study, it was assumed that 70% of the total traffic entering the project sites and 50% of the total traffic exiting the project sites will travel northbound and southbound on Carothers Parkway. Also, it was assumed that 20% of the total traffic exiting the project sites will travel westbound on S. Carothers Road. Based on these assumptions, the hourly traffic volumes on Carothers Parkway and S. Carothers Road were added to the existing traffic volumes in [Table 4](#) in order to establish the projected traffic volumes shown in [Table 12](#).

The results of these updated traffic signal warrant analyses are included in [Table 12](#). These results indicate that the projected traffic volumes will satisfy all of the volume-related signal warrants.

**TABLE 11. HOURLY TRAFFIC VOLUMES
EXPECTED TO BE GENERATED BY APPROVED AND PROPOSED HOMES**

HOURLY	% OF DAILY TRAFFIC	TOTAL TRAFFIC	% ENTER	ENTERING TRAFFIC	% EXIT	EXITING TRAFFIC
12:00 - 1:00 AM	0.5%	73	50%	37	50%	37
1:00 - 2:00 AM	0.5%	73	45%	33	55%	40
2:00 - 3:00 AM	1.0%	147	40%	59	60%	88
3:00 - 4:00 AM	2.0%	293	35%	103	65%	191
4:00 - 5:00 AM	3.0%	440	30%	132	70%	308
5:00 - 6:00 AM	4.0%	586	25%	147	75%	440
6:00 - 7:00 AM	5.0%	733	25%	183	75%	550
7:00 - 8:00 AM	7.8%	1,141	23%	257	77%	883
8:00 - 9:00 AM	6.0%	880	35%	308	65%	572
9:00 - 10:00 AM	5.0%	733	40%	293	60%	440
10:00 - 11:00 AM	5.0%	733	50%	366	50%	366
11:00 - 12:00 N	5.0%	733	50%	366	50%	366
12:00 - 1:00 PM	5.0%	733	50%	366	50%	366
1:00 - 2:00 PM	5.0%	733	50%	366	50%	366
2:00 - 3:00 PM	5.0%	733	50%	366	50%	366
3:00 - 4:00 PM	5.0%	733	55%	403	45%	330
4:00 - 5:00 PM	7.0%	1,026	60%	616	40%	410
5:00 - 6:00 PM	10.0%	1,466	64%	939	36%	527
6:00 - 7:00 PM	8.0%	1,173	70%	821	30%	352
7:00 - 8:00 PM	5.0%	733	80%	586	20%	147
8:00 - 9:00 PM	3.0%	440	80%	352	20%	88
9:00 - 10:00 PM	1.0%	147	75%	110	25%	37
10:00 - 11:00 PM	0.6%	88	70%	62	30%	26
11:00 - 12:00 M	0.6%	88	65%	57	35%	31

TABLE 12. TRAFFIC SIGNAL WARRANT ANALYSIS

HOURL	TOTAL VEHICLES BOTH DIRECTIONS OF CAROTHERS PARKWAY	WESTBOUND VEHICLES ON S. CAROTHERS ROAD	SATISFY FULL WARRANTS?		
			Warrant 1 Condition A	Warrant 1 Condition B	Warrant 2
6:00 - 7:00 AM	636	135	Yes	Yes	---
7:00 - 8:00 AM	1,210	218	Yes	Yes	Yes
8:00 - 9:00 AM	1,053	152	Yes	Yes	Yes
9:00 - 10:00 AM	724	108	Yes	Yes	---
10:00 - 11:00 AM	745	93	Yes	Yes	---
11:00 - 12:00 N	795	95	Yes	Yes	---
12:00 - 1:00 PM	788	103	Yes	Yes	---
1:00 - 2:00 PM	774	85	Yes	Yes	---
2:00 - 3:00 PM	775	92	Yes	Yes	---
3:00 - 4:00 PM	785	84	Yes	Yes	---
4:00 - 5:00 PM	1,132	113	Yes	Yes	Yes
5:00 - 6:00 PM	1,542	119	Yes	Yes	Yes
6:00 - 7:00 PM	1,181	93	Yes	Yes	Yes

6. CONCLUSIONS AND RECOMMENDATIONS

The analyses presented in this study indicate that the following infrastructure improvements should be provided in order to accommodate the existing, background, and total projected traffic volumes with the completion of the proposed project:

In conjunction with the northern portion of the proposed project:

1. At the intersection with Highway 96E, the northbound approach of Ridgeway Drive should be widened to include two northbound turn lanes. Specifically, the existing northbound lane should be retained as left turn lane, and a separate through/right turn lane with at least 75 feet of storage should be constructed to the east.
2. At the intersection with Ridgeway Drive, an eastbound right turn lane should be provided on Highway 96E. This turn lane should include at least 150 feet of storage and should be designed and constructed according to AASHTO standards.

In conjunction with the southern portion of the proposed project:

3. A northbound right turn lane should be provided on Carothers Parkway at the intersection with S. Carothers Road. This turn lane should include at least 100 feet of storage and should be designed and constructed according to AASHTO standards.
4. A traffic signal will likely be warranted at the intersection of Carothers Parkway and S. Carothers Road as all of the approved residential projects on Carothers Parkway and S. Carothers Road are developed. If constructed, this traffic signal should be designed and constructed to include protected and permissive signal phases for southbound motorists, as well as right turn overlap signal phases for northbound and westbound approaches.
5. The western project access on S. Carothers Road should be constructed to include one entering lane and one exiting lane, striped as a shared left and right turn lane.
6. The eastern (main) project access on S. Carothers Road should be constructed to include one entering lane and two exiting lanes, striped as separate left and right turn lanes.

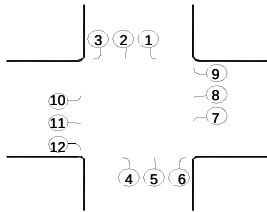
This project access could be constructed by reconstructing the existing 90-degree curve as a conventional three-legged or four-legged intersection. Alternatively, the free-flowing nature of the traffic on S. Carothers Road could be preserved, and the project access could be constructed at the apex of the horizontal curve. Based on comments provided by the City of Franklin Engineering Department, the developer of the proposed project plans to preserve the free-flowing nature of the traffic on S. Carothers Road and construct the project access at the apex of the horizontal curve. In conjunction with this configuration, a southbound/eastbound left turn lane should be provided on S. Carothers Road at the project access. This turn lane should include at least 100 feet of storage and should be designed and constructed according to AASHTO standards.

Finally, in conjunction with the preparation of final construction documents for the proposed project, sight triangles should be provided to identify the sight distances which will be available, based on the specific location of the project access and its design parameters. These sight triangles should be developed based on guidelines that are included in A Policy on Geometric Design of Highways and Streets, which is published by the American Association of State Highway and Transportation Officials (AASHTO) and commonly known as The Green Book. Specifically, The Green Book indicates that for a speed of 40 mph, the minimum stopping sight distance is 305 feet. This is the distance that motorists on S. Carothers Road will need to come to a stop if a vehicle turning from the project access creates a conflict. Also, based on The Green Book, the minimum intersection sight distance is 445 feet. This is the distance that motorists on the project access will need to safely complete a turn onto S. Carothers Road.

In conclusion, implementation of the above recommendations will facilitate safe and efficient traffic operations with the completion of the proposed project. However, it is important to note, that these recommendations may need to be updated if the development plan for the proposed project is modified as it is considered by the City of Franklin Staff, Planning Commission, and Board of Mayor and Aldermen.

**APPENDIX A
EXISTING TRAFFIC COUNTS**

INTERSECTION TRAFFIC VOLUME COUNTS



LOCATION: Highway 96 and Carothers Parkway
DATE: 29-Oct-15 Thu
RECORDER: Burns
NOTES: signalized

LOCATION	S/B Carothers Parkway			N/B Carothers Parkway			W/B Highway 96			E/B Highway 96		
TIME	1	2	3	4	5	6	7	8	9	10	11	12
6:30-6:45	27	4	4	73	25	9	2	364	21	48	75	10
6:45-7:00	21	9	16	107	48	7	4	371	24	43	101	26
7:00-7:15	40	7	25	84	60	5	8	392	21	41	96	39
7:15-7:30	25	8	29	114	83	6	6	394	45	65	105	35
7:30-7:45	35	9	17	116	93	11	12	346	39	65	97	57
7:45-8:00	31	11	21	120	103	5	5	379	39	89	116	70
8:00-8:15	28	15	25	111	100	7	5	316	37	52	93	50
8:15-8:30	27	15	22	98	53	14	6	362	39	56	137	41
4:30-4:45	187	109	53	53	17	11	8	149	25	30	350	81
4:45-5:00	167	146	29	45	14	10	7	152	16	17	337	91
5:00-5:15	158	151	42	64	26	8	5	168	12	28	342	112
5:15-5:30	135	142	27	57	10	7	3	168	11	22	348	98
5:30-5:45	167	124	52	57	14	11	5	154	13	17	344	129
5:45-6:00	143	142	27	72	18	4	8	128	19	29	323	88
6:00-6:15	108	79	25	69	23	7	2	114	11	38	289	96
6:15-6:30	95	54	33	50	20	8	8	137	19	37	296	70
TOTAL	1,394	1,025	447	1,290	707	130	94	4,094	391	677	3,449	1,093
AM PK HR	119	43	92	461	379	29	28	1,435	160	271	411	212
PM PK HR	627	563	150	223	64	36	20	642	52	84	1,371	430

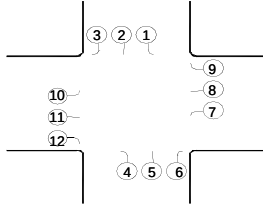
3,172 662
3,407 777
3,619 818
3,640 915
3,595 897
989
839
870
4,248 1,073
4,262 1,031
4,232 1,116
3,977 1,028
3,776 1,087
1,001
861
827

7:15-8:15
4:45-5:45

AM PK PHF	0.85	0.72	0.79	0.96	0.92	0.66	0.58	0.91	0.89	0.76	0.89	0.76
PM PK PHF	0.94	0.93	0.72	0.87	0.62	0.82	0.71	0.96	0.81	0.75	0.98	0.83

0.92
0.95

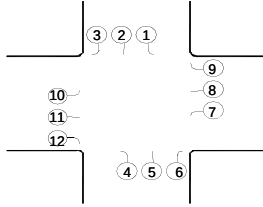
INTERSECTION TRAFFIC VOLUME COUNTS



LOCATION: Murfreesboro Road and Clovercroft Road
DATE: 3-Mar-15 Tue
RECORDER: Burns
NOTES: signalized

LOCATION	S/B Clovercroft Rd			N/B			W/B Murfreesboro Rd			E/B Murfreesboro Rd				
TIME	1	2	3	4	5	6	7	8	9	10	11	12		
7:00-7:15	14		31					560	11	14	88		2,691	718
7:15-7:30	8		34					524	10	16	103		2,523	695
7:30-7:45	1		39					495	14	13	82		2,359	644
7:45-8:00	2		55					445	6	19	107		2,276	634
8:00-8:15	3		37					390	4	12	104		2,210	550
8:15-8:30	3		40					344	6	14	124			531
8:30-8:45	6		35					393	10	17	100			561
8:45-9:00	6		42					361	12	29	118			568
4:00-4:15	10		18					158	5	36	395		3,062	622
4:15-4:30	14		27					179	1	44	539		3,285	804
4:30-4:45	18		24					147	9	34	577		3,319	809
4:45-5:00	23		19					160	13	38	574		3,308	827
5:00-5:15	30		34					119	8	30	624		3,244	845
5:15-5:30	30		33					150	12	30	583			838
5:30-5:45	20		27					150	5	43	553			798
5:45-6:00	16		20					179	5	26	517			763
TOTAL	204		515					4,754	131	415	5,188			
AM PK HR	25		159					2,024	41	62	380		7:00-8:00	
PM PK HR	101		110					576	42	132	2,358		4:30-5:30	
AM PK PHF	0.45		0.72					0.90	0.73	0.82	0.89		0.94	
PM PK PHF	0.84		0.81					0.90	0.81	0.87	0.94		0.98	

INTERSECTION TRAFFIC VOLUME COUNTS



LOCATION: Murfreesboro Road and Cross Creek Drive
DATE: 3-Mar-15 Tue
RECORDER: Burns
NOTES: unsignalized

LOCATION	S/B			N/B Cross Creek Drive			W/B Murfreesboro Rd			E/B Murfreesboro Rd		
TIME	1	2	3	4	5	6	7	8	9	10	11	12
7:00-7:15				9				479			105	3
7:15-7:30				9				541			91	
7:30-7:45				7		1		476			78	2
7:45-8:00				10		1		523			95	2
8:00-8:15				4				423			101	1
8:15-8:30				3				381			88	3
8:30-8:45				3				394			82	2
8:45-9:00				4				410			110	1
4:00-4:15				2				148			450	8
4:15-4:30				5				130			561	6
4:30-4:45				3				146			534	10
4:45-5:00				1				140			576	6
5:00-5:15				6				128			572	6
5:15-5:30				4				139			577	12
5:30-5:45				1				110			545	9
5:45-6:00				1		1	1	90			529	7
TOTAL				72		3	1	4,658			5,094	78
AM PK HR				35		2		2,019			369	7
PM PK HR				14				553			2,259	34

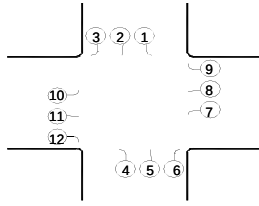
2,432 596
2,365 641
2,199 564
2,116 631
2,010 529
475
481
525
2,726 608
2,830 702
2,860 693
2,832 723
2,738 712
732
665
629

7:00-8:00
4:30-5:30

AM PK PHF				0.88		0.50		0.93			0.88	0.58
PM PK PHF				0.58				0.95			0.98	0.71

0.95
0.98

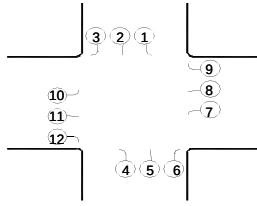
INTERSECTION TRAFFIC VOLUME COUNTS



LOCATION: Murfreesboro Road and Chester Stevens Rd / Ridgeway Dr
DATE: 3-Mar-15 Tue
RECORDER: Burns
NOTES: unsignalized

LOCATION	S/B Chester Stevens Rd			N/B Ridgeway Dr			W/B Murfreesboro Rd			E/B Murfreesboro Rd				
TIME	1	2	3	4	5	6	7	8	9	10	11	12		
7:00-7:15	8		12	3		2		490	1		116		2,465	632
7:15-7:30	1		11	4				476	12	1	107	1	2,333	613
7:30-7:45	1		12	4				486	2	3	91	2	2,204	601
7:45-8:00	1		22	5			2	495	6	4	83	1	2,118	619
8:00-8:15	2		11					384		5	97	1	1,982	500
8:15-8:30	3		20	2		2		351	1	6	99			484
8:30-8:45			11	2			1	402	2	6	90	1		515
8:45-9:00			13	1		1		363	2	7	95	1		483
4:00-4:15	4	1	3	1				130		9	410	1	2,617	559
4:15-4:30			6	1				130	1	9	513	1	2,823	661
4:30-4:45	1		9	1			1	152	4	8	512	2	2,895	690
4:45-5:00	1		6	1				129	1	7	559	3	2,921	707
5:00-5:15			4	2				151	3	9	595	1	2,887	765
5:15-5:30	1		7					135	3	12	573	2		733
5:30-5:45	2		7	3		1	1	119	2	13	567	1		716
5:45-6:00	2		10					135	2	17	507			673
TOTAL	27	1	164	30		6	5	4,528	42	116	5,014	18		
AM PK HR	11		57	16		2	2	1,947	21	8	397	4	7:00-8:00	
PM PK HR	4		24	6		1	1	534	9	41	2,294	7	4:45-5:45	
AM PK PHF	0.34		0.65	0.80		0.25	0.25	0.98	0.44	0.50	0.86	0.50	0.98	
PM PK PHF	0.50		0.86	0.50		0.25	0.25	0.88	0.75	0.79	0.96	0.58	0.95	

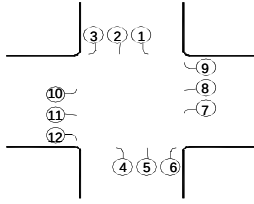
INTERSECTION TRAFFIC VOLUME COUNTS



LOCATION: Murfreesboro Road and Arno Road
DATE: 3-Mar-15 Tue
RECORDER: Burns
NOTES: signalized

LOCATION	S/B			N/B Arno Road			W/B Murfreesboro Rd			E/B Murfreesboro Rd				
TIME	1	2	3	4	5	6	7	8	9	10	11	12		
7:00-7:15				174		12	30	295			47	73	2,444	631
7:15-7:30				164		25	8	340			49	29	2,321	615
7:30-7:45				206		19	4	287			47	33	2,205	596
7:45-8:00				167		15	3	322			65	30	2,096	602
8:00-8:15				163		12	5	221			72	35	2,010	508
8:15-8:30				186		18	12	184			75	24		499
8:30-8:45				177		7	7	202			63	31		487
8:45-9:00				152		3	2	264			65	30		516
4:00-4:15				67		7	6	80			251	204	2,747	615
4:15-4:30				64		10	10	91			267	225	2,920	667
4:30-4:45				50		15	10	86			274	250	3,082	685
4:45-5:00				57		15	18	93			281	316	3,158	780
5:00-5:15				59		5	22	90			289	323	3,077	788
5:15-5:30				74		8	12	96			282	357		829
5:30-5:45				71		3	13	102			273	299		761
5:45-6:00				79		3	13	104			265	235		699
TOTAL				1,910		177	175	2,857			2,665	2,494		
AM PK HR				711		71	45	1,244			208	165	7:00-8:00	
PM PK HR				261		31	65	381			1,125	1,295	4:45-5:45	
AM PK PHF				0.86		0.71	0.38	0.91			0.80	0.57	0.97	
PM PK PHF				0.88		0.52	0.74	0.93			0.97	0.91	0.95	

INTERSECTION TRAFFIC VOLUME COUNTS

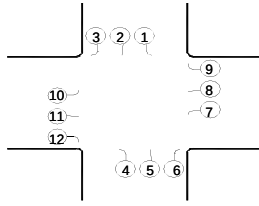


LOCATION: Carothers Parkway and S. Carothers Road
DATE: 2-Feb-16 Tue
RECORDER: Burns
NOTES: unsignalized

LOCATION	S/B Carothers Parkway			N/B Carothers Parkway			W/B S. Carothers Road			E/B				
TIME	1	2	3	4	5	6	7	8	9	10	11	12		
6:30-6:45	2	15			30	1	1		10				361	59
6:45-7:00	5	10			61				7				463	83
7:00-7:15	3	19			70				5				526	97
7:15-7:30	1	22			90	1	1		7				550	122
7:30-7:45	3	22			127	1			8				566	161
7:45-8:00	2	16			118				10					146
8:00-8:15	1	16			98	1			5					121
8:15-8:30		20			105	1			12					138
4:30-4:45	8	74			23	1			3				572	109
4:45-5:00	11	90			39	1			5				610	146
5:00-5:15	7	111			24	1			7				573	150
5:15-5:30	9	118			29	2	3		6				516	167
5:30-5:45	16	101			24	1			5				432	147
5:45-6:00	8	69			30	1			1					109
6:00-6:15	7	65			17	1			3					93
6:15-6:30	9	49			19		1		5					83
TOTAL	92	817			904	13	6		99					
AM PK HR	6	74			448	3			35				7:30-8:30	
PM PK HR	43	420			116	5	3		23				4:45-5:45	

AM PK PHF	0.50	0.84			0.88	0.75			0.73				0.88
PM PK PHF	0.67	0.89			0.74	0.63	0.25		0.82				0.91

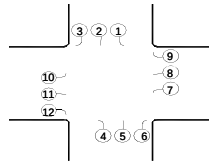
INTERSECTION TRAFFIC VOLUME COUNTS



LOCATION: S. Carothers Road and Swanson Lane
DATE: 2-Feb-16 Tue
RECORDER: Burns
NOTES: unsignalized

LOCATION	S/B S. Carothers Road			N/B S. Carothers Road			W/B			E/B Swanson Lane			
TIME	1	2	3	4	5	6	7	8	9	10	11	12	
6:30-6:45		3	1		1								30
6:45-7:00		8			1								35
7:00-7:15		1	3		2					1			32
7:15-7:30		3		1	4					1			33
7:30-7:45		5			4							1	33
7:45-8:00		2	1		1					2			
8:00-8:15		2	1		4					1			
8:15-8:30					5					4			
4:30-4:45		1	1	1	2					1			27
4:45-5:00		2			1								26
5:00-5:15		1	3		2								26
5:15-5:30		6	1	1	2					1		1	23
5:30-5:45		4	1										14
5:45-6:00		1	1		1								
6:00-6:15			2		1								
6:15-6:30			2							1			
TOTAL		39	17	3	31					12		2	
AM PK HR		17	3	1	11					2		1	6:45-7:45
PM PK HR		10	5	2	7					2		1	4:30-5:30
AM PK PHF		0.53	0.25	0.25	0.69					0.50		0.25	0.88
PM PK PHF		0.42	0.42	0.50	0.88					0.50		0.25	0.56

INTERSECTION TRAFFIC VOLUME COUNTS



LOCATION: Carothers Parkway and S. Carothers Road
 DATE: 23-Aug-16 Tue
 RECORDER: Burns
 NOTES: unsignalized

LOCATION	S/B Carothers Parkway			N/B Carothers Parkway			W/B S. Carothers Road			E/B		
TIME	1	2	3	4	5	6	7	8	9	10	11	12
6:00-6:15	3	23			17				1			
6:15-6:30	2	9			29				7			
6:30-6:45	1	23			45	2	1		8			
6:45-7:00		21			58		1		7			
7:00-7:15		26			87	2			5			
7:15-7:30	4	36			91		1		10			
7:30-7:45	2	29			120				9			
7:45-8:00	3	42			146		1		15			
8:00-8:15	1	24			161	1			7			
8:15-8:30	5	32			98	2			10			
8:30-8:45	3	35			76				8			
8:45-9:00	3	38			72	1			13			
9:00-9:15	1	36			39				1			
9:15-9:30	5	34			44	2			9			
9:30-9:45	1	27			37				5			
9:45-10:00	5	27			41				5			
10:00-10:15	5	28			41				5			
10:15-10:30	5	30			42				5			
10:30-10:45	4	31			42	2			5			
10:45-11:00	4	41			30				5			
11:00-11:15	10	41			42				7			
11:15-11:30	3	42			33				5			
11:30-11:45	8	39			45				5			
11:45-12:00	4	50			37	1	1		4			
12:00-12:15	3	28			50	1			6			
12:15-12:30	4	50			40				7			
12:30-12:45	7	57			32	1			7			
12:45-1:00	7	38			30				10			
1:00-1:15	9	56			33	2			2			
1:15-1:30	4	34			40		1		3			
1:30-1:45	7	39			33		1		1			
1:45-2:00	9	31			36	1			4			
2:00-2:15	8	32			32				7			
2:15-2:30	9	48			35	1			4			
2:30-2:45	9	46			32	1			4			
2:45-3:00	8	45			30	1			4			
3:00-3:15	8	43			27				4			
3:15-3:30	7	41			24				4			
3:30-3:45	12	55			39				7			
3:45-4:00	8	48			27				3			
4:00-4:15	5	57			24	2			9			
4:15-4:30	5	88			31	1			6			
4:30-4:45	11	89			29	2	1		6			
4:45-5:00	15	93			44		2		7			
5:00-5:15	7	112			39				3			
5:15-5:30	11	110			47	2			6			
5:30-5:45	16	99			45	1			2			
5:45-6:00	11	92			29				3			
6:00-6:15	13	89			34	1			7			
6:15-6:30	6	72			36				6			
6:30-6:45	9	44			39				6			
6:45-7:00	8	40			37	2	1		3			
TOTAL	317	2,440			2,447	31	11		302			
AM PK HR	11	127			525	3	1		41			
PM PK HR	49	414			175	3	2		18			

258 44
 334 47
 429 80
 509 87
 629 120
 703 142
 708 160
 670 207
 590 194
 473 147
 420 122
 368 127
 319 77
 321 94
 309 70
 323 78
 325 79
 346 82
 347 84
 360 80
 377 100
 365 83
 383 97
 390 97
 378 88
 392 101
 373 104
 350 85
 346 102
 323 82
 338 81
 349 81
 354 79
 356 97
 335 92
 357 87
 356 81
 372 76
 427 113
 452 86
 527 97
 591 131
 636 138
 661 161
 635 161
 618 176
 562 163
 497 135
 453 144
 120
 98
 91

7:30-8:30
 4:45-5:45

AM PK PHF	0.55	0.76			0.82	0.38	0.25		0.68			
PM PK PHF	0.77	0.92			0.93	0.38	0.25		0.64			

0.86
 0.94

**APPENDIX B
CAPACITY ANALYSES**

EXISTING CONDITIONS

Lanes, Volumes, Timings

1: Carothers Parkway & Murfreesboro Road

7/12/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	271	411	212	28	1435	160	461	379	29	119	43	92
Future Volume (vph)	271	411	212	28	1435	160	461	379	29	119	43	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	2		1	1		0	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	0.91	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850		0.985				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	1770	5009	0	3433	3539	1583	3433	3539	1583
Flt Permitted	0.176			0.493			0.725			0.510		
Satd. Flow (perm)	636	3539	1583	918	5009	0	2620	3539	1583	1843	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			230		50				33			33
Link Speed (mph)		45			45			35			40	
Link Distance (ft)		150			1130			3000			147	
Travel Time (s)		2.3			17.1			58.4			2.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	295	447	230	30	1560	174	501	412	32	129	47	100
Shared Lane Traffic (%)												
Lane Group Flow (vph)	295	447	230	30	1734	0	501	412	32	129	47	100
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Detector Phase	4	4	4	8	8		2	2	2	6	6	6
Switch Phase												

Lanes, Volumes, Timings

1: Carothers Parkway & Murfreesboro Road

7/12/2016



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	27.2	27.2	27.2	27.2	27.2		22.8	22.8	22.8	22.8	22.8	22.8
Total Split (%)	54.4%	54.4%	54.4%	54.4%	54.4%		45.6%	45.6%	45.6%	45.6%	45.6%	45.6%
Maximum Green (s)	22.7	22.7	22.7	22.7	22.7		18.3	18.3	18.3	18.3	18.3	18.3
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0	0	0	0	0
Act Effect Green (s)	22.7	22.7	22.7	22.7	22.7		18.3	18.3	18.3	18.3	18.3	18.3
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.45		0.37	0.37	0.37	0.37	0.37	0.37
v/c Ratio	1.02	0.28	0.27	0.07	0.75		0.52	0.32	0.05	0.19	0.04	0.17
Control Delay	80.8	9.1	2.5	7.0	11.5		14.9	12.2	4.8	11.8	10.3	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.8	9.1	2.5	7.0	11.5		14.9	12.2	4.8	11.8	10.3	8.7
LOS	F	A	A	A	B		B	B	A	B	B	A
Approach Delay		29.3			11.4			13.4			10.4	
Approach LOS		C			B			B			B	
90th %ile Green (s)	22.7	22.7	22.7	22.7	22.7		18.3	18.3	18.3	18.3	18.3	18.3
90th %ile Term Code	Max	Max	Max	Max	Max		Coord	Coord	Coord	Coord	Coord	Coord
70th %ile Green (s)	22.7	22.7	22.7	22.7	22.7		18.3	18.3	18.3	18.3	18.3	18.3
70th %ile Term Code	Max	Max	Max	Max	Max		Coord	Coord	Coord	Coord	Coord	Coord
50th %ile Green (s)	22.7	22.7	22.7	22.7	22.7		18.3	18.3	18.3	18.3	18.3	18.3
50th %ile Term Code	Max	Max	Max	Max	Max		Coord	Coord	Coord	Coord	Coord	Coord
30th %ile Green (s)	22.7	22.7	22.7	22.7	22.7		18.3	18.3	18.3	18.3	18.3	18.3
30th %ile Term Code	Max	Max	Max	Max	Max		Coord	Coord	Coord	Coord	Coord	Coord
10th %ile Green (s)	22.7	22.7	22.7	22.7	22.7		18.3	18.3	18.3	18.3	18.3	18.3
10th %ile Term Code	Max	Max	Max	Hold	Hold		Coord	Coord	Coord	Coord	Coord	Coord
Stops (vph)	198	234	24	13	1053		340	252	9	77	28	44
Fuel Used(gal)	7	4	1	0	29		14	11	1	1	0	1
CO Emissions (g/hr)	502	285	43	28	1995		974	772	51	81	29	48
NOx Emissions (g/hr)	98	55	8	6	388		190	150	10	16	6	9
VOC Emissions (g/hr)	116	66	10	7	462		226	179	12	19	7	11
Dilemma Vehicles (#)	0	41	0	0	148		0	38	0	0	4	0
Queue Length 50th (ft)	~43	40	0	6	185		56	43	0	12	4	13
Queue Length 95th (ft)	#111	64	28	m7	267		93	71	13	27	12	37
Internal Link Dist (ft)		70			1050			2920			67	
Turn Bay Length (ft)												
Base Capacity (vph)	288	1606	844	416	2301		958	1295	600	674	1295	600

Lanes, Volumes, Timings

1: Carothers Parkway & Murfreesboro Road

7/12/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.28	0.27	0.07	0.75		0.52	0.32	0.05	0.19	0.04	0.17

Intersection Summary

Area Type: Other

Cycle Length: 50

Actuated Cycle Length: 50

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection

Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 16.2

Intersection LOS: B

Intersection Capacity Utilization 71.3%

ICU Level of Service C

Analysis Period (min) 15

Description: Hwy 96 and Carothers Pkwy

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

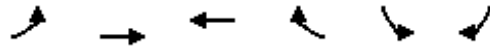
Splits and Phases: 1: Carothers Parkway & Murfreesboro Road

			
Ø2 (R)			Ø4
22.8 s			27.2 s
			
Ø6 (R)			Ø8
22.8 s			27.2 s

Lanes, Volumes, Timings

2: Murfreesboro Road/Murfreesboro Rd & Clovercroft Road

7/12/2016

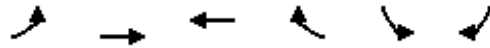


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	62	380	2024	41	25	159
Future Volume (vph)	62	380	2024	41	25	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.997			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3529	0	1770	1583
Flt Permitted	0.054				0.950	
Satd. Flow (perm)	101	3539	3529	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			5			16
Link Speed (mph)		45	45		40	
Link Distance (ft)		1130	160		355	
Travel Time (s)		17.1	2.4		6.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	67	413	2200	45	27	173
Shared Lane Traffic (%)						
Lane Group Flow (vph)	67	413	2245	0	27	173
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Detector Phase	4	4	8		6	6
Switch Phase						

Lanes, Volumes, Timings

2: Murfreesboro Road/Murfreesboro Rd & Clovercroft Road

7/12/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5
Total Split (s)	76.0	76.0	76.0		24.0	24.0
Total Split (%)	76.0%	76.0%	76.0%		24.0%	24.0%
Maximum Green (s)	71.5	71.5	71.5		19.5	19.5
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	None	None		C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effect Green (s)	73.8	73.8	73.8		17.2	17.2
Actuated g/C Ratio	0.74	0.74	0.74		0.17	0.17
v/c Ratio	0.91	0.16	0.86		0.09	0.61
Control Delay	103.6	4.9	14.3		35.2	44.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	103.6	4.9	14.3		35.2	44.3
LOS	F	A	B		D	D
Approach Delay		18.6	14.3		43.1	
Approach LOS		B	B		D	
90th %ile Green (s)	71.5	71.5	71.5		19.5	19.5
90th %ile Term Code	Max	Max	Max		Coord	Coord
70th %ile Green (s)	73.3	73.3	73.3		17.7	17.7
70th %ile Term Code	Max	Max	Max		Coord	Coord
50th %ile Green (s)	75.8	75.8	75.8		15.2	15.2
50th %ile Term Code	Max	Max	Max		Coord	Coord
30th %ile Green (s)	74.8	74.8	74.8		16.2	16.2
30th %ile Term Code	Gap	Gap	Hold		Coord	Coord
10th %ile Green (s)	73.7	73.7	73.7		17.3	17.3
10th %ile Term Code	Hold	Hold	Gap		Coord	Coord
Stops (vph)	43	136	1370		22	131
Fuel Used(gal)	2	5	25		0	3
CO Emissions (g/hr)	161	339	1762		32	217
NOx Emissions (g/hr)	31	66	343		6	42
VOC Emissions (g/hr)	37	79	408		7	50
Dilemma Vehicles (#)	0	6	95		0	0
Queue Length 50th (ft)	24	46	410		15	96
Queue Length 95th (ft)	#131	70	650		38	160
Internal Link Dist (ft)		1050	80		275	
Turn Bay Length (ft)						
Base Capacity (vph)	74	2612	2606		345	321

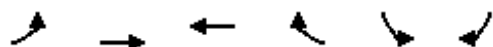
Baseline

Synchro 9 Light Report
Page 5

Lanes, Volumes, Timings

2: Murfreesboro Road/Murfreesboro Rd & Clovercroft Road

7/12/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.91	0.16	0.86		0.08	0.54

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 84 (84%), Referenced to phase 2: and 6:SBL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 17.0

Intersection LOS: B

Intersection Capacity Utilization 74.6%

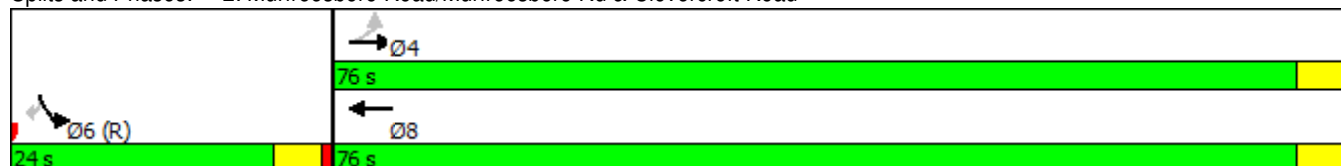
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: Murfreesboro Road/Murfreesboro Rd & Clovercroft Road



Lanes, Volumes, Timings
5: Arno Road & Murfreesboro Rd

7/12/2016

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	↗
Traffic Volume (vph)	224	177	45	1269	711	71
Future Volume (vph)	224	177	45	1269	711	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.934					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3306	0	1770	3539	1770	1583
Flt Permitted			0.459		0.950	
Satd. Flow (perm)	3306	0	855	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	192					77
Link Speed (mph)	45			45	50	
Link Distance (ft)	1550			63	683	
Travel Time (s)	23.5			1.0	9.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	243	192	49	1379	773	77
Shared Lane Traffic (%)						
Lane Group Flow (vph)	435	0	49	1379	773	77
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases			8			2
Detector Phase	4		8	8	2	2
Switch Phase						

Lanes, Volumes, Timings
5: Arno Road & Murfreesboro Rd

7/12/2016

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		22.5	22.5	22.5	22.5
Total Split (s)	47.0		47.0	47.0	53.0	53.0
Total Split (%)	47.0%		47.0%	47.0%	53.0%	53.0%
Maximum Green (s)	42.5		42.5	42.5	48.5	48.5
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0		3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0		0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0	0.0	0.0
Recall Mode	None		None	None	Min	Min
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effect Green (s)	40.4		40.4	40.4	44.1	44.1
Actuated g/C Ratio	0.43		0.43	0.43	0.47	0.47
v/c Ratio	0.28		0.13	0.90	0.93	0.10
Control Delay	10.3		18.7	35.1	42.6	3.7
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	10.3		18.7	35.1	42.6	3.7
LOS	B		B	D	D	A
Approach Delay	10.3			34.6	39.1	
Approach LOS	B			C	D	
90th %ile Green (s)	42.5		42.5	42.5	48.5	48.5
90th %ile Term Code	Hold		Max	Max	Max	Max
70th %ile Green (s)	42.5		42.5	42.5	48.5	48.5
70th %ile Term Code	Hold		Max	Max	Max	Max
50th %ile Green (s)	42.5		42.5	42.5	48.5	48.5
50th %ile Term Code	Hold		Max	Max	Max	Max
30th %ile Green (s)	42.5		42.5	42.5	43.6	43.6
30th %ile Term Code	Hold		Max	Max	Gap	Gap
10th %ile Green (s)	31.9		31.9	31.9	32.1	32.1
10th %ile Term Code	Hold		Gap	Gap	Gap	Gap
Stops (vph)	134		28	1087	602	9
Fuel Used(gal)	7		1	23	18	0
CO Emissions (g/hr)	456		38	1616	1293	35
NOx Emissions (g/hr)	89		7	314	251	7
VOC Emissions (g/hr)	106		9	374	300	8
Dilemma Vehicles (#)	17		0	63	0	0
Queue Length 50th (ft)	49		19	425	434	0
Queue Length 95th (ft)	82		43	#575	#684	24
Internal Link Dist (ft)	1470			1	603	
Turn Bay Length (ft)						
Base Capacity (vph)	1626		394	1631	930	869

Baseline

Synchro 9 Light Report
Page 10

Lanes, Volumes, Timings

5: Arno Road & Murfreesboro Rd

7/12/2016

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.27		0.12	0.85	0.83	0.09

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 93.6

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 32.1

Intersection LOS: C

Intersection Capacity Utilization 82.0%

ICU Level of Service D

Analysis Period (min) 15

90th %ile Actuated Cycle: 100

70th %ile Actuated Cycle: 100

50th %ile Actuated Cycle: 100

30th %ile Actuated Cycle: 95.1

10th %ile Actuated Cycle: 73

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

Splits and Phases: 5: Arno Road & Murfreesboro Rd

↖ Ø2	→ Ø4
53 s	47 s
	↖ Ø8
	47 s

Lanes, Volumes, Timings

1: Carothers Parkway & Murfreesboro Road

7/12/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	1371	430	20	642	52	223	64	36	627	563	150
Future Volume (vph)	84	1371	430	20	642	52	223	64	36	627	563	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	2		1	1		0	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	0.91	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850		0.989				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	1770	5029	0	3433	3539	1583	3433	3539	1583
Flt Permitted	0.346			0.178			0.366			0.709		
Satd. Flow (perm)	1250	3539	1583	332	5029	0	1323	3539	1583	2562	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			123		34				33			141
Link Speed (mph)		45			45			35			40	
Link Distance (ft)		150			1130			3000			147	
Travel Time (s)		2.3			17.1			58.4			2.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	91	1490	467	22	698	57	242	70	39	682	612	163
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	1490	467	22	755	0	242	70	39	682	612	163
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Detector Phase	4	4	4	8	8		2	2	2	6	6	6
Switch Phase												

Lanes, Volumes, Timings

1: Carothers Parkway & Murfreesboro Road

7/12/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	27.0	27.0	27.0	27.0	27.0		23.0	23.0	23.0	23.0	23.0	23.0
Total Split (%)	54.0%	54.0%	54.0%	54.0%	54.0%		46.0%	46.0%	46.0%	46.0%	46.0%	46.0%
Maximum Green (s)	22.5	22.5	22.5	22.5	22.5		18.5	18.5	18.5	18.5	18.5	18.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0	0	0	0	0
Act Effect Green (s)	22.5	22.5	22.5	22.5	22.5		18.5	18.5	18.5	18.5	18.5	18.5
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.45		0.37	0.37	0.37	0.37	0.37	0.37
v/c Ratio	0.16	0.94	0.60	0.15	0.33		0.49	0.05	0.06	0.72	0.47	0.24
Control Delay	9.1	27.0	11.3	7.3	5.8		16.4	10.3	5.4	19.0	13.5	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.1	27.0	11.3	7.3	5.8		16.4	10.3	5.4	19.0	13.5	4.3
LOS	A	C	B	A	A		B	B	A	B	B	A
Approach Delay		22.6			5.8			14.0			15.0	
Approach LOS		C			A			B			B	
90th %ile Green (s)	22.5	22.5	22.5	22.5	22.5		18.5	18.5	18.5	18.5	18.5	18.5
90th %ile Term Code	Max	Max	Max	Hold	Hold		Coord	Coord	Coord	Coord	Coord	Coord
70th %ile Green (s)	22.5	22.5	22.5	22.5	22.5		18.5	18.5	18.5	18.5	18.5	18.5
70th %ile Term Code	Max	Max	Max	Hold	Hold		Coord	Coord	Coord	Coord	Coord	Coord
50th %ile Green (s)	22.5	22.5	22.5	22.5	22.5		18.5	18.5	18.5	18.5	18.5	18.5
50th %ile Term Code	Max	Max	Max	Hold	Hold		Coord	Coord	Coord	Coord	Coord	Coord
30th %ile Green (s)	22.5	22.5	22.5	22.5	22.5		18.5	18.5	18.5	18.5	18.5	18.5
30th %ile Term Code	Max	Max	Max	Hold	Hold		Coord	Coord	Coord	Coord	Coord	Coord
10th %ile Green (s)	22.5	22.5	22.5	22.5	22.5		18.5	18.5	18.5	18.5	18.5	18.5
10th %ile Term Code	Max	Max	Max	Hold	Hold		Coord	Coord	Coord	Coord	Coord	Coord
Stops (vph)	49	1102	234	10	347		167	40	13	506	398	31
Fuel Used(gal)	1	23	4	0	10		7	2	1	8	6	1
CO Emissions (g/hr)	59	1578	302	21	715		478	127	64	560	420	41
NOx Emissions (g/hr)	12	307	59	4	139		93	25	12	109	82	8
VOC Emissions (g/hr)	14	366	70	5	166		111	30	15	130	97	10
Dilemma Vehicles (#)	0	130	0	0	34		0	6	0	0	56	0
Queue Length 50th (ft)	7	202	66	3	46		27	6	1	85	68	4
Queue Length 95th (ft)	18	#346	142	9	49		54	16	15	136	106	33
Internal Link Dist (ft)		70			1050			2920			67	
Turn Bay Length (ft)												
Base Capacity (vph)	562	1592	780	149	2281		489	1309	606	947	1309	674

Lanes, Volumes, Timings

1: Carothers Parkway & Murfreesboro Road

7/12/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.94	0.60	0.15	0.33		0.49	0.05	0.06	0.72	0.47	0.24

Intersection Summary

Area Type: Other

Cycle Length: 50

Actuated Cycle Length: 50

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 16.8

Intersection LOS: B

Intersection Capacity Utilization 71.2%

ICU Level of Service C

Analysis Period (min) 15

Description: Hwy 96 and Carothers Pkwy

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

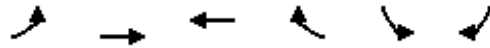
Splits and Phases: 1: Carothers Parkway & Murfreesboro Road

					
Ø2 (R)			Ø4		
23 s			27 s		
					
Ø6 (R)			Ø8		
23 s			27 s		

Lanes, Volumes, Timings

2: Murfreesboro Road/Murfreesboro Rd & Clovercroft Road

7/12/2016

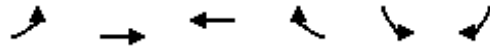


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	132	2434	634	42	101	110
Future Volume (vph)	132	2434	634	42	101	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.991			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3507	0	1770	1583
Flt Permitted	0.367				0.950	
Satd. Flow (perm)	684	3539	3507	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			18			120
Link Speed (mph)		45	45		40	
Link Distance (ft)		1130	160		355	
Travel Time (s)		17.1	2.4		6.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	143	2646	689	46	110	120
Shared Lane Traffic (%)						
Lane Group Flow (vph)	143	2646	735	0	110	120
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Detector Phase	4	4	8		6	6
Switch Phase						

Lanes, Volumes, Timings

2: Murfreesboro Road/Murfreesboro Rd & Clovercroft Road

7/12/2016

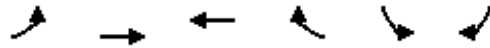


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5
Total Split (s)	77.0	77.0	77.0		23.0	23.0
Total Split (%)	77.0%	77.0%	77.0%		23.0%	23.0%
Maximum Green (s)	72.5	72.5	72.5		18.5	18.5
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	None	None		C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effect Green (s)	79.5	79.5	79.5		11.5	11.5
Actuated g/C Ratio	0.80	0.80	0.80		0.12	0.12
v/c Ratio	0.26	0.94	0.26		0.54	0.42
Control Delay	3.8	16.0	1.8		51.0	11.9
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	3.8	16.0	1.8		51.0	11.9
LOS	A	B	A		D	B
Approach Delay		15.3	1.8		30.6	
Approach LOS		B	A		C	
90th %ile Green (s)	75.0	75.0	75.0		16.0	16.0
90th %ile Term Code	Max	Max	Hold		Coord	Coord
70th %ile Green (s)	77.7	77.7	77.7		13.3	13.3
70th %ile Term Code	Max	Max	Hold		Coord	Coord
50th %ile Green (s)	79.5	79.5	79.5		11.5	11.5
50th %ile Term Code	Max	Max	Hold		Coord	Coord
30th %ile Green (s)	81.3	81.3	81.3		9.7	9.7
30th %ile Term Code	Max	Max	Hold		Coord	Coord
10th %ile Green (s)	84.0	84.0	84.0		7.0	7.0
10th %ile Term Code	Max	Max	Hold		Coord	Coord
Stops (vph)	36	1623	86		92	19
Fuel Used(gal)	2	46	2		2	1
CO Emissions (g/hr)	106	3212	141		153	50
NOx Emissions (g/hr)	21	625	27		30	10
VOC Emissions (g/hr)	25	744	33		36	12
Dilemma Vehicles (#)	0	79	17		0	0
Queue Length 50th (ft)	14	496	26		67	0
Queue Length 95th (ft)	m37	m#1065	m44		117	49
Internal Link Dist (ft)		1050	80		275	
Turn Bay Length (ft)						
Base Capacity (vph)	543	2813	2791		327	390

Lanes, Volumes, Timings

2: Murfreesboro Road/Murfreesboro Rd & Clovercroft Road

7/12/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.26	0.94	0.26		0.34	0.31

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 34 (34%), Referenced to phase 2: and 6:SBL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 13.6

Intersection LOS: B

Intersection Capacity Utilization 80.4%

ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 2: Murfreesboro Road/Murfreesboro Rd & Clovercroft Road



Lanes, Volumes, Timings
5: Arno Road & Murfreesboro Rd

7/12/2016

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	↗
Traffic Volume (vph)	1143	1315	65	381	261	31
Future Volume (vph)	1143	1315	65	381	261	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.920					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3256	0	1770	3539	1770	1583
Flt Permitted			0.055		0.950	
Satd. Flow (perm)	3256	0	102	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	733					34
Link Speed (mph)	45			45	50	
Link Distance (ft)	1550			63	683	
Travel Time (s)	23.5			1.0	9.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	1242	1429	71	414	284	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2671	0	71	414	284	34
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases			8			2
Detector Phase	4		8	8	2	2
Switch Phase						

Lanes, Volumes, Timings
5: Arno Road & Murfreesboro Rd

7/12/2016

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		22.5	22.5	22.5	22.5
Total Split (s)	76.2		76.2	76.2	23.8	23.8
Total Split (%)	76.2%		76.2%	76.2%	23.8%	23.8%
Maximum Green (s)	71.7		71.7	71.7	19.3	19.3
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0		3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0		0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0	0.0	0.0
Recall Mode	None		None	None	C-Min	C-Min
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effect Green (s)	72.5		72.5	72.5	18.5	18.5
Actuated g/C Ratio	0.72		0.72	0.72	0.18	0.18
v/c Ratio	1.04		0.96	0.16	0.87	0.11
Control Delay	30.9		118.8	4.6	66.0	12.3
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	30.9		118.8	4.6	66.0	12.3
LOS	C		F	A	E	B
Approach Delay	30.9			21.3	60.3	
Approach LOS	C			C	E	
90th %ile Green (s)	71.7		71.7	71.7	19.3	19.3
90th %ile Term Code	Max		Max	Max	Coord	Coord
70th %ile Green (s)	71.7		71.7	71.7	19.3	19.3
70th %ile Term Code	Max		Max	Max	Coord	Coord
50th %ile Green (s)	71.7		71.7	71.7	19.3	19.3
50th %ile Term Code	Max		Max	Max	Coord	Coord
30th %ile Green (s)	71.7		71.7	71.7	19.3	19.3
30th %ile Term Code	Max		Max	Max	Coord	Coord
10th %ile Green (s)	75.8		75.8	75.8	15.2	15.2
10th %ile Term Code	Max		Hold	Hold	Coord	Coord
Stops (vph)	1022		41	110	235	9
Fuel Used(gal)	53		2	2	8	0
CO Emissions (g/hr)	3698		147	131	576	24
NOx Emissions (g/hr)	719		29	26	112	5
VOC Emissions (g/hr)	857		34	30	134	6
Dilemma Vehicles (#)	104		0	19	0	0
Queue Length 50th (ft)	~906		36	38	176	0
Queue Length 95th (ft)	m#1020		#90	53	#312	26
Internal Link Dist (ft)	1470			1	603	
Turn Bay Length (ft)						
Base Capacity (vph)	2562		74	2566	341	332

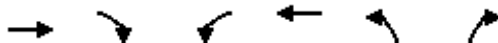
Baseline

Synchro 9 Light Report
Page 10

Lanes, Volumes, Timings

5: Arno Road & Murfreesboro Rd

7/12/2016



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	1.04		0.96	0.16	0.83	0.10

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 64 (64%), Referenced to phase 2:NBL and 6:, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 32.3

Intersection LOS: C

Intersection Capacity Utilization 95.8%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

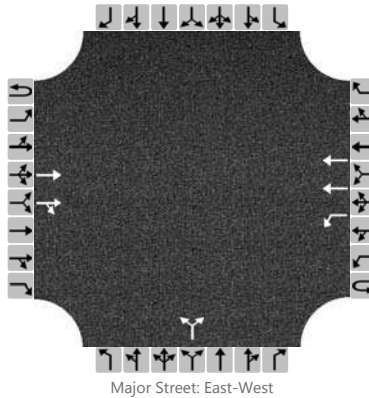
Splits and Phases: 5: Arno Road & Murfreesboro Rd

Ø2 (L)	Ø4
23.8 s	76.2 s
Ø8	
	76.2 s

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Hwy 96E and Cross Creek
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	9/16/2015	East/West Street	Highway 96E
Analysis Year	2015	North/South Street	Cross Creek Drive
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.95
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	10647		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	0	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			398	7		0	2030			35		2				
Percent Heavy Vehicles						0				0		0				
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	1															

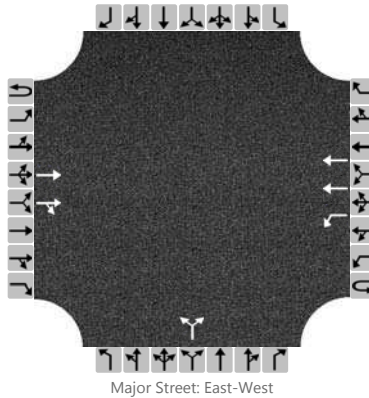
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)											39					
Capacity						1144					194					
v/c Ratio											0.20					
95% Queue Length											0.7					
Control Delay (s/veh)						8.1					28.1					
Level of Service (LOS)						A					D					
Approach Delay (s/veh)									28.1							
Approach LOS									D							

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Hwy 96E and Cross Creek
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	9/16/2015	East/West Street	Highway 96E
Analysis Year	2015	North/South Street	Cross Creek Drive
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.98
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	10647		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	0	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			2501	34		0	662			14		0				
Percent Heavy Vehicles						0				0		0				
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	1															

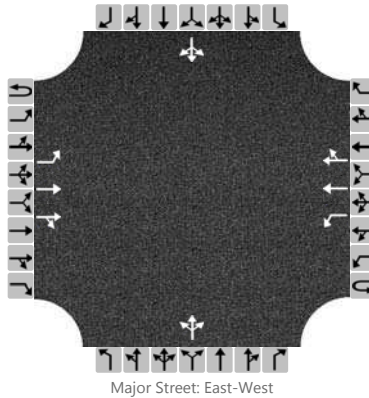
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)											14					
Capacity						171					24					
v/c Ratio											0.58					
95% Queue Length											1.7					
Control Delay (s/veh)						26.0					278.1					
Level of Service (LOS)						D					F					
Approach Delay (s/veh)									278.1							
Approach LOS									F							

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Highway 96E and Ridgeway
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	9/16/2015	East/West Street	Highway 96E
Analysis Year	2015	North/South Street	Chester Stevens/Ridgeway
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.98
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	10647		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		0	1	0		0	1	0
Configuration		L	T	TR		L	T	TR			LTR				LTR	
Volume (veh/h)		8	388	4		2	1957	21		16	0	2		11	0	57
Percent Heavy Vehicles		0				0				0	0	0		0	0	0
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	1															

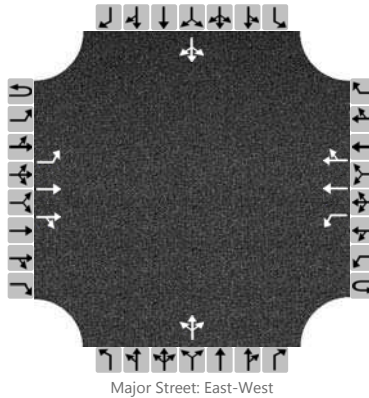
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		8				2					18				69	
Capacity		286				1170					170				157	
v/c Ratio		0.03				0.00					0.11				0.44	
95% Queue Length		0.1				0.0					0.3				2.0	
Control Delay (s/veh)		17.9				8.1					28.7				45.0	
Level of Service (LOS)		C				A					D				E	
Approach Delay (s/veh)	0.4				0.0				28.7				45.0			
Approach LOS	A				A				D				E			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Highway 96E and Ridgeway
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	9/16/2015	East/West Street	Highway 96E
Analysis Year	2015	North/South Street	Chester Stevens/Ridgeway
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.98
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	10647		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		0	1	0		0	1	0
Configuration		L	T	TR		L	T	TR			LTR				LTR	
Volume (veh/h)		41	2453	7		1	632	9		6	0	1		4	0	24
Percent Heavy Vehicles		0				0				0	0	0		0	0	0
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	1															

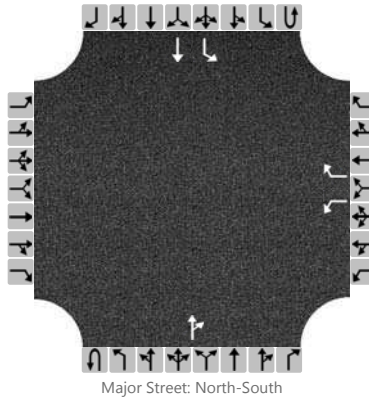
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		42				1					7					28
Capacity		943				184					26					400
v/c Ratio		0.04				0.01					0.27					0.07
95% Queue Length		0.1				0.0					0.8					0.2
Control Delay (s/veh)		9.0				24.7					192.5					14.7
Level of Service (LOS)		A				C					F					B
Approach Delay (s/veh)	0.1				0.0				192.5				14.7			
Approach LOS	A				A				F				B			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Carothers and S. Carother
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	2016	East/West Street	S. Carothers Road
Analysis Year	2016	North/South Street	Carothers Parkway
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.88
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	10647 (Existing)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume (veh/h)						0		35			448	3		6	74	
Percent Heavy Vehicles						0		0						0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

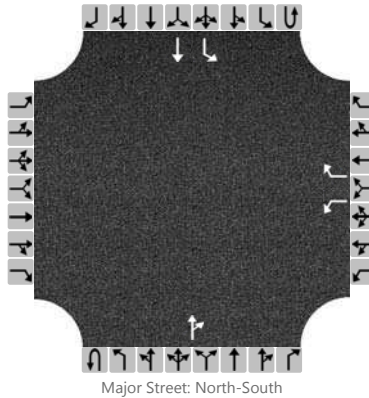
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)							40						7		
Capacity						459	561						1064		
v/c Ratio							0.07						0.01		
95% Queue Length							0.2						0.0		
Control Delay (s/veh)						12.8	11.9						8.4		
Level of Service (LOS)						B	B						A		
Approach Delay (s/veh)					11.9							0.6			
Approach LOS					B							A			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Carothers and S. Carother
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	2016	East/West Street	S. Carothers Road
Analysis Year	2016	North/South Street	Carothers Parkway
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.91
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	10647 (Existing)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume (veh/h)						3		23			116	5		43	420	
Percent Heavy Vehicles						0		0						0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						3		25						47		
Capacity						403		925						1466		
v/c Ratio						0.01		0.03						0.03		
95% Queue Length						0.0		0.1						0.1		
Control Delay (s/veh)						14.0		9.0						7.5		
Level of Service (LOS)						B		A						A		
Approach Delay (s/veh)					9.5								0.7			
Approach LOS					A								A			

BACKGROUND CONDITIONS

Lanes, Volumes, Timings

1: Carothers Parkway & Murfreesboro Road

7/12/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	499	439	158	38	1566	251	470	456	30	150	124	191
Future Volume (vph)	499	439	158	38	1566	251	470	456	30	150	124	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	2		1	1		0	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	0.91	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850		0.979				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	1770	4979	0	3433	3539	1583	3433	3539	1583
Flt Permitted	0.222			0.479			0.666			0.468		
Satd. Flow (perm)	802	3539	1583	892	4979	0	2407	3539	1583	1691	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			172		81				36			36
Link Speed (mph)		45			45			35			40	
Link Distance (ft)		150			1130			3000			147	
Travel Time (s)		2.3			17.1			58.4			2.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	542	477	172	41	1702	273	511	496	33	163	135	208
Shared Lane Traffic (%)												
Lane Group Flow (vph)	542	477	172	41	1975	0	511	496	33	163	135	208
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Detector Phase	4	4	4	8	8		2	2	2	6	6	6
Switch Phase												

Lanes, Volumes, Timings

1: Carothers Parkway & Murfreesboro Road

7/12/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	22.5		22.5	22.5	22.5	22.5	22.5	22.5
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0		18.0	18.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0	0	0	0	0
Act Effct Green (s)	18.0	18.0	18.0	18.0	18.0		18.0	18.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40		0.40	0.40	0.40	0.40	0.40	0.40
v/c Ratio	1.69	0.34	0.23	0.12	0.97		0.53	0.35	0.05	0.24	0.10	0.32
Control Delay	345.0	10.2	2.9	8.6	21.5		12.8	10.3	3.8	10.2	8.7	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	345.0	10.2	2.9	8.6	21.5		12.8	10.3	3.8	10.2	8.7	9.3
LOS	F	B	A	A	C		B	B	A	B	A	A
Approach Delay	161.5				21.2		11.3				9.4	
Approach LOS	F				C		B				A	
90th %ile Green (s)	18.0	18.0	18.0	18.0	18.0		18.0	18.0	18.0	18.0	18.0	18.0
90th %ile Term Code	Max	Max	Max	Max	Max		Coord	Coord	Coord	Coord	Coord	Coord
70th %ile Green (s)	18.0	18.0	18.0	18.0	18.0		18.0	18.0	18.0	18.0	18.0	18.0
70th %ile Term Code	Max	Max	Max	Max	Max		Coord	Coord	Coord	Coord	Coord	Coord
50th %ile Green (s)	18.0	18.0	18.0	18.0	18.0		18.0	18.0	18.0	18.0	18.0	18.0
50th %ile Term Code	Max	Max	Max	Max	Max		Coord	Coord	Coord	Coord	Coord	Coord
30th %ile Green (s)	18.0	18.0	18.0	18.0	18.0		18.0	18.0	18.0	18.0	18.0	18.0
30th %ile Term Code	Max	Max	Max	Max	Max		Coord	Coord	Coord	Coord	Coord	Coord
10th %ile Green (s)	18.0	18.0	18.0	18.0	18.0		18.0	18.0	18.0	18.0	18.0	18.0
10th %ile Term Code	Max	Max	Max	Max	Max		Coord	Coord	Coord	Coord	Coord	Coord
Stops (vph)	418	278	23	25	1497		333	291	9	93	70	103
Fuel Used(gal)	41	5	1	1	40		14	13	1	1	1	2
CO Emissions (g/hr)	2847	335	37	46	2789		972	910	52	96	72	109
NOx Emissions (g/hr)	554	65	7	9	543		189	177	10	19	14	21
VOC Emissions (g/hr)	660	78	9	11	646		225	211	12	22	17	25
Dilemma Vehicles (#)	0	49	0	0	162		0	51	0	0	14	0
Queue Length 50th (ft)	~112	42	0	8	199		48	44	0	13	10	28
Queue Length 95th (ft)	#187	68	26	m9	m#229		83	72	11	29	22	64
Internal Link Dist (ft)	70				1050		2920				67	
Turn Bay Length (ft)												
Base Capacity (vph)	320	1415	736	356	2040		962	1415	654	676	1415	654

Baseline

Synchro 9 Light Report
Page 2

Lanes, Volumes, Timings

1: Carothers Parkway & Murfreesboro Road

7/12/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.69	0.34	0.23	0.12	0.97		0.53	0.35	0.05	0.24	0.10	0.32

Intersection Summary

Area Type: Other

Cycle Length: 45

Actuated Cycle Length: 45

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection

Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.69

Intersection Signal Delay: 53.0

Intersection LOS: D

Intersection Capacity Utilization 82.7%

ICU Level of Service E

Analysis Period (min) 15

Description: Hwy 96 and Carothers Pkwy

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

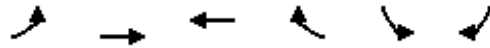
Splits and Phases: 1: Carothers Parkway & Murfreesboro Road

 Ø2 (R)	 Ø4
22.5 s	22.5 s
 Ø6 (R)	 Ø8
22.5 s	22.5 s

Lanes, Volumes, Timings

2: Murfreesboro Road/Murfreesboro Rd & Clovercroft Road

7/12/2016

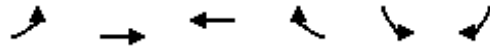


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	68	435	2247	45	28	175
Future Volume (vph)	68	435	2247	45	28	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.997			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3529	0	1770	1583
Flt Permitted	0.061				0.950	
Satd. Flow (perm)	114	3539	3529	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			5			8
Link Speed (mph)		45	45		40	
Link Distance (ft)		1130	160		355	
Travel Time (s)		17.1	2.4		6.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	74	473	2442	49	30	190
Shared Lane Traffic (%)						
Lane Group Flow (vph)	74	473	2491	0	30	190
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Detector Phase	4	4	8		6	6
Switch Phase						

Lanes, Volumes, Timings

2: Murfreesboro Road/Murfreesboro Rd & Clovercroft Road

7/12/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5
Total Split (s)	66.0	66.0	66.0		24.0	24.0
Total Split (%)	73.3%	73.3%	73.3%		26.7%	26.7%
Maximum Green (s)	61.5	61.5	61.5		19.5	19.5
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	None	None		C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effect Green (s)	65.9	65.9	65.9		15.1	15.1
Actuated g/C Ratio	0.73	0.73	0.73		0.17	0.17
v/c Ratio	0.89	0.18	0.96		0.10	0.70
Control Delay	96.9	2.7	13.2		30.5	47.1
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	96.9	2.7	13.2		30.5	47.1
LOS	F	A	B		C	D
Approach Delay		15.4	13.2		44.8	
Approach LOS		B	B		D	
90th %ile Green (s)	61.5	61.5	61.5		19.5	19.5
90th %ile Term Code	Max	Max	Max		Coord	Coord
70th %ile Green (s)	62.9	62.9	62.9		18.1	18.1
70th %ile Term Code	Max	Max	Max		Coord	Coord
50th %ile Green (s)	65.4	65.4	65.4		15.6	15.6
50th %ile Term Code	Max	Max	Max		Coord	Coord
30th %ile Green (s)	68.0	68.0	68.0		13.0	13.0
30th %ile Term Code	Hold	Hold	Max		Coord	Coord
10th %ile Green (s)	71.7	71.7	71.7		9.3	9.3
10th %ile Term Code	Hold	Hold	Max		Coord	Coord
Stops (vph)	49	70	1064		25	154
Fuel Used(gal)	2	4	22		0	4
CO Emissions (g/hr)	171	301	1523		34	253
NOx Emissions (g/hr)	33	58	296		7	49
VOC Emissions (g/hr)	40	70	353		8	59
Dilemma Vehicles (#)	0	17	36		0	0
Queue Length 50th (ft)	33	22	257		14	98
Queue Length 95th (ft)	#132	34	m#811		37	161
Internal Link Dist (ft)		1050	80		275	
Turn Bay Length (ft)						
Base Capacity (vph)	83	2591	2585		383	349

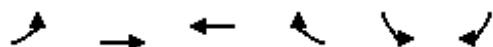
Baseline

Synchro 9 Light Report
Page 5

Lanes, Volumes, Timings

2: Murfreesboro Road/Murfreesboro Rd & Clovercroft Road

7/12/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.89	0.18	0.96		0.08	0.54

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 14 (16%), Referenced to phase 2: and 6:SBL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 15.7

Intersection LOS: B

Intersection Capacity Utilization 81.9%

ICU Level of Service D

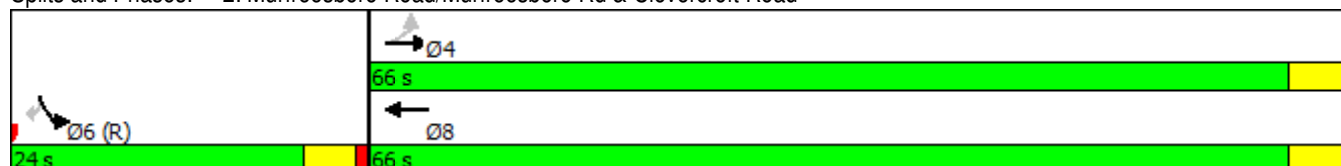
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 2: Murfreesboro Road/Murfreesboro Rd & Clovercroft Road



Lanes, Volumes, Timings
5: Arno Road & Murfreesboro Rd

7/12/2016

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↙	↗
Traffic Volume (vph)	253	196	50	1406	782	78
Future Volume (vph)	253	196	50	1406	782	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.935					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3309	0	1770	3539	1770	1583
Flt Permitted			0.421		0.950	
Satd. Flow (perm)	3309	0	784	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	213					85
Link Speed (mph)	45			45	50	
Link Distance (ft)	1550			63	683	
Travel Time (s)	23.5			1.0	9.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	275	213	54	1528	850	85
Shared Lane Traffic (%)						
Lane Group Flow (vph)	488	0	54	1528	850	85
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases			8			2
Detector Phase	4		8	8	2	2
Switch Phase						

Lanes, Volumes, Timings
5: Arno Road & Murfreesboro Rd

7/12/2016

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		22.5	22.5	22.5	22.5
Total Split (s)	42.2		42.2	42.2	47.8	47.8
Total Split (%)	46.9%		46.9%	46.9%	53.1%	53.1%
Maximum Green (s)	37.7		37.7	37.7	43.3	43.3
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0		3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0		0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0	0.0	0.0
Recall Mode	None		None	None	C-Min	C-Min
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effect Green (s)	37.7		37.7	37.7	43.3	43.3
Actuated g/C Ratio	0.42		0.42	0.42	0.48	0.48
v/c Ratio	0.32		0.16	1.03	1.00	0.11
Control Delay	18.1		18.1	58.9	55.7	3.4
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	18.1		18.1	58.9	55.7	3.4
LOS	B		B	E	E	A
Approach Delay	18.1			57.5	50.9	
Approach LOS	B			E	D	
90th %ile Green (s)	37.7		37.7	37.7	43.3	43.3
90th %ile Term Code	Hold		Max	Max	Coord	Coord
70th %ile Green (s)	37.7		37.7	37.7	43.3	43.3
70th %ile Term Code	Hold		Max	Max	Coord	Coord
50th %ile Green (s)	37.7		37.7	37.7	43.3	43.3
50th %ile Term Code	Hold		Max	Max	Coord	Coord
30th %ile Green (s)	37.7		37.7	37.7	43.3	43.3
30th %ile Term Code	Hold		Max	Max	Coord	Coord
10th %ile Green (s)	37.7		37.7	37.7	43.3	43.3
10th %ile Term Code	Hold		Max	Max	Coord	Coord
Stops (vph)	328		31	1216	654	10
Fuel Used(gal)	10		1	33	22	1
CO Emissions (g/hr)	716		41	2276	1558	38
NOx Emissions (g/hr)	139		8	443	303	7
VOC Emissions (g/hr)	166		10	528	361	9
Dilemma Vehicles (#)	13		0	72	0	0
Queue Length 50th (ft)	58		19	~494	463	0
Queue Length 95th (ft)	101		44	#629	#732	23
Internal Link Dist (ft)	1470			1	603	
Turn Bay Length (ft)						
Base Capacity (vph)	1509		328	1482	851	805

Baseline

Synchro 9 Light Report
Page 10

Lanes, Volumes, Timings

5: Arno Road & Murfreesboro Rd

7/12/2016

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.32		0.16	1.03	1.00	0.11

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 68 (76%), Referenced to phase 2:NBL and 6:, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.03

Intersection Signal Delay: 49.1

Intersection LOS: D

Intersection Capacity Utilization 89.7%

ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Arno Road & Murfreesboro Rd

↖ Ø2 (R)	→ Ø4
47.8 s	42.2 s
	← Ø8
	42.2 s

Lanes, Volumes, Timings

1: Carothers Parkway & Murfreesboro Road

7/12/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	257	1488	326	25	675	163	287	182	67	925	544	463
Future Volume (vph)	257	1488	326	25	675	163	287	182	67	925	544	463
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	2		1	1		0	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	0.91	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850		0.971				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	1770	4938	0	3433	3539	1583	3433	3539	1583
Flt Permitted	0.250			0.077			0.357			0.627		
Satd. Flow (perm)	903	3539	1583	143	4938	0	1290	3539	1583	2266	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			192		70				15			140
Link Speed (mph)		45			45			35			40	
Link Distance (ft)		150			1130			3000			147	
Travel Time (s)		2.3			17.1			58.4			2.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	279	1617	354	27	734	177	312	198	73	1005	591	503
Shared Lane Traffic (%)												
Lane Group Flow (vph)	279	1617	354	27	911	0	312	198	73	1005	591	503
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Detector Phase	4	4	4	8	8		2	2	2	6	6	6
Switch Phase												

Lanes, Volumes, Timings

1: Carothers Parkway & Murfreesboro Road

7/12/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	56.4	56.4	56.4	56.4	56.4		53.6	53.6	53.6	53.6	53.6	53.6
Total Split (%)	51.3%	51.3%	51.3%	51.3%	51.3%		48.7%	48.7%	48.7%	48.7%	48.7%	48.7%
Maximum Green (s)	51.9	51.9	51.9	51.9	51.9		49.1	49.1	49.1	49.1	49.1	49.1
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0	0	0	0	0
Act Effect Green (s)	51.9	51.9	51.9	51.9	51.9		49.1	49.1	49.1	49.1	49.1	49.1
Actuated g/C Ratio	0.47	0.47	0.47	0.47	0.47		0.45	0.45	0.45	0.45	0.45	0.45
v/c Ratio	0.65	0.97	0.42	0.40	0.39		0.54	0.13	0.10	0.99	0.37	0.64
Control Delay	31.2	44.6	9.9	32.0	10.5		26.6	18.2	14.7	58.0	21.1	21.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.2	44.6	9.9	32.0	10.5		26.6	18.2	14.7	58.0	21.1	21.0
LOS	C	D	A	C	B		C	B	B	E	C	C
Approach Delay		37.5			11.1			22.3			38.7	
Approach LOS		D			B			C			D	
90th %ile Green (s)	51.9	51.9	51.9	51.9	51.9		49.1	49.1	49.1	49.1	49.1	49.1
90th %ile Term Code	Max	Max	Max	Max	Max		Coord	Coord	Coord	Coord	Coord	Coord
70th %ile Green (s)	51.9	51.9	51.9	51.9	51.9		49.1	49.1	49.1	49.1	49.1	49.1
70th %ile Term Code	Max	Max	Max	Hold	Hold		Coord	Coord	Coord	Coord	Coord	Coord
50th %ile Green (s)	51.9	51.9	51.9	51.9	51.9		49.1	49.1	49.1	49.1	49.1	49.1
50th %ile Term Code	Max	Max	Max	Hold	Hold		Coord	Coord	Coord	Coord	Coord	Coord
30th %ile Green (s)	51.9	51.9	51.9	51.9	51.9		49.1	49.1	49.1	49.1	49.1	49.1
30th %ile Term Code	Max	Max	Max	Hold	Hold		Coord	Coord	Coord	Coord	Coord	Coord
10th %ile Green (s)	51.9	51.9	51.9	51.9	51.9		49.1	49.1	49.1	49.1	49.1	49.1
10th %ile Term Code	Max	Max	Max	Hold	Hold		Coord	Coord	Coord	Coord	Coord	Coord
Stops (vph)	199	1302	96	15	301		206	102	29	801	348	266
Fuel Used(gal)	4	31	2	1	12		9	5	2	20	6	5
CO Emissions (g/hr)	305	2178	151	37	816		652	376	131	1378	440	353
NOx Emissions (g/hr)	59	424	29	7	159		127	73	25	268	86	69
VOC Emissions (g/hr)	71	505	35	9	189		151	87	30	319	102	82
Dilemma Vehicles (#)	0	65	0	0	44		0	8	0	0	25	0
Queue Length 50th (ft)	75	566	65	8	83		80	42	23	355	142	194
Queue Length 95th (ft)	129	#745	137	#30	80		126	65	51	#506	186	313
Internal Link Dist (ft)		70			1050			2920			67	
Turn Bay Length (ft)												
Base Capacity (vph)	426	1669	848	67	2366		575	1579	714	1011	1579	784

Lanes, Volumes, Timings

1: Carothers Parkway & Murfreesboro Road

7/12/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.97	0.42	0.40	0.39		0.54	0.13	0.10	0.99	0.37	0.64

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 32.2

Intersection LOS: C

Intersection Capacity Utilization 91.7%

ICU Level of Service F

Analysis Period (min) 15

Description: Hwy 96 and Carothers Pkwy

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

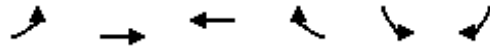
Splits and Phases: 1: Carothers Parkway & Murfreesboro Road

 Ø2 (R)	 Ø4
53.6 s	56.4 s
 Ø6 (R)	 Ø8
53.6 s	56.4 s

Lanes, Volumes, Timings

2: Murfreesboro Road/Murfreesboro Rd & Clovercroft Road

7/12/2016

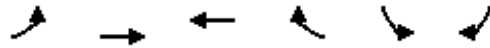


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	145	2709	719	46	111	121
Future Volume (vph)	145	2709	719	46	111	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.991			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3507	0	1770	1583
Flt Permitted	0.329				0.950	
Satd. Flow (perm)	613	3539	3507	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			17			132
Link Speed (mph)		45	45		40	
Link Distance (ft)		1130	160		355	
Travel Time (s)		17.1	2.4		6.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	158	2945	782	50	121	132
Shared Lane Traffic (%)						
Lane Group Flow (vph)	158	2945	832	0	121	132
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Detector Phase	4	4	8		6	6
Switch Phase						

Lanes, Volumes, Timings

2: Murfreesboro Road/Murfreesboro Rd & Clovercroft Road

7/12/2016

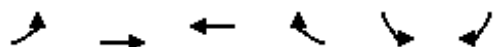


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5
Total Split (s)	87.4	87.4	87.4		22.6	22.6
Total Split (%)	79.5%	79.5%	79.5%		20.5%	20.5%
Maximum Green (s)	82.9	82.9	82.9		18.1	18.1
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	None	None		C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effect Green (s)	88.2	88.2	88.2		12.8	12.8
Actuated g/C Ratio	0.80	0.80	0.80		0.12	0.12
v/c Ratio	0.32	1.04	0.30		0.59	0.44
Control Delay	3.5	33.3	1.9		57.1	12.1
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	3.5	33.3	1.9		57.1	12.1
LOS	A	C	A		E	B
Approach Delay		31.7	1.9		33.6	
Approach LOS		C	A		C	
90th %ile Green (s)	83.3	83.3	83.3		17.7	17.7
90th %ile Term Code	Max	Max	Hold		Coord	Coord
70th %ile Green (s)	86.2	86.2	86.2		14.8	14.8
70th %ile Term Code	Max	Max	Hold		Coord	Coord
50th %ile Green (s)	88.2	88.2	88.2		12.8	12.8
50th %ile Term Code	Max	Max	Hold		Coord	Coord
30th %ile Green (s)	90.2	90.2	90.2		10.8	10.8
30th %ile Term Code	Max	Max	Hold		Coord	Coord
10th %ile Green (s)	93.1	93.1	93.1		7.9	7.9
10th %ile Term Code	Max	Max	Hold		Coord	Coord
Stops (vph)	29	1224	100		102	19
Fuel Used(gal)	2	53	2		3	1
CO Emissions (g/hr)	107	3735	164		179	54
NOx Emissions (g/hr)	21	727	32		35	11
VOC Emissions (g/hr)	25	866	38		41	13
Dilemma Vehicles (#)	0	69	17		0	0
Queue Length 50th (ft)	17	~1186	34		82	0
Queue Length 95th (ft)	m27	m#1303	m50		137	53
Internal Link Dist (ft)		1050	80		275	
Turn Bay Length (ft)						
Base Capacity (vph)	491	2837	2815		291	370

Lanes, Volumes, Timings

2: Murfreesboro Road/Murfreesboro Rd & Clovercroft Road

7/12/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.32	1.04	0.30		0.42	0.36

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 16 (15%), Referenced to phase 2: and 6:SBL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 25.9

Intersection LOS: C

Intersection Capacity Utilization 88.5%

ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

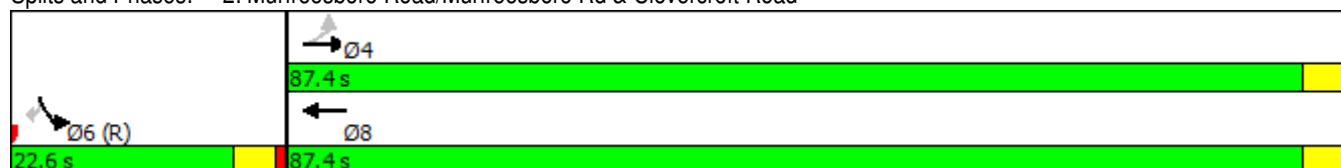
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 2: Murfreesboro Road/Murfreesboro Rd & Clovercroft Road



Lanes, Volumes, Timings
5: Arno Road & Murfreesboro Rd

7/12/2016

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	↗
Traffic Volume (vph)	1275	1446	72	426	288	34
Future Volume (vph)	1275	1446	72	426	288	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.920					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3256	0	1770	3539	1770	1583
Flt Permitted			0.048		0.950	
Satd. Flow (perm)	3256	0	89	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	743					37
Link Speed (mph)	45			45	50	
Link Distance (ft)	1550			63	683	
Travel Time (s)	23.5			1.0	9.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	1386	1572	78	463	313	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2958	0	78	463	313	37
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases			8			2
Detector Phase	4		8	8	2	2
Switch Phase						

Lanes, Volumes, Timings
5: Arno Road & Murfreesboro Rd

7/12/2016

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		22.5	22.5	22.5	22.5
Total Split (s)	87.0		87.0	87.0	23.0	23.0
Total Split (%)	79.1%		79.1%	79.1%	20.9%	20.9%
Maximum Green (s)	82.5		82.5	82.5	18.5	18.5
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0		3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0		0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0	0.0	0.0
Recall Mode	None		None	None	C-Min	C-Min
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effect Green (s)	82.5		82.5	82.5	18.5	18.5
Actuated g/C Ratio	0.75		0.75	0.75	0.17	0.17
v/c Ratio	1.13		1.18	0.17	1.05	0.12
Control Delay	68.2		191.5	4.1	111.9	13.6
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	68.2		191.5	4.1	111.9	13.6
LOS	E		F	A	F	B
Approach Delay	68.2			31.1	101.5	
Approach LOS	E			C	F	
90th %ile Green (s)	82.5		82.5	82.5	18.5	18.5
90th %ile Term Code	Max		Max	Max	Coord	Coord
70th %ile Green (s)	82.5		82.5	82.5	18.5	18.5
70th %ile Term Code	Max		Max	Max	Coord	Coord
50th %ile Green (s)	82.5		82.5	82.5	18.5	18.5
50th %ile Term Code	Max		Max	Max	Coord	Coord
30th %ile Green (s)	82.5		82.5	82.5	18.5	18.5
30th %ile Term Code	Max		Max	Max	Coord	Coord
10th %ile Green (s)	82.5		82.5	82.5	18.5	18.5
10th %ile Term Code	Max		Max	Max	Coord	Coord
Stops (vph)	627		42	111	244	10
Fuel Used(gal)	73		3	2	12	0
CO Emissions (g/hr)	5099		235	134	808	28
NOx Emissions (g/hr)	992		46	26	157	5
VOC Emissions (g/hr)	1182		54	31	187	6
Dilemma Vehicles (#)	136		0	19	0	0
Queue Length 50th (ft)	~1215		~66	42	~242	0
Queue Length 95th (ft)	m#1137		#118	56	#416	29
Internal Link Dist (ft)	1470			1	603	
Turn Bay Length (ft)						
Base Capacity (vph)	2627		66	2654	297	297

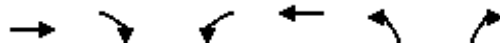
Baseline

Synchro 9 Light Report
Page 10

Lanes, Volumes, Timings

5: Arno Road & Murfreesboro Rd

7/12/2016



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	1.13		1.18	0.17	1.05	0.12

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 28 (25%), Referenced to phase 2:NBL and 6:, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.18

Intersection Signal Delay: 66.0

Intersection LOS: E

Intersection Capacity Utilization 105.2%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

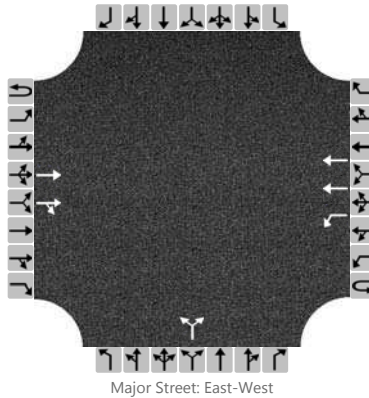
Splits and Phases: 5: Arno Road & Murfreesboro Rd

 Ø2 (L)	 Ø4
23 s	87 s
	 Ø8
	87 s

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Hwy 96E and Cross Creek
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	July 2016	East/West Street	Highway 96E
Analysis Year	2015	North/South Street	Cross Creek Drive
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.95
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	10647 (Background)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	0	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			455	8		0	2253			39		2				
Percent Heavy Vehicles						0				0		0				
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	1															

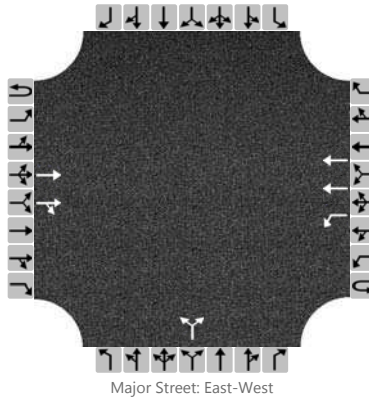
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)											43					
Capacity						1087					163					
v/c Ratio											0.26					
95% Queue Length											1.0					
Control Delay (s/veh)						8.3					34.8					
Level of Service (LOS)						A					D					
Approach Delay (s/veh)									34.8							
Approach LOS									D							

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Hwy 96E and Cross Creek
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	July 2016	East/West Street	Highway 96E
Analysis Year	2015	North/South Street	Cross Creek Drive
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.98
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	10647 (Background)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	0	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			2783	37		0	750			15		0				
Percent Heavy Vehicles						0				0		0				
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	1															

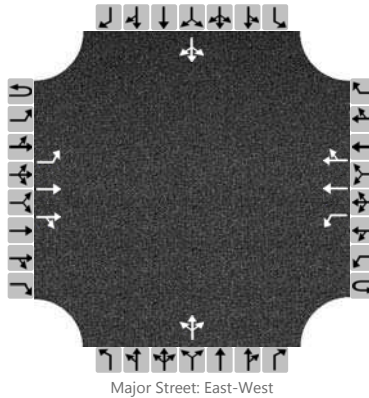
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)											15					
Capacity						131					16					
v/c Ratio											0.96					
95% Queue Length											2.3					
Control Delay (s/veh)						32.4					539.1					
Level of Service (LOS)						D					F					
Approach Delay (s/veh)									539.1							
Approach LOS									F							

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Highway 96E and Ridgeway
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	July 2016	East/West Street	Highway 96E
Analysis Year	2015	North/South Street	Chester Stevens/Ridgeway
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.98
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	10647 (Background		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		0	1	0		0	1	0
Configuration		L	T	TR		L	T	TR			LTR				LTR	
Volume (veh/h)		9	441	7		3	2164	23		27	0	4		12	0	62
Percent Heavy Vehicles		0				0				0	0	0		0	0	0
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	1															

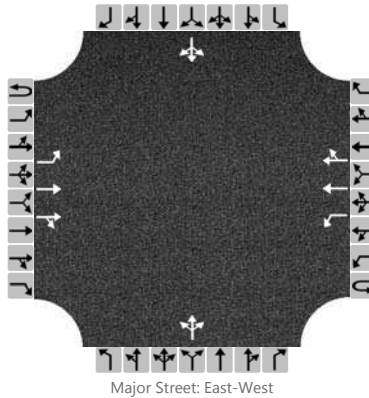
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		9				3					32				75	
Capacity		236				1115					134				124	
v/c Ratio		0.04				0.00					0.24				0.61	
95% Queue Length		0.1				0.0					0.9				3.1	
Control Delay (s/veh)		20.8				8.2					40.2				71.2	
Level of Service (LOS)		C				A					E				F	
Approach Delay (s/veh)	0.4				0.0				40.2				71.2			
Approach LOS	A				A				E				F			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Highway 96E and Ridgeway
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	July 2016	East/West Street	Highway 96E
Analysis Year	2015	North/South Street	Chester Stevens/Ridgeway
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.98
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	10647 (Background)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		0	1	0		0	1	0
Configuration		L	T	TR		L	T	TR			LTR				LTR	
Volume (veh/h)		45	2720	18		3	711	10		13	0	2		4	0	26
Percent Heavy Vehicles		0				0				0	0	0		0	0	0
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	1															

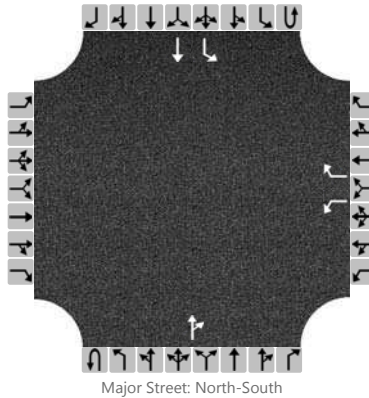
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		46				3					15				31	
Capacity		879				142					16				360	
v/c Ratio		0.05				0.02					0.91				0.09	
95% Queue Length		0.2				0.1					2.3				0.3	
Control Delay (s/veh)		9.3				31.0					506.7				16.0	
Level of Service (LOS)		A				D					F				C	
Approach Delay (s/veh)	0.2				0.1				506.7				16.0			
Approach LOS	A				A				F				C			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Carothers and S. Carother
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	2016	East/West Street	S. Carothers Road
Analysis Year	2016	North/South Street	Carothers Parkway
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.88
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	10647 (Background)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume (veh/h)						37		146			665	30		97	322	
Percent Heavy Vehicles						0		0						0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

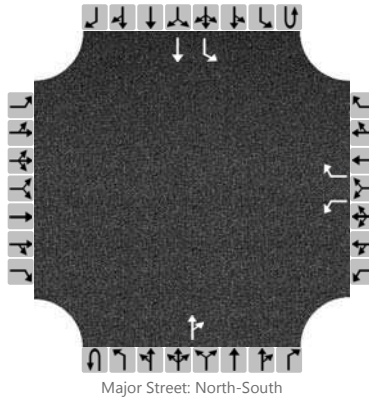
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						42		166						110		
Capacity						144		397						839		
v/c Ratio						0.29		0.42						0.13		
95% Queue Length						1.1		2.0						0.5		
Control Delay (s/veh)						40.0		20.4						9.9		
Level of Service (LOS)						E		C						A		
Approach Delay (s/veh)					24.4								2.3			
Approach LOS					C								A			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Carothers and S. Carother
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	2016	East/West Street	S. Carothers Road
Analysis Year	2016	North/South Street	Carothers Parkway
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.91
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	10647 (Background)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume (veh/h)						58		132			454	63		159	649	
Percent Heavy Vehicles						0		0						0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						64		145						175		
Capacity						98		550						1014		
v/c Ratio						0.65		0.26						0.17		
95% Queue Length						3.2		1.1						0.6		
Control Delay (s/veh)						93.3		13.9						9.3		
Level of Service (LOS)						F		B						A		
Approach Delay (s/veh)						38.2								1.8		
Approach LOS						E								A		

TOTAL PROJECTED CONDITIONS

Lanes, Volumes, Timings

1: Carothers Parkway & Murfreesboro Road

9/1/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	499	446	183	41	1588	260	546	498	38	153	138	191
Future Volume (vph)	499	446	183	41	1588	260	546	498	38	153	138	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	2		1	1		0	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	0.91	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850		0.979				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	1770	4979	0	3433	3539	1583	3433	3539	1583
Flt Permitted	0.222			0.476			0.657			0.436		
Satd. Flow (perm)	802	3539	1583	887	4979	0	2374	3539	1583	1576	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			199		83				41			36
Link Speed (mph)		45			45			35			40	
Link Distance (ft)		150			1130			3000			147	
Travel Time (s)		2.3			17.1			58.4			2.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	542	485	199	45	1726	283	593	541	41	166	150	208
Shared Lane Traffic (%)												
Lane Group Flow (vph)	542	485	199	45	2009	0	593	541	41	166	150	208
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Detector Phase	4	4	4	8	8		2	2	2	6	6	6
Switch Phase												

Baseline

Synchro 9 Light Report
Page 1

Lanes, Volumes, Timings
1: Carothers Parkway & Murfreesboro Road

9/1/2016



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	22.5		22.5	22.5	22.5	22.5	22.5	22.5
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0		18.0	18.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0	0	0	0	0
Act Effct Green (s)	18.0	18.0	18.0	18.0	18.0		18.0	18.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40		0.40	0.40	0.40	0.40	0.40	0.40
v/c Ratio	1.69	0.34	0.26	0.13	0.98		0.62	0.38	0.06	0.26	0.11	0.32
Control Delay	345.0	10.3	2.9	8.7	23.6		14.4	10.6	3.8	10.5	8.8	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	345.0	10.3	2.9	8.7	23.6		14.4	10.6	3.8	10.5	8.8	9.3
LOS	F	B	A	A	C		B	B	A	B	A	A
Approach Delay	157.0				23.2		12.3				9.5	
Approach LOS	F				C		B				A	
90th %ile Green (s)	18.0	18.0	18.0	18.0	18.0		18.0	18.0	18.0	18.0	18.0	18.0
90th %ile Term Code	Max	Max	Max	Max	Max		Coord	Coord	Coord	Coord	Coord	Coord
70th %ile Green (s)	18.0	18.0	18.0	18.0	18.0		18.0	18.0	18.0	18.0	18.0	18.0
70th %ile Term Code	Max	Max	Max	Max	Max		Coord	Coord	Coord	Coord	Coord	Coord
50th %ile Green (s)	18.0	18.0	18.0	18.0	18.0		18.0	18.0	18.0	18.0	18.0	18.0
50th %ile Term Code	Max	Max	Max	Max	Max		Coord	Coord	Coord	Coord	Coord	Coord
30th %ile Green (s)	18.0	18.0	18.0	18.0	18.0		18.0	18.0	18.0	18.0	18.0	18.0
30th %ile Term Code	Max	Max	Max	Max	Max		Coord	Coord	Coord	Coord	Coord	Coord
10th %ile Green (s)	18.0	18.0	18.0	18.0	18.0		18.0	18.0	18.0	18.0	18.0	18.0
10th %ile Term Code	Max	Max	Max	Max	Max		Coord	Coord	Coord	Coord	Coord	Coord
Stops (vph)	418	283	25	26	1520		409	322	10	96	79	103
Fuel Used(gal)	41	5	1	1	41		17	14	1	1	1	2
CO Emissions (g/hr)	2847	341	42	49	2889		1153	998	65	99	81	109
NOx Emissions (g/hr)	554	66	8	9	562		224	194	13	19	16	21
VOC Emissions (g/hr)	660	79	10	11	669		267	231	15	23	19	25
Dilemma Vehicles (#)	0	49	0	0	161		0	55	0	0	15	0
Queue Length 50th (ft)	~112	43	0	9	203		59	48	0	13	12	28
Queue Length 95th (ft)	#187	70	27	m10	m#234		100	78	12	30	24	64
Internal Link Dist (ft)	70				1050		2920				67	
Turn Bay Length (ft)												
Base Capacity (vph)	320	1415	752	354	2041		949	1415	657	630	1415	654

Baseline

Synchro 9 Light Report
Page 2

Lanes, Volumes, Timings

1: Carothers Parkway & Murfreesboro Road

9/1/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.69	0.34	0.26	0.13	0.98		0.62	0.38	0.06	0.26	0.11	0.32

Intersection Summary

Area Type: Other

Cycle Length: 45

Actuated Cycle Length: 45

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection

Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.69

Intersection Signal Delay: 52.1

Intersection LOS: D

Intersection Capacity Utilization 85.5%

ICU Level of Service E

Analysis Period (min) 15

Description: Hwy 96 and Carothers Pkwy

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

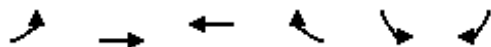
Splits and Phases: 1: Carothers Parkway & Murfreesboro Road

			
Ø2 (R)			Ø4
22.5 s			22.5 s
			
Ø6 (R)			Ø8
22.5 s			22.5 s

Lanes, Volumes, Timings

2: Murfreesboro Road/Murfreesboro Rd & Clovercroft Road

9/1/2016

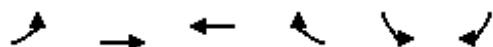


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	68	453	2281	47	29	175
Future Volume (vph)	68	453	2281	47	29	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.997			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3529	0	1770	1583
Flt Permitted	0.061				0.950	
Satd. Flow (perm)	114	3539	3529	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			5			8
Link Speed (mph)		45	45		40	
Link Distance (ft)		1130	160		355	
Travel Time (s)		17.1	2.4		6.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	74	492	2479	51	32	190
Shared Lane Traffic (%)						
Lane Group Flow (vph)	74	492	2530	0	32	190
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Detector Phase	4	4	8		6	6
Switch Phase						

Lanes, Volumes, Timings

2: Murfreesboro Road/Murfreesboro Rd & Clovercroft Road

9/1/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5
Total Split (s)	67.0	67.0	67.0		23.0	23.0
Total Split (%)	74.4%	74.4%	74.4%		25.6%	25.6%
Maximum Green (s)	62.5	62.5	62.5		18.5	18.5
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	None	None		C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effect Green (s)	66.1	66.1	66.1		14.9	14.9
Actuated g/C Ratio	0.73	0.73	0.73		0.17	0.17
v/c Ratio	0.89	0.19	0.98		0.11	0.71
Control Delay	95.3	2.7	14.9		31.0	48.1
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	95.3	2.7	14.9		31.0	48.1
LOS	F	A	B		C	D
Approach Delay		14.8	14.9		45.7	
Approach LOS		B	B		D	
90th %ile Green (s)	62.5	62.5	62.5		18.5	18.5
90th %ile Term Code	Max	Max	Max		Coord	Coord
70th %ile Green (s)	62.9	62.9	62.9		18.1	18.1
70th %ile Term Code	Max	Max	Max		Coord	Coord
50th %ile Green (s)	65.4	65.4	65.4		15.6	15.6
50th %ile Term Code	Max	Max	Max		Coord	Coord
30th %ile Green (s)	68.0	68.0	68.0		13.0	13.0
30th %ile Term Code	Hold	Hold	Max		Coord	Coord
10th %ile Green (s)	71.7	71.7	71.7		9.3	9.3
10th %ile Term Code	Hold	Hold	Max		Coord	Coord
Stops (vph)	49	72	1070		24	155
Fuel Used(gal)	2	4	23		0	4
CO Emissions (g/hr)	170	312	1593		34	256
NOx Emissions (g/hr)	33	61	310		7	50
VOC Emissions (g/hr)	39	72	369		8	59
Dilemma Vehicles (#)	0	18	38		0	0
Queue Length 50th (ft)	33	23	268		15	98
Queue Length 95th (ft)	#131	35	m#823		39	163
Internal Link Dist (ft)		1050	80		275	
Turn Bay Length (ft)						
Base Capacity (vph)	83	2599	2593		363	331

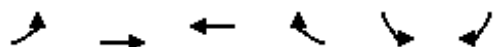
Baseline

Synchro 9 Light Report
Page 5

Lanes, Volumes, Timings

2: Murfreesboro Road/Murfreesboro Rd & Clovercroft Road

9/1/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.89	0.19	0.98		0.09	0.57

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 14 (16%), Referenced to phase 2: and 6:SBL, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 16.9

Intersection LOS: B

Intersection Capacity Utilization 82.9%

ICU Level of Service E

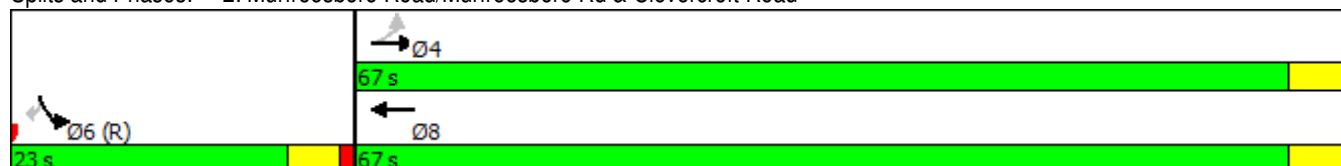
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 2: Murfreesboro Road/Murfreesboro Rd & Clovercroft Road



Lanes, Volumes, Timings
5: Arno Road & Murfreesboro Rd

9/1/2016

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	↗
Traffic Volume (vph)	268	200	50	1411	784	78
Future Volume (vph)	268	200	50	1411	784	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.936					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3313	0	1770	3539	1770	1583
Flt Permitted			0.408		0.950	
Satd. Flow (perm)	3313	0	760	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	217					84
Link Speed (mph)	45			45	50	
Link Distance (ft)	1550			63	683	
Travel Time (s)	23.5			1.0	9.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	291	217	54	1534	852	85
Shared Lane Traffic (%)						
Lane Group Flow (vph)	508	0	54	1534	852	85
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases			8			2
Detector Phase	4		8	8	2	2
Switch Phase						

Lanes, Volumes, Timings
5: Arno Road & Murfreesboro Rd

9/1/2016

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		22.5	22.5	22.5	22.5
Total Split (s)	42.3		42.3	42.3	47.7	47.7
Total Split (%)	47.0%		47.0%	47.0%	53.0%	53.0%
Maximum Green (s)	37.8		37.8	37.8	43.2	43.2
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0		3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0		0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0	0.0	0.0
Recall Mode	None		None	None	C-Min	C-Min
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effect Green (s)	37.8		37.8	37.8	43.2	43.2
Actuated g/C Ratio	0.42		0.42	0.42	0.48	0.48
v/c Ratio	0.33		0.17	1.03	1.00	0.11
Control Delay	18.1		18.2	59.2	56.9	3.5
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	18.1		18.2	59.2	56.9	3.5
LOS	B		B	E	E	A
Approach Delay	18.1			57.8	52.1	
Approach LOS	B			E	D	
90th %ile Green (s)	37.8		37.8	37.8	43.2	43.2
90th %ile Term Code	Hold		Max	Max	Coord	Coord
70th %ile Green (s)	37.8		37.8	37.8	43.2	43.2
70th %ile Term Code	Hold		Max	Max	Coord	Coord
50th %ile Green (s)	37.8		37.8	37.8	43.2	43.2
50th %ile Term Code	Hold		Max	Max	Coord	Coord
30th %ile Green (s)	37.8		37.8	37.8	43.2	43.2
30th %ile Term Code	Hold		Max	Max	Coord	Coord
10th %ile Green (s)	37.8		37.8	37.8	43.2	43.2
10th %ile Term Code	Hold		Max	Max	Coord	Coord
Stops (vph)	366		31	1220	655	10
Fuel Used(gal)	11		1	33	23	1
CO Emissions (g/hr)	767		41	2290	1575	38
NOx Emissions (g/hr)	149		8	446	306	7
VOC Emissions (g/hr)	178		10	531	365	9
Dilemma Vehicles (#)	13		0	73	0	0
Queue Length 50th (ft)	61		19	~497	~468	0
Queue Length 95th (ft)	102		44	#631	#735	24
Internal Link Dist (ft)	1470			1	603	
Turn Bay Length (ft)						
Base Capacity (vph)	1517		319	1486	849	803

Baseline

Synchro 9 Light Report
Page 10

Lanes, Volumes, Timings

5: Arno Road & Murfreesboro Rd

9/1/2016

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.33		0.17	1.03	1.00	0.11

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 68 (76%), Referenced to phase 2:NBL and 6:, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.03

Intersection Signal Delay: 49.4

Intersection LOS: D

Intersection Capacity Utilization 89.9%

ICU Level of Service E

Analysis Period (min) 15

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

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

Splits and Phases: 5: Arno Road & Murfreesboro Rd

↖ Ø2 (R)	→ Ø4
47.7 s	42.3 s
	↖ Ø8
	42.3 s

Lanes, Volumes, Timings

1: Carothers Parkway & Murfreesboro Road

9/1/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	257	1512	408	34	689	169	335	209	72	935	589	463
Future Volume (vph)	257	1512	408	34	689	169	335	209	72	935	589	463
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	2		1	1		0	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	0.91	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850		0.970				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	1770	4933	0	3433	3539	1583	3433	3539	1583
Flt Permitted	0.239			0.055			0.324			0.599		
Satd. Flow (perm)	864	3539	1583	102	4933	0	1171	3539	1583	2165	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			173		54				11			142
Link Speed (mph)		45			45			35			40	
Link Distance (ft)		150			1130			3000			147	
Travel Time (s)		2.3			17.1			58.4			2.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	279	1643	443	37	749	184	364	227	78	1016	640	503
Shared Lane Traffic (%)												
Lane Group Flow (vph)	279	1643	443	37	933	0	364	227	78	1016	640	503
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Detector Phase	4	4	4	8	8		2	2	2	6	6	6
Switch Phase												

Baseline

Synchro 9 Light Report
Page 1

Lanes, Volumes, Timings

1: Carothers Parkway & Murfreesboro Road

9/1/2016



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	77.0	77.0	77.0	77.0	77.0		73.0	73.0	73.0	73.0	73.0	73.0
Total Split (%)	51.3%	51.3%	51.3%	51.3%	51.3%		48.7%	48.7%	48.7%	48.7%	48.7%	48.7%
Maximum Green (s)	72.5	72.5	72.5	72.5	72.5		68.5	68.5	68.5	68.5	68.5	68.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0	0	0	0	0
Act Effect Green (s)	72.5	72.5	72.5	72.5	72.5		68.5	68.5	68.5	68.5	68.5	68.5
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.48		0.46	0.46	0.46	0.46	0.46	0.46
v/c Ratio	0.67	0.96	0.52	0.76	0.39		0.68	0.14	0.11	1.03	0.40	0.63
Control Delay	39.2	51.7	17.8	95.9	14.3		40.1	24.0	20.4	75.9	28.0	25.6
Queue Delay	0.0	5.5	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.2	57.2	17.8	95.9	14.3		40.1	24.0	20.4	75.9	28.0	25.6
LOS	D	E	B	F	B		D	C	C	E	C	C
Approach Delay		47.7			17.4			32.3			50.0	
Approach LOS		D			B			C			D	
90th %ile Green (s)	72.5	72.5	72.5	72.5	72.5		68.5	68.5	68.5	68.5	68.5	68.5
90th %ile Term Code	Max	Max	Max	Max	Max		Coord	Coord	Coord	Coord	Coord	Coord
70th %ile Green (s)	72.5	72.5	72.5	72.5	72.5		68.5	68.5	68.5	68.5	68.5	68.5
70th %ile Term Code	Max	Max	Max	Max	Max		Coord	Coord	Coord	Coord	Coord	Coord
50th %ile Green (s)	72.5	72.5	72.5	72.5	72.5		68.5	68.5	68.5	68.5	68.5	68.5
50th %ile Term Code	Max	Max	Max	Max	Max		Coord	Coord	Coord	Coord	Coord	Coord
30th %ile Green (s)	72.5	72.5	72.5	72.5	72.5		68.5	68.5	68.5	68.5	68.5	68.5
30th %ile Term Code	Max	Max	Max	Hold	Hold		Coord	Coord	Coord	Coord	Coord	Coord
10th %ile Green (s)	72.5	72.5	72.5	72.5	72.5		68.5	68.5	68.5	68.5	68.5	68.5
10th %ile Term Code	Max	Max	Max	Hold	Hold		Coord	Coord	Coord	Coord	Coord	Coord
Stops (vph)	199	1351	173	25	326		263	117	34	822	379	260
Fuel Used(gal)	5	34	4	1	13		12	6	2	23	8	5
CO Emissions (g/hr)	334	2390	282	86	898		837	449	148	1640	536	380
NOx Emissions (g/hr)	65	465	55	17	175		163	87	29	319	104	74
VOC Emissions (g/hr)	77	554	65	20	208		194	104	34	380	124	88
Dilemma Vehicles (#)	0	49	0	0	18		0	7	0	0	20	0
Queue Length 50th (ft)	105	802	176	17	124		142	66	37	~545	215	269
Queue Length 95th (ft)	168	#980	278	#108	156		209	94	70	#681	267	397
Internal Link Dist (ft)		70			1050			2920			67	
Turn Bay Length (ft)												
Base Capacity (vph)	417	1710	854	49	2412		534	1616	728	988	1616	800

Baseline

Synchro 9 Light Report
Page 2

Lanes, Volumes, Timings

1: Carothers Parkway & Murfreesboro Road

9/1/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	61	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.67	1.00	0.52	0.76	0.39		0.68	0.14	0.11	1.03	0.40	0.63

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.03

Intersection Signal Delay: 42.1

Intersection LOS: D

Intersection Capacity Utilization 93.4%

ICU Level of Service F

Analysis Period (min) 15

Description: Hwy 96 and Carothers Pkwy

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

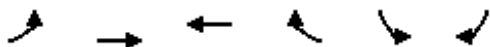
Splits and Phases: 1: Carothers Parkway & Murfreesboro Road

 Ø2 (R)	 Ø4
73 s	77 s
 Ø6 (R)	 Ø8
73 s	77 s

Lanes, Volumes, Timings

2: Murfreesboro Road/Murfreesboro Rd & Clovercroft Road

9/1/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	145	2748	748	47	113	121
Future Volume (vph)	145	2748	748	47	113	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.991			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3507	0	1770	1583
Flt Permitted	0.318				0.950	
Satd. Flow (perm)	592	3539	3507	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			17			132
Link Speed (mph)		45	45		40	
Link Distance (ft)		1130	160		355	
Travel Time (s)		17.1	2.4		6.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	158	2987	813	51	123	132
Shared Lane Traffic (%)						
Lane Group Flow (vph)	158	2987	864	0	123	132
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Detector Phase	4	4	8		6	6
Switch Phase						

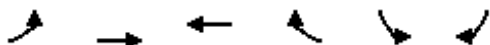
Baseline

Synchro 9 Light Report
Page 4

Lanes, Volumes, Timings

2: Murfreesboro Road/Murfreesboro Rd & Clovercroft Road

9/1/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5
Total Split (s)	127.0	127.0	127.0		23.0	23.0
Total Split (%)	84.7%	84.7%	84.7%		15.3%	15.3%
Maximum Green (s)	122.5	122.5	122.5		18.5	18.5
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	None	None		C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effect Green (s)	125.9	125.9	125.9		15.1	15.1
Actuated g/C Ratio	0.84	0.84	0.84		0.10	0.10
v/c Ratio	0.32	1.01	0.29		0.69	0.48
Control Delay	3.1	21.9	1.8		84.7	15.0
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	3.1	21.9	1.8		84.7	15.0
LOS	A	C	A		F	B
Approach Delay		21.0	1.8		48.6	
Approach LOS		C	A		D	
90th %ile Green (s)	122.5	122.5	122.5		18.5	18.5
90th %ile Term Code	Max	Max	Hold		Coord	Coord
70th %ile Green (s)	122.9	122.9	122.9		18.1	18.1
70th %ile Term Code	Max	Max	Hold		Coord	Coord
50th %ile Green (s)	125.3	125.3	125.3		15.7	15.7
50th %ile Term Code	Max	Max	Hold		Coord	Coord
30th %ile Green (s)	127.7	127.7	127.7		13.3	13.3
30th %ile Term Code	Max	Max	Hold		Coord	Coord
10th %ile Green (s)	131.1	131.1	131.1		9.9	9.9
10th %ile Term Code	Max	Max	Hold		Coord	Coord
Stops (vph)	25	1176	87		108	17
Fuel Used(gal)	1	47	2		3	1
CO Emissions (g/hr)	103	3289	153		229	58
NOx Emissions (g/hr)	20	640	30		45	11
VOC Emissions (g/hr)	24	762	36		53	13
Dilemma Vehicles (#)	0	52	14		0	0
Queue Length 50th (ft)	20	~1627	43		118	0
Queue Length 95th (ft)	m28	m#1681	m55		187	65
Internal Link Dist (ft)		1050	80		275	
Turn Bay Length (ft)						
Base Capacity (vph)	496	2970	2946		218	310

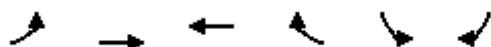
Baseline

Synchro 9 Light Report
Page 5

Lanes, Volumes, Timings

2: Murfreesboro Road/Murfreesboro Rd & Clovercroft Road

9/1/2016



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.32	1.01	0.29		0.56	0.43

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 16 (11%), Referenced to phase 2: and 6:SBL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 18.7

Intersection LOS: B

Intersection Capacity Utilization 89.7%

ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

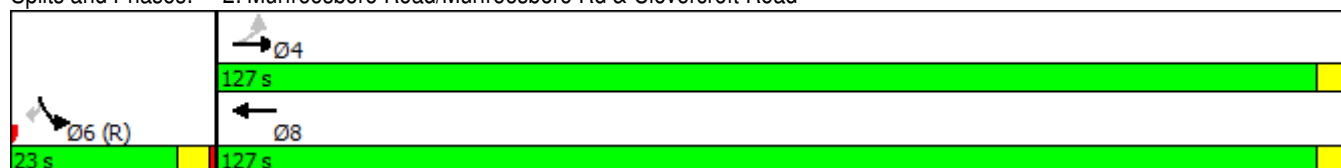
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 2: Murfreesboro Road/Murfreesboro Rd & Clovercroft Road



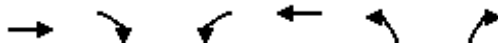
Lanes, Volumes, Timings
5: Arno Road & Murfreesboro Rd

9/1/2016

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	 			 		
Traffic Volume (vph)	1284	1449	72	442	293	34
Future Volume (vph)	1284	1449	72	442	293	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.920					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3256	0	1770	3539	1770	1583
Flt Permitted			0.035		0.950	
Satd. Flow (perm)	3256	0	65	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	589					37
Link Speed (mph)	45			45	50	
Link Distance (ft)	1550			63	683	
Travel Time (s)	23.5			1.0	9.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	1396	1575	78	480	318	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2971	0	78	480	318	37
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases			8			2
Detector Phase	4		8	8	2	2
Switch Phase						

Lanes, Volumes, Timings
5: Arno Road & Murfreesboro Rd

9/1/2016



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		22.5	22.5	22.5	22.5
Total Split (s)	120.0		120.0	120.0	30.0	30.0
Total Split (%)	80.0%		80.0%	80.0%	20.0%	20.0%
Maximum Green (s)	115.5		115.5	115.5	25.5	25.5
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0		3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0		0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0	0.0	0.0
Recall Mode	None		None	None	C-Min	C-Min
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effect Green (s)	115.5		115.5	115.5	25.5	25.5
Actuated g/C Ratio	0.77		0.77	0.77	0.17	0.17
v/c Ratio	1.15dr		1.56	0.18	1.06	0.12
Control Delay	67.4		351.2	4.8	126.4	16.1
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	67.4		351.2	4.8	126.4	16.1
LOS	E		F	A	F	B
Approach Delay	67.4			53.2	114.9	
Approach LOS	E			D	F	
90th %ile Green (s)	115.5		115.5	115.5	25.5	25.5
90th %ile Term Code	Max		Max	Max	Coord	Coord
70th %ile Green (s)	115.5		115.5	115.5	25.5	25.5
70th %ile Term Code	Max		Max	Max	Coord	Coord
50th %ile Green (s)	115.5		115.5	115.5	25.5	25.5
50th %ile Term Code	Max		Max	Max	Coord	Coord
30th %ile Green (s)	115.5		115.5	115.5	25.5	25.5
30th %ile Term Code	Max		Max	Max	Coord	Coord
10th %ile Green (s)	115.5		115.5	115.5	25.5	25.5
10th %ile Term Code	Max		Max	Max	Coord	Coord
Stops (vph)	1618		42	108	252	8
Fuel Used(gal)	85		6	2	13	0
CO Emissions (g/hr)	5951		398	136	886	27
NOx Emissions (g/hr)	1158		78	27	172	5
VOC Emissions (g/hr)	1379		92	32	205	6
Dilemma Vehicles (#)	46		0	15	0	0
Queue Length 50th (ft)	~1686		~58	57	~340	0
Queue Length 95th (ft)	m#1671		#173	74	#539	34
Internal Link Dist (ft)	1470			1	603	
Turn Bay Length (ft)						
Base Capacity (vph)	2642		50	2725	300	299

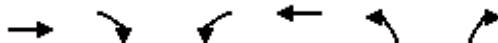
Baseline

Synchro 9 Light Report
Page 10

Lanes, Volumes, Timings

5: Arno Road & Murfreesboro Rd

9/1/2016



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	1.12		1.56	0.18	1.06	0.12

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 48 (32%), Referenced to phase 2:NBL and 6:, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.56

Intersection Signal Delay: 69.7

Intersection LOS: E

Intersection Capacity Utilization 105.8%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

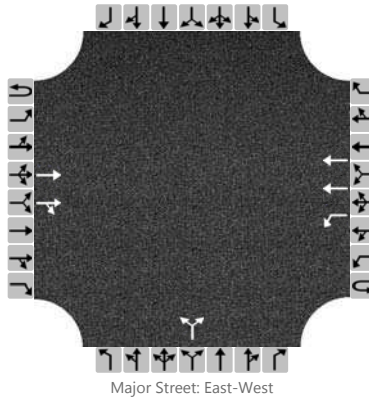
Splits and Phases: 5: Arno Road & Murfreesboro Rd

 Ø2 (R)	 Ø4
30 s	120 s
	 Ø8
	120 s

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Hwy 96E and Cross Creek
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Aug 2016	East/West Street	Highway 96E
Analysis Year	2015	North/South Street	Cross Creek Drive
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.95
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	10647 (Total)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	0	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			474	8		0	2289			39		2				
Percent Heavy Vehicles						0				0		0				
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	1															

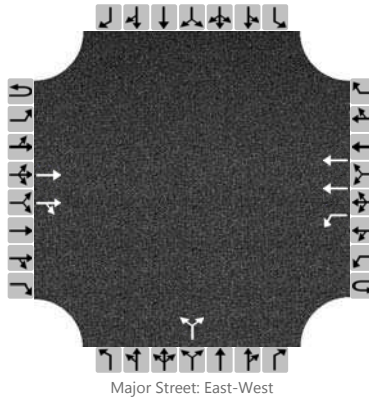
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)											43					
Capacity						1068					158					
v/c Ratio											0.27					
95% Queue Length											1.0					
Control Delay (s/veh)						8.4					36.1					
Level of Service (LOS)						A					E					
Approach Delay (s/veh)									36.1							
Approach LOS									E							

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Hwy 96E and Cross Creek
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Aug 2016	East/West Street	Highway 96E
Analysis Year	2015	North/South Street	Cross Creek Drive
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.98
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	10647 (Total)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	0	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			2824	37		0	780			15		0				
Percent Heavy Vehicles						0				0		0				
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	1															

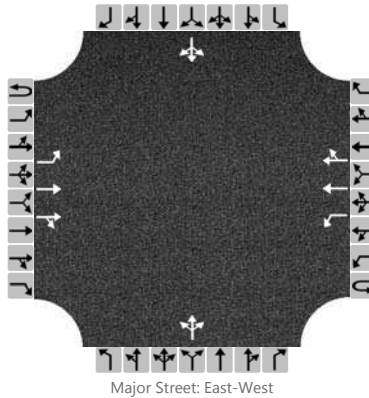
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)											15					
Capacity						126					15					
v/c Ratio											1.02					
95% Queue Length											2.4					
Control Delay (s/veh)						33.5					588.8					
Level of Service (LOS)						D					F					
Approach Delay (s/veh)									588.8							
Approach LOS									F							

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Highway 96E and Ridgeway
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Aug 2016	East/West Street	Highway 96E
Analysis Year	2015	North/South Street	Chester Stevens/Ridgeway
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.98
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	10647 (Total)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		0	1	0		0	1	0
Configuration		L	T	TR		L	T	TR			LTR				LTR	
Volume (veh/h)		9	449	18		7	2167	23		60	0	15		12	0	62
Percent Heavy Vehicles		0				0				0	0	0		0	0	0
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	1															

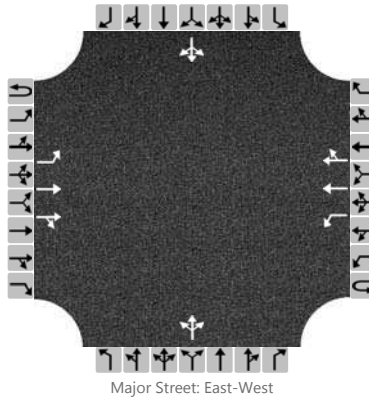
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		9				7					76				75	
Capacity		236				1097					141				122	
v/c Ratio		0.04				0.01					0.54				0.61	
95% Queue Length		0.1				0.0					2.7				3.1	
Control Delay (s/veh)		20.9				8.3					57.3				72.6	
Level of Service (LOS)		C				A					F				F	
Approach Delay (s/veh)	0.4				0.0				57.3				72.6			
Approach LOS	A				A				F				F			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Highway 96E and Ridgeway
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Aug 2016	East/West Street	Highway 96E
Analysis Year	2015	North/South Street	Chester Stevens/Ridgeway
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.98
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	10647 (Total)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		0	1	0		0	1	0
Configuration		L	T	TR		L	T	TR			LTR				LTR	
Volume (veh/h)		45	2725	54		15	720	10		34	0	9		4	0	26
Percent Heavy Vehicles		0				0				0	0	0		0	0	0
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	1															

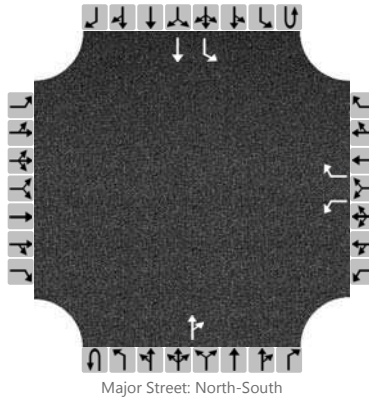
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		46				15					44				31	
Capacity		872				136					17				328	
v/c Ratio		0.05				0.11					2.59				0.09	
95% Queue Length		0.2				0.4					6.1				0.3	
Control Delay (s/veh)		9.4				34.6					1186.2				17.1	
Level of Service (LOS)		A				D					F				C	
Approach Delay (s/veh)	0.1				0.7				1186.2				17.1			
Approach LOS	A				A				F				C			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Carothers and S. Carother
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Aug 2016	East/West Street	S. Carothers Road
Analysis Year	2016	North/South Street	Carothers Parkway
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.88
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	10647 (Total)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume (veh/h)						37		272			665	30		139	322	
Percent Heavy Vehicles						0		0						0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

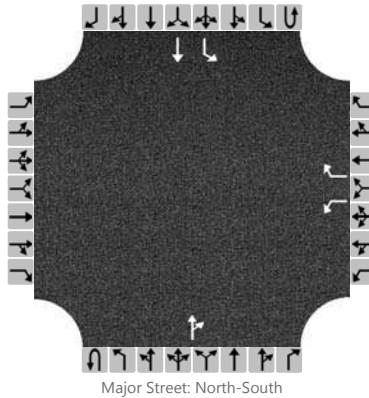
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						42		309						158		
Capacity						117		397						839		
v/c Ratio						0.36		0.78						0.19		
95% Queue Length						1.4		6.6						0.7		
Control Delay (s/veh)						51.8		39.4						10.3		
Level of Service (LOS)						F		E						B		
Approach Delay (s/veh)					40.9								3.1			
Approach LOS					E								A			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	Carothers and S. Carother
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Aug 2016	East/West Street	S. Carothers Road
Analysis Year	2016	North/South Street	Carothers Parkway
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.91
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	10647 (Total)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume (veh/h)						58		212			454	63		295	649	
Percent Heavy Vehicles						0		0						0		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

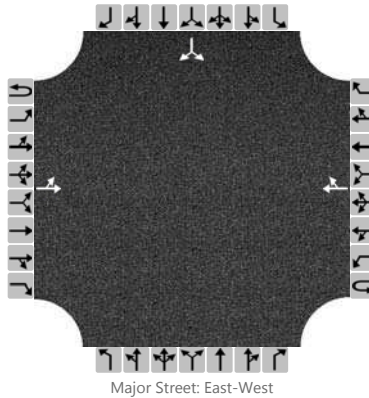
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						64		233						324		
Capacity						53		550						1014		
v/c Ratio						1.21		0.42						0.32		
95% Queue Length						5.6		2.1						1.4		
Control Delay (s/veh)						318.9		16.3						10.2		
Level of Service (LOS)						F		C						B		
Approach Delay (s/veh)					81.5								3.2			
Approach LOS					F								A			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	S. Carothers and Project
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Aug 2016	East/West Street	S. Carothers Road
Analysis Year	2016	North/South Street	Western Project Access
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.80
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	10647 (Total)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume (veh/h)		6	163				292	3						8		17
Percent Heavy Vehicles		0												0		0
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

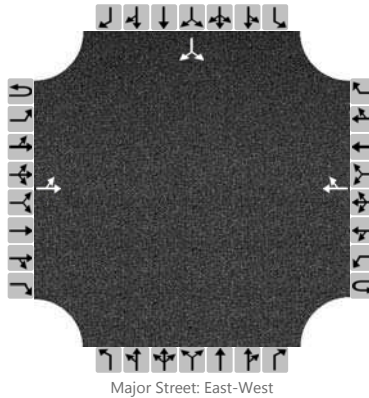
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		212													31	
Capacity		1201													569	
v/c Ratio		0.18													0.05	
95% Queue Length		0.0													0.2	
Control Delay (s/veh)		8.0													11.7	
Level of Service (LOS)		A													B	
Approach Delay (s/veh)	0.4												11.7			
Approach LOS	A												B			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	S. Carothers and Project
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Aug 2016	East/West Street	S. Carothers Road
Analysis Year	2016	North/South Street	Western Project Access
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.80
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	10647 (Total)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume (veh/h)		18	340				259	9						5		11
Percent Heavy Vehicles		0												0		0
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

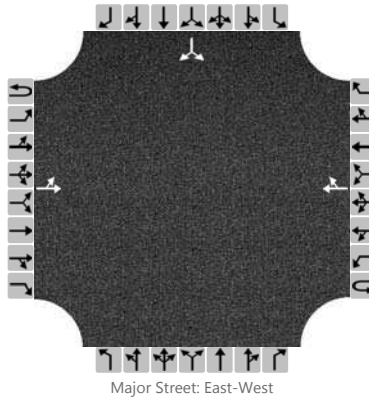
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		447													20	
Capacity		1236													507	
v/c Ratio		0.36													0.04	
95% Queue Length		0.1													0.1	
Control Delay (s/veh)		8.0													12.4	
Level of Service (LOS)		A													B	
Approach Delay (s/veh)	0.6												12.4			
Approach LOS	A												B			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	S. Carothers and Project
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Aug 2016	East/West Street	S. Carothers Road
Analysis Year	2016	North/South Street	Main Project Access
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.80
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	10647 (Total)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume (veh/h)		36	135				186	11						34		109
Percent Heavy Vehicles		0												0		0
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

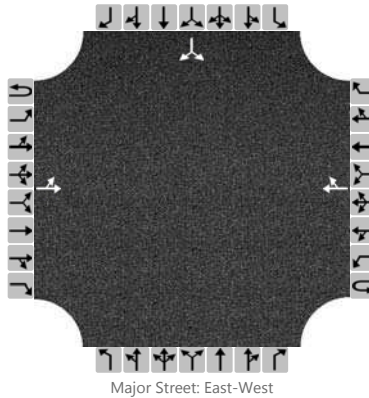
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		214													178	
Capacity		1332													690	
v/c Ratio		0.16													0.26	
95% Queue Length		0.1													1.0	
Control Delay (s/veh)		7.8													12.0	
Level of Service (LOS)		A													B	
Approach Delay (s/veh)	1.9												12.0			
Approach LOS	A												B			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	S. Carothers and Project
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Aug 2016	East/West Street	S. Carothers Road
Analysis Year	2016	North/South Street	Main Project Access
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.80
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	10647 (Total)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume (veh/h)		118	227				199	36						21		69
Percent Heavy Vehicles		0												0		0
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

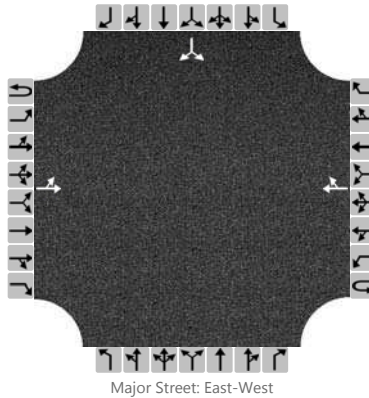
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		432													112	
Capacity		1279													522	
v/c Ratio		0.34													0.21	
95% Queue Length		0.4													0.8	
Control Delay (s/veh)		8.2													13.8	
Level of Service (LOS)		A													B	
Approach Delay (s/veh)	3.5												13.8			
Approach LOS	A												B			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	S. Carothers and Project
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Aug 2016	East/West Street	S. Carothers Road
Analysis Year	2016	North/South Street	Main Project Access
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.80
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	10647 (Total)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume (veh/h)		36	150				231	11						34		109
Percent Heavy Vehicles		0												0		0
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

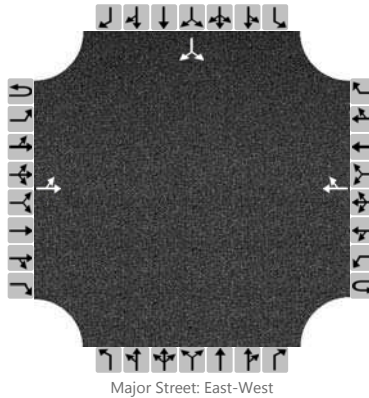
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		233													178	
Capacity		1270													632	
v/c Ratio		0.18													0.28	
95% Queue Length		0.1													1.2	
Control Delay (s/veh)		7.9													12.9	
Level of Service (LOS)		A													B	
Approach Delay (s/veh)	1.8												12.9			
Approach LOS	A												B			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	FTG	Intersection	S. Carothers and Project
Agency/Co.	FTG	Jurisdiction	Franklin, TN
Date Performed	Aug 2016	East/West Street	S. Carothers Road
Analysis Year	2016	North/South Street	Main Project Access
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.80
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	10647 (Total)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume (veh/h)		118	277				228	36						21		69
Percent Heavy Vehicles		0												0		0
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		494													112	
Capacity		1241													471	
v/c Ratio		0.40													0.24	
95% Queue Length		0.4													0.9	
Control Delay (s/veh)		8.3													15.0	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)	3.3												15.0			
Approach LOS	A												C			

**APPENDIX C
TRAFFIC SIGNAL WARRANTS**

The Federal Highway Administration has published the Manual on Uniform Traffic Control Devices 2010 (MUTCD 2010), which includes eight traffic signal warrants that help traffic engineering professionals to identify when a traffic signal installation is justified at a particular location. These eight warrants include minimum conditions that are compared to existing or projected traffic conditions, and typically, traffic signals should not be installed unless at least one of the MUTCD warrants is met. Of the eight total signal warrants, the following are relevant to the intersection considered as part of this study:

Warrant 1, Eight-Hour Vehicular Volume

The Minimum Vehicular Volume, Condition A, is intended for application where a large volume of intersecting traffic is the principal reason to consider installing a traffic signal. The Interruption of Continuous Traffic, Condition B, is intended for application where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street.

Standard: The need for a traffic control signal shall be considered if an engineering study finds that one of the following conditions exists for each of any eight hours of an average day:

- A. The vehicles per hour given in both of the 100% columns of Condition A in Table C1 exist on the major street and on the higher volume minor-street approaches, respectively, to the intersection, or
- B. The vehicles per hour given in both of the 100% columns of Condition B in Table C1 exist on the major street and on the higher volume minor-street approaches, respectively, to the intersection.

In applying each condition, the major street and minor street volumes shall be for the same eight hours. On the minor street, the higher volume shall not be required to be on the same approach during each of these eight hours.

Option: If the posted or statutory speed limit or the 85th percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the traffic volumes in the 70% columns in Table C1 may be used in place of the 100% columns.

Standard: The need for a traffic control signal shall be considered if an engineering study finds that both of the following conditions exists for each of any eight hours of an average day:

- A. The vehicles per hour given in both of the 80% columns of Condition A in Table C1 exist on the major street and on the higher volume minor-street approaches, respectively, to the intersection, and
- B. The vehicles per hour given in both of the 80% columns of Condition B in Table C1 exist on the major street and on the higher volume minor-street approaches, respectively, to the intersection.

These major street and minor street volumes shall be for the same eight hours for each condition; however, the eight hours satisfied in Condition A shall not be required to be the same eight hours satisfied in Condition B. On the minor street, the higher volume shall not be required to be on the same approach during each of these eight hours.

TABLE C1. WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

CONDITION A – MINIMUM VEHICULAR VOLUME							
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)			Vehicles per hour on higher-volume minor street approach (one direction only)		
Major Street	Minor Street	100%	80%	70%	100%	80%	70%
1 lane	1 lane	500	400	350	150	120	105
2 or more lanes	1 lane	600	480	420	150	120	105
2 or more lanes	2 or more lanes	600	480	420	200	160	140
1 lane	2 or more lanes	500	400	350	200	160	140

CONDITION B – INTERRUPTION OF CONTINUOUS TRAFFIC							
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)			Vehicles per hour on higher-volume minor street approach (one direction only)		
Major Street	Minor Street	100%	80%	70%	100%	80%	70%
1 lane	1 lane	750	600	525	75	60	53
2 or more lanes	1 lane	900	720	630	75	60	53
2 or more lanes	2 or more lanes	900	720	630	100	80	70
1 lane	2 or more lanes	750	600	525	100	80	70

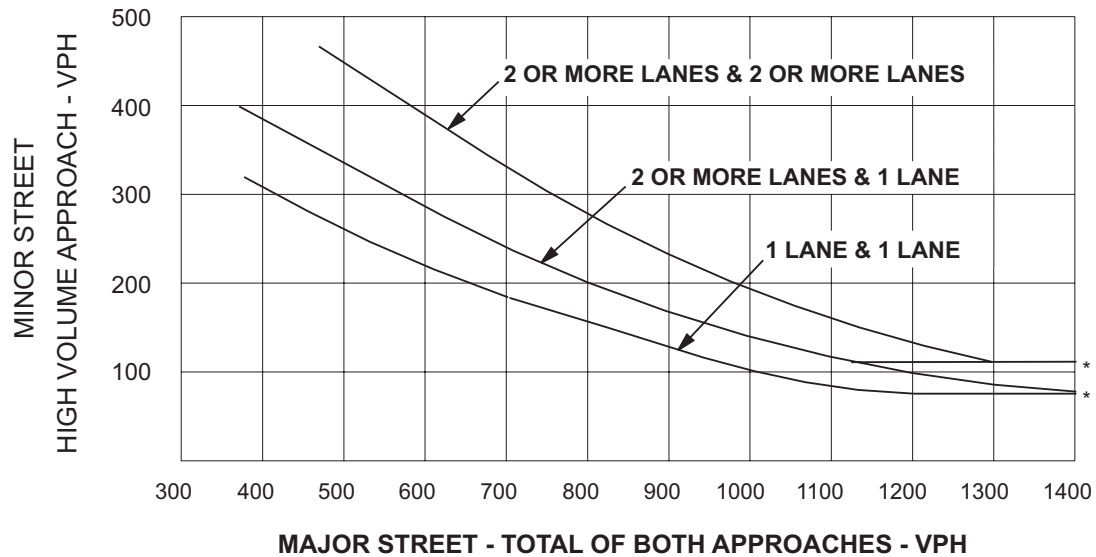
Warrant 2, Four-Hour Vehicular Volume

The Four-Hour Vehicular Volume signal warrant conditions are intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic signal.

Standard: The need for a traffic control signal shall be considered if an engineering study finds that for each of any four hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher volume minor street approach (one direction only) all fall above the applicable curve in Figure C1-Graph A for the existing combination of approach lanes. On the minor street, the higher volume shall not be required to be on the same approach during each of these four hours.

Option: If the posted or statutory speed limit or the 85th percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure C1-Graph B may be used in place of Figure C1-Graph A.

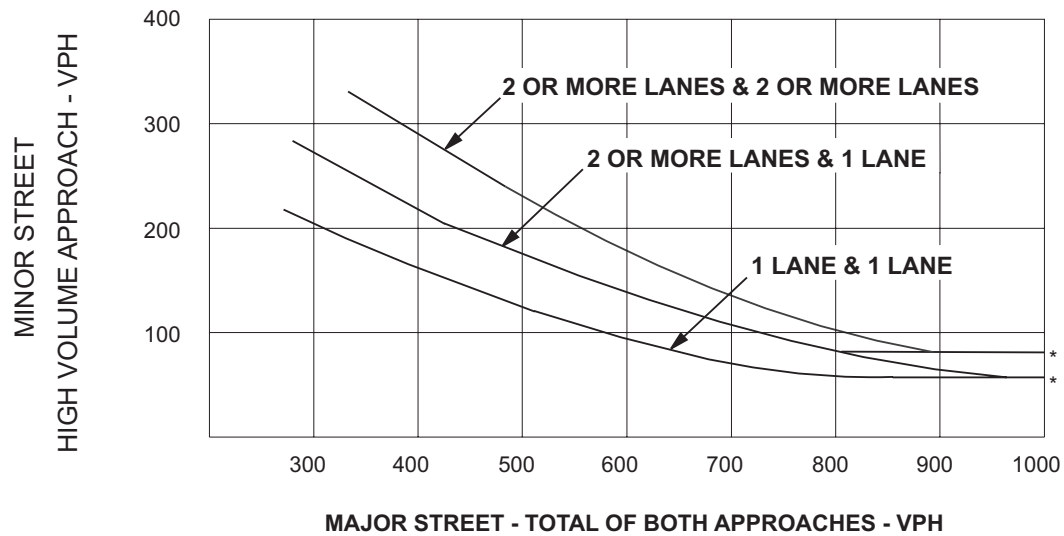
GRAPH A: FOUR HOUR VOLUME WARRANT



*NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

GRAPH B: FOUR HOUR VOLUME WARRANT

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



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

**APPENDIX D
INFORMATION ABOUT APPROVED PROJECTS
IN THE VICINITY OF THE PROJECT SITE**

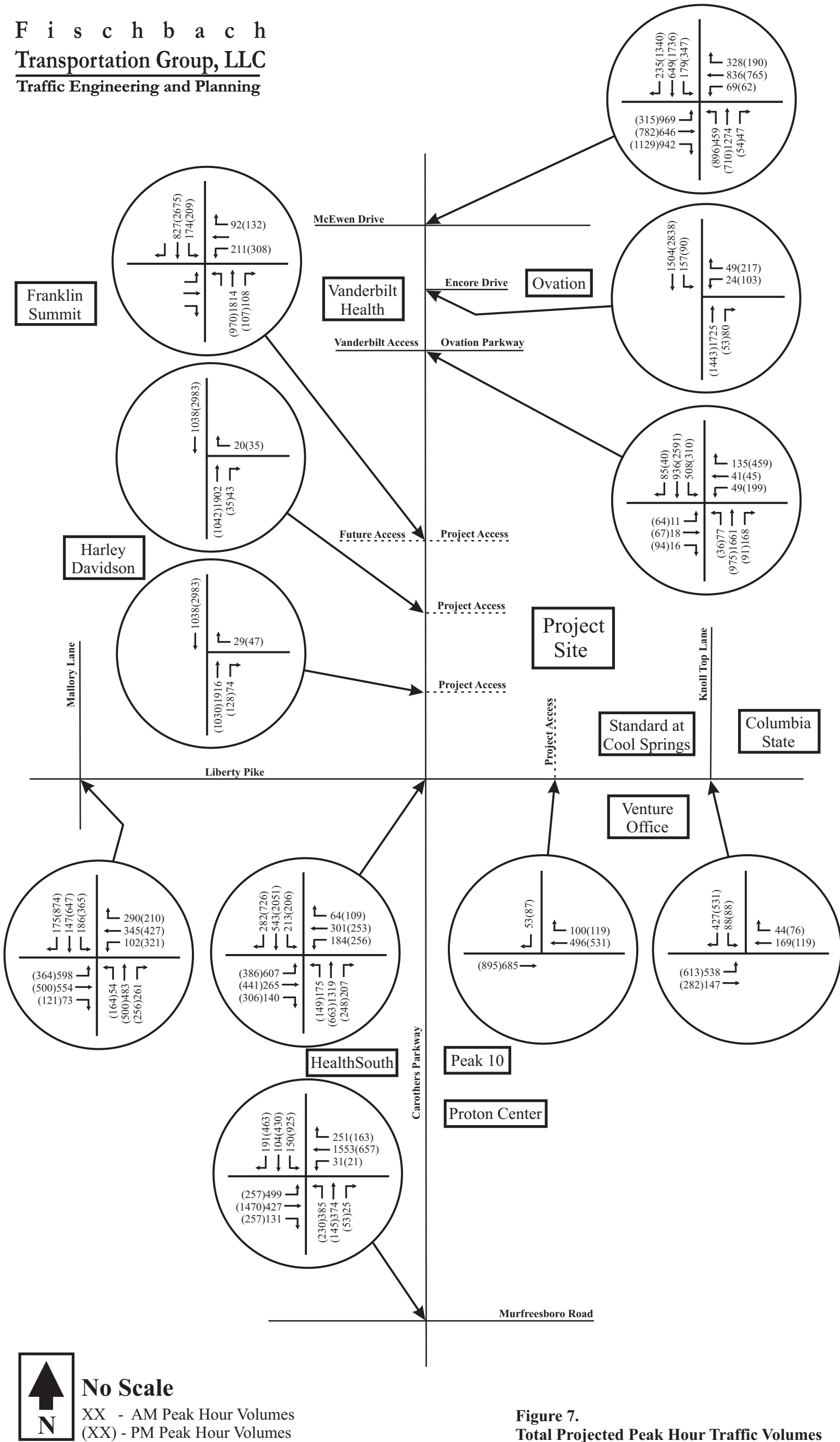
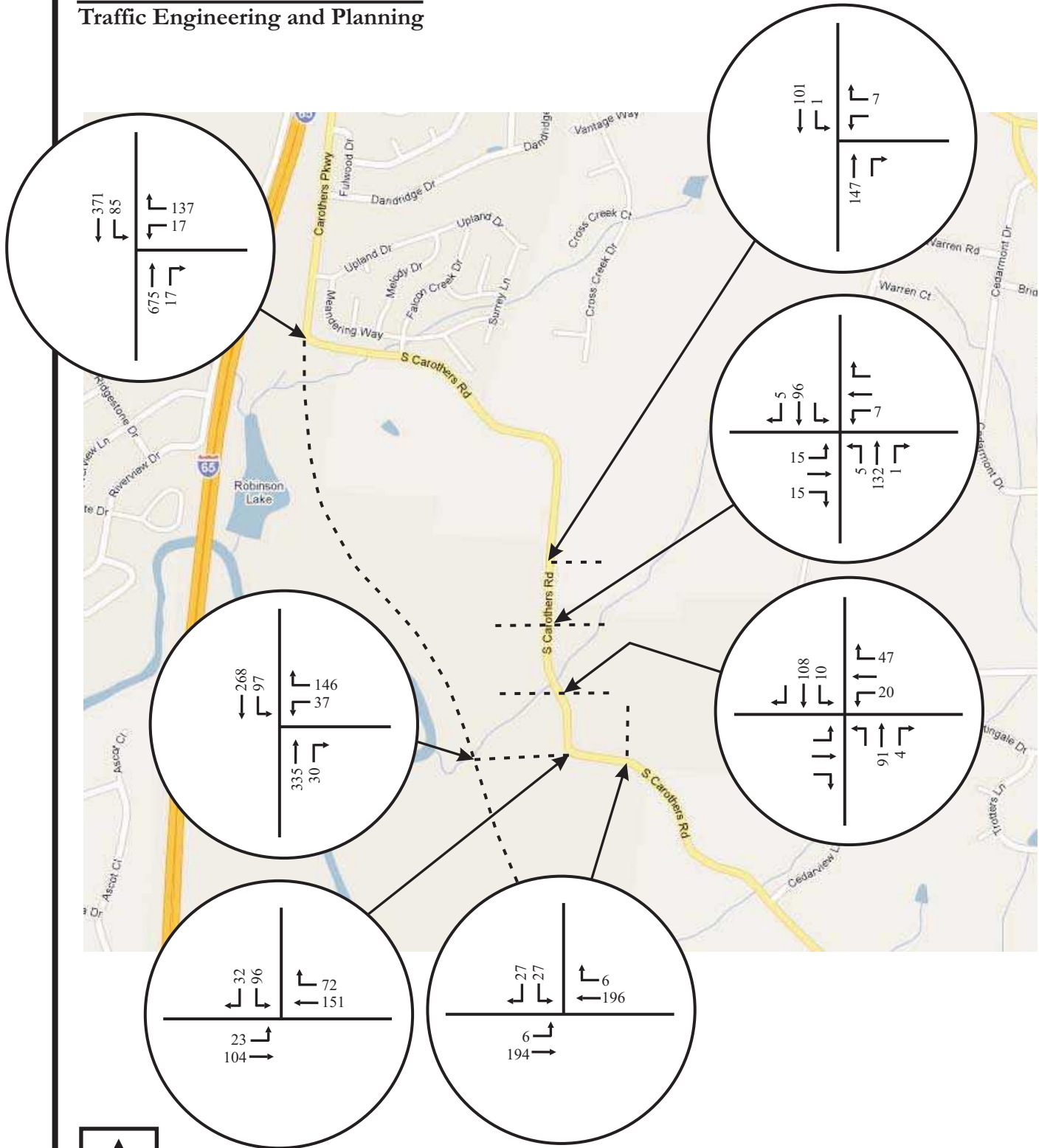


Figure 7.
Total Projected Peak Hour Traffic Volumes

F i s c h b a c h
Transportation Group, Inc.
 Traffic Engineering and Planning



No Scale

Figure 7A.
 Year 2016 AM Peak Hour
 Total Projected Peak Hour Traffic Volumes
 With Carothers Parkway

F i s c h b a c h
Transportation Group, Inc.
 Traffic Engineering and Planning

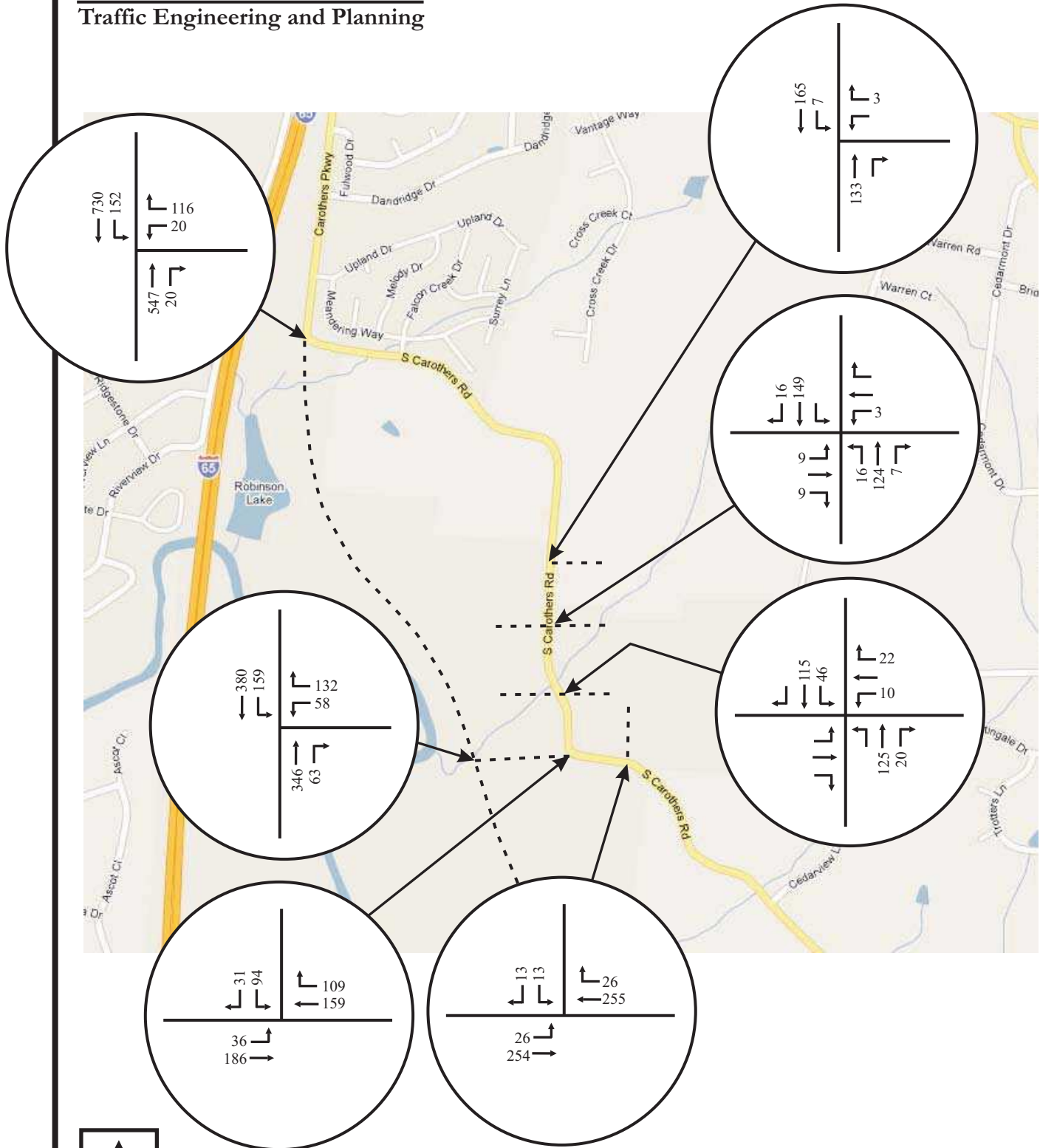
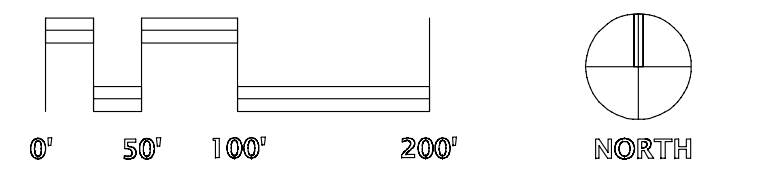
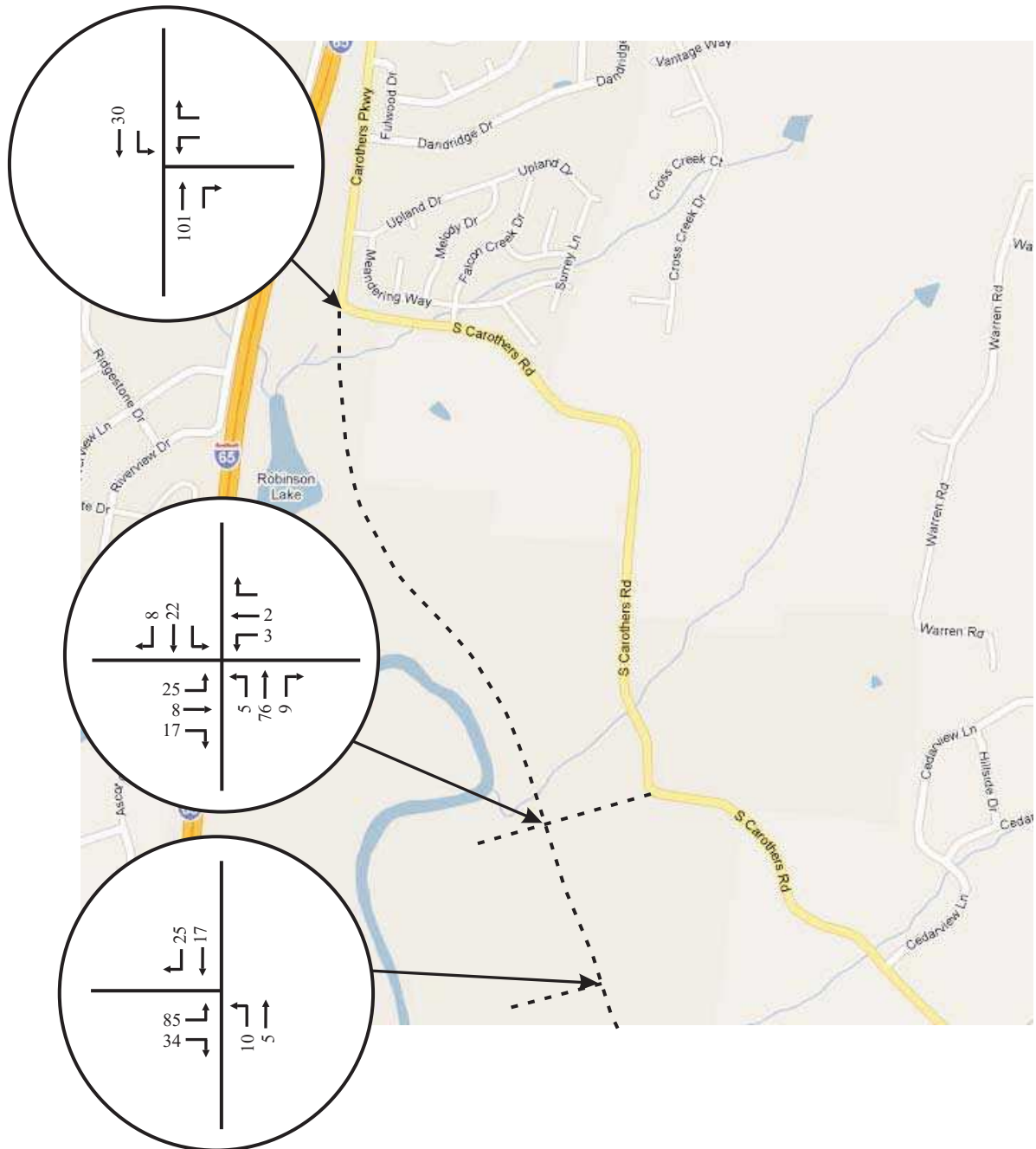


Figure 7C.
 Year 2016 PM Peak Hour
 Total Projected Peak Hour Traffic Volumes
 With Carothers Parkway





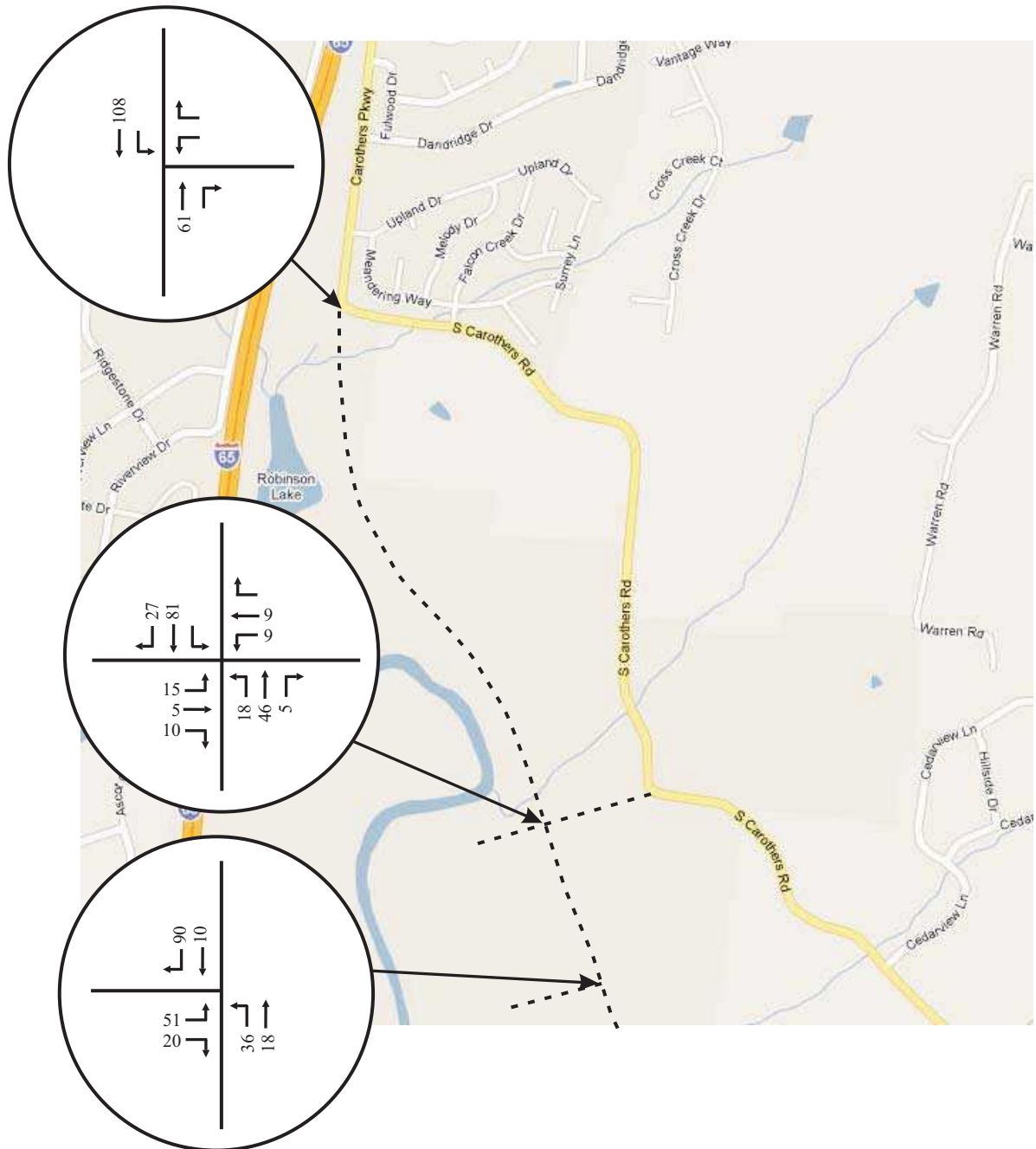
F i s c h b a c h
 Transportation Group, LLC
 Traffic Engineering and Planning



No Scale

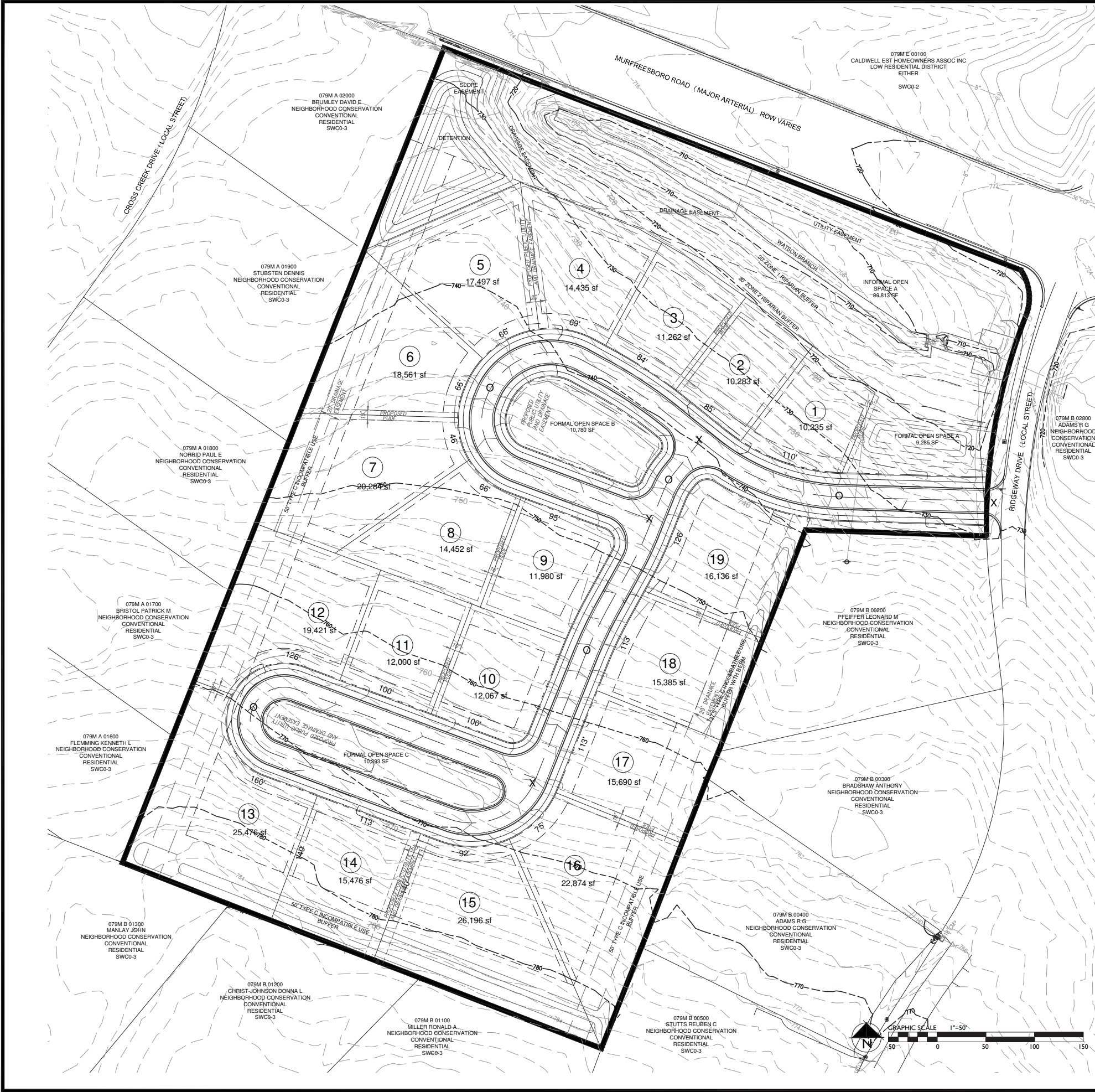
Figure 6A.
 AM Peak Hour Traffic Volumes
 Generated by the Water's Edge Project

F i s c h b a c h
 Transportation Group, LLC
 Traffic Engineering and Planning



No Scale

Figure 6C.
 PM Peak Hour Traffic Volumes
 Generated by the Water's Edge Project



LAND USE PLAN COMPLIANCE

- CHARACTER AREA OVERLAY: SWCO-3
APPLICABLE DEVELOPMENT STANDARD: CONVENTIONAL
1. THE EXISTING USES WITHIN SEWARD HALL CHARACTER AREA 3 ARE PREDOMINANTLY SINGLE FAMILY DETACHED HOMES. THE PROPOSED PLAN PROVIDES SINGLE FAMILY HOME LOTS.
 2. THE PROPOSED DEVELOPMENT PLAN PRESERVES THE FRONT PORTION OF THE PROPERTY ALONG MURFREESBORO ROAD AS OPEN SPACE. THIS OPEN SPACE "FRONT YARD" IS CONSISTENT WITH THE CHARACTER OF THE CORRIDOR.
 3. THE PROPOSED DEVELOPMENT WILL BE ACCESSED FROM RIDGEWAY DRIVE.

LOCAL COMPATIBILITY

THE PROPOSED SUBDIVISION IS PLANNED WITH TWO STORY SINGLE FAMILY HOMES RANGING IN SIZE BETWEEN 3500 SQUARE FEET AND 4600 SQUARE FEET. THESE HOMES ARE COMPATIBLE WITH THE HOMES WITHIN THE ADJACENT NEIGHBORHOODS, RIDGEWAY AND CROSS CREEK SUBDIVISIONS EVEN THOUGH THEY ARE PROPOSED ON LOTS LESS THAN ONE ACRE.

THE HOMES WITHIN THE RIDGEWAY AND CROSS CREEK SUBDIVISIONS ARE BETWEEN 1900 TO 5700 SQUARE FEET IN SIZE. THE AVERAGE HOME IS 3500 SQUARE FEET IN SIZE. THESE HOMES WERE BUILT ON ONE ACRE LOTS WITH SEPTIC TANKS ACCORDING TO WILLIAMSON COUNTY DEVELOPMENT REGULATIONS. SINCE THE DEVELOPMENT OF THESE HOMES, SEWER HAS BEEN MADE ACCESSIBLE BY THE CITY OF FRANKLIN WITH A SEWER MAIN ALONG MURFREESBORO ROAD.

THE PROPOSED PUD PLAN FOLLOWS THE ZONING ORDINANCE'S REQUIREMENTS FOR PROVIDING A TYPE 'C' INCOMPATIBLE USE BUFFERS WHERE ADJACENT LOTS ARE LESS THAN 75% OF THE ADJACENT LOTS. A TYPE 'C' BUFFER IS PLANNED ON 3 BOUNDARIES OF THE SITE ADJOINING ADJACENT LOTS ZONED NEIGHBORHOOD CONSERVATION (WILLIAMSON COUNTY). IN ADDITION TO SPACIAL REQUIREMENTS, THIS BUFFER WILL INCLUDE 16 TREES AND 40 SHRUBS EVERY ONE HUNDRED LINEAR FEET. THE NEIGHBORING HOMES AVERAGE A REAR SETBACK OF 88 FEET FROM OCTOBER PARK'S BOUNDARY. HOMES ARE AS CLOSE AS 25 FEET TO THE PROPERTY AND AS FAR AWAY AS 165 FEET. THE AVERAGE DISTANCE BETWEEN THE NEW HOMES AND THE EXISTING HOMES WILL BE 138 FEET.

COMPATIBILITY OF LOT SIZE SHOULD NOT BE THE ONLY FACTOR TO DETERMINE APPROPRIATENESS OF THE DEVELOPMENT PLAN. THE PROPOSED PLAN IS COMPATIBLE IN THE SIZE OF HOME AND COST OF HOME, AND ARE FULLY SCREENED FOR THE PRIVACY OF THE EXISTING NEIGHBORS AND THE NEW RESIDENTS.

THE DEVELOPMENT OF ONE ACRE LOTS WITHIN THE CITY OF FRANKLIN IS OFTEN BOTH COST PROHIBITIVE FOR DEVELOPMENT AND COST PROHIBITIVE FOR LONG TERM MAINTENANCE OF INFRASTRUCTURE. THE DENSITY AND LOT SIZES PROPOSED IN THE PUD ARE NECESSARY DUE TO THE COST OF INFRASTRUCTURE AND COST OF LAND. BOTH RIDGEWAY AND CROSS CREEK SUBDIVISIONS WERE DEVELOPED WITHOUT STORMWATER DETENTION BASINS, SEWER, CURB AND GUTTER, SIDEWALKS, FORMAL OPEN SPACE, NOR INFORMAL OPEN SPACE PRESERVATION AREAS. THE PER LOT COST OF DEVELOPMENT, INSTALLATION, AND MAINTENANCE IS DISPROPORTIONATELY HIGHER FOR NEW DEVELOPMENT THAN THE ADJACENT EXISTING SUBDIVISIONS DUE TO THE CITY'S DESIGN STANDARDS.

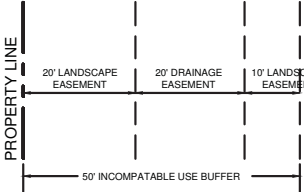
CONNECTIVITY INDEX

0 LINKS 1
X NODES 4
INDEX = 1.0

DUE TO EXISTING CONDITIONS OF THIS PROPERTY, AND ADJACENT EXISTING SUBDIVISION, OFF-SITE CONNECTIONS ARE NOT POSSIBLE AND ARE NOT PROVIDED WITH THIS PUD. A SPECIAL EXCEPTION IS REQUESTED FROM THE ENGINEERING DEPARTMENT FOR OFF-SITE CONNECTIONS.

INCOMPATIBLE USE BUFFER

THE SOUTHERN, EASTERN, AND WESTERN BOUNDARIES SHALL HAVE A TYPE 'C' INCOMPATIBLE USE BUFFER AS SHOWN ON THE SITE PLAN. INCOMPATIBLE USE BUFFERS ARE TO BE PLACED IN A LANDSCAPE EASEMENT. (SEE DIAGRAM BELOW)



PARKLAND DEDICATION

PARKLAND DEDICATION SHALL BE FEE IN LIEU OF FOR THIS DEVELOPMENT PLAN.
19 X 1200SF = 22,800 SF (0.52 ACRES)

HYDRANT FIRE FLOW (HYDRANT LOCATED 500' EAST OF THE INTERSECTION OF RIDGEWAY DR AND HWY 96)

WATER MAIN 16" DUCTILE IRON
FLOW: 1455 GPM
STATIC PRESSURE: 99 PSI
RESIDUAL PRESSURE: 75 PSI

STREAMSIDE BUFFER ENHANCEMENT

ENHANCEMENT SHALL INCLUDE REMOVAL OF INVASIVE SPECIES AND THE RE-ESTABLISHMENT OF NATIVE SPECIES WHICH PROVIDES A MIX OF CANOPY TREES, UNDERSTORY SHRUBS, AND A NATIVE SEED MIX OF FORBES/GRASSES/SEDGES/RUSHES SUITABLE FOR A MOIST SHADED UNDERSTORY.

THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION, STORAGE, OR DISTURBANCE OF VEGETATION ALLOWED IN THE STREAM BUFFER EXCEPT AS PERMITTED BY THE CITY ENGINEER.

PHASING

THE DEVELOPMENT WILL BE CONSTRUCTED AS A SINGLE PHASE.

CRITICAL TREE LOTS

LOTS 3, 4, 5, 6, 14, 16 & 20 ARE CRITICAL TREE LOTS.



SITE DATA:

PROJECT NAME: OCTOBER PARK
PROJECT NUMBER: 4686
SUBDIVISION: NA
LOT NUMBER: NA
ADDRESS: 1110 RIDGEWAY DRIVE
CITY: FRANKLIN, TN
COUNTY: WILLIAMSON
STATE: TENNESSEE
CIVIL DISTRICT: 14TH CIVIL DISTRICT
MAP, GROUP, PARCEL NUMBERS: MAP 79, PARCELS 60.07, 60.01, AND MAP 79M GROUP B PARCEL 1.00

EXISTING ZONING: WILLIAMSON COUNTY
NEIGHBORHOOD CONSERVATION
PROPOSED ZONING: SD-R 1.6 DUA
CHARACTER AREA OVERLAY: SWCO-3
APPLICABLE DEVELOPMENT STANDARD: CONVENTIONAL
TOTAL ACREAGE: 11.88 AC
TOTAL SQUARE FOOTAGE: 517,412 SF
MINIMUM REQUIRED SETBACKS:
FRONT YARD: 15'
REAR YARD: VARIES WITH BUFFER TREATMENT
SIDE YARD: 5'

OWNER: R. GLENN ADAMS
ADDRESS: 1100 RIDGEWAY DRIVE
CONTACT: FRANKLIN, TN 37067
GLENN ADAMS

APPLICANT: VERTEX DEVELOPMENT, LLC
ADDRESS: 1212 HOSS ROAD
OFFICE PHONE: POWELL, TN 37849
EMAIL ADDRESS: 865-384-8124
CONTACT: sbethel.bethel@gmail.com
STEVE BETHEL

PLANNER/LANDSCAPE ARCHITECT: GAMBLE DESIGN COLLABORATIVE
ADDRESS: 144 SOUTHEAST PARKWAY
SUITE 200
FRANKLIN, TN 37064
OFFICE PHONE: 615.975.5765
EMAIL ADDRESS: greggambledesign@gmail.com
CONTACT: GREGG GAMBLED

PROJECT CHARACTERISTICS
BUILDING SQUARE FOOTAGE: N/A
BUILDING HEIGHT: 2 STORY
LANDSCAPE SURFACE RATIO: 0.84
MINIMUM LANDSCAPE RATIO: 0.40
INCOMPATIBLE-USE BUFFER REQUIRED: YES
TYPE A BUFFER TO NORTH
TYPE C BUFFER, SOUTH, EAST, AND WEST

MINIMUM PARKING REQUIRED: N/A
MAXIMUM PARKING LIMIT: N/A
EXISTING PARKING: N/A
PARKING PROVIDED: SINGLE FAMILY DETACHED
2 PER UNIT

RESIDENTIAL DENSITY: 1.60 DUA (19 UNITS)
EXISTING TREE CANOPY: 1.66 AC
PRESERVED TREE CANOPY: 1.48 AC
PARKLAND FEE IN LIEU: 2.76 AC PROVIDED (23.22%)
OPEN SPACE: 2.76 AC PROVIDED (23.22%)

TOTAL REQUIRED: 1.79 AC (15% OF ACREAGE)
TOTAL PROVIDED: 2.76 AC (23.22%)
FORMAL: .70 AC (59.1% OF REQUIRED)
REQUIRED: .59 AC (33%)
PROVIDED: .70 AC (59.1%)
INFORMAL PROVIDED: 2.06 AC

STATEMENT OF IMPACTS

WATER
WATER SERVICE WILL BE PROVIDED BY THE MILCROFTON UTILITY DISTRICT. THE WATER MAIN WILL BE SERVED FROM A MAIN IN RIDGEWAY DRIVE. 19 x 350 GDP = 6,650 GDP

SEWER
SEWER SERVICE WILL BE PROVIDED BY THE CITY OF FRANKLIN. SEWER MAIN CONNECTION AT MANHOLE LOCATED AT THE INTERSECTION OF RIDGEWAY DRIVE AND HIGHWAY 96.

DRAINAGE FACILITIES
THE PROPERTY WILL BE DRAINED TO THE NORTH TO DETENTION FACILITY. THE DETENTION POND WILL DRAIN TO WATSONS BRANCH BETWEEN THE SITE AND HWY 96.

POLICE AND FIRE
FRANKLIN FIRE DEPT STATION #2 - 2.2 MILES DRIVING DISTANCE
COLUMBIA AVE POLICE STATION - 3.8 MILES DRIVING DISTANCE

RECREATION FACILITIES
LIBERTY PARK - 3.0 MILES DRIVING DISTANCE

PROJECTED STUDENT POPULATION
THE STUDENT POPULATION IS PROJECTED AT A RATE OF .64 STUDENTS PER HOME: 19 x .64 = 12.2 STUDENTS
TRINITY ELEMENTARY SCHOOL 2.7 MILES
PAGE MIDDLE SCHOOL 6.0 MILES
PAGE HIGH SCHOOL 6.0 MILES

REFUSE COLLECTION
REFUSE COLLECTION SERVICE WILL BE PROVIDED BY THE CITY OF FRANKLIN SOLID WASTE.

RESTRICTIVE COVENANTS
A HOME OWNERS ASSOCIATION WILL BE ESTABLISHED PRIOR TO THE FIRST OCCUPANCY OF RESIDENTS. THE HOME OWNERS ASSOCIATION WILL REGULATE ARCHITECTURAL STANDARDS AND THE MAINTENANCE OF THE COMMUNITY. THE HOA WILL MAINTAIN ALL COMMON OPEN SPACE AND RECREATIONAL AREAS.

MINERAL RIGHTS
NO THIRD PARTY MINERAL RIGHTS ARE ASSOCIATED WITH THIS PROPERTY.

COF 4686

Revisions:
1. 11.10.2014
2. 12.03.2014

Drawing Notes:

GDC
GAMBLE
DESIGN COLLABORATIVE

DEVELOPMENT PLANNING AND
LANDSCAPE ARCHITECTURE

Date: OCT 13, 2014

**OCTOBER PARK PUD SUBDIVISION
DEVELOPMENT PLAN**

Parcels 60.07, 60.01 on Map 79 and 1.00 in Group B on Tax Map 79M
Franklin, Williamson County, Tennessee



GAMBLED DESIGN COLLABORATIVE
144 SOUTHEAST PARKWAY
SUITE 200
FRANKLIN, TENNESSEE 37064
GREG GAMBLED
ggambledesign@gmail.com
615.975.5765

**DEVELOPMENT
PLAN**

C 3.0

SITE DATA SHEET
PROJECT NAME: FOUNTAINS OF FRANKLIN, SITE PLAN, SECTION 2
PROJECT #: 4523
SUBDIVISION: SILVER GRACE
LOT NUMBER: 1 AND 2
ADDRESS: 4100 MURFREESBORO ROAD
CITY: FRANKLIN
COUNTY: WILLIAMSON
STATE: TENNESSEE
CIVIL DISTRICT: 14TH

DISTING. ZONING AND CHARACTER AREA OVERLAY:
R1 RESIDENTIAL, VARIETY DIST. / SCENARIO HALL SH2
OTHER APPLICABLE OVERLAYS:
APPLICABLE DEVELOPMENT STANDARD: CONVENTIONAL
ACREAGE OF SITE: 14.88
SQUARE FOOTAGE OF SITE: 648,134.2
MINIMUM REQUIRED SETBACK LINES:
STREET FRONTING: 30' LOCAL/50' ARTERIAL (VILLAS)
STREET FRONTING: 60' (SINGLE FAMILY LOTS)
SIDE YARD: 10'
REAR YARD: 30'

OWNER LOTS 1 & 2:
FOUNTAINS OF FRANKLIN, L.L.C.
2202 JEFFERSON COURT
FRANKLIN, TN 37064
(615)790-7041
MAP 79, PARCEL 58
MAP 80, PARCEL 39.04
BOOK 5006, PAGE 86
CONTAINING 13.51 ACRES (588,615.2 S.F.) &
CONTAINING 1.37 ACRES (59,519 S.F.)

APPLICANT/DEVELOPER:
GOODWORKS UNLIMITED, LLC
GARY KEOCKLEY
2202 JEFFERSON COURT
FRANKLIN, TN 37064
(615)790-7041
GKEOCKLEY@YAHOO.COM

BUILDING SQUARE FOOTAGE:
MEMORY CARE BUILDING: 49,548
PHASE 2 VILLAS: 23,213

BUILDING HEIGHT:
MEMORY CARE: ONE STORY-26'
VILLAS: ONE STORY-30'

LANDSCAPE SURFACE RATIO: 0.22
MIN. LANDSCAPE SURFACE RATIO: 0.10
INCOMPATIBLE-USE BUFFER REQUIRED: 37.5' CLASS C ALONG
EAST PROPERTY BOUNDARY (25% REDUCTION W/6' OPAQUE FENCE)

MINIMUM PARKING REQUIREMENT:
MAIN BUILDING: 0.25 PER PATIENT + 1 PER EMPLOYEE =
25 (59) + 15 = 30 SPACES (TEMPORARY CARE FACILITY)
TOTAL: 30 SPACES
MAXIMUM PARKING LIMIT: 120% OF 30 = 36 SPACES

PARKING PROVIDED:
MAIN BUILDING: 59 SPACES
TOTAL: 59 SPACES
ADDITIONAL SPACES FOR FUTURE SECTIONS

RESIDENTIAL DENSITY: 3.96 UNITS PER ACRE

PARKLAND DEDICATION: PAYMENT IN-LIEU BASED ON 30 UNITS
AT 1,200 S.F./UNIT = 36,000 S.F.

TREE CANOPY: 34,570 S.F. TO REMAIN; 58% OF LOT 2

OPEN SPACE:
REQUIRED:
FORMAL: 5% = 14,880(05) = 32,409 S.F.
INFORMAL: 10% = 14,880(10) = 64,817 S.F.
PROVIDED:
FORMAL: 45,807 S.F. = 7.08%
INFORMAL: 173,508 S.F. = 26.77%

WATER SUPPLY:
THE WATER UTILITY DISTRICT THAT SERVES THIS DEVELOPMENT IS THE MIDCROFTON UTILITY DISTRICT, 6333 ARNO RD FRANKLIN, TN 37064. THE CONTACT PERSON AT MIDCROFTON IS CARL SCOTT AT 615-794-5947. THE RECORDED DATA FOR THIS HYDRANT IS 105 PSI STATIC PRESSURE AND 96 PSI RESIDUAL PRESSURE WITH A FLOW RATE OF 1,300+ GPM.

ALL VILLAS AND ASSISTED SUITES TO HAVE AUTOMATIC FIRE SPRINKLERS.

SANITARY SEWER SERVICE:
THE UTILITY DISTRICT THAT SERVES THIS DEVELOPMENT IS THE CITY OF FRANKLIN. THE SEWER INFRASTRUCTURE FOR THIS DEVELOPMENT WAS INSTALLED IN PHASE 1. CLEAN-OUTS FOR THE VILLAS HAVE BEEN STUBBED OUT FOR CONNECTION DURING THIS PHASE. THE MEMORY CARE ADDITION WILL BE SERVED INTERNALLY BY THE EXISTING FACILITY. ALL SEWER CONNECTIONS MUST BE APPROVED BY THE CITY OF FRANKLIN (COF) AND CONSTRUCTION WILL ADHERE TO THE SPECIFICATIONS OF THE COF.

STORMWATER CONTROL:
ALL STORMWATER TREATMENT FOR QUALITY AND QUANTITY WERE INSTALLED DURING PHASE 1 FOR THE COMPLETE BUILD-OUT OF THIS DEVELOPMENT. NO NEW TREATMENT IS REQUIRED FOR THIS PHASE. ON SITE DETENTION WAS DESIGNED TO TREAT A MAXIMUM IMPERVIOUS AREA OF 266,588 S.F.

ELECTRIC SERVICE:
THE UTILITY DISTRICT THAT SERVES THIS DEVELOPMENT IS MIDDLE TENNESSEE ELECTRIC MEMBERSHIP CORP. (MTEC). MTEC HAS PROVIDED THE LAYOUT. ALL ELECTRIC SERVICE LINES TO BE UNDERGROUND. ALL CONSTRUCTION TO ADHERE TO THE SPECIFICATIONS OF MTEC.

TREE PROTECTION NOTE:
ALL TREE PROTECTION FENCING SHALL BE INSTALLED PRIOR TO ISSUANCE OF A GRADING PERMIT AND SHALL BE MAINTAINED IN GOOD WORKING ORDER UNTIL ALL CONSTRUCTION ACTIVITY IS COMPLETE. ANY REQUIRED EROSION CONTROL MEASURES SHALL BE PLACED OUTSIDE OF ANY TREE PROTECTION FENCING.

UTILITY NOTE:
WITHIN NEW DEVELOPMENTS AND FOR OFFSITE LINES CONSTRUCTED AS A RESULT OF, OR TO PROVIDE SERVICE TO THE NEW DEVELOPMENT, ALL UTILITIES SUCH AS CABLE TELEVISION, ELECTRICAL (EXCLUDING TRANSFORMERS), GAS, SEWER, TELEPHONE, AND WATER LINES SHALL BE PLACED UNDERGROUND.

SOLID WASTE SERVICE:
THE SITE IS CURRENTLY SERVICED BY A DUMPSITE LOCATED AT THE REAR OF THE EXISTING FACILITY. THIS WILL CONTINUE TO BE USED FOR THE PRESENT FACILITY AS WELL AS THE PHASE 2 ADDITIONS, MEMORY CARE UNIT AND VILLAS.

APPROVAL NOTE:
THIS SITE PLAN HAS BEEN DESIGNED TO MEET THE CITY OF FRANKLIN STANDARDS AND THE APPROVAL OF THE PLANNING COMMISSION. CHANGES SHALL NOT BE MADE TO THE APPROVED SITE PLAN UNLESS APPROVED BY EITHER THE RELEVANT DEPARTMENT SUPERINTENDENT OR THE PLANNING COMMISSION.

RETAINING WALL NOTE:
ALL RETAINING WALLS ON SITE SHALL MEET THE STANDARDS OF SECTION 6.6 OF THE FRANKLIN ZONING ORDINANCE. DETAILS OF RETAINING WALLS SHALL BE SUBMITTED TO THE DEPT. OF BUILDING AND NEIGHBORHOOD SERVICES FOR REVIEW. REFER TO LANDSCAPE PLANS IN THIS SUBMITAL FOR PLANTINGS AROUND WALLS.

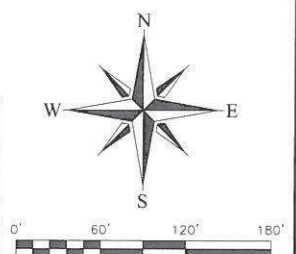
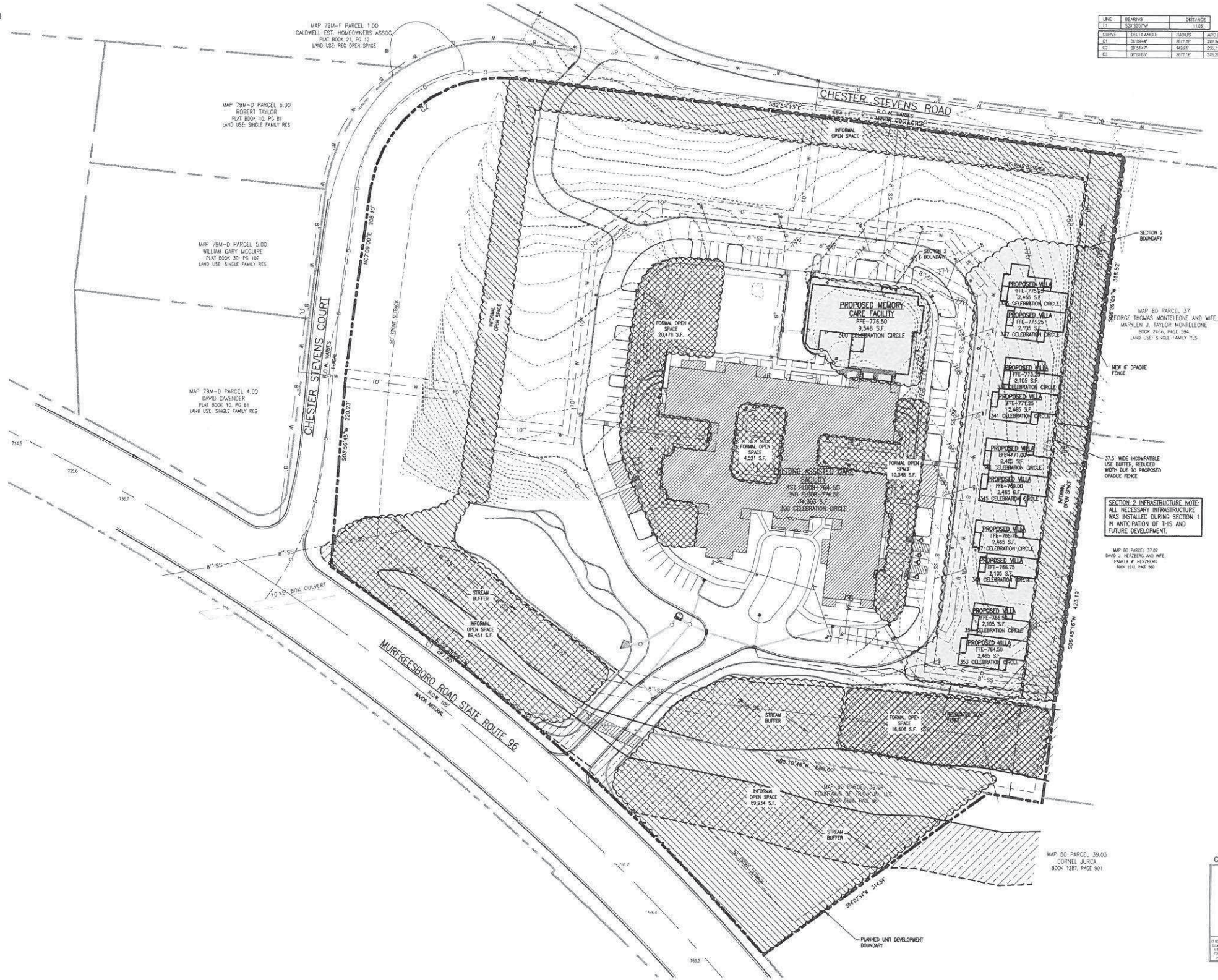
CIVIL CONTRACTOR NOTES:

- THE SCOPE OF WORK IS THE TOTALITY OF THE CONTRACT DOCUMENTS INCLUDING PLANS, SPECIFICATIONS, FIELD ORDERS, SHOP DRAWING APPROVAL CONDITIONS AND PERFORMANCE REQUIREMENTS OF THE SCOPE OF WORK. THE SCOPE OF WORK IS IDENTIFIED WITH SPECIFICATION SECTIONS AND SHEET ALPHA NUMERIC CONVENTION, BUT SUCH IDENTIFICATION DOES NOT DEFINE, RESTRICT OR ASSIGN THE SCOPE OF WORK OR ORGANIZE THE CONTRACT.
- THE SCOPE OF WORK IS SUBJECT TO AND SHALL INCLUDE THE REQUIREMENTS OF THE APPLICABLE CODES, STANDARDS AND ORDINANCES FOR THE LOCATION OF THIS PROJECT AND THE INTERPRETATIONS OF THE CODES, STANDARDS AND ORDINANCES BY THE AUTHORITIES HAVING JURISDICTION OF THIS PROJECT. SUCH INTERPRETATION SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO BIDDING. ANY VARIANCE FROM THE CONTRACT DOCUMENTS SHALL BE INCLUDED IN THE BIDDING AS A QUALIFICATION OF ANY BID AND SHALL BE INCLUDED IN THE SCOPE OF WORK BY THE CONTRACTOR. FAILURE TO IDENTIFY ANY SUCH VARIANCE AS A QUALIFICATION IN A BID SHALL NOT BE A BASIS FOR A CHANGE ORDER. DO NOT SCALE DRAWINGS. IF DIMENSIONS OR ELEVATIONS ARE IN QUESTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLARIFICATION FROM THE ARCHITECT BEFORE IMPLEMENTATION OF CONSTRUCTION.
- CONTRACTOR SHALL VERIFY ALL EQUIPMENT REQUIREMENTS, FIXTURE REQUIREMENTS, SYSTEM REQUIREMENTS WHETHER OWNER FURNISHED OR CONTRACTOR FURNISHED, PRIOR TO IMPLEMENTATION OF ANY WORK ASSOCIATED WITH THE EQUIPMENT.
- CONTRACTOR SHALL PROVIDE WORK AS NEEDED FOR ALL SITE UTILITIES WHERE UTILITIES ARE INSTALLED BY OTHERS INCLUDING, BUT NOT LIMITED TO TRENCHING, CONDUIT, JUNCTION BOXES.
- CONTRACTOR SHALL PROVIDE FOR FIRE LINES AND DOMESTIC WATER LINES IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION INCLUDING BUT NOT LIMITED TO LICENSED INSTALLERS, TESTING, MATERIALS.
- NO IMPROVEMENT MAY BE ENCASED, CLOSED OR COVERED PRIOR TO INSPECTION AND ACCEPTANCE BY THE ARCHITECT. PROVIDE ARCHITECT WITH ADEQUATE NOTICE TO INSPECT ANY IMPROVEMENT READY FOR ENCLOSURE.
- CONTRACTOR SHALL LAYOUT BUILDING PAD, PARKING, SIDEWALKS AND ESTABLISH FINISH FLOOR ELEVATION FOR REVIEW AND APPROVAL OF ARCHITECT PRIOR TO IMPLEMENTATION.

GENERAL CONTRACTOR NOTES:

- THE SCOPE OF WORK IS THE TOTALITY OF THE CONTRACT DOCUMENTS INCLUDING PLANS, SPECIFICATIONS, FIELD ORDERS, SHOP DRAWING APPROVAL CONDITIONS AND PERFORMANCE REQUIREMENTS OF THE SCOPE OF WORK. THE SCOPE OF WORK IS IDENTIFIED WITH SPECIFICATION SECTIONS AND SHEET ALPHA NUMERIC CONVENTION, BUT SUCH IDENTIFICATION DOES NOT DEFINE, RESTRICT OR ASSIGN THE SCOPE OF WORK OR ORGANIZE THE CONTRACT.
- THE SCOPE OF WORK IS SUBJECT TO AND SHALL INCLUDE THE REQUIREMENTS OF THE APPLICABLE CODES, STANDARDS AND ORDINANCES FOR THE LOCATION OF THIS PROJECT AND THE INTERPRETATIONS OF THE CODES, STANDARDS AND ORDINANCES BY THE AUTHORITIES HAVING JURISDICTION OF THIS PROJECT. SUCH INTERPRETATION SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO BIDDING. ANY VARIANCE FROM THE CONTRACT DOCUMENTS SHALL BE INCLUDED IN THE BIDDING AS A QUALIFICATION OF ANY BID AND SHALL BE INCLUDED IN THE SCOPE OF WORK BY THE CONTRACTOR. FAILURE TO IDENTIFY ANY SUCH VARIANCE AS A QUALIFICATION IN A BID SHALL NOT BE A BASIS FOR A CHANGE ORDER.
- DO NOT SCALE DRAWINGS. IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLARIFICATION FROM THE ARCHITECT BEFORE IMPLEMENTATION OF CONSTRUCTION.
- CONTRACTOR SHALL VERIFY ALL CONDITIONS AND SHALL REPORT ANY CONDITION THAT VARIES FROM THE CONSTRUCTION AS SHOWN.
- FOR CLARIFICATION FROM THE ARCHITECT BEFORE IMPLEMENTATION OF CONSTRUCTION, PRIOR TO IMPLEMENTATION OF ANY WORK ASSOCIATED WITH THE EQUIPMENT. PROVIDE PLUMBING SUPPLY AND DRAINS FOR ALL FIXTURES AND EQUIPMENT AS SHOWN ON ARCHITECTURAL, MECHANICAL, FIRE PROTECTION AND PLUMBING PLANS. LOCATE ALL ELECTRICAL SWITCHES AND PLUGS AS SHOWN ON ELECTRICAL OR ARCHITECTURAL PLANS AND INTERIOR ELEVATIONS.
- DIMENSIONS ARE NOMINAL TO THE FACE OF THE WALL OR CENTERLINE OF COLUMNS.
- ALL RATED WALLS EXTEND ONLY TO CEILING; RATED WALLS IN ATTICS ARE SHOWN ON ROOF PLAN.
- PROVIDED RATED WALLS AS NOTED BEHIND ALL FIRE EXTINGUISHER CABINETS AND OTHER PENETRATIONS.
- CONCEAL ALL PIPING IN WALLS OR FUR OUT WALL TO ENCASE PIPING. REVIEW ANY CONDITION REQUIRING FURRING WITH ARCHITECT PRIOR TO IMPLEMENTATION.
- PROVIDE APPROPRIATE STRUCTURAL SUPPORT FOR EQUIPMENT, LAVATORIES OR OTHER IMPROVEMENTS AS REQUIRED TO SUPPORT A MINIMUM LOAD OF 250 LBS.
- NO IMPROVEMENT MAY BE ENCASED, CLOSED OR COVERED PRIOR TO INSPECTION AND ACCEPTANCE BY THE ARCHITECT. PROVIDE ARCHITECT WITH ADEQUATE NOTICE TO INSPECT ANY IMPROVEMENT READY FOR ENCLOSURE.
- TO COORDINATE ALL WORK, MARK THE FLOORS AND WALLS FOR LOCATION OF WALLS, CABINETS, EQUIPMENT, TOILETS, SHOWERS, AIR HANDLING EQUIPMENT, DIFFUSERS, EXHAUSTS, SPRINKLER HEADS, DRAINS AND TEST VALVES, ELECTRICAL, SYSTEMS AND JUNCTION BOXES FOR REVIEW AND APPROVAL OF ARCHITECT PRIOR TO IMPLEMENTATION.

LINE	BEARING	DISTANCE			
L1	S20°32'00"W	11.05'			
CURVE	DELTA ANGLE	RADIUS	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C1	06°59'44"	2677.16'	287.94'	N62°26'00"W	287.80'
C2	85°57'47"	145.81'	235.15'	N62°04'30"E	231.75'
C3	08°00'00"	2677.16'	376.20'	N45°22'41"W	375.80'



FRANKLIN PROJECT #:

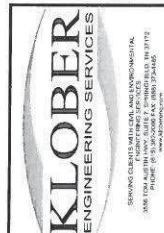
- THE CITY OF FRANKLIN PROJECT NUMBER IS COF #4523

DEVELOPMENT	APPROVAL DATE	RY ZONED ACRES	SINGLE FAMILY DWELLING UNITS	MAIN BUILDING VILLAS	TOTAL DWELLING UNITS	LOT DENSITY (UNITS/AC)	REMAINING ACREAGE	REMAINING DWELLINGS
CONCEPT PLAN	9/8/09	14.88	3	94	27	124	1	8.33
REGULATING PLAN	3/25/10	14.88	3	94	27	124	1	8.33
SECTION 1	11/18/10	14.88	-	59	-	59	1	3.97
SECTION 2	TBD	14.88	-	18	10	87	1	5.84

DEVELOPMENT	APPROVAL DATE	RY ZONED ACRES	USE	PHASE TOTAL FLOOR AREA	ASSISTED LIVING FLOOR AREA	MEMORY CARE FLOOR AREA	VILLA FLOOR AREA	SINGLE FAMILY FLOOR AREA	PUD PROJECT TOTAL FLOOR AREA	PUD REMAINING FLOOR AREA	IMPERVIOUS SURFACE	TOTAL IMPERVIOUS SURFACE	TOTAL I.S.R.
CONCEPT PLAN	9/8/09	14.88	ASSISTED LIVING FACILITY, VILLAS, SINGLE FAMILY	153,658	-	-	-	-	153,658	-	238,806	238,806	0.37
REGULATING PLAN	3/25/10	14.88	ASSISTED LIVING FACILITY, VILLAS, SINGLE FAMILY	153,658	-	-	-	-	153,658	-	238,806	238,806	0.37
SECTION 1	11/18/10	14.88	ASSISTED LIVING FACILITY, VILLAS, MEMORY CARE	74,303	74,303	-	-	-	74,303	79,355	140,059	140,059	0.22
SECTION 2	TBD	14.88	VILLAS, MEMORY CARE	32,761	-	9,548	23,213	-	107,064	46,594	46,764	186,823	0.29
SECTION 3	TBD	14.88	ASSISTED LIVING FACILITY, VILLAS	30,942	5,157	-	24,785	-	138,006	15,652	0	-	-
SECTION 4	TBD	14.88	VILLAS, SINGLE FAMILY	15,652	-	-	11,660	3,992	153,658	0	0	-	-



2202 JEFFERSON COURT
FRANKLIN, TN 37064
615.790.7041 P/F



DATE	DESCRIPTION
3/19/14	PRICING AND PERMITS

DATE	DESCRIPTION
3/19/14	PRICING AND PERMITS

VILLA AND MEMORY CARE ADDITION FOR
Silver Grace
PUD SUBDIVISION, SITE PLAN, SECTION 2
300 CELEBRATION CIRCLE, FRANKLIN TN, 37067

DRAWING TITLE:
OVERALL PLAN

SCALE: 1"=60'

C1.2

**APPENDIX E
TRIP GENERATION**

TRIP GENERATION CALCULATIONS - Single-family Homes (NORTHERN PORTION)

The following calculations are based on the data compiled for ITE Land Use Code 210.

Average Daily Traffic

$$\ln(T) = 0.92 \ln(X) + 2.72$$

$$\ln(T) = 0.92 \ln(70) + 2.72$$

$$T = 756 \text{ vehicles}$$

$$\text{Enter} = 0.50 (756) = 378 \text{ vehicles}$$

$$\text{Exit} = 0.50 (756) = 378 \text{ vehicles}$$

AM traffic during peak hour of adjacent street

$$T = 0.70 (X) + 9.74$$

$$T = 0.70 (70) + 9.74$$

$$T = 59 \text{ vehicles}$$

$$\text{Enter} = 0.25 (59) = 15 \text{ vehicles}$$

$$\text{Exit} = 0.75 (59) = 44 \text{ vehicles}$$

PM traffic during peak hour of adjacent street

$$\ln(T) = 0.90 \ln(X) + 0.51$$

$$\ln(T) = 0.90 \ln(70) + 0.51$$

$$T = 76 \text{ vehicles}$$

$$\text{Enter} = 0.63 (76) = 48 \text{ vehicles}$$

$$\text{Exit} = 0.37 (76) = 28 \text{ vehicles}$$

TRIP GENERATION CALCULATIONS - Single-family Homes (NORTHERN PORTION)

The following calculations are based on the data compiled for ITE Land Use Code 210.

Average Daily Traffic

$$\ln(T) = 0.92 \ln(X) + 2.72$$

$$\ln(T) = 0.92 \ln(306) + 2.72$$

$$T = 2,938 \text{ vehicles}$$

$$\text{Enter} = 0.50 (2,938) = 1,469 \text{ vehicles}$$

$$\text{Exit} = 0.50 (2,938) = 1,469 \text{ vehicles}$$

AM traffic during peak hour of adjacent street

$$T = 0.70 (X) + 9.74$$

$$T = 0.70 (306) + 9.74$$

$$T = 224 \text{ vehicles}$$

$$\text{Enter} = 0.25 (224) = 56 \text{ vehicles}$$

$$\text{Exit} = 0.75 (224) = 168 \text{ vehicles}$$

PM traffic during peak hour of adjacent street

$$\ln(T) = 0.90 \ln(X) + 0.51$$

$$\ln(T) = 0.90 \ln(306) + 0.51$$

$$T = 287 \text{ vehicles}$$

$$\text{Enter} = 0.63 (287) = 181 \text{ vehicles}$$

$$\text{Exit} = 0.37 (287) = 106 \text{ vehicles}$$

APPENDIX F

**RELEVANT PAGES FROM NCHRP REPORT 457:
ENGINEERING STUDY GUIDE FOR EVALUATING INTERSECTION IMPROVEMENTS**

NCHRP

REPORT 457

**NATIONAL
COOPERATIVE
HIGHWAY
RESEARCH
PROGRAM**

Evaluating Intersection Improvements: An Engineering Study Guide

TRANSPORTATION RESEARCH BOARD

NATIONAL RESEARCH COUNCIL

can also indirectly reduce the delay to the left-turn or through movements by lessening their need to compete for service with the right-turn movement.

One disadvantage of adding a lane to the minor-road approach is that it may require reallocating the existing pavement or widening of the approach cross section. Sometimes the pavement width needed for the additional lane is available within the existing roadway cross section. In this instance, the only impact is a reallocation of the paved surface through modification of the pavement markings. However, in downtown settings this reallocation may require the removal of some curb parking stalls and can affect adjacent business significantly. Occasionally, the cross section must be widened to provide for the additional lane. If the needed lane width can be provided within the available right-of-way, the cost may be limited to that of construction. However, if additional right-of-way is needed, the costs of acquiring this property in urban settings can be high.

Guidance. The literature does not offer guidance regarding conditions where a second approach lane would benefit from the operation of a minor-road approach. However, the procedures in Chapter 17 of the *Highway Capacity Manual 2000* (15) can be used to identify major- and minor- road volume combinations that would benefit operationally from the provision of a second approach lane or bay. Bonneson and Fontaine (20) developed Figure 2-4 using these procedures and an assumed upper limit of 0.7 for the shared-lane, minor-road volume-to-capacity ratio.

Application. Figure 2-4 indicates the conditions that may justify the use of two approach lanes. Use of the information in this figure requires two types of data:

1. Major-road approach volume for the peak hour of the average day and
2. Minor-road turn movement volume for the peak hour of the average day (used to compute right-turn percentage).

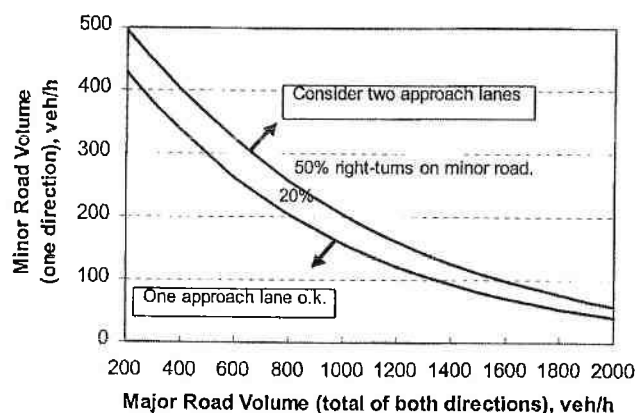


Figure 2-4. Guideline for determining minor-road approach geometry at two-way stop-controlled intersections.

Figure 2-4 would be used once for each minor-road approach to the intersection. The appropriate trend line would be identified on the basis of the percentage of right-turns on the subject minor-road approach. If the volume combination for the major and minor roads intersects above or to the right of this trend line, a second traffic lane should be considered for the subject minor-road approach. If a bay is selected for addition to the intersection, it should be long enough to store vehicles 95 percent of the time (i.e., the bay should not overflow more than 5 percent of the time). Techniques for estimating the 95th percentile storage length are provided in the section, [Increase the Length of the Turn Bay](#).

Add a Left-Turn Bay on the Major Road

Introduction. Provision of a left-turn bay on the major road to a two-way stop-controlled intersection can significantly improve operations and safety at the intersection. A left-turn bay effectively separates those vehicles that are slowing or stopped to turn from those vehicles in through traffic lanes. This separation minimizes turn-related crashes and eliminates unnecessary delay to through vehicles. Data reported by Neuman (21) indicate that the crash rate for unsignalized intersections can be reduced by 35 to 75 percent through the provision of a left-turn bay.

One disadvantage of adding a bay to the major-road approach is that it may require reallocating the existing pavement or widening of the approach cross section. Sometimes the pavement width needed for the additional lane is available within the existing roadway cross section. However, in downtown settings this reallocation may require the removal of some curb parking stalls and can affect adjacent business significantly. Occasionally, the cross section must be widened to provide for the turn bay. If the needed width can be provided within the available right-of-way, the cost may be limited to that of construction. However, if additional right-of-way is needed, the costs of acquiring this property in urban settings can be high.

Guidance. Neuman (21) suggests that the following guidelines should be used to determine when to provide a left-turn bay on the major road of a two-way stop-controlled intersection:

1. A left-turn lane should be considered at any median crossover on a divided, high-speed road.
2. A left-turn lane should be provided on the unstopped approach of a high-speed rural highway when it intersects with other arterials or collectors.
3. A left-turn lane is recommended on the unstopped approach of any intersection when the combination of intersection volumes intersect above or to the right of the appropriate trend line shown in Figure 2-5.

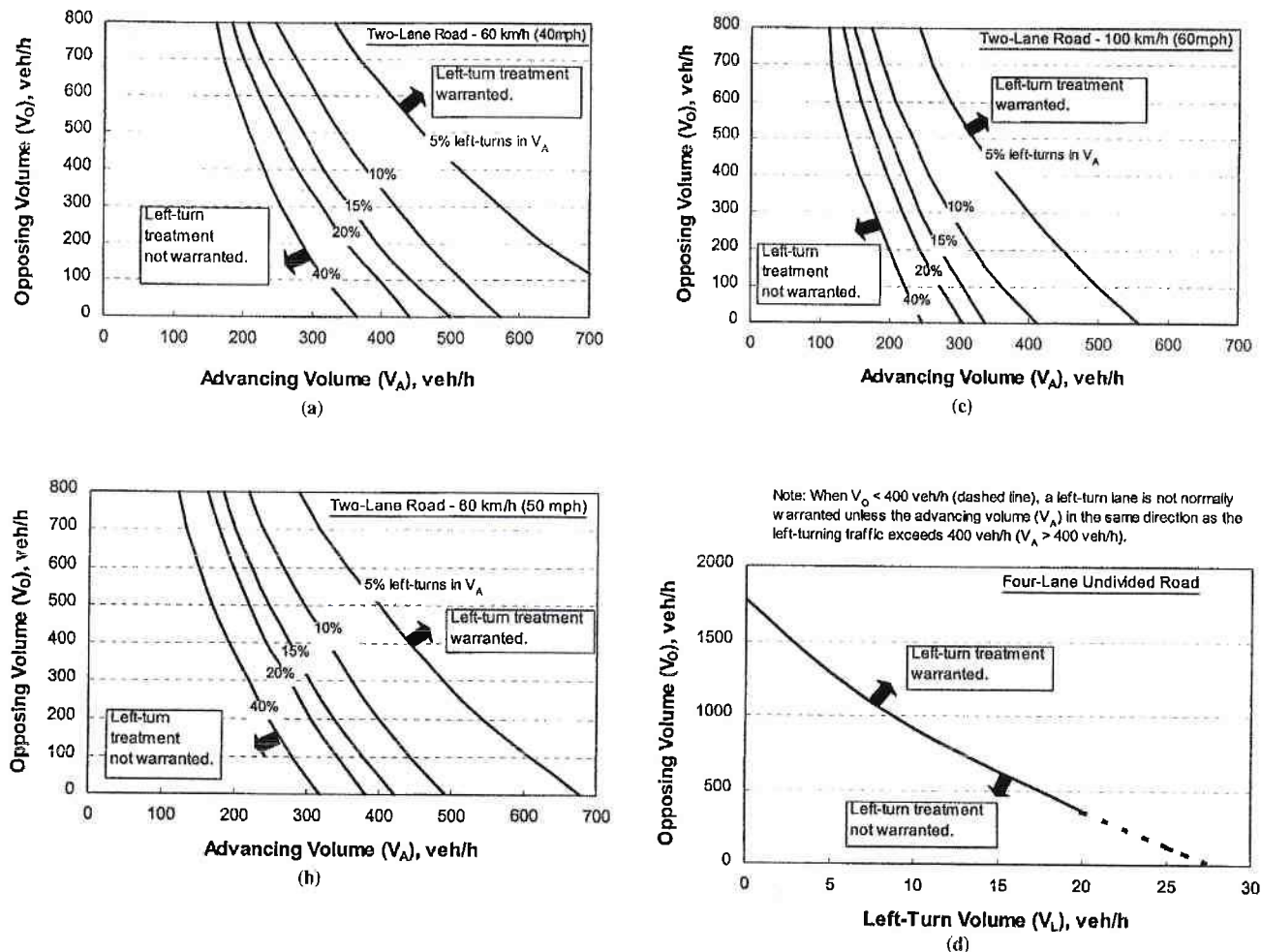


Figure 2-5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

Application. The guidance stated in the preceding section defines the conditions that may justify the provision of a left-turn bay. Application of this guidance requires two types of data:

1. Major-road turn movement volume for the peak hour of the average day and
2. Major-road 85th percentile speed (posted speed can be substituted if data are unavailable).

Use of Figure 2-5 requires determination of the opposing volume, the advancing volume, and the operating speed. The opposing volume should include only the right-turn and through movements on the approach across from (and heading in the opposite direction of) the subject major-road approach. The advancing volume should include the left-turn, right-turn, and through movements on the subject approach. The operating speed can be estimated as the 85th percentile speed. If the operating speed does not coincide with 60, 80, or 100 km/h (i.e., 40, 50, or 60 mph), then interpolation can

be used or, as a more conservative approach, the operating speed can be rounded up to the nearest speed for which a figure is provided.

In application, Figure 2-5 is used once for each major-road approach to the intersection. The appropriate trend line is identified on the basis of the percentage of left-turns on the subject major-road approach. If the advancing and opposing volume combination intersects above or to the right of this trend line, a left-turn bay should be considered for the subject approach. If a bay is included at the intersection, it should be long enough to store left-turn vehicles 99.5 percent of the time (i.e., the bay should not overflow more than 0.5 percent of the time). Techniques for estimating this storage length are provided in the section, [Increase the Length of the Turn Bay](#).

Add a Right-Turn Bay on the Major Road

Introduction. Provision of a right-turn bay on the major road to a two-way stop-controlled intersection can signifi-

cantly improve operations and safety at the intersection. A right-turn bay effectively separates those vehicles that are slowing or stopped to turn from those vehicles in the through traffic lanes. This separation minimizes turn-related collisions (e.g., angle, rear-end, and same-direction-sideswipe) and eliminates unnecessary delay to through vehicles.

One disadvantage of adding a bay to the major-road approach is that it may require reallocating the existing pavement or widening of the approach cross section. Sometimes the pavement width needed for the additional lane is available within the existing roadway cross section. However, in downtown settings this reallocation may require the removal of some curb parking stalls and can affect adjacent business significantly. Occasionally, the cross section must be widened to provide for the turn bay. If the needed width can be provided within the available right-of-way, the cost may be limited to that of construction. However, if additional right-of-way is needed, the costs of acquiring this property in urban settings can be high.

Guidance. Hasan and Stokes (22) developed guidelines for determining when to provide a right-turn bay on the major road of a two-way stop-controlled intersection. These guidelines were based on an evaluation of the operating and collision costs associated with the right-turn maneuver relative to the cost of constructing a right-turn bay. The operating costs included those of road-user fuel and delay. Separate guidelines were developed for two-lane and four-lane roadways. These guidelines are shown in Figure 2-6.

Application. The guidance described in the preceding section defines conditions that may justify the provision of a right-turn bay. Application of this guidance requires two types of data:

1. Major-road turn movement volume for the peak hour of the average day and
2. Major-road 85th percentile speed (posted speed can be substituted if data are unavailable).

Figure 2-6 should be consulted once for each major-road approach. If the combination of major-road approach volume and right-turn volume intersects above or to the right of the trend line corresponding to the major-road operating speed, then a right-turn bay is a viable alternative.

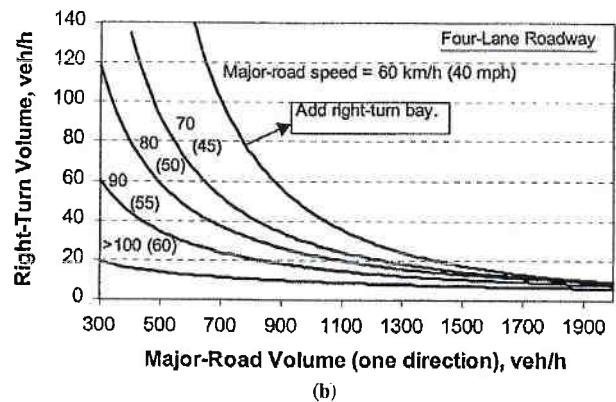
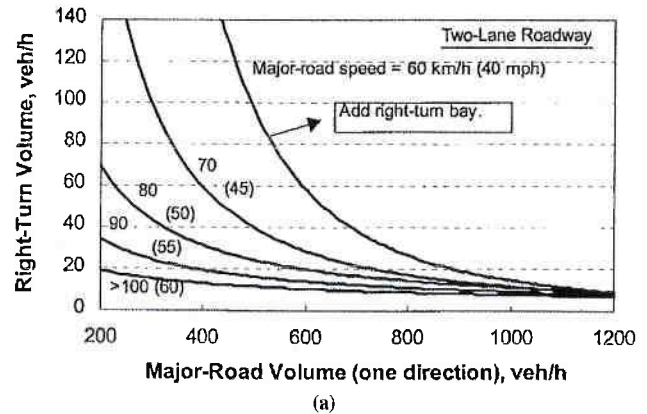


Figure 2-6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

Increase Length of Turn Bay

Introduction. Turn bay length can affect the safety and operation of the intersection approach significantly. This effect becomes more negative as the frequency with which vehicles exceed the available storage increases. Also, for unstopped approaches, this effect becomes more negative as more of the turning vehicle's deceleration occurs in the through lane, prior to the bay. The need to provide adequate storage length, deceleration length, or both is dependent on the type of approach control used and whether the vehicle is turning left or right. Table 2-13 identifies the appropriate bay

TABLE 2-13 Turn-bay length components at unsignalized intersections

Approach Control	Length Components	
	Left-Turn Bay	Right-Turn Bay
Unstopped	Storage Length + Deceleration Length	Deceleration Length
Stopped	Storage Length	Storage Length

PUBLIC NOTICE AFFIDAVIT
City of Franklin, Tennessee

We/I MATTHEW S. HUFF

(Please print Name/Names in Full)

being duly sworn, depose and say(s) that (I am)/(we are), acting as the authorized agent on all matters pertaining to the processing of the development application for the property described as:

MAP 89, PARCELS 55.06, 30.00, 30.01, 43.02, 43.03, 43.04 1/2 MAP 79M, PARCELS 28.00 1/2 29.00
(Property Parcel/Tax ID Number)

and located at:

1101 RIDGEWAY DRIVE

(Street Address)

have/has provided a mailed notice in accordance with section 2.3.8 of the Franklin Zoning Ordinance, which included the following:

1. The address or location of the property subject to the submittal;
2. A brief description of the property (e.g., legal description, nearby streets and intersections);
3. Date, time, and location of the public meeting or hearing; Nature, scope, and purpose of submittal;
4. Information on where the public can view the application and where they may be heard;
5. Information on where the public can submit written comments.

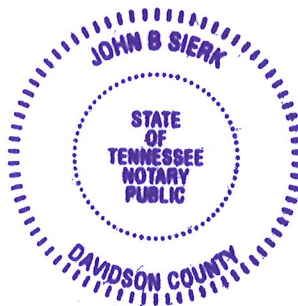
Matthew S. Huff
Signature

Subscribed and sworn to before me this

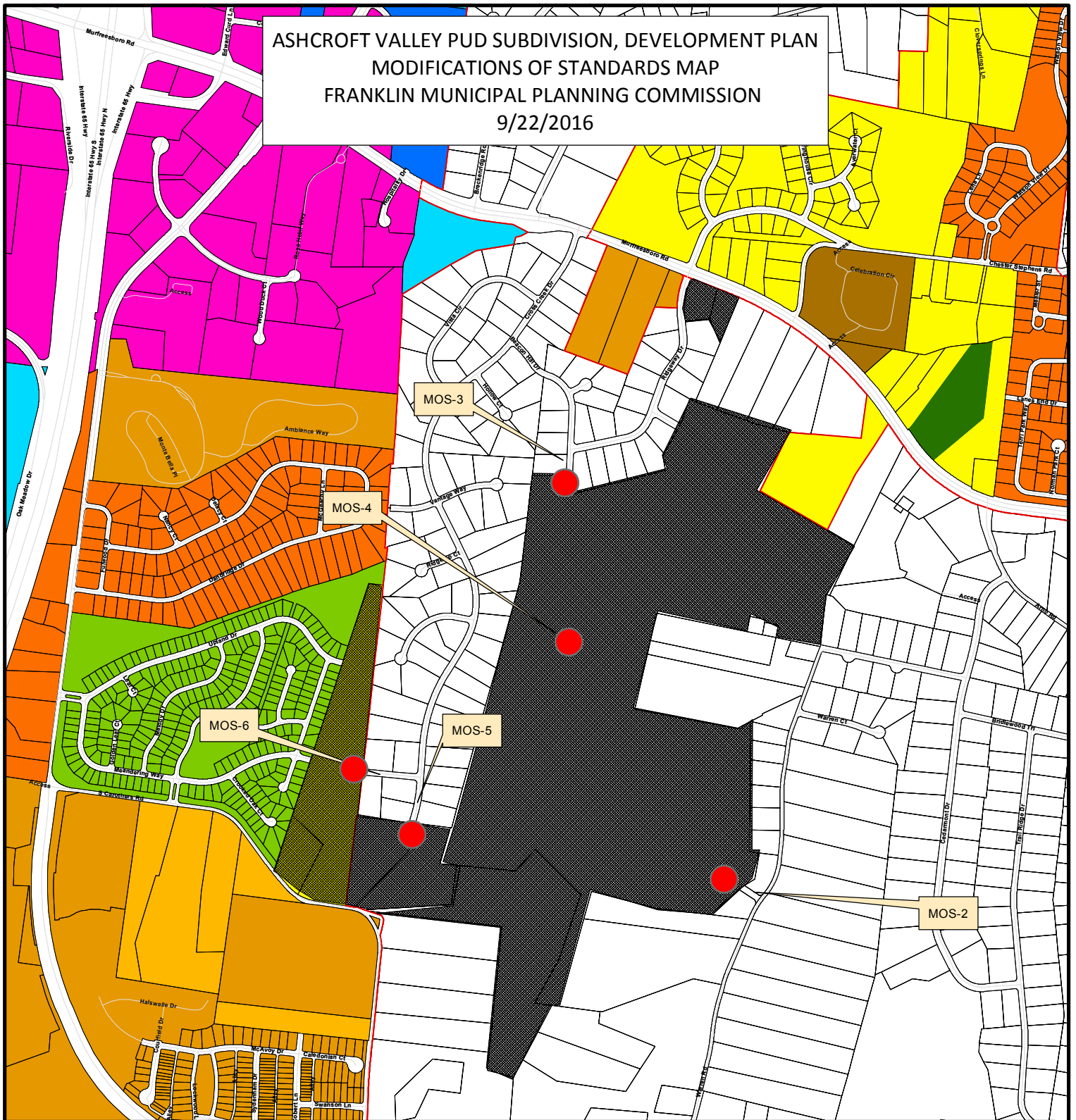
9th day of AUGUST, 20 16

[Signature]
Notary Public

My Commission Expires: 5/5/19



ASHCROFT VALLEY PUD SUBDIVISION, DEVELOPMENT PLAN
MODIFICATIONS OF STANDARDS MAP
FRANKLIN MUNICIPAL PLANNING COMMISSION
9/22/2016



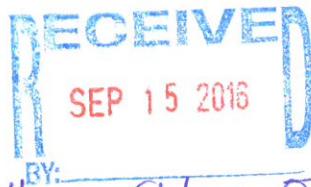
- | | |
|--|---------------------------------------|
| Ashcroft Valley PUD Subdivision | SD-R Specific Development-Residential |
| AG Agricultural District | SD-X Specific Development-Variety |
| ER Estate Residential | OR Office Residential District |
| R-1 Residential District | GO General Office District |
| R-2 Residential District | CC Central Commercial District |
| R-3 Residential District | NC Neighborhood Commercial District |
| R-6 Residential District | GC General Commercial District |
| RM-10 Attached 10 Residential District | LI Light Industrial District |
| RM-15 Attached 15 Residential District | HI Heavy Industrial District |
| RM-20 Attached 20 Residential District | CI Civic and Institutional District |



0 750 1,500 3,000
Feet

This map was created by the Franklin Planning Department.
It was compiled from the most authentic information available.
The City is not responsible for any errors or omissions contained hereon.
All data and materials (c) copyright 2016. All rights reserved.

1991 Beacon Hill Dr.
Franklin
TN 37067



9/12/16
Item 8
9/22/16 FMPC Mtg.

Dear Members of the City of Franklin Planning and sustainability department,

I am writing to express my concern about the planned development of Ashcroft Valley and the consequences it will bear on adjacent county neighborhoods.

Please understand that most of my neighbors in Franklin East and Cross Creek do not support a plan that brings city traffic onto our county roads.

Traffic from 70 homes in a gated community, entering and exiting on Stanford Drive will cause a danger to the 30+ young children who live on Ridgeway (yes, the number has increased, another young family has moved in, 2 babies have been born and at least one more family with 2 little ones is due to move in soon.

What guarantee do we, as residents, have that once building starts, there will be a "gated" community and the "pedestrian only" connectivity will not become roads, connecting the further 250+ homes on the Ridge Valley?

Greg Gamble is on record stating that he "understands there will be a fatality." Please prevent this from happening by

redirecting all city traffic away from our county neighborhood.

Unfortunately my husband and I will be absent from the public meeting on September 22. We have to travel out of the country to a family member's funeral.

We regret that our voices won't be heard and request that you acknowledge our concerns.

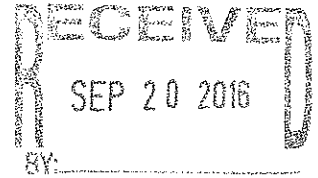
Sincerely,

Susan and Brian Caplan

Susan Caplan

A handwritten signature in blue ink, appearing to read "Brian Caplan", written in a cursive style.

Item 8
FMPC Mtg - 9/22/16



Attention of the Major of Franklin City, Ken Moore and Aldermen at Large

cc: Williamson County Major, Roger Anderson

Ref: FMPC Sept 22nd 2016. Ashcroft Valley PUD. Item 15-1094 etc

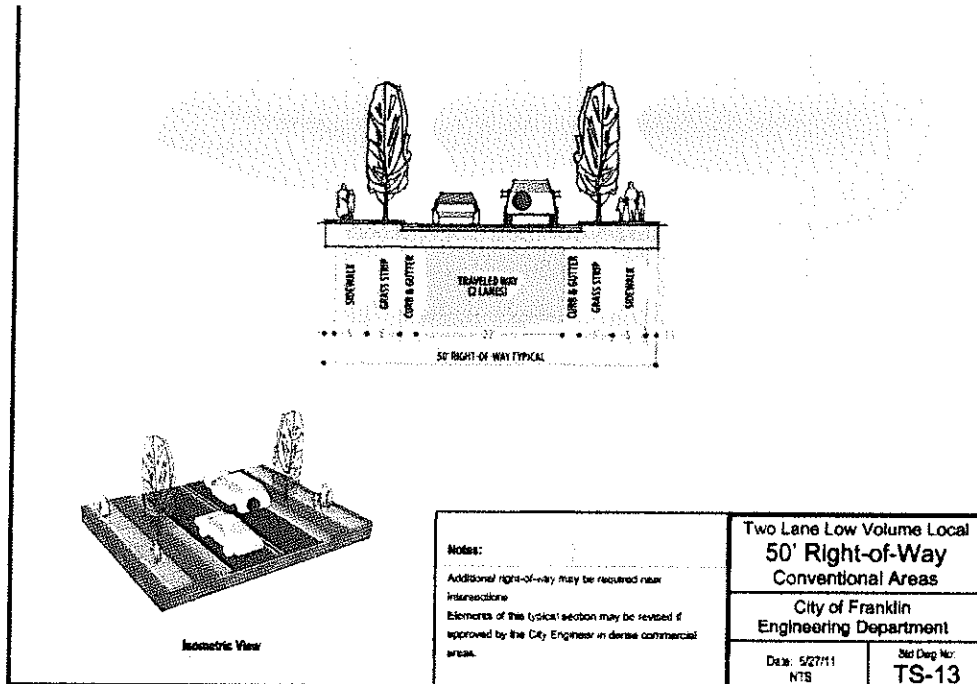
Dear Sirs/Madams

Unfortunately I will not be able to attend the above meeting as I have to attend a funeral in England. Therefore I am sending you my comments on the rezoning request and review of the associated Development Plan. I have grave worries about this Plan and trust that my comments can be entered into the records.

My concerns relating to this proposed development have always been centered around the fundamental flaw in the Plan that proposes to have the traffic from a City developed housing development drive onto and through a County maintained and developed series of roads. Throughout all the revisions on this Plan. None of them have sufficiently addressed and solved the fundamental reality that the County roads of Cross Creek, Ridgeway, Beacon Hill, Stanford and Warren were not developed for this level of traffic.

The new Plan proposes a gated community of 70 houses that has one entrance and exit via Stanford Dr. The traffic, which would not alone come from the houses but would include all the service traffic, school buses, mail trucks, lawn etc would presumably then drive down Lower Ridgeway to join onto Hwy 96. No traffic lights at these intersections are being proposed for this number of cars. However as everyone knows the traffic on Hwy 96 is fast flowing and does not allow traffic to join quickly during the peak rush morning and evening hours. Therefore a backup will occur on Lower Ridgeway and Hwy 96. Traffic is very likely to go back up Ridgeway, down Beacon Hill to Cross Creek to join Hwy 96 closer to the traffic lights at Clover Croft in an attempt to gain quicker access to Hwy 96. .

All these County roads have existed for many years. None have sidewalks nor street lighting. The Franklin Planning department clearly state and require that all new developments follow their criteria of sidewalks and street lighting. As shown clearly in the Ashcroft PUD. However, as I understand, they have no jurisdiction or ability to require that all of these affected County roads mentioned, be upgraded to meet these same requirements. If there is a good rational for these requirements in the City housing areas, should not the same requirements be required for the County roads, as the same traffic will be flowing on both. The reasoning behind these requirements is for the safety of both the motorists and the pedestrians. Therefore these County roads would then not meet this basic code for safety.



The present County road system is sufficient for the present housing density, although with no sidewalks, pedestrian travel can still be risky and unsafe. If this Plan were to proceed to add this new traffic from 70 houses and services, then all this new traffic will become the burden on 9 existing households on Lower Ridgway/Stanford. With the potential burden and safety, also on the households of Upper Ridgway, Beacon Hill and Lower Cross Creek.

I have grave concerns about our safety and the safety for the new households, should they also want to walk out of their gated community to Hwy 96. This Plan brings up the same safety objections as with the earlier plans, even with a housing density that has been reduced to 70.

The traffic safety has simply not been addressed adequately for these County roads to accommodate all of this extra traffic..

Yours sincerely

Brian Caplen

1991 Beacon Hill Drive , Franklin TN 37067

Brian Caplen 9/10/16



HISTORIC
FRANKLIN
TENNESSEE

City of Franklin

Connectivity Presentation

Ashcroft Valley PUD Subdivision

BOMA Work Session 10/11/2016



Connectivity Requirements (Section 5.10.4 of the Zoning Ordinance)

(1) Internal Street Connectivity

- All new Developments shall maintain internal street connectivity through the use of a connectivity index in accordance with the following standards:
 - Development shall achieve a connectivity index score of 1.65 or greater
 - Connectivity Index = Links/Nodes
 - Nodes are street intersection and cul-de-sac heads.
 - Links are stretches of road that connect nodes.

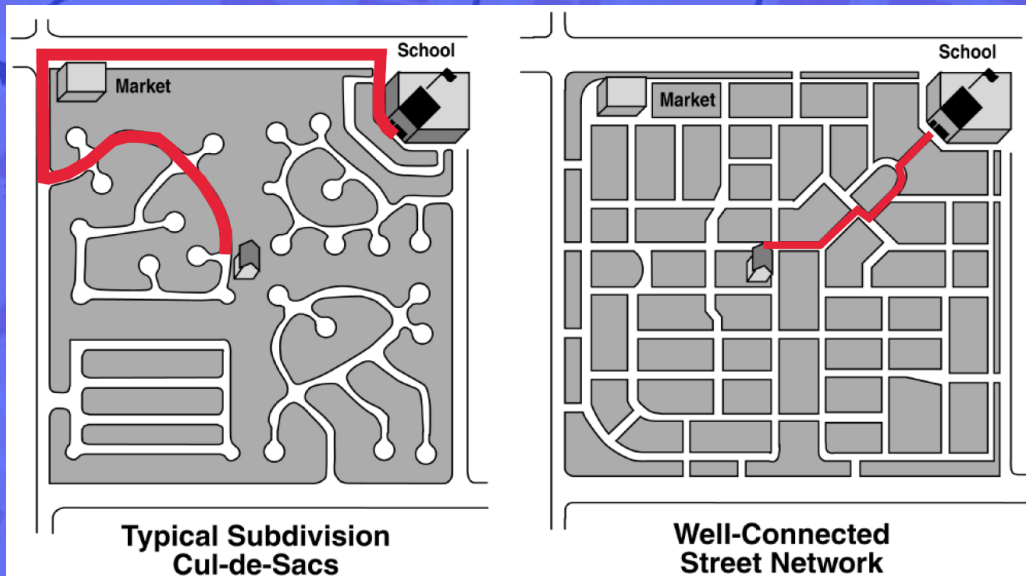
(2) External Street Connectivity

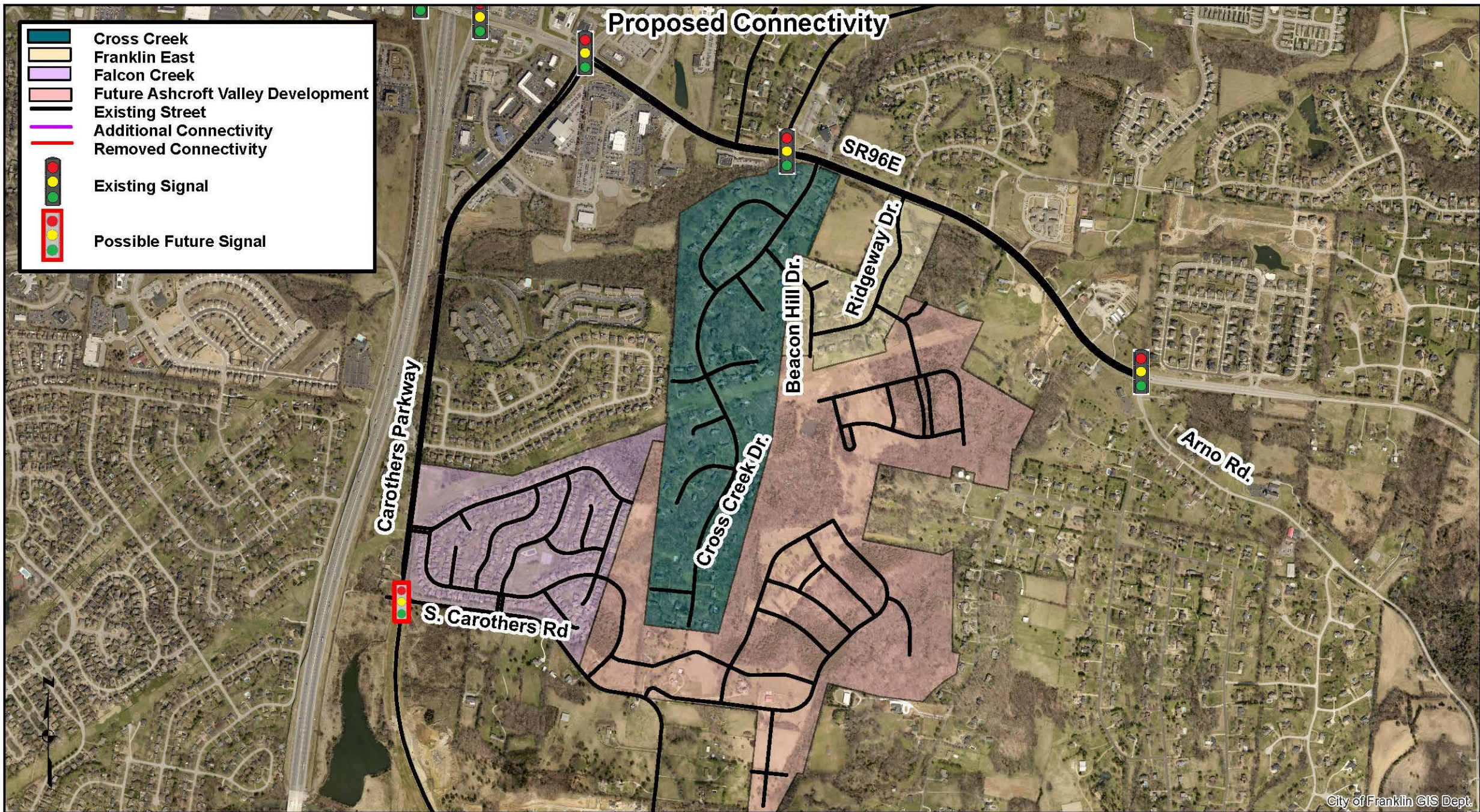
- The arrangement of streets in a development shall provide for the alignment and continuation of existing or proposed streets into adjoining lands in those cases in which the adjoin lands are undeveloped and intended for future development or in which the adjoin lands are developed and include opportunities for such connections.
- Traffic calming measures shall be integrated in the development to mitigate the impact of potential future “cut – through” traffic.
- Street rights-of-way shall be extended to or along adjoining property boundaries such that a roadway connection or street stub shall be provided for development at least every 1,500 feet for each direction (north, south, east and west) in which development abuts vacant lands. Such street stubs shall not be required to abut adjacent development lacking existing or planned street connections, floodplains, wetlands, HHO Districts, riparian buffers, required Tree Projection Zones, slopes exceeding 14 percent, or other unique site conditions preventing a street connection in the determination of the DRT.

Connectivity Requirements				
Community	Connectivity Requirements?	Are Street Stubs Required?	Are cul-de-sacs allowed?	Max. cul-de-sac length
Franklin, TN	Yes	Yes	Yes	500'
Williamson County, TN	Yes	Yes	Yes	800' (Lots Less 14,000 SF)
Nashville, TN	Yes	Yes	Generally prohibited	250'
Chattanooga, TN	Yes	Yes	Yes, Limited	<600' and provides access to < 10 lots
Boulder, CO	Yes	Yes	Yes, Limited	500'
Fort Collins, CO	Yes	Yes	Yes, Limited	660'
Cary, NC	Yes	Yes	Yes	900'
Raleigh, NC	Yes	Yes	Yes	400' for residential
Charlotte, NC	Yes	Yes	Yes, Limited	600'
Austin, TX	Yes	Yes	Yes, Limited	2000' and < 30 single-family residential dwellings

What is the purpose of connectivity requirements?

- Supports the creation of a highly connected transportation system within the City, in order to provide choices for drivers, bicyclists and pedestrians
- Connects neighborhoods to each other and to local destinations such as schools, parks and shopping centers
- Distributes traffic throughout the network and provides options for routes of travel
- Free up arterial road capacity to better serve regional long distance travel needs.
- Improves routing for transit and delivery vehicles (solid waste, recycling, mail, etc.)
- Reduces vehicles miles of travel and travel times
- Reduces emergency response times
- Promote higher levels of physical activity (walking and cycling)
- Improves air quality



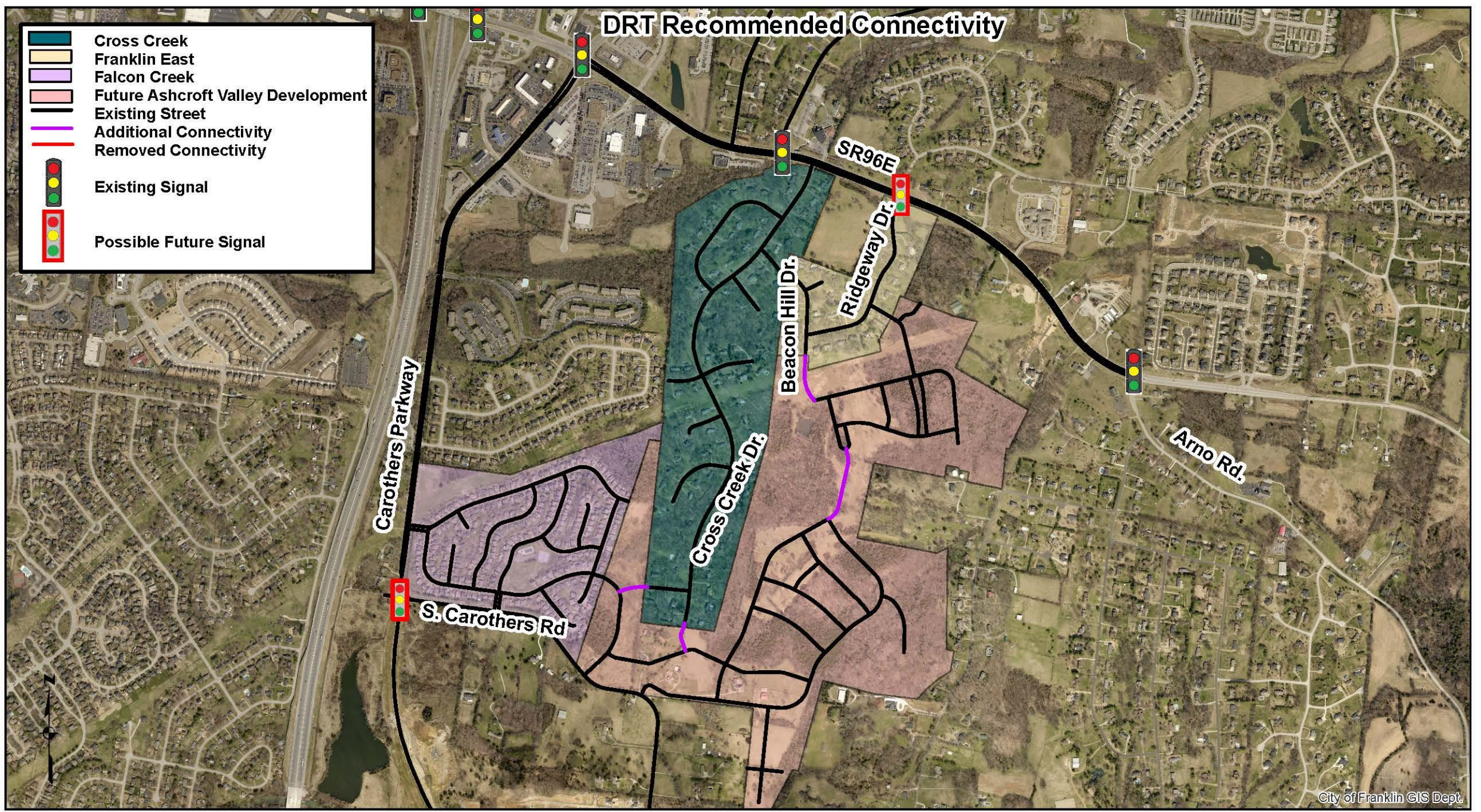


DRT Recommended Connectivity

Cross Creek
Franklin East
Falcon Creek
Future Ashcroft Valley Development
Existing Street
Additional Connectivity
Removed Connectivity

Existing Signal

Possible Future Signal



Planned - Activity Center Map 1

- Cross Creek
- Franklin East
- Falcon Creek
- Future Ashcroft Valley Development
- Future Park
- Future Neighborhood Commercial
- Existing/Future Commercial Development

Summary of Approved Development:

Proposed Retail = 1.95 Million SF

Proposed Office = 3.1 Million SF

Without connectivity you:

- You increase delay at SR96E/Clovercroft and SR96E/Carothers
- Concentrate and direct traffic to the arterial roadways vs. distribute traffic throughout the network
- Increase vehicle miles of travel and travel times
- Decrease routing options for transit, local delivery vehicles and emergency response times

Planned - Activity Center Map 2

- Cross Creek
- Franklin East
- Falcon Creek
- Future Ashcroft Valley Development
- Future Park
- Future Neighborhood Commercial
- Existing/Future Commercial Development

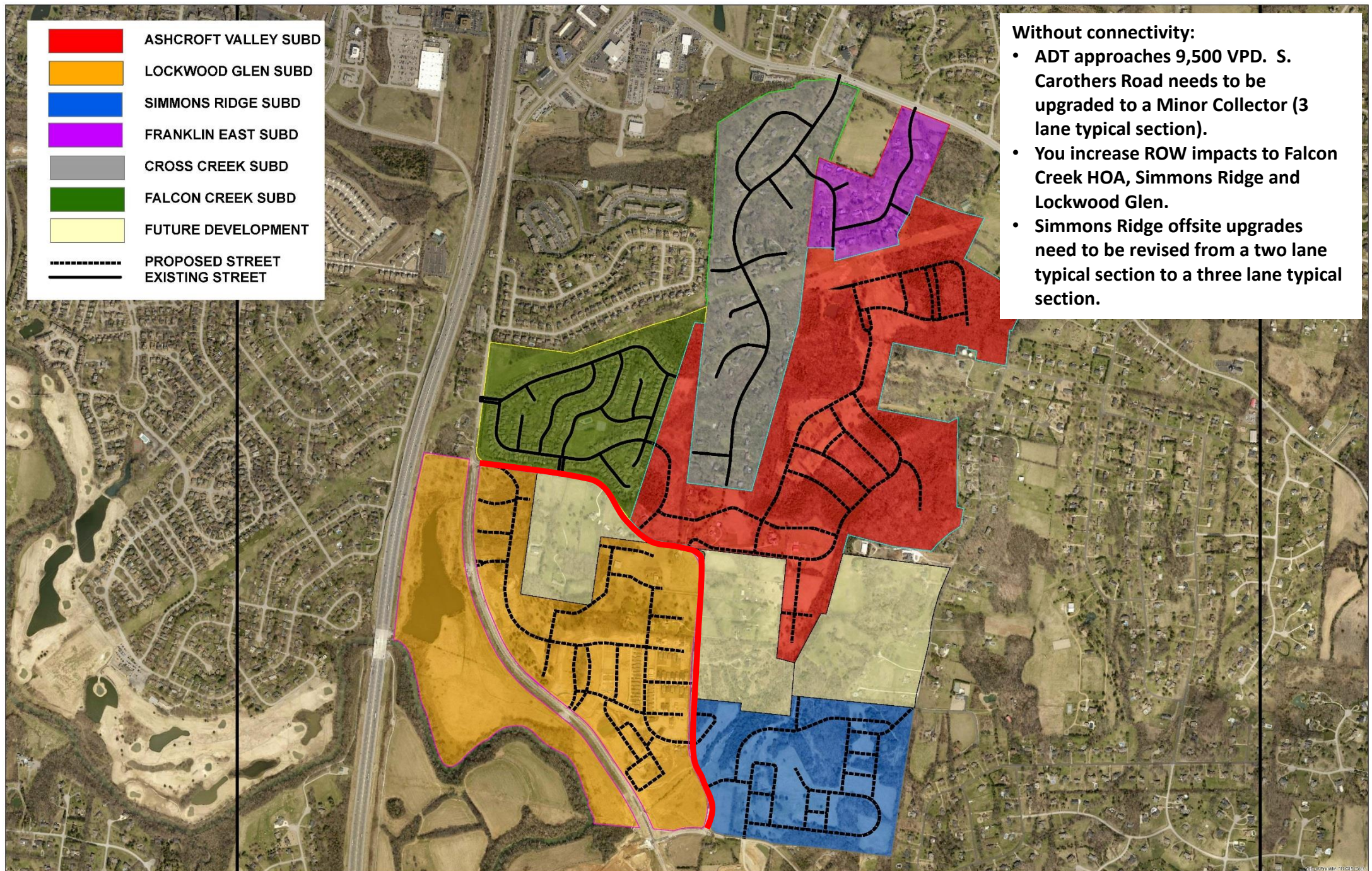
Summary of Approved Development:

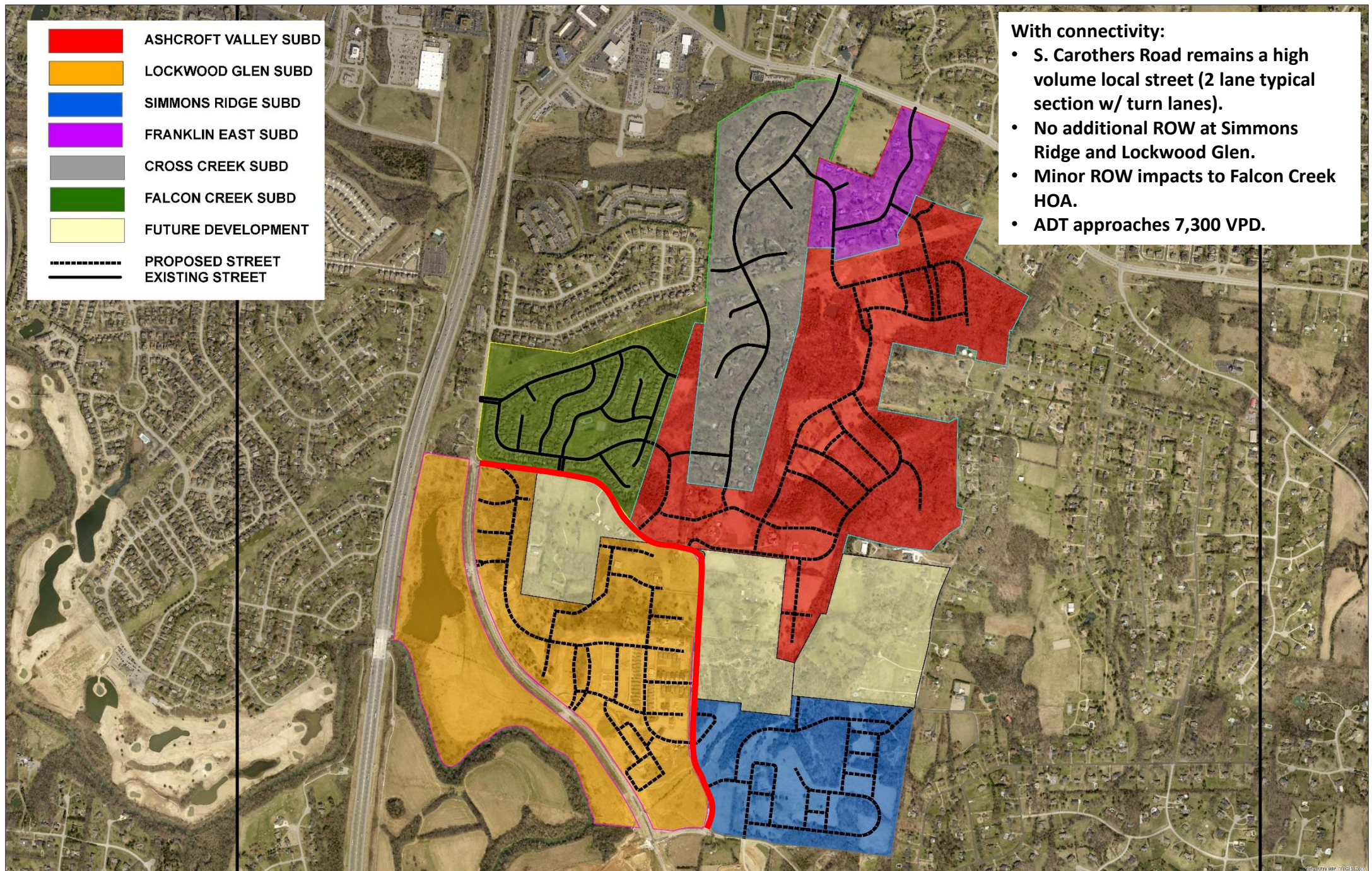
Proposed Retail = 1.95 Million SF

Proposed Office = 3.1 Million SF

With connectivity you:

- You decrease delay at SR96E/Clovercroft and SR96/Carothers
- Distribute traffic throughout the network
- Decrease vehicle miles of travel and travel times
- Increase routing options for transit, local delivery vehicles and emergency response times





November 15, 2016

TO: Board of Mayor and Aldermen

FROM: Paul Holzen, Director of Engineering
Jimmy Wiseman, Assistant Director of Engineering
Carl Baughman, Traffic Engineer III
Josh King, Senior Planner

SUBJECT: Ashcroft Valley Development Plan – Recommended Offsite Transportation Improvements

Purpose

The purpose of this memo is to provide information to the Board of Mayor and Aldermen (BOMA) for the consideration of offsite Transportation Improvements related to Ashcroft Valley Development Plan

Background

Ashcroft Valley currently has numerous MOS related to connectivity. These MOS make it very difficult to complete a traffic impact study addressing all off-site conditions. For this reason, the applicant shall be required to update the traffic impact study following BOMA approval or denial of the MOS's. This will allow City staff and our on-call traffic engineer to finalize traffic distributions and offsite requirements. The final TIS shall be approved by the City Engineer prior to the submitting the first site plan. The summary below is a list of staff recommendations of approval.

General Conditions of Approval:

1. The Development Plan shall be modified to allow adequate guest/visitor parking for all alley loaded residential lots. Specifically lots 133, 134, 135, 136, 137, 143, 144 145, 148, 149, 226, 227, 228, 229, 232, 233, 234 and 235. **Given the design speed (40MPH) along South Carothers Roadway and the superelevation that will be required, no parallel parking shall be allowed on South Carothers Roadway.**
2. The proposed intersection of Local Road E and South Carothers Roadway shall be re-evaluated to ensure Local Road E meets a minimum design speed of 25MPH. AASHTO standards recommends a minimum radius of 198' vs. the 70' radius as shown in the development plan. It should be noted that this may have offsite right-of-way acquisition issues. Staff would be willing to consider a single lane roundabout at this intersection. This roundabout shall be designed to meet AASHTO standards for a design speed of 40 MPH (Posted at 30MPH).
3. In conjunction with the first site plan or infrastructure submittal, full construction drawings shall be prepared for all improvements required on South Carothers Roadway so that Right-of-Way can be reserved and coordinated with adjacent property owners and developers. The Developer shall be required to coordinate with all off-site property owners and pay all cost associated with the Design, Right-of-way and Construction. In the event negotiations fail, for the Right-of-way

acquisition, the City shall attempt to acquire the property and use condemnation as a last resort for South Carothers Roadway only.

Conditions of approval with 100% Connectivity

In conjunction with the northern portion of the proposed project:

1. At the intersection with Highway 96E, the northbound approach of Ridgeway Drive should be widened to include two northbound turn lanes. Specifically, the existing northbound lane should be retained as left turn lane, and a separate through/right turn lane with at least 75 feet of storage should be constructed to the east. With connectivity the developer shall install a traffic signal at HWY 96E. The signal shall be designed to ensure that left turn phases operate concurrently. The exact details of the traffic signal shall be evaluated as part of the TIS update.
2. At the intersection with Ridgeway Drive, an eastbound right turn lane should be provided on Highway 96E. This turn lane should include at least 150 feet of storage and should be designed and constructed according to AASHTO standards.

In conjunction with the southern portion of the proposed project:

3. A northbound right turn lane should be provided on Carothers Parkway at the intersection with S. Carothers Road. This turn lane should include at least 100 feet of storage and should be designed and constructed according to AASHTO standards. No road impact fee offsets will be allowed with this improvement.
4. A traffic signal will likely be warranted at the intersection of Carothers Parkway and S. Carothers Road as all of the approved residential projects on Carothers Parkway and S. Carothers Road are developed. If constructed, this traffic signal should be designed and constructed to include protected and permissive signal phases for southbound motorists, as well as right turn overlap signal phases for northbound and westbound approaches. **Staff does not recommend the installation of the traffic signal until Carothers Parkway is widened to a 4/5 lane roadway.** Any type of signal installed today would be removed as part of a future widening of Carothers Parkway and we would essentially be paying for the signal two times. The signal is only warranted as development continues and staff will continue to evaluate this.
5. The western project access on S. Carothers Road should be constructed to include one entering lane and one exiting lane, striped as a shared left and right turn lane. In conjunction with this configuration, a southbound/eastbound left turn lane should be provided on S. Carothers Road at the project access. This turn lane should include at least 100 feet of storage and should be designed and constructed according to AASHTO standards **(See Exhibit A)**.
6. The eastern (main) project access on S. Carothers Road should be constructed to include one entering lane and two exiting lanes, striped as separate left and right turn lanes. This project access shall be constructed with S. Carothers Road to allow free-flowing traffic on S. Carothers Road and the main project access shall tee into S. Carothers Road. S. Carothers Road shall be designed as a two lane high volume street with turn lanes as required. The design speed on S. Carothers Road shall be 40 MPH so that it can be posted at 30 mph. Due to limited sight distance a westbound right turn lane shall be added, at the main entrance, on S. Carothers Road to

prevent future accidents. In conjunction with this configuration, a southbound/eastbound left turn lane should be provided on S. Carothers Road at the project access. This turn lane should include at least 100 feet of storage and should be designed and constructed according to AASHTO standards **(See Exhibit A)**.

7. Finally, in conjunction with the preparation of final construction documents for the proposed project, sight triangles should be provided to identify the sight distances which will be available, based on the specific location of the project access and its design parameters. These sight triangles should be developed based on guidelines that are included in A Policy on Geometric Design of Highways and Streets, which is published by the American Association of State Highway and Transportation Officials (AASHTO) and commonly known as The Green Book. Specifically, The Green Book indicates that for a speed of 40 mph, the minimum stopping sight distance is 305 feet. This is the distance that motorists on S. Carothers Road will need to come to a stop if a vehicle turning from the project access creates a conflict. Also, based on The Green Book, the minimum intersection sight distance is 445 feet. This is the distance that motorists on the project access will need to safely complete a turn onto S. Carothers Road.

Without 100% Connectivity

1. A northbound right turn lane should be provided on Carothers Parkway at the intersection with S. Carothers Road. This turn lane should include at least 100 feet of storage and should be designed and constructed according to AASHTO standards. No road impact fee offsets will be allowed with this improvement.
2. A traffic signal will likely be warranted at the intersection of Carothers Parkway and S. Carothers Road as all of the approved residential projects on Carothers Parkway and S. Carothers Road are developed. If constructed, this traffic signal should be designed and constructed to include protected and permissive signal phases for southbound motorists, as well as right turn overlap signal phases for northbound and westbound approaches. **Staff does not recommend the installation of the traffic signal until Carothers Parkway is widened to a 4/5 lane roadway.** Any type of signal installed today would be removed as part of a future widening of Carothers Parkway and we would essentially be paying for the signal two times.
3. The western project access on S. Carothers Road should be constructed to include one entering lane and one exiting lane, striped as a shared left and right turn lane. In conjunction with this configuration South Carothers Roadway shall be constructed as a three lane minor collector roadway that would include a left / eastbound turn lane and should include at least 100 feet of storage **(See Exhibit B)**.
4. The eastern (main) project access on S. Carothers Road should be constructed to include one entering lane and two exiting lanes, striped as separate left and right turn lanes. This project access shall be constructed with S. Carothers Road to allow free-flowing traffic on S. Carothers Road and the main project access shall tee into S. Carothers Road. S. Carothers Road shall be designed as a three lane minor collector street. The design speed on S. Carothers Road shall be 40 MPH so that it can be posted at 30 mph. Due to limited sight distance a westbound right turn lane shall be added, at the main entrance, on S. Carothers Road to prevent future accidents. In

conjunction with this configuration, a southbound/eastbound left turn lane should be provided on S. Carothers Road at the project access. This turn lane should include at least 100 feet of storage and should be designed and constructed according to AASHTO standards (**See Exhibit B**).

5. Finally, in conjunction with the preparation of final construction documents for the proposed project, sight triangles should be provided to identify the sight distances which will be available, based on the specific location of the project access and its design parameters. These sight triangles should be developed based on guidelines that are included in A Policy on Geometric Design of Highways and Streets, which is published by the American Association of State Highway and Transportation Officials (AASHTO) and commonly known as The Green Book. Specifically, The Green Book indicates that for a speed of 40 mph, the minimum stopping sight distance is 305 feet. This is the distance that motorists on S. Carothers Road will need to come to a stop if a vehicle turning from the project access creates a conflict. Also, based on The Green Book, the minimum intersection sight distance is 445 feet. This is the distance that motorists on the project access will need to safely complete a turn onto S. Carothers Road.
6. A roadway connection to Stanford Drive and Biltmore Court or Cross Creek Drive shall be required as a gated emergency connection. This should be completed as a two lane curb and guttered roadway with emergency gates that meet the requirements of the Franklin Fire Department. In addition, these roadways shall be designed to meet City of Franklin Street specifications.

Financial Impact

As the City continues to develop there will be increased pressure to make capital improvements to Carothers Parkway and S. Carothers Road. Without connectivity, The City will be forcing 3,560 VPD to use South Carothers Roadway. Without 100% connectivity, it is recommended that S Carothers Roadway be upgraded to a minor collector to handle the long term traffic in the area. While feasible, this change would have a direct impact on the cost of other future capital projects.

The diagram shows a proposed road layout on an aerial photograph. The road starts at the top left, curves to the right, and then curves back to the left. Key features include:

- Left Turn Lane**: Indicated by arrows pointing to the left-turn lanes at two different points along the road.
- 30 mph superelevated curve**: Indicated by arrows pointing to two specific curved sections of the road.
- 12' Trail**: Indicated by an arrow pointing to a narrow path or shoulder area.
- Right Turn Lane Required for Safety**: Indicated by an arrow pointing to a right-turn lane on the second curve.

The road is marked with yellow dashed lines for the centerline and solid lines for the edges. Green areas represent grass or vegetation, and grey areas represent the road surface.

With Connectivity
Two Lane Typical Section
Design Speed = 40 mph
Posted Speed = 30 mph

Left Turn Lane

30 mph superelevated curve

12' Trail

Left Turn Lane

Right Turn Lane
Required for Safety

30 mph superelevated curve

The diagram is an aerial photograph of a rural area with a proposed road layout overlaid. The road starts from the top left, curves to the right, and then curves back to the left. Labels with arrows point to specific features: 'Left Turn Lane' at the first curve, '30 mph superelevated curve' for the first curve, '12' Trail' for a path branching off to the right, 'Left Turn Lane' for the second curve, 'Right Turn Lane Required for Safety' for the second curve, and '30 mph superelevated curve' for the second curve. The road is shown with lane markings and a green buffer zone.

Without Connectivity
Three Lane Typical Section
Design Speed = 40 mph
Posted Speed = 30 mph



September 16, 2016

Dear Board of Mayor and Alderman,

Our partnership purchased Fairways on Spencer Creek 15 months ago, and renamed the course Cheekwood Golf Club we found the course in great need of repair. We take great pride in the progress of our renovations and the improvements we are making to the course. We hear daily from our neighbors and our golfers that our investment is making a great difference. There are currently only three public golf courses within the City of Franklin, Cheekwood, The Little Course, and Forrest Crossing. We have a vision to expand our facility, and ask for your consideration to lease approximately 51 acres of land currently owned by the City of Franklin on the south side of Mack Hatcher parkway.

We have made a substantial investment in our current property and we hope our request to provide Franklin with a manicured golf course, practice, and academy facility demonstrates our commitment to improving the quality of life for Franklin residents. To fulfill the vision we need more property and the possibility of combining our current property with leasing the city owned 51 acres can create long term solutions that can benefit both parties. As golf course developers, we comprehend the intricate details of developing in and around environmental sensitive properties. When done properly, incorporating golf into the environment enhances the overall experience of the user and provides an escape from ones daily pressures.

We understand that this process would require a public request of proposals for the lease of the land and understand that we may not be selected during this process. We believe we have a very exciting opportunity for the City of Franklin and for the residents of Franklin.

Scope of Request

The current partners of Cheekwood Golf Club, located at 285 Spencer Creek Rd, Franklin, TN:

Tommy Pierce
Land Developer and Entrepreneur
909 Division Street, Suite 200, Nashville, TN 37203

Jo Dee Prichard
Land Developer
909 Division Street, Suite 200, Nashville, TN 37203

Todd Jester
Golf Course Architect
1115 Davenport Blvd, Suite 308, Franklin, TN 37069

We are proposing an expansion of the existing public executive 9-hole golf course to enlarge the course to a regulation 9-hole course, and add a public practice facility and golf academy. In doing so, our proposed concept plan would incorporate the 51 acres owned by the City of Franklin through a land lease agreement.

Proposed Access

Cheekwood Golf Club is currently accessed from Spencer Creek Road adjacent to a residential neighborhood. Should the negotiation for the lease prove successful, the partners are prepared to build new clubhouse facilities on the leased property. Therefore, changing the access for the golf course and facilities to the new signalized intersection built at Mack Hatcher Parkway and Spencer Creek Road that is presently being used to access the new Methodist Church.

Proposed Facilities

As mentioned above, the partners are prepared to build a publicly accessible new clubhouse, driving range, golf academy, and 3 new golf holes on the requested for lease 51 acres. The routing of the new golf holes would connect to the improved current golf course via a cart path underneath the Mack Hatcher Parkway Harpeth River bridge on the east side of the river; similar to how the existing nature trail goes under the bridge on the west side of the river. The regulation 9-hole routing would then include the first 2 holes on the leased property, travel under the bridge, play 6 holes on the current property and then travel again under the bridge and play the ninth hole on the leased property.

Environmental Concerns

Cheekwood Golf Club is unequivocally positive about both the concept and the reality of sustainable golf course development and maintenance. Our goals for the new facility embrace objectives to be resource efficient, ecologically rich, and community integrated.

It is the wish of the partners to create a public/private relationship with the ongoing plans and eventual renovation of the sewer treatment plant located across the river from the proposed 51 acres. It would be our hope that this relationship would include, but not limited to the use of treated water for irrigation, using organic solid waste fertilizer created by the new plant on the golf course, improving our current irrigation holding pond for treated water, and any other use that might be deemed beneficial due to the close proximity of the two entities.

The new golf course will be created and shaped with a fundamental aspect of water resource management that will work with and possibly improve the current watershed. It is the intent of the new design to create water detention areas within the golf course and transitional zones on the edges of the golf course to encourage wildlife habitat.

Once the golf development is in place, the golf course will pursue an environmental and sustainable friendly maintenance practice. The partners have already reached out and hired such a golf course consultant and are actively pursuing such goals on the current property.

Community Access

Our partners recognize that a sustainable golf course must meet and exceed the needs of local residents. Our recent investments to improve and repair the course reflect our long term commitment to this course and this neighborhood. We are committed to maintaining public access to the course as a recreational use for all residents of Franklin.

Design Elements

The partners of Cheekwood Golf Club are prepared to incur expenses for improvements to the 51 acres ranging from three and a half to four and a half million dollars. These improvements would include, but not limited to access roads, cart paths, carparks, sand and grass bunkers, golf tee and green complexes, clubhouse and other outbuildings, parking, courtyards and landscaped areas for events, golf academy, and administrative offices.

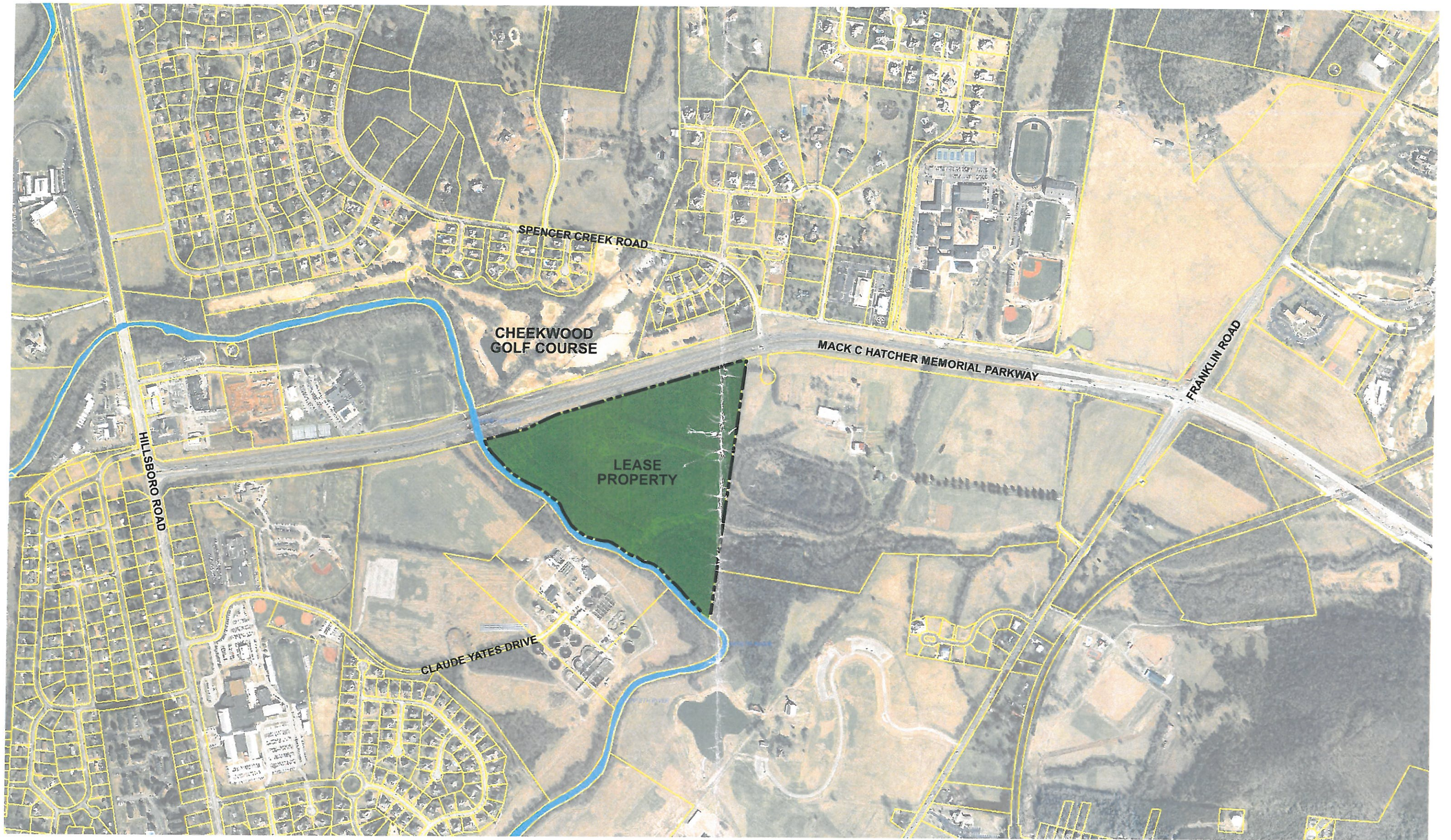
Summary

We appreciate your consideration of our request. Our partnership believes that we can bring a unique and viable alternative recreational choice to the city of Franklin. We and our associates are already reaching out to the youth of Franklin and getting them involved in golf. We believe golf is a game with which to learn valuable life lessons. Borrowing a quote from the great Bobby Jones, "Golf is the closest game to the game we call life. You get bad breaks from good shots; you get good breaks from bad shots- but you have to play the ball where it lies." We have included with this letter a draft plan of the proposed golf additions.

Sincerely,

 9/16/16

J. Todd Jester
General Partner
Cheekwood Golf Club





ORDINANCE 2016-03

TO BE ENTITLED, "AN ORDINANCE AMENDING TITLE 8, CHAPTER 1 OF THE FRANKLIN MUNICIPAL CODE RELATIVE TO ALCOHOL OTHER THAN BEER TO PROVIDE GUIDANCE FOR RETAIL FOOD STORES AND OTHER GENERAL HOUSEKEEPING."

WHEREAS, cities in which voters approved the sale of wine in grocery stores ("Retail Food Stores") are required to issue certificates before Retail Food Stores may be licensed to sell wine by the Tennessee Alcoholic Beverage Commission; and

WHEREAS, the voters of the City of Franklin approved such sales by referendum; and

WHEREAS, the Board of Mayor and Aldermen desire to update Title 8, Chapter 1 of the Franklin Municipal Code to acknowledge the change in state and local law permitting the sale of wine in Retail Food Stores; and

WHEREAS, the Board of Mayor and Aldermen desire to update Title 8, Chapter 1 of the Franklin Municipal Code to provide other general cleanup to ensure its provisions are fully up-to-date with other state law references; and

WHEREAS, the Board of Mayor and Aldermen believe it is in the best interests of the citizens of the City of Franklin to enact these updates.

NOW THEREFORE, BE IT ORDAINED BY THE BOARD OF MAYOR AND ALDERMEN OF THE CITY OF FRANKLIN, TENNESSEE, AS FOLLOWS:

SECTION 1. That Title 8, Chapter 1 of the Franklin Municipal Code is amended by adding text shown in **bold** and deleting text shown in ~~strike through~~ and renumbering sections as appropriate, so that it shall read as follows:

"Sec. 8-101. - Subject to law and regulations.

It shall be unlawful to engage in the business of selling, storing, transporting, distributing, or to purchase or possess alcoholic beverages within the corporate limits of the City of Franklin except in accordance with the provisions of Tennessee Code Annotated, title 57, chapter 3, and rules and regulations promulgated thereunder, and as provided in this chapter.

Sec. 8-102. - Terms defined.

Whenever used herein unless context requires otherwise:

- (1) Alcoholic beverage or beverage means and includes alcohol, spirits, liquor, wine, and every liquid containing alcohol, spirits, wine and capable of being consumed by a human being, other than patented medicine, beer or wine, where the latter two contain an alcoholic content of five percent by weight, or less.
- (2) **Certificate or certificate of compliance means the certificate required pursuant to Tennessee Code Annotated §§ 57-3-208 or 57-3-806, as the same may be amended, supplemented or replaced, and subject to the provisions set forth in this article for issuance of such a certificate.**
- (3) License means the license issued herein or by the Tennessee Alcoholic Beverage Commission and licensee means any person to whom such license has been issued.

- (4) Retail sale or sale at retail means a sale to a consumer or to any person for any purpose other than for resale.
- (5) **Retail food store means an establishment which is eligible for the issuance of a retail food store wine license by the alcoholic beverage commission of the state, pursuant to Tennessee Code Annotated Title 57, Chapter 3, Part 8.**
- (6) **Retail liquor store means any business which is required to have a license for the retail sale of alcoholic spirituous beverages, including beer and malt beverages, under the provisions of Tennessee Code Annotated Title 57, Chapter 3, Part 2.**
- (7) Retailer means any person who sells at retail any beverage for the sale of which a license is required under the provisions herein.
- (8) Manufacturer means and includes a distiller, vintner and rectifier. Manufacture means and includes distilling, rectifying and operating a winery.
- (9) Wholesale sale or sale at wholesale means a sale to any person for purposes of resale.
- (10) Wholesaler means any person who sells at wholesale any beverage for the sale of which a license is required under the provisions of Tennessee Code Annotated, §§ 57-3-101—57-3-110.
- (11) ~~Wine means the product of the normal alcoholic fermentation of the juice of fresh, sound, ripe grapes, with the usual cellar treatment and necessary additions to correct defects due to climatic, saccharin and seasonal conditions, including champagne, sparkling and fortified wine of an alcoholic content not to exceed 21 percent by volume. No other product shall be called "wine" unless designated by appropriate prefixes descriptive of the fruit or other product from which the same was predominantly produced, or an artificial or imitation wine.~~ **the product of the normal alcoholic fermentation of the juice of fresh, sound, ripe grapes, as further defined by T.C.A. §§ 57-3-101 and 57-3-802, as the same may be amended, supplemented or replaced.**
- (12) The word gallon or gallons wherever used herein, shall be construed to mean a wine gallon or wine gallons, of 128 ounces. The word quart whenever used herein will be construed to mean one-fourth of a wine gallon. The word pint wherever used shall be construed to mean one-eighth of a wine gallon.
- (13) Words importing the masculine gender shall include the feminine and the neuter, and the singular shall include the plural.
- (14) The term federal license as used herein shall not mean tax receipt or permit.
- (15) Person means any private individual, partnership, joint venture, corporation, or any other business entity or association.
- (16) Premises means on the property owned, leased, or controlled by the licensee and so connected with the liquor business in which the licensee is engaged as to form a component or integral part of it, including, but not limited to, the building and the parking areas surrounding it. "Premises" includes all decks, patios and other outdoor serving areas that are contiguous to the exterior of the building in which the business is located and that are operated by the business identified in the permit. "Premises" does not include sidewalks as defined in chapter 3 of this title, unless a separate sidewalk dining permit for an outdoor cafe has been issued and the sidewalk dining permittee is in compliance with the terms therein.
- (17) Curb service means all sales transacted outside of the building where the business is carried on. The intent of this provision being to insure that the sale and purchase of alcoholic beverages is transacted in a face-to-face meeting between the salesperson and the customer, with the customer outside of a motor vehicle and under such circumstances that the salesperson has a reasonable opportunity to determine if the customer is then in an intoxicated condition or is a minor.

~~Sec. 8-103. — Manufacturing prohibited.~~

~~The manufacture of alcoholic beverages is prohibited within the corporate limits.~~

Sec. 8-104. - Revocation procedures.

Whenever the board of mayor and aldermen find that a licensee has been, or is, in violation of the provisions of Tennessee Code Annotated, title 57, chapters **1 through 4**, or the provisions of this chapter, they shall certify such violation to the state alcoholic beverage commission, in such form as the commission requires, which shall have the responsibility for determining whether the offender's license shall be revoked.

Sec. 8-105. Certificate of compliance required prior to issuance of license.

As a condition precedent to the issuance of a license by the state alcoholic beverage commission, an applicant for a license shall first obtain a certificate of compliance from the city, as provided below:

- (1) **Retail liquor stores.** Any person intending to apply for a state license for a retail liquor store shall first apply for a certificate of compliance from the city, pursuant to Tennessee Code Annotated § 57-3-803. The application for a certificate shall be in writing on a form furnished by the city recorder. The application shall identify the name and address of the owner of the property for which the certificate is sought, and shall be accompanied by evidence that the owner has agreed to allow the proposed retail store to be operated on the property upon issuance of a license. Applications will be considered in the chronological order in which they are received, and no consideration will be given to the fact that other applications have subsequently been received. The certificate shall be granted or denied by the Board of Mayor and Aldermen within 60 days after the application for the certificate is submitted to the city recorder and, if granted, shall be signed by the mayor or a majority of the board of mayor and aldermen. A certificate of compliance for a retail liquor store shall expire and become void if the applicant to whom the certificate was granted fails to apply for a license from the alcoholic beverage commission within six months of the date of the certificate, or if the retail liquor store for which a certificate was granted is not in operation within 12 months following the issuance of the certificate; provided, however, that the board of mayor and aldermen may, upon written request of the applicant, extend the expiration date of a certificate for up to three additional months in the event of circumstances beyond the applicant's control. If a certificate becomes void, no new certificate may be issued to the same applicant unless a new application is submitted and all applicable requirements of this article are met at the time the new application is received. The mayor shall be authorized to issue a certificate of compliance required in connection with the renewal of an existing license pursuant to Tennessee Code Annotated § 57-3-213 without deliberation by the full Board of Mayor and Aldermen. If the mayor fails or refuses to issue a certificate required in connection with a license renewal, members of the Board of Mayor and Aldermen may sign the certificate and the certificate shall be issued when a majority of the members have signed it.
- (2) **Retail food stores.** Any person intending to apply for a state license for the sale of wine at a retail food store shall first apply for a certificate of compliance from the city, pursuant to Tennessee Code Annotated § 57-3-208. The application for a certificate shall be in writing on a form furnished by the city recorder. Upon verification that the applicant meets the requirements of Tennessee Code Annotated § 57-3-208(b), the mayor may issue the certificate without action by the Board of Mayor and Aldermen. Alternatively, members of the Board of Mayor and Aldermen may sign the certificate and the certificate shall be issued when a

majority of the members have signed it. The certificate shall be granted or denied within 60 days after the application for the certificate is submitted to the city recorder. A certificate of compliance for the sale of wine at a retail food store shall expire and become void if the applicant to whom the certificate was granted fails to apply for a license from the alcoholic beverage commission within six months of the date of the certificate, or if the retail food store for which a certificate was granted is not in operation within 12 months following the issuance of the certificate; provided, however, that the mayor or a majority of the board of mayor and aldermen may, upon written request of the applicant, extend the expiration date of a certificate for up to three additional months in the event of circumstances beyond the applicant's control. If a certificate becomes void, no new certificate may be issued to the same applicant unless a new application is submitted and all applicable requirements of this article are met at the time the new application is received.

Sec. 8-106. - Restrictions as to location of retailers.

~~No license shall be granted for the operation of a retail store for the sale of alcoholic beverages on any premises except on premises which are zoned GC (General Commercial), CC (Central Commercial), NC (Neighborhood Commercial), ML (Local Mixed Use), MN (Neighborhood Mixed Use), or MR (Regional Mixed Use) as shown on the official zoning map. Within these districts no alcoholic beverages shall be sold, distributed, or stored on any premises that shall be located within 300 feet of any church, school ground, or college campus or within 200 feet of a public library or residential dwelling unit, as defined by the zoning ordinance, except if the dwelling unit is located within a building that contains mixed uses. No license shall be issued to any retail liquor dealer where the place of business of the licensee is located within 300 feet of another retail liquor store. Distances shall be measured in the most direct means from main entrance door to main entrance door. "Schools" and "colleges" shall include, but are not limited to, licensed day care or childcare facilities, but shall not include any private colleges or schools where only specialized business, such as law, stenography, business, music, art, medicine, dentistry, vocational occupations or other business subjects are taught. In determining the distance from any public library, school, church ground or college campus, the distance shall be measured from the center of the main entrance of such structures and following the usual and customary path of pedestrian travel to the center of the main entrance of the proposed liquor store. As a further limitation on the location of retail stores for the sale of alcoholic beverages, when, in the opinion of the board of mayor and aldermen, expressed by the passage of an appropriate resolution, the carrying on of a business for the operation of a retail store for the sale of alcoholic beverages at the location covered by the application for a license would be inimical to the public interest, the board shall so advise the alcoholic beverage commission and shall instruct the city attorney to oppose the issuance of the license. Further, any approval of license is contingent on state and local laws, which take precedence over this section.~~

- (1) A certificate issued under this article for a retail liquor store or for the sale of wine at a retail food store shall be valid only for the premises proposed in the application, and any change of location of the business shall be cause for immediate nullification of the certificate. No certificate of compliance shall be issued for the operation of a retail liquor store or for the sale of wine at a retail food store where such store would be a prohibited use under the city's zoning ordinance. No license shall be granted for the operation of a retail liquor store on any premises except on premises which are zoned GC (General Commercial), CC (Central Commercial), NC (Neighborhood Commercial), or Specific Development-Mixed Use (SD-X) as shown on the official zoning map. Furthermore, no certificate shall be issued for a retail liquor store where the proposed place of business is located:**

- (a) Within 200 feet of a public library or a private residence which is in a residential zoning district (except if the private residence is located within a building that contains mixed uses).
 - (b) Within 300 feet of any structure used as a church or other religious institution, school or college. "School" and "college," as used herein, shall include, but are not limited to licensed day care or childcare facility, but shall not include private colleges or schools wherein only specialized subjects, such as music, art, cosmetology, computer skills or vocational occupations are taught.
 - (c) Within 300 feet of another retail liquor store.
- (2) The restrictions set forth herein as to locations apply to conditions existing as of the time the application for a certificate is filed, provided that proximity of a retail liquor store to a private residence, religious institution, school, college, or public library shall not be grounds for revocation of a license or denial of a certificate if a valid license had been issued to any business at that same location, and the business has been in continuing operation since issuance of that license.
- (3) In determining the distances from any structure used as a private residence, religious institution, school, college, public library or existing retail liquor store, the distance shall be measured from the main entrance door of such structure to the nearest public entrance of the proposed retail liquor store, following the usual and customary path of pedestrian travel along streets and/or sidewalks.

Sec. 8-107. - Limitation on number of retailers to be licensed.

Within the corporate limits of the City of Franklin there shall be a limit on the number of retailers licensed to sell alcoholic beverages. That limit shall be one retailer for every 3,000 inhabitants, or fraction thereof, according to the latest federal census, whether regular or special. No person, firm or corporation shall be licensed under this chapter or permitted by the City of Franklin to engage in the sale or distribution of alcoholic beverages in excess of one licensee for every three thousand inhabitants of Franklin, or fraction thereof, according to the last federal census, whether regular or special. When the number of licenses issued under this chapter for retail dealers in alcoholic beverages within the corporate limits of the City of Franklin equals one for every three thousand inhabitants of said town or fraction thereof, according to the last federal census, whether special or regular, all other applications for a license to engage in the retail sale of alcoholic beverages within the limits of said city shall be opposed by the City of Franklin before the alcoholic beverage commission, unless or until some person, firm or corporation holding such a valid license discontinues the operation of a retail liquor establishment. Provided, however, that nothing in this section shall prohibit or in any manner affect the renewal of any retail license in the continuation of the operation of any retail store licensed and in operation on March 8, 1966.

Sec. 8-108. - Bonds of licensees.

Bonds required herein shall be executed by a surety company duly authorized and qualified to do business in Tennessee. Bonds of retailers shall be as specified in appendix A, comprehensive fees and penalties. The bond shall be conditioned that the principal thereof shall pay any fine which may be assessed against the principal.

Sec. 8-109. - Restrictions on license holders and employees.

- (1) The license fee for every license hereunder shall be payable by the person making application for such license and to whom it is issued, and no other person shall pay for such license. In addition to all other penalties, a violation of this section shall authorize and require the board of mayor and aldermen to take action pursuant to section 8-104 of this chapter, regarding the revocation of the

license, if any, of the person so paying for the license of another and/or the license of the person for whom the license was purchased.

- (2) No retailer's license shall be issued to a person who is a holder of a public office, either appointive or elective, or who is a public employee, either national, state, city or county. It shall be unlawful for any such person to have any interest in such retail business, directly or indirectly, either proprietary or by means of any loan, mortgage, or lien, or to participate in the profits of any such business.
The foregoing shall not apply to uncompensated appointees to municipal boards and commissions where the boards or commissions on which such appointees serve have no duty to vote for, overlook, or in any manner superintend the sale of alcoholic beverages.
- (3) No retailer shall be a person who has been convicted of a felony involving moral turpitude within ten years prior to the time he or she or the concern with which he or she is connected shall receive a license. However, this provision shall not apply to any person who has been convicted, but whose rights of citizenship have been restored or judgment of infamy has been removed by a court of competent jurisdiction. In the case of any such conviction occurring after a license has been issued and received, the said license shall immediately be revoked, if such convicted felon be an individual licensee, and if not, the partnership, corporation or association with which he or she is connected shall immediately discharge him or her.
- (4) No license shall under any condition be issued to any person who within ten years preceding application for such license or permit shall have been convicted of any offense under the laws of the State of Tennessee or of any other state or of the United States prohibiting or regulating the sale, possession, transportation, storing, manufacturing, or otherwise handling intoxicating liquors or who has, during said period, been engaged in business, alone or with others, in violation of any of said laws or rules and regulations promulgated pursuant thereto.
- (5) No manufacturer, brewer, or wholesaler shall have any interest in the business or building containing licensed premises or any other person having a license hereunder or in the fixtures of any such person.
- (6) It shall be unlawful for any person to have ownership in, or participate, either directly or indirectly, in the profits of any retail business licensee, unless his interest in said business and the nature, extent, and character thereof shall appear on the application. If the interest is acquired after the issuance of a license it shall be fully disclosed to the board of mayor and aldermen and approved by it. Where such interest is owned by such person on or before the application for any license, the burden shall be upon such person to see that this section is fully complied with, whether he or she, himself or herself, signs or prepares the application, or whether the same is prepared by another. If said interest is acquired after the issuance of the license, the burden of said disclosure of the acquisition of such interest shall be upon the seller and the purchaser. If any person shall violate the provisions of this subsection, he or she shall be guilty of a misdemeanor and, upon conviction thereof shall be fined as specified in appendix A, comprehensive fees and penalties.
- (7) No person shall be employed in the sale of alcoholic beverages except a citizen of the United States.
- (8) No retailer, or any employee thereof, engaged in the sale of alcoholic beverages shall be a person under the age of 18 years. It shall be unlawful for any retailer to employ any person under 18 years of age for the physical storage, sale, or distribution of alcoholic beverages, or to permit any such person in its place of business to engage in the storage, sale or distribution of alcoholic beverages.
- (9) No retailer shall employ in the storage, sale or distribution of alcoholic beverages, any person who, within ten years prior to the date of his or her employment shall have been convicted of a felony involving moral turpitude. In case an employee should be convicted he or she shall immediately be discharged. However, these provisions shall not apply to any person who has been so convicted, but

whose rights of citizenship have been restored, or judgment of infamy has been removed by a court of competent jurisdiction.

- (10) The issuance of a license does not vest a property right in the licensee, but is a privilege subject to revocation or suspension under this chapter.
- (11) Misrepresentation of a material fact, or concealment of a material fact required to be shown in the application for a license shall be a violation of this chapter.

Sec. 8-110. - Residency requirement for managing agents and licensees.

No license shall be issued to any person who has not been a resident of Williamson County, Tennessee, for a period of at least two years prior to the issuance of said license. When a license is applied for in the name of a corporation, the license shall be issued jointly with that corporation's managing agent, and no license shall be issued to a managing agent unless that managing agent has been a resident of Williamson County, Tennessee, for a period of at least two years prior to the issuance of said license.

Sec. 8-111. - Display of licenses.

Persons granted a license to carry on any business or undertaking contemplated herein shall, before being qualified to do business, display and post, and keep displayed and posted, in the most conspicuous place in their premises, such license.

Sec. 8-112. - Transfer of licenses restricted.

The holder of a license may not sell, assign, or transfer such license to any other person, and the license shall be good and valid only for the calendar year in which the same was issued. However, licensees who are serving in the military forces of the United States in the time of war may appoint an agent to operate under the license of the licensee during the absence of the licensee. In such instances, the license shall continue to be carried and renewed in the name of the owner. The agent of the licensee shall conform to all the requirements of a licensee. No person who is ineligible to obtain a license shall be eligible to serve as the agent of a licensee under this section.

Sec. 8-113. - New license after revocation.

Where a license is revoked, no new license shall be issued to permit the sale of alcoholic beverages on the same premises until after the expiration of one year from the date said revocation becomes final and effective.

Sec. 8-114. - Federal license, effect of.

The possession of any federal license to sell alcoholic beverages without the corresponding requisite state license, shall in all cases be prima facie evidence that the holder of such federal license is selling alcoholic beverages in violation of the terms of this chapter.

Sec. 8-115. - Inspection fee.

- (1) There is hereby levied upon every licensee under this chapter an inspection fee as specified in appendix A, comprehensive fees and penalties, for all alcoholic beverages sold and/or supplied by a wholesaler of alcoholic beverages to said licensee within the corporate limits of the City of Franklin, Tennessee, said fee to be collected by the wholesaler as hereinafter provided.
- (2) The inspection fee shall be collected by the wholesaler from the licensee following notice given the wholesaler by the city recorder of the City of Franklin, Tennessee, of the passage of this chapter. The inspection fee shall be collected by the wholesaler at the time of the sale or at the time the licensee makes payment for the delivery of the alcoholic beverages.

- (3) Each wholesaler making sales to licensees located within the corporate limits of the City of Franklin, Tennessee, shall furnish the municipality a report monthly, which report shall contain a list of the alcoholic beverages sold in each licensee located within the municipality, the wholesale price of the alcoholic beverages sold to each licensee, the amount of the inspection fee due and such other information as may be required by the municipality. A monthly report shall be furnished the municipality imposing the inspection fee not later than the 20th of the month following the month in which the sales were made. The inspection fees collected by the wholesalers from the licensee or licensees located within the municipality shall be paid to the municipality at the time the monthly report is made. Wholesalers collecting and remitting the inspection fee to the municipality shall be entitled to reimbursement for this collection service a sum as specified in appendix A, comprehensive fees and penalties, and remitted, such reimbursement to be deducted and shown on the monthly report to the municipality.
- (4) The failure of the wholesaler to collect or timely report and/or pay the inspection fees collected shall result in a penalty as specified in appendix A, comprehensive fees and penalties, which shall be payable to the municipality.
- (5) The inspection fee provided for herein shall be in lieu of all other gross receipt or inspection fees imposed upon wholesalers or licensees under this chapter on alcoholic beverages by the municipality.
- (6) The municipality shall have the authority to audit the records of the wholesalers and/or licensees subject to the provisions of this chapter in order to determine the accuracy of the reports of the wholesalers and/or licensees.

Sec. 8-116. - Regulations for purchase and sale of intoxicating liquors.

- (1) It shall be unlawful for any person in this city to buy any alcoholic beverages herein defined from any person who does not hold the appropriate license under this chapter authorizing the sale of said beverages to him or her.
- (2) No retailer shall purchase any alcoholic beverages from anyone other than a licensed wholesaler, nor shall any wholesaler sell any alcoholic beverages to anyone other than a licensed retailer.
- (3) No licensee shall sell intoxicating liquors at retail in connection with any other business or in the same store where any other business is carried on.
- (4) No retail **liquor** store shall be located except on the ground floor and it shall have one main entrance opening on a public street and such place of business shall have no other entrance for use by the public except as hereafter provided. When a retail **liquor** store is located on the corner of two public streets such retail store may maintain a door opening on each of the public streets. Any sales room adjoining the lobby of a hotel or other public building may maintain an additional door into such lobby so long as same shall be open to the public. Also, every retail store shall be provided with whatever entrances and exits may be required by existing or future municipal ordinances. When a retail liquor store is authorized to be located or operated within an established shopping center or shopping mall, under circumstances that said liquor store would not have a main entrance or door opening onto a public street, the board of mayor and aldermen in its discretion may nevertheless approve the issuance of a liquor license for said location, pursuant to section 8-106 of this chapter. However, nothing in this subsection shall prohibit or in any manner limit or affect the renewal of any retail license in the continuation of the operation of any retail store licensed and in operation on March 8, 1966.
- (5) No holder of a license for the sale of alcoholic beverages at retail shall sell, deliver, or cause, permit or procure to be sold or delivered, any alcoholic beverage on credit.
- ~~(6) No alcoholic beverages shall be sold for consumption on the premises of the seller.~~

- (7) The sale and delivery of alcoholic beverages shall be confined to the premises of the licensee and curb service is not permitted.
- (8) To the fullest extent, consistent with the structure of the establishment, full, free and unobstructed vision shall be afforded from the street and public highway to the interior of the place of sale or dispensing of alcoholic beverages there sold or dispensed.
- ~~(9) No form of entertainment, including pin ball machines, music machines, or similar devices, shall be permitted to operate upon any premises from which alcoholic beverages are sold.~~
- (10) Advertising by a licensee, and signs, displays, posters, and designs intended to advertise any alcoholic beverages, shall be governed by the applicable rules of the alcoholic beverage commission and/or the sign provisions and restrictions of the underlying zoning district in which the licensee is located or the sign or advertising is proposed.

Sec. 8-117. - Use of solicitors by licensees prohibited.

No holder of a license shall employ any canvasser or solicitor for the purpose of receiving an order from a consumer for any alcoholic beverages at the residence or places of business of such consumer, nor shall any such licensee receive or accept any such order which shall have been solicited or received at the residence or place of business of such consumer. This paragraph shall not be construed so as to prohibit the solicitation by a state licensed wholesaler of an order from any licensed retailer at the licensed premises.

Sec. 8-118. - Regulation of retail sales.

- ~~(1) No retailer shall, directly or indirectly, operate more than one place of business for the sale of alcoholic beverages in the City of Franklin, Tennessee, and the word "indirectly" shall include and mean any kind of interest in another place of business, by way of stock ownership, loan, partner's interest, or otherwise. No retailer shall hold more than fifty percent (50%) of the licenses authorized for issuance by the City of Franklin, Tennessee.~~
- (2) No retailer shall sell, lend, or give away any alcoholic beverages to any person who is drunk, nor shall any retailer selling alcoholic beverages sell, lend, or give away such beverage to any person accompanied by a person who is drunk.
- (3) No retailer shall sell, lend, or give away any alcoholic beverages to a person under ~~18~~**21** years of age.
- (4) No retailer shall sell, lend, or give away any alcoholic beverages between 11 o'clock P.M. on Saturday and 8 o'clock A.M. Monday through Saturday. The store may not be open to the general public except during regular hours.
- (5) No retailer shall sell, lend, or give away any alcoholic beverages on Christmas Day, Thanksgiving Day, Labor Day, New Year's Day, or the Fourth of July.
- (6) No retailer of alcoholic beverages shall keep or permit to be kept upon the licensed premises any alcoholic beverages in any unsealed bottles or other unsealed containers, except for the purpose of conducting sales demonstrations as permitted by state law.

Sec. 8-119. - Consumption of alcoholic beverages on premises.

Restaurants ~~serving a full course food menu~~ **or limited service restaurants** may allow the consumption of alcoholic beverages as defined in this chapter on premises and under the terms and conditions within this title **and as provided by Tennessee Code Annotated Title 57**. Consumption of alcoholic beverages may be permitted at outdoor cafes as defined by and regulated under the provisions in chapter 3 of this title. Restaurants may furnish set-ups for use in consumption of alcoholic beverages as long as they comply with the setup tax provisions of Tennessee Code Annotated, § 57-4-301. Provided,

however, that nothing in this section permits the sale of liquor by the drink except where the establishment meets ~~the private club~~ an exception under Tennessee Code Annotated, title 57, chapter 3.

Sec. 8-120. - Recorder authorized to examine books, etc., of licensees.

The city recorder or his agent is authorized to examine the books, papers and records of any licensee for the purpose of determining whether the provisions of this chapter are being complied with. Any refusal to permit the examination of any of such books, papers, and records, or the investigation and examination of such premises, shall constitute sufficient reason for the revocation of a license or the refusal to issue a license.

Sec. 8-121. - Violations.

(a) Any violation of the terms of this chapter shall be punishable by a fine as specified in appendix A, comprehensive fees and penalties. In the discretion of the board of mayor and aldermen, any violation may be cause for certification of violation to the alcoholic beverage commission pursuant to section 8-104 of this chapter.

(b) Misrepresentation of a material fact, or concealment of a material fact required to be shown in the application for a certificate, shall be a violation of this title. The city may refuse to issue a certificate if, upon investigation, the city finds that the applicant for a certificate has concealed or misrepresented in writing or otherwise any material fact or circumstance concerning the operation of the business, or if the interest of any person in the operation of the business is not truly stated in the application, or in case of any fraud or false statements by the applicant pertaining to any matter relating to the operation of the business. All data, written statements, affidavits, evidence or other documents submitted in support of an application are a part of the application.

(c) If the provisions of this section are alleged to have been violated, the city may revoke any certificate which has been issued, after first providing an opportunity for the applicant or licensee to refute such allegations and/or to show cause why the certificate should not be revoked. Revocation of a certificate for a retail liquor store shall require a majority vote of the board of mayor and aldermen. The mayor may revoke a certificate for the sale of wine at a retail food store, provided that the applicant or licensee may appeal the revocation to the board of aldermen, which may reverse the mayor's action by majority vote.

Sec. 8-122. - Visible possession of unsealed containers on streets, etc., prohibited.

Visible possession of alcoholic beverages in unsealed containers upon any public street or within any governmental building or public park shall be a violation of this chapter.

Sec. 8-123. - Chapter does not apply to beer.

No provision of this chapter shall be considered or construed as in any way modifying, changing or restricting the rules and regulations governing the sale, storage, transportation, etc., or tax upon beer or other liquids with an alcoholic content of five percent or less, more specifically chapter 2 of this title.

Sec. 8-124. - Tax levied.

There is hereby levied on the privilege of selling at retail in the city alcoholic beverages for consumption on the premises the tax provided for in Tennessee Code Annotated, § 57-4-301, as it now exists or may from time to time be amended at the rates and in the manner prescribed by said state law, and the said tax shall hereafter be collected annually by the city."

SECTION 2. Severability. In the event that any section, clause, provision, or part of this ordinance shall be found and determined to be invalid by a court of competent jurisdiction, all valid parts that are severable full force and effect. If any part of this ordinance is found to be invalid in any one or more of its several applications, all valid applications that are severable from the invalid applications shall remain in effect.

SECTION 3. Repeal and Savings Clause. All ordinances or parts of ordinances in conflict herewith are hereby repealed; provided, however, that nothing herein contained shall affect any rights, actions or causes of action which shall have accrued to the City of Franklin prior to the effective date of this ordinance.

SECTION 4. BE IT FINALLY ORDAINED by the Board of Mayor and Aldermen of the City of Franklin, Tennessee, that this Ordinance shall take effect from and after its passage on second and final reading, the health, safety, and welfare of the citizens requiring it.

ATTEST:

By: _____
Eric Stuckey
City Administrator/Recorder

CITY OF FRANKLIN, TENNESSEE:

By: _____
Dr. Ken Moore
Mayor

Approved as to form by:

Kristen L. Corn
Assistant City Attorney

PASSED FIRST READING:

PASSED SECOND READING:

