Town of Thompson's Station
Board of Mayor and Aldermen
Work Session Agenda
June 8, 2021 @ 6:00 p.m.

1. Steve Thompson – Burris-Thompson & Associates Classification & Compensation Presentation:

2. Interlocal Agreement Between Thompson's Station And Spring Hill: (To Be Provided)

Documents:

INTERLOCAL AGREEMENT _ SPRING HILL THOMPSONS STATION _ JUNE 2021.PDF
EXHIBIT_ TSRDEAST_ROADSHARING.PDF

3. Spring Hill Traffic Light ROW–Intersection Relocation For Buckner Lane At Thompson's Station Road East:

Documents:

Z ITEM - 3 WORK SESSION MEMO SPRING HILL TRAFFIC LIGHT ROW INTERSECTION REQUEST BOMA PACKAGE.PDF
Z ITEM - 3 WORK SESSION SPRING HILL TRAFFIC LIGHT ROW-INTERSECTION REQUEST BOMA PACKAGE.PDF

This meeting will be held at 6:00 p.m. at Thompson's Station Community Center
1555 Thompson's Station Road West

INTERLOCAL AGREEMENT

This Interlocal Agreement (the "Agreement") is entered into by and between the **Town of Thompson's Station, Tennessee** (the "Town") and the **City of Spring Hill** (the "City") as of this ____ day of _____, 2021.

WITNESSETH:

WHEREAS, the Town and the City share a municipal boundary along portions of Thompson's Station Road East (the "Road");

WHEREAS, the Town and the City have a mutual interest in maintaining the Road for use by both the citizen of the Town and the City;

WHEREAS, the Town has historically maintained the entirety of the Road;

WHEREAS, the Town and the City wish to enter into this Agreement in order to outline ownership, maintenance costs, and requirements for future development by both along the Road;

WHEREAS, the Tennessee General Assembly has provided authority for such arrangements by public act to include, without limitation, the authority granted to counties and cities pursuant to Tenn. Code Ann. § 12-9-101, et seq., known as the "Interlocal Cooperation Act." This Agreement is made and entered into pursuant to said Act.

NOW, THEREFORE, in consideration of the mutual agreements herein contained, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto agree as follows:

1. Municipal Boundary. It is agreed, by and between the Town and the City, that the Road known as Thompson's Station Road East (the "Road") shall serve, in pertinent portions, as the boundary between the two municipalities. Specifically, the centerline of portions of the Road where the property on the north side is within the municipal limits of the Town and the property on the south side is within the municipal limits of the City shall serve as the municipal boundary between the two. Attached hereto and incorporated herein is Exhibit "A", which depicts a Map of Thompson's Station Road East delineating the pertinent portions of the same for the purposes of this Agreement. Said pertinent portions shall be known as the Shared Road.

2. Term. Either party to this Agreement may terminate its participation in this Agreement by giving one hundred eighty (180) days' written notice to the other municipality. This Agreement shall remain in effect until its termination in accordance with the provisions of this Section.

3. Mutual Maintenance/Generally. The Town and the City agree that mutual maintenance of the Shared Road is in the best interests of both the Town and the City. The Town and City shall work together to establish a regular maintenance schedule in their respective

capital improvement programs. The Town and the City shall work together to report and address issues on and about the Shared Road.

4. Minor Maintenance. Minor, spot maintenance of the Shared Road shall be performed by the pertinent municipality, where minor maintenance on the north side of the Shared Road shall be performed by the Town, and minor maintenance on the south side of the Shared Road shall be performed by the City. In the rare occasion that a minor maintenance issue is discovered on the centerline of the road, the Town shall be responsible for said maintenance, and the cost of said maintenance shall be proportionately divided between the Town and the City. The Town and the City agree to work together and notify the other of minor, spot maintenance work on the Shared Road. Said minor, spot maintenance shall be conducted in a timely, expeditious fashion. In the unlikely event one municipality does not address a minor maintenance issue on the Shared Road, the other municipality shall provide the other with fourteen (14) days' notice of the discovered issue. If the minor maintenance issue is not resolved within said time frame, the notifying municipality may perform the minor maintenance and charge the other municipality for the reasonable cost thereof, and said costs shall be paid by the non-performing municipality.

5. Major Maintenance. For major maintenance on parts of or all of the Shared Road, in accordance with the Town's maintenance schedule as determined in its capital improvement program, the Town shall give the City at least one hundred eighty (180) days' notice of any and all planned major maintenance, which shall include by not be limited to: resurfacing, repaving, widening, or other significant, non-minor work, including but not limited to infrastructure improvements. The Town and the City shall plan, coordinate and budget for said major maintenance, as necessary. The Town will be responsible for bidding out all major maintenance, and the City agrees to reimburse the Town for a proportionate share of all costs associated with all major maintenance of the Shared Road within sixty (60) days of receipt from the Town of an invoice for the same. The aforementioned proportionate share of all costs shall be determined by assigning to the City fifty percent (50%) of all costs for major maintenance along the Shared Road. The staffs for both municipalities shall worth together, and the City shall be allowed to present recommendations to the Town for its consideration on all major maintenance projects.

6. Signage and Traffic Signals. The Town will be responsible for all maintenance, erection, and costs associated with signage on the north side of the Shared Road. The City will be responsible for all maintenance, erection, and costs associated with signage on the south side of the Shared Road. Traffic signal responsibility shall be determined by the location of the control box, with the City responsible for traffic signals with control boxes placed on the south side of the Shared Road and the Town responsible for traffic signals with control boxes placed on the north side of the Shared Road, and the Town and the City shall split the costs associated with maintenance and operation of any traffic signals on the Shared Road. All signs and traffic signals shall be installed and maintained pursuant to the latest edition of the Manual for Uniform Traffic Control Devices ("MUTCD").

7. Timing of Traffic Signals. The Town and the City shall work together to determine the appropriate timing for the signals along the Shared Road in order to ensure optimal

performance of traffic signals during morning and afternoon peak operating periods. If a mutual agreement cannot be reached, then the Town and the City shall split the costs of a timing study conducted by a licensed traffic engineer agreeable to both the City and the Town. Once traffic signal timing has been established, neither the City nor the Town shall modify the timing of the traffic signals without the mutual consent of the other municipality.

8. Speed Limits. The Town and the City shall work together to determine the appropriate speed limit(s) along the Shared Road. If a mutual agreement cannot be reached, then the Town and the City shall split the costs of a speed study conducted by a licensed traffic engineer agreeable to both the City and the Town. As outlined in Paragraph 6 above, each municipality shall be responsible for the maintenance, erection, and costs associated with speed limit signage along their respective side of the Shared Road pursuant to the MUTCD.

9. Culverts and Bridges. The Town and the City agree to notify the other of any work performed on any culvert, bridge, or other infrastructure, drainage in nature or otherwise, within the right-of-way of the Shared Road. Said notification shall occur at least six (6) months in advance, and the municipalities shall work together in good faith to address traffic, safety, and other issues stemming from said work. Further, said notification is designed to allow the other municipality to determine if work on the infrastructure is needed on said municipality's side of the Shared Road. In the event said work is determined necessary, the Town and the City shall work together to determine if the work, overall, can be bid out as one project for cost saving and efficiency purposes. The municipality in charge of bidding out cooperative work under this paragraph shall be determined by agreement on a case-by-case basis, depending on the location, nature and extent of the work contemplated to be performed. In the event of an emergency repair, the discovering municipality shall immediately notify the other municipality of the emergency and initiate an emergency response with the responsibility of the cost to be determined after the fact based on the location and nature of the emergency.

10. Drainage Issues. The Town and the City agree to work together and communicate drainage issues along the Shared Road and to help determine appropriate next steps to address any drainage issues discovered. In the event of an emergency repair, the discovering municipality shall immediately notify the other municipality of the emergency and initiate an emergency response with the responsibility of the cost to be determined after the fact based on the location and nature of the emergency.

11. Future Connections. Prior to any future connection of any road to the Shared Road, the Town and the City agree to meet, by and between their respective staff, to coordinate such a connection to the extent possible, including, but not limited to, drainage, turn lanes, additional lanes, shoulder widening, signs, traffic signals, street lighting, and associated traffic and speed limit studies. The intent of the foregoing is to facilitate communication as well as planning and mitigating of future issues for the benefit of both municipalities. It is understood, by and between the Town and the City, that certain projects and developments have received preliminary and/or final development approvals from one or both of the parties. This Agreement is neither intended to nor shall it be permitted to violate the vested rights of any property owner.

However, it is the intent and purpose of this Agreement to facilitate better coordination on the Shared Road.

12. Future Development. The Town and the City agree to provide notice to the other of any property development along the Shared Road. Said notice shall be given as expeditiously as possible. If any development is a major subdivision or planned development, the respective staffs for the municipalities shall meet to discuss the same. It is understood, by and between the Town and the City, that certain projects and developments have received preliminary and/or final development approvals from one or both of the parties. This Agreement is neither intended to nor shall it be allowed to violate the vested rights of any property owner. However, it is the intent and purpose of this Agreement to facilitate better coordination on the Shared Road.

13. Roadwork Standards. All roadwork along the Shared Road shall comply with the Town's road standards, or, as applicable, state standards unless otherwise agreed to in writing by the municipalities.

14. Compliance with Law. The Town and the City each agree to comply with all applicable laws, rules, regulations, and procedures required of them in providing the services contemplated by this Agreement.

15. *Force Majeure*. The parties shall not be liable to each other or be deemed to be in breach of this Agreement for any failure or delay in rendering performance arising out of causes beyond their respective reasonable control and without its fault or negligence. Such causes may include, but are not limited to, acts of God or the public enemy, terrorism, significant fires, floods, earthquakes, epidemics, quarantine restrictions, strikes, freight embargoes, or governmental authorities approval delays which are not caused by any act or omission by the parties, and unusually severe weather. The parties agree to notify each other of the existence and nature of any delay.

16. Severability. The Parties agree that if any part, term, or provision of this Agreement is determined to be illegal or in conflict with any law of the State of Tennessee by any court with jurisdiction, the validity of the remaining portions or provisions shall not be affected. The rights and obligations of the parties shall be construed and enforced as if the Agreement did not contain that particular part, term, or provision held to be invalid.

17. Survival. All of the terms, conditions, covenants, agreements, warranties and representations contained herein not fully performed by any party hereto upon any termination or expiration of this Agreement shall survive such termination or expiration.

18. Board Approval. This Agreement is subject to the approval of the legislative body or governing board for each party to this Agreement.

19. Entire Agreement. This Agreement embodies the entire agreement and understanding of the parties related to its subject matter and supersedes all prior proposals, understandings, agreements, correspondence, arrangements and contemporaneous oral

agreements relating to the subject matter of this Agreement. No representation, promise, inducement or statement of intention has been made by any party which has not been embodied in this Agreement. This Agreement may be modified only by a written instrument signed by the parties hereto.

20. Jurisdiction, Venue, and Law. The parties agree and acknowledge that jurisdiction and venue for any dispute regarding this Agreement shall be in the Chancery Court for Williamson County, Tennessee with application of the laws of the State of Tennessee.

IN WITNESS WHEREOF, the Mayor for each of the municipalities has executed this Agreement to be effective as of the date of the last to sign below.

THE TOWN OF THOMPSON'S STATION:

By: _____
Corey Napier, Mayor

Date: _____

THE CITY OF SPRING HILL:

By: _____
Jim Hagaman, Mayor

Date: _____

Thompson's Station Rd East Exhibit
Shared Road Sections with Spring Hill

Sections of Thompsons Station Rd E

Cities

SPRING HILL

THOMPSON'S STATION

Town of Thompson's Station

City of Spring Hill

CLAYTON A

SHERRIE ST

BRENDA ST

PANTALL RD

TACEY ST

THOMPSONS STATION RD E

INTERSTATE 65 HWY

PRATT RD

65

MCKENNA DR

NEW PORT ROYAL RD

SAYBROOK XING

SAYBROOK TRL

HATTERAS DR

WATAUGA CT

MERCER LN

PALAMINO CT

MILTON CT

IROQUOIS DR

IROQUOIS PL

MERCER CT

MCGEE CT

MILTON LN

LYDIA PL

BUCKNER LN

CAMDEN CT

IROQUOIS CT

DOUGLAS CT

DOUGLAS LN

CASH CT

BANKS CT

N

W

E

S

1 inch = 517 feet

Phone: (615) 794-4333
Fax: (615) 794-3313
www.thompsons-station.com

1550 Thompson's Station Road W.
P.O. Box 100
Thompson's Station, TN 37179

MEMO

DATE: February 9, 2021

TO: BOMA

FROM: Micah Wood, AICP
Planning Director

SUBJECT: Item : ROW/Intersection relocation for Buckner Lane at Thompson's Station Road East

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Southeast Ventures requests approval of an intersection relocation in ROW partially controlled by the Town of Thompson's Station. The intersection of Buckner Lane at Thompson's Station Road East is proposed to be relocated to accommodate a PUD development called June Lake that is located in Spring Hill and is being developed in conjunction with the new Buckner Road-Interstate 65 Interchange.

The ROW plat submitted with this request has been approved by the City of Spring Hill. Deeded lots indicate a mixed picture as to where the actual property lines fall in this location: some deeds indicate to the centerline of the road, while others indicate they end at the ROW line. Spring Hill, through acceptance of the ROW on the southside of Thompson's Station Road East, as part of the preliminary plat, has laid claim to the ROW to the centerline of the Thompson's Station Road East. The Town's ROW would meet the Spring Hill ROW at the centerline, forming the corporate boundaries between the two municipalities.

Planning Commission reviewed the ROW/Intersection request at the January 26 Meeting. This request is forwarded to BOMA for consideration without a recommendation.

Members of the Southeast Ventures will be in attendance at the meeting to provide context to this request.

Southeast Ventures request the BOMA consider acceptance of the new intersection location for Buckner Lane at Thompson's Station Road East, as shown on the ROW plat included with the memo.

Attachments
Southeast Venture Memorandum
ROW-Intersection Request BOMA Package (ROW Plat & Traffic Study)

NOTES

1. THE PURPOSE OF THIS PLAT IS TO CREATE 2 BUILDABLE LOTS, OPEN SPACE AND DEDICATE RIGHT OF WAY.

   -PURPOSE OF LOT A: TO CREATE A SINGLE LOT, BETWEEN THE NEW BUCKNER LANE RIGHT OF WAY AND FORMER BUCKNER LANE RIGHT WAY. THIS LOT WILL BE DEVELOPED IN THE FUTURE AS SUBDIVIDED SINGLE FAMILY LAND USE DEVELOPMENT, IN ACCORDANCE WITH THE 2660 BUCKNER LANE GATEWAY PZD. PRIOR TO DEVELOPMENT OF LOT A, A SUBDIVISION PRELIMINARY PLAT APPLICATION WILL BE MADE BY THE DEVELOPER.

   -PURPOSE OF USE FOR LOT D: TO CREATE A SINGLE LOT ADJACENT TO THE REALIGNED BUCKNER LANE FOR FUTURE DEVELOPMENT. THIS LOT WILL BE DEVELOPED IN THE FUTURE AS A SINGLE-PARCEL MULTI-FAMILY DEVELOPMENT, IN ACCORDANCE WITH THE 2660 BUCKNER LANE GATEWAY PZD.

2. PARCEL NUMBERS SHOWN AS THUS (00) REFER TO TAX MAPS 154 & 166 WILLIAMSON COUNTY, TENNESSEE.

3. ALL DISTANCES WERE MEASURED WITH E.D.M. EQUIPMENT AND HAVE BEEN ADJUSTED FOR TEMPERATURE.

4. OWNER: BUCKNER LANE PARTNERS, LLC
   ADDRESS: 6012 PELICAN WAY
   COLLEGE GROVE, TN 37046
   PHONE: 615-833-9484
   CONTACT: DON ALEXANDER
   EMAIL: dalexander@southeastventure.com

6. SURVEYOR: S&ME
   ADDRESS: 658 GRASSMERE PARK DRIVE, SUITE 100
   NASHVILLE, TN 37211
   PHONE: (615) 385-4144
   CONTACT: ROBERT SEARSON
   EMAIL: rsearson@smeinc.com

7. THE TENNESSEE STATE PLANE COORDINATE SYSTEM IS THE BASIS FOR THIS SURVEY, AND WAS ESTABLISHED USING RTK-GPS POSITIONAL DATA THAT WAS ACQUIRED ON THE DATE OF MARCH 24, 2020 UTILIZING TRIMBLE R8S OR R10 DUAL FREQUENCY RECEIVERS. THE GRID COORDINATES OF THE SURVEY CONTROL POINT SHOWN HEREON WERE DERIVED USING A VRS NETWORK OF MULTIPLE TDOT CORS STATIONS REFERENCED TO THE NORTH AMERICAN DATUM OF 1983, NAD 83 (2011) (EPOCH 2010) GEOID 12B. THE POSITIONAL ACCURACY OF THE GPS VECTORS DOES NOT EXCEED: H=0.2'/V=0.2'. THE COMBINED GRID FACTOR OF 0.99990908 WAS CALCULATED AT SURVEY CONTROL POINT #1 AS SHOWN HEREON.

8. THE PROPERTY DOES NOT LIE WITHIN THE 100 YEAR FLOOD PLAIN AND IS DETERMINED TO BE IN ZONE "X" AS PER FEDERAL EMERGENCY MANAGEMENT AGENCY FIRM PANEL NUMBER 47119C0070E, DATED APRIL 16, 2007, FIRM PANEL NUMBER 47119C0090E, DATED APRIL 16, 2007, FIRM PANEL NUMBER 47187C0365F, DATED SEPTEMBER 29, 2006, AND FIRM PANEL NUMBER 47187C0345F, DATED SEPTEMBER 29, 2006.

9. THIS SURVEYOR WAS NOT PROVIDED WITH A TITLE COMMITMENT, THEREFORE THE PROPERTY IS SUBJECT TO THE FINDINGS OF A DETAILED TITLE SEARCH.

10. PRIOR TO ANY CONSTRUCTION, EXCAVATION OR ANY DISTURBANCE OF THE EXISTING GROUND ELEVATION, THE OWNER AND / OR CONTRACTOR SHOULD ASSUME RESPONSIBILITY OF CONTACTING THE LOCAL UTILITY AUTHORITIES FOR EXACT LOCATION OF UNDERGROUND GAS LINES, TELEPHONE LINES, ELECTRIC CABLES, WATER LINES, ETC. TO AVOID ANY HAZARD OR CONFLICT. IN TENNESSEE, IT IS A REQUIREMENT, PER "THE UNDERGROUND UTILITY DAMAGE PREVENTION ACT", THAT ANYONE WHO ENGAGES IN EXCAVATION MUST NOTIFY ALL KNOWN UNDERGROUND UTILITY OWNERS, NO LESS THAN THREE (3) NOR MORE THAN (10) WORKING DAYS PRIOR TO THE DATE OF THEIR EXCAVATION TO AVOID ANY POSSIBLE HAZARD OR CONFLICT. DIAL 811 FOR A ONE CALL CENTER.

11. UTILITIES SHOWN WERE TAKEN FROM FIELD LOCATIONS THAT WERE APPARENT AND COPIED FROM APPROPRIATE GOVERNING AGENCIES MAPS AND ARE APPROXIMATE AT BEST. THERE MAY BE UTILITIES, THE EXISTENCE OF WHICH IS UNKNOWN TO THE SURVEYOR.

12. TOPOGRAPHIC INFORMATION IS FROM AN AERIAL TOPOGRAPHY PROVIDED BY MAPMAKER, LLC. CONTOUR INTERVAL IS 1'.

13. ALL DEED & PLAT REFERENCES ARE MADE TO THE REGISTER'S OFFICE OF WILLIAMSON COUNTY, TENNESSEE (ROWC).

14. SURVEY FIELD DATA COLLECTED ON APRIL 1, 2020.

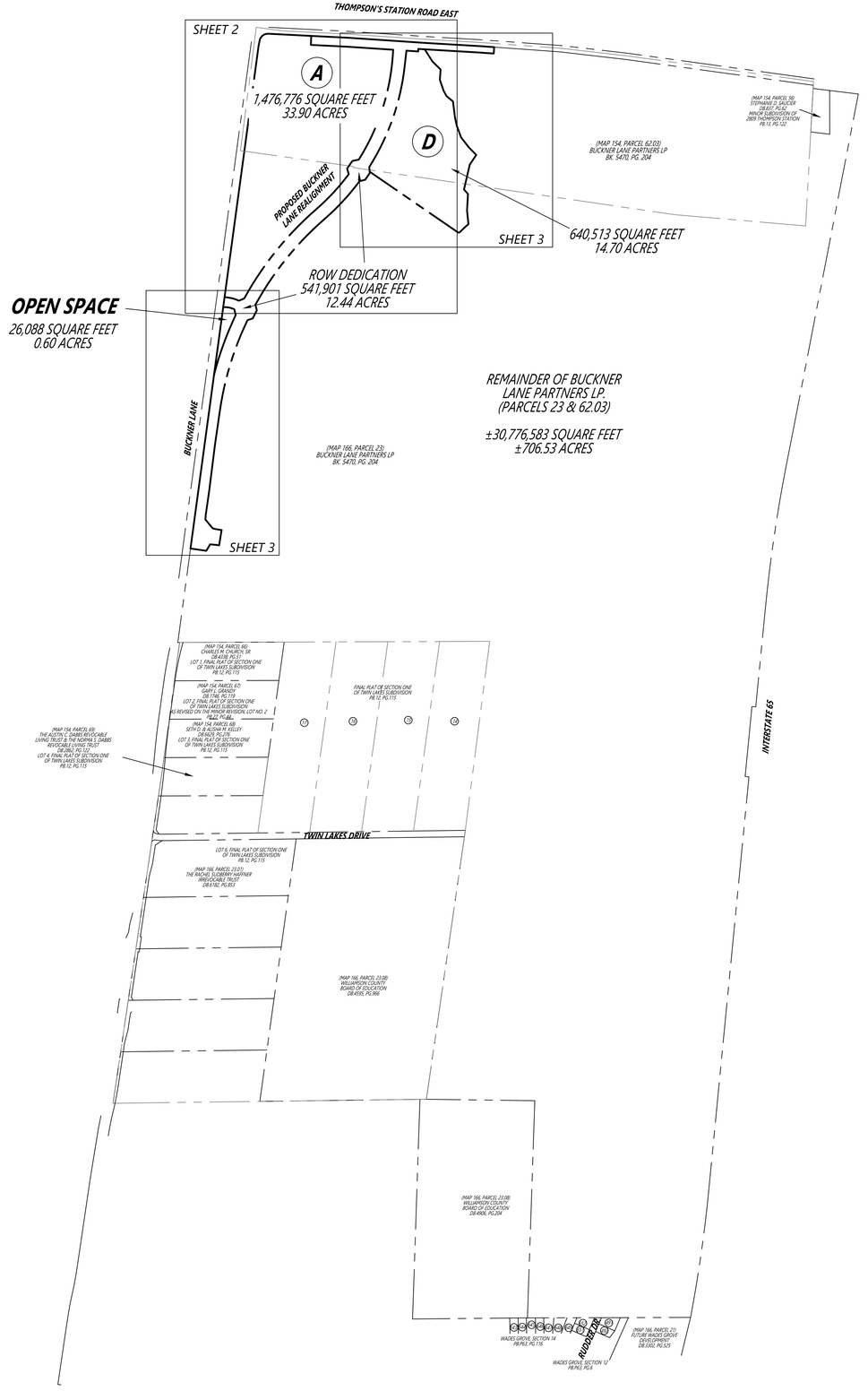
15. ROW DEDICATION IS TO ACCOMMODATE ROADWAY IMPROVEMENTS.

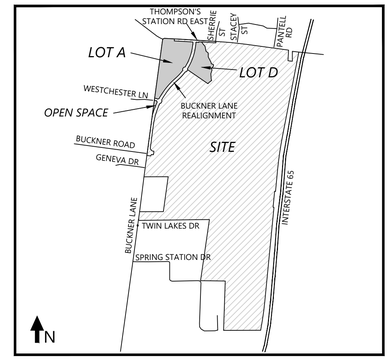
SITE BM: S&ME CONTROL POINT #1, PK NAIL IN ASPHALT ON THE NORTH SIDE OF THOMPSON'S STATION RD, ± 70' NORTHWEST OF THE CENTERLINE INTERSECTION OF BUCKNER LANE AND THOMPSON'S STATION RD.
ELEV: 827.92

PROJECT BM:
NAVD 88 (GPS DERIVED)

LEGEND

PARCEL NO.	(xx)
IRON ROD (OLD)	IR(O)
IRON ROD (SET)	
IRON PIPE (OLD)	IP(O)
P.K. NAIL (OLD)	PK(O)
PROPERTY LINE	
FENCE LINE	X
GUARDRAIL	
TREE DRIP LINE	
CONTOUR LINE	-500-
AERIAL COLLECTED SPOT ELEVATION	× 999.9
FIELD COLLECTED SPOT ELEVATION	+ 999.9
OVERHEAD POWER LINE	OH
STORM SEWER LINE	15" S T
WATER LINE	8" W
GAS LINE	2" G
SIGN POST	
TELEPHONE MANHOLE	T
TELEPHONE RISER	TR
TELEPHONE BOX	TBOX
ELECTRIC RISER	ER
ELECTRIC BOX	EBOX
ELECTRIC METER	E
UTILITY POLE	
LIGHT POLE	
GUY WIRE	
TRAFFIC SIGNAL POLE	
SANITARY SEWER MANHOLE	S
STORM SEWER MANHOLE	D
CATCH BASIN	
GAS VALVE	
FIRE HYDRANT	
WATER VALVE	WV





VICINITY MAP
NOT TO SCALE

N

T.S.P.C.S.

0 500 1000 1500
GRAPHIC SCALE (IN FEET)

AREA TABLE		
LOT	SQ. FT.	ACRES
A	1476776	33.90
D	640513	14.70
OPEN SPACE	26088	0.60
ROW	541901	12.44
TOTAL	2685278	61.65

SURVEYOR'S CERTIFICATE

I hereby certify that to the best of my knowledge and belief the information shown hereon is true and correct.

By: _____ Date: _____
ROBERT M. SEARSON TN REGISTERED SURVEYOR'S No. 1666

658 GRASSMERE PARK DRIVE
SUITE 100
NASHVILLE, TN 37212
(615) 385-4144
ENGINEERING FIRM
LICENSE NUMBER: F-0176

2660 BUCKNER LANE
LOTS A & D
PRELIMINARY PLAT

SPRING HILL, 2ND DISTRICT, MAURY COUNTY, TENNESSEE

TOTAL AREA: 2,685,278 SQFT (61.65 AC) TOTAL LOTS: 2

DATE: 10-05-2020
REV: 10-19-2020
REV: 11-02-2020

S&ME PROJECT #514719058 SHEET 1 OF 3

L:\Projects\2019\5147-19-058_Southeast Venture_2660 Buckner Lane Master Plan_Spring Hill\CAD\Survey\Final Plat\5147-19-058_Preliminary Plat_Parcels A & D_2020-September.dwg-SHEET 1 Nov 01, 2020 - 7:46pm zdavis

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S66°58'17"W	46.05'
L2	N80°00'56"W	45.89'
L3	N11°24'07"E	44.74'
L4	S02°38'33"W	69.99'
L5	S04°02'33"W	46.68'
L6	S27°57'01"W	51.49'
L7	S34°28'55"W	71.72'
L8	S15°59'51"E	45.50'
L9	S37°59'51"E	100.06'
L10	S44°42'43"E	80.96'
L11	S33°54'36"W	91.36'
L12	S40°59'51"E	47.54'
L13	S03°19'52"W	127.56'
L14	S05°44'31"E	108.10'
L15	N54°10'02"W	9.41'
L16	N06°34'43"W	36.68'
L17	N06°25'37"E	124.08'
L18	S86°10'20"E	91.45'
L19	N03°37'06"E	20.00'
L20	S86°10'20"E	50.45'
L21	S32°26'37"E	112.45'
L22	S45°19'19"E	88.85'
L23	S03°52'16"W	81.73'
L24	S19°12'38"E	89.48'
L25	S28°43'42"E	46.84'
L26	S50°13'11"E	65.59'
L27	S07°05'19"E	128.15'
L28	S12°24'02"E	61.37'
L29	S20°02'32"E	99.56'
L30	S88°27'06"E	19.13'
L31	S33°30'58"E	46.66'
L32	S06°34'43"E	45.63'
L33	S34°28'55"W	64.99'
L34	S75°32'33"W	45.63'
L35	S14°47'26"E	44.84'
L36	S27°10'27"W	70.99'
L37	S71°20'19"W	43.11'
L38	S04°12'16"W	38.92'
L39	S39°48'39"E	89.57'
L40	S76°53'17"E	31.07'
L41	S80°52'35"E	39.00'
L42	S09°09'43"W	119.99'
L43	N81°01'38"W	12.40'
L44	N84°47'19"W	57.74'
L45	S31°14'35"W	58.59'
L46	N81°50'49"W	124.27'
L47	N07°42'54"E	80.12'
L48	S85°53'08"E	112.67'
L49	S03°50'27"W	49.99'
L50	N85°53'08"W	112.58'

CURVE TABLE						
CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	TANGENT	CHORD BEARING	CHORD LENGTH
C1	374.11'	1749.86'	12°14.98"	187.77'	S42°52'20"W	373.40'
C2	897.92'	2549.80'	20°10'36"	453.66'	S38°54'31"W	893.28'
C3	69.59'	237.73'	16°46'16"	35.04'	N71°37'48"W	69.34'
C4	92.44'	65.00'	81°29'11"	55.99'	N52°08'43"E	84.85'
C5	860.45'	1749.86'	28°10'26"	439.11'	S18°07'46"W	851.81'
C6	89.91'	840.50'	6°07'44"	45.00'	S47°08'24"W	89.87'
C7	19.26'	13.50'	81°45'27"	11.69'	S84°57'15"W	17.67'
C8	838.87'	1849.86'	25°58'56"	426.77'	N19°25'05"E	831.70'
C9	494.35'	2549.80'	11°06'30"	247.95'	S19°58'44"W	493.57'
C10	69.87'	162.24'	24°40'28"	35.48'	S76°06'52"E	69.33'
C11	401.72'	1849.86'	12°26'33"	201.65'	S42°46'33"W	400.93'
C12	864.12'	2449.80'	20°12'36"	436.60'	S38°53'32"W	859.65'
C13	747.00'	2449.80'	17°28'15"	376.42'	S16°53'18"W	744.11'

SITE BM: S&ME CONTROL POINT #1, PK NAIL IN ASPHALT ON THE NORTH SIDE OF THOMPSON'S STATION RD, ± 70' NORTHWEST OF THE CENTERLINE INTERSECTION OF BUCKNER LANE AND THOMPSON'S STATION RD.
ELEV: 827.92

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NAVD 88 (GPS DERIVED)

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IRON ROD (OLD)	IR(O)
IRON ROD (SET)	
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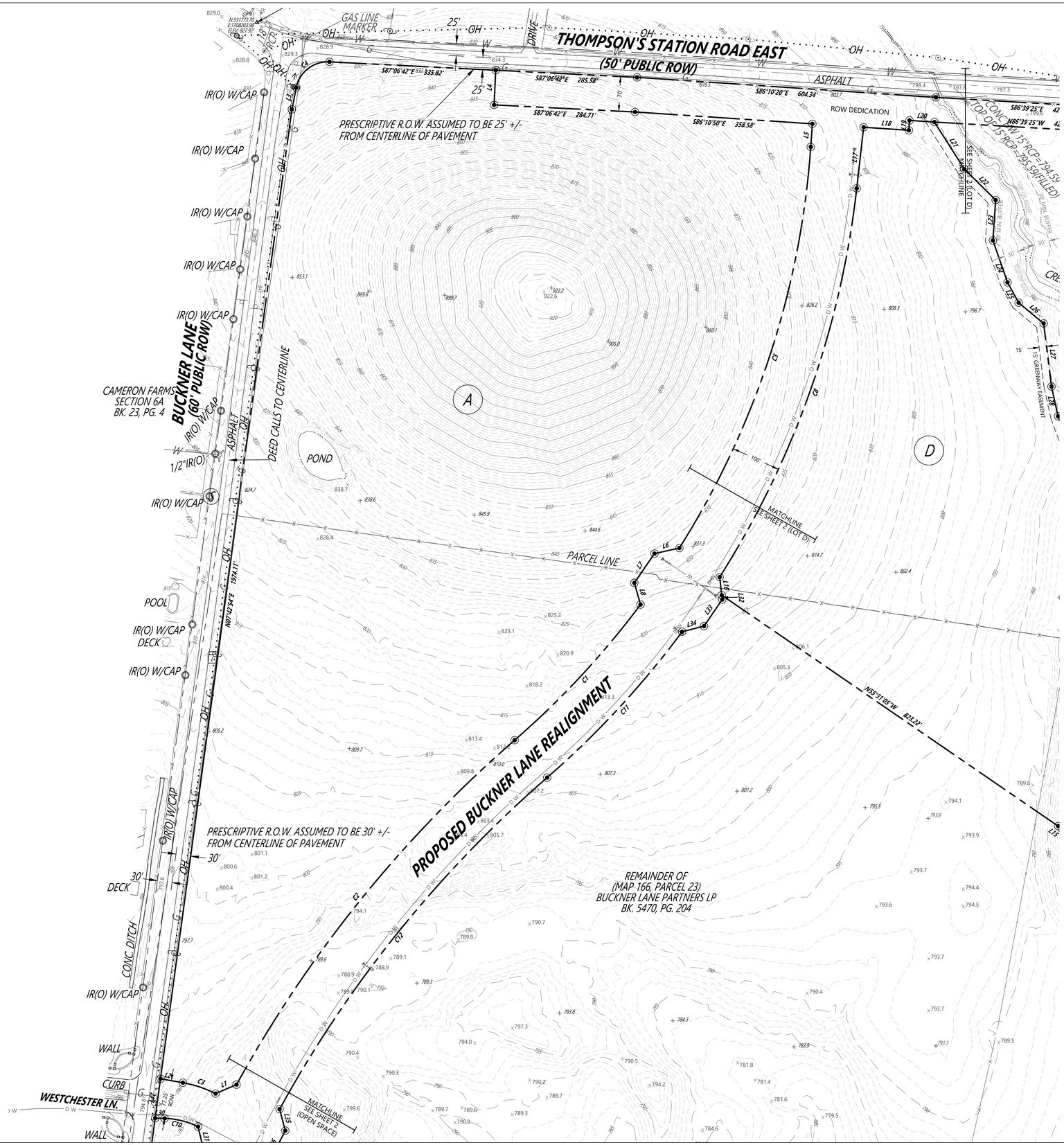
P.K. NAIL (OLD)	PK(O)
PROPERTY LINE	
FENCE LINE	X
GUARDRAIL	
TREE DRIP LINE	
CONTOUR LINE	-500-
AERIAL COLLECTED SPOT ELEVATION	× 999.9
FIELD COLLECTED SPOT ELEVATION	+ 999.9
OVERHEAD POWER LINE	OH
STORM SEWER LINE	15"S T
WATER LINE	8"W
GAS LINE	2"G
SIGN POST	
TELEPHONE MANHOLE	T
TELEPHONE RISER	TR
TELEPHONE BOX	TBOX
ELECTRIC RISER	ER
ELECTRIC BOX	EBOX
ELECTRIC METER	E
UTILITY POLE	
LIGHT POLE	
GUY WIRE	
TRAFFIC SIGNAL POLE	
SANITARY SEWER MANHOLE	S
STORM SEWER MANHOLE	D
CATCH BASIN	
GAS VALVE	
FIRE HYDRANT	
WATER VALVE	



AREA TABLE		
LOT	SQ. FT.	ACRES
A	1476776	33.90
D	640513	14.70
OPEN SPACE	26088	0.60
ROW	541901	12.44
TOTAL	2685278	61.65

658 GRASSMERE PARK DRIVE
SUITE 100
NASHVILLE, TN 37212
(615) 385-4144
ENGINEERING FIRM
LICENSE NUMBER: F-0176

2660 BUCKNER LANE
LOTS A & D
PRELIMINARY PLAT

SPRING HILL, 2ND DISTRICT, MAURY COUNTY, TENNESSEE

TOTAL AREA: 2,685,278 SQFT (61.65 AC) TOTAL LOTS: 2

DATE: 10-05-2020
REV: 10-19-2020
REV: 11-02-2020

S&ME PROJECT #514719058 SHEET 2 OF 3

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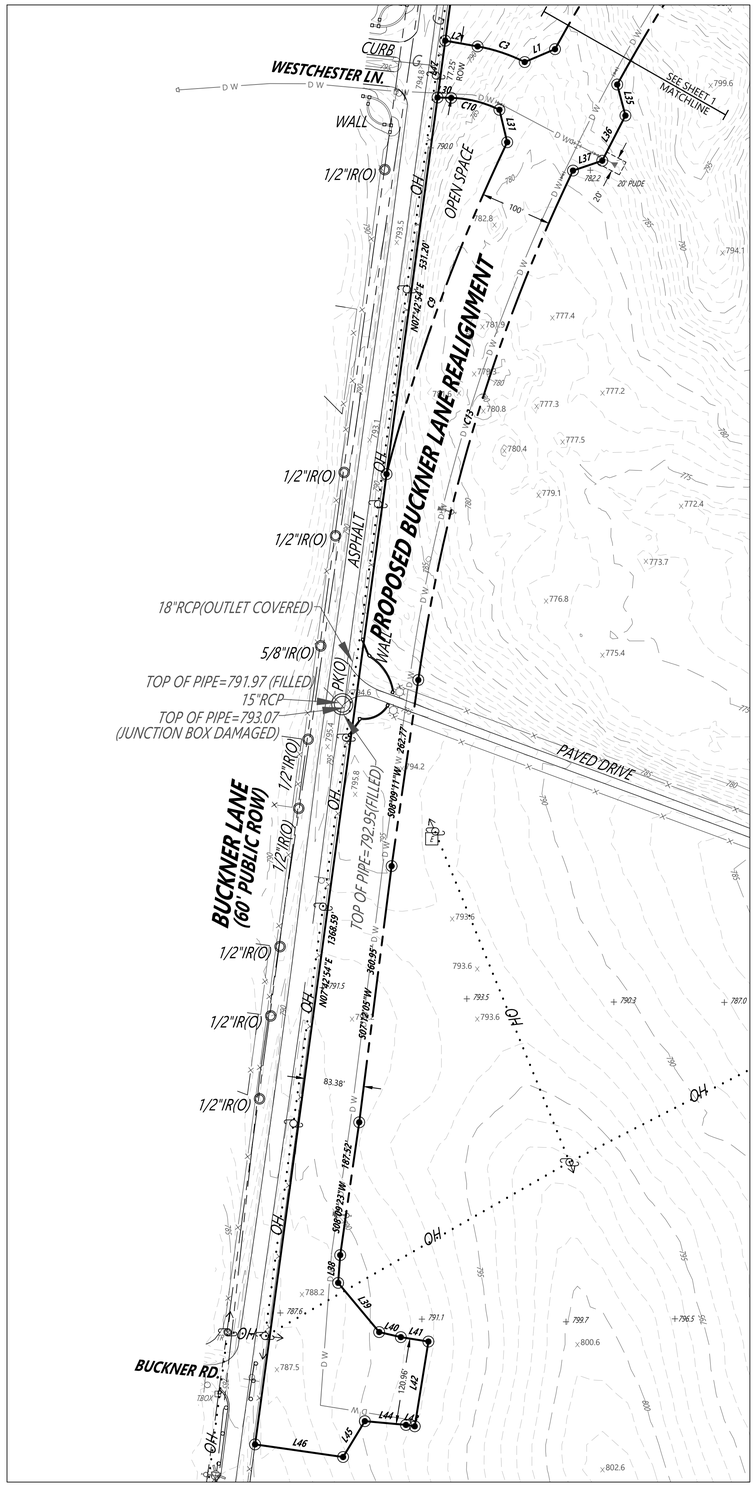
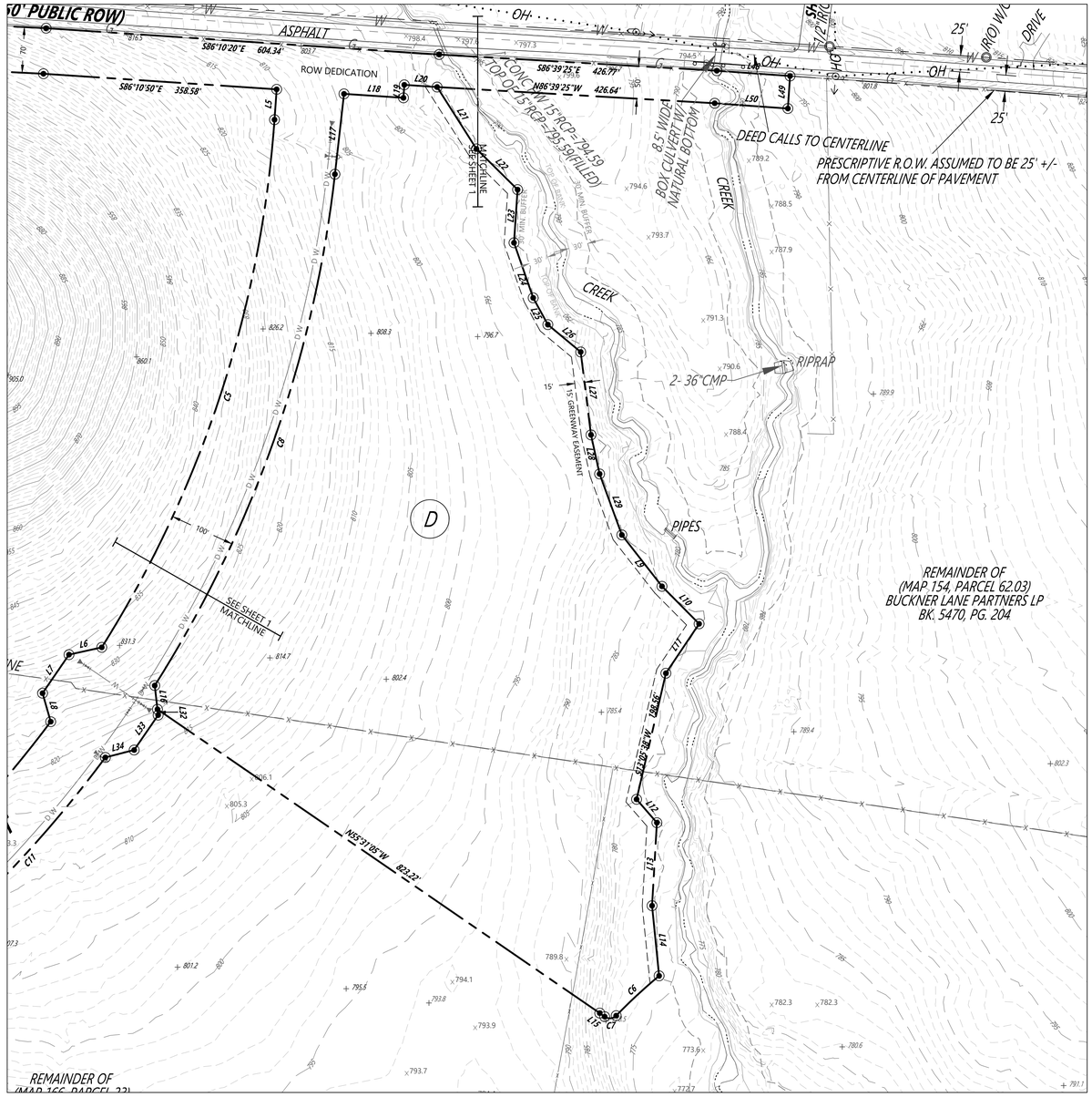


OPEN SPACE AND SOUTHERN ROW
SCALE: 1" = 100'



LOT D
SCALE: 1" = 100'

LEGEND

PARCEL NO.	(xx)
IRON ROD (OLD)	IR(O)
IRON ROD (SET)	
IRON PIPE (OLD)	IP(O)
P.K NAIL (OLD)	PK(O)
PROPERTY LINE	
FENCE LINE	X
GUARDRAIL	
TREE DRIP LINE	
CONTOUR LINE	-500-
AERIAL COLLECTED SPOT ELEVATION	× 999.9
FIELD COLLECTED SPOT ELEVATION	+ 999.9
OVERHEAD POWER LINE	• • • • • OH • • • • •
STORM SEWER LINE	15"S T
WATER LINE	8"W
GAS LINE	2"G
SIGN POST	
TELEPHONE MANHOLE	T
TELEPHONE RISER	TR
TELEPHONE BOX	TBOX
ELECTRIC RISER	ER
ELECTRIC BOX	EBOX
ELECTRIC METER	E
UTILITY POLE	
LIGHT POLE	
GUY WIRE	
TRAFFIC SIGNAL POLE	
SANITARY SEWER MANHOLE	S
STORM SEWER MANHOLE	D
CATCH BASIN	
GAS VALVE	
FIRE HYDRANT	
WATER VALVE	WV

LINE TABLE

LINE	BEARING	DISTANCE
L1	S66°58'17"W	46.05'
L2	N80°00'56"W	45.89'
L3	N11°24'07"E	44.74'
L4	S02°38'33"W	69.99'
L5	S04°02'33"W	46.68'
L6	S77°27'01"W	51.49'
L7	S34°28'55"W	71.72'
L8	S15°59'51"E	46.50'
L9	S37°58'51"E	100.06'
L10	S44°42'43"E	80.96'
L11	S33°54'36"W	91.36'
L12	S40°59'51"E	47.54'
L13	S03°19'52"W	127.56'
L14	S05°44'31"E	108.10'
L15	N54°10'02"W	9.41'
L16	N06°34'43"W	36.68'
L17	N06°25'37"E	124.08'
L18	S86°10'20"E	91.45'
L19	N03°37'06"E	20.00'
L20	S86°10'20"E	50.45'
L21	S32°26'37"E	112.45'
L22	S45°19'19"E	88.85'
L23	S05°52'16"W	81.73'
L24	S19°12'38"E	89.48'
L25	S28°43'42"E	46.84'
L26	S50°13'11"E	65.59'
L27	S07°05'19"E	128.15'
L28	S12°24'02"E	61.37'
L29	S20°02'32"E	99.56'
L30	S88°27'06"E	19.13'
L31	S13°30'58"E	46.66'
L32	S06°34'43"E	45.63'
L33	S34°28'55"W	64.99'
L34	S75°32'33"W	45.63'
L35	S14°47'26"E	44.84'
L36	S27°10'37"W	70.99'
L37	S71°22'19"W	43.11'
L38	S04°12'16"W	38.92'
L39	S39°48'39"E	89.57'
L40	S76°53'17"E	31.07'
L41	S80°52'35"E	39.00'
L42	S09°09'43"W	119.99'
L43	N81°01'38"W	12.40'
L44	N84°47'19"W	57.74'
L45	S31°14'35"W	58.59'
L46	N81°50'49"W	124.27'
L47	N07°42'54"E	80.12'
L48	S85°53'08"E	112.67'
L49	S03°50'27"W	49.99'
L50	N85°53'08"W	112.58'

AREA TABLE

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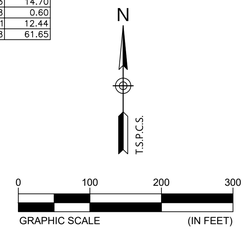
TOTAL	2685278	61.65

CURVE TABLE

CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	TANGENT	CHORD BEARING	CHORD LENGTH
C1	374.11'	1749.86'	12°14'58"	187.77'	S42°52'20"W	373.40'
C2	897.92'	2549.80'	20°10'36"	453.66'	S38°54'21"W	893.28'
C3	69.59'	237.73'	16°46'16"	35.04'	N71°37'48"W	69.34'
C4	92.44'	65.00'	81°29'11"	55.99'	N52°08'43"E	84.85'
C5	860.45'	1749.86'	28°10'26"	439.11'	S38°07'46"W	851.81'
C6	89.91'	840.50'	6°07'44"	45.00'	S47°08'24"W	89.87'
C7	19.26'	13.50'	81°45'27"	11.69'	S84°57'15"W	17.67'
C8	838.87'	1849.86'	25°58'56"	426.77'	N19°25'05"E	831.70'
C9	494.35'	2549.80'	11°06'30"	247.95'	S19°58'44"W	493.57'
C10	69.87'	162.24'	24°40'28"	35.48'	S76°06'52"E	69.33'
C11	401.72'	1849.86'	12°26'23"	201.65'	S42°46'33"W	400.93'
C12	864.12'	2449.80'	20°12'36"	436.60'	S38°53'32"W	859.65'
C13	747.00'	2449.80'	17°28'15"	376.42'	S16°53'18"W	744.11'



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DATE: 10-05-2020
REV: 10-19-2020
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S&ME PROJECT #514719058 SHEET 3 OF 3

JANUARY 18, 2021

MEMORANDUM

To: Jon Baughman; Associate Planner, City of Spring Hill
Tom Wolf; City Engineer, City of Spring Hill

From: Amy Burch, P.E.
Bob Murphy, P.E.

Re: 2660 Buckner Lane Rezoning TIS – Addendum

Date: January 5, 2017

This memorandum is intended to provide supplemental information to the Traffic Impact Study for the proposed 2660 Buckner Lane Rezoning request, which was prepared by RPM Transportation Consultants, LLC and dated 12/14/16. Specifically, we would like to provide clarifications regarding the existing traffic operations and transportation infrastructure in the study area.

Existing Conditions Analysis

Table 1 below presents the capacity analysis results for the study intersections just as is presented in the original TIS. As shown, several intersections and/or stop-controlled approaches operate poorly during peak hours, which indicates existing transportation infrastructure deficiencies. Specifically, the northbound approach of Buckner Lane at its intersection with Thompson's Station Road E operates poorly with extreme delays and queues during the peak hours. Similarly, the eastbound approach of Buckner Road at its intersection with Buckner Lane operates poorly with long delays and queues, particularly during the AM peak hour. The poor operation at these two intersections is attributed to the highly directional commuter travel patterns and the lack of turn lanes and appropriate traffic control at intersections.

The streets providing access to the two schools on the east side of Buckner Lane also experience long delay and queues due to the volume of traffic entering and exiting the schools and traveling through on Buckner Lane. However, the capacity analyses do not reflect the operational benefits of providing a traffic control officer at Twin Lakes Drive and Spring Station Drive to help direct traffic entering and exiting the schools.

TABLE 1: EXISTING PEAK HOUR LEVELS OF SERVICE

NO.	INTERSECTION	TURNING MOVEMENT	AM PEAK HOUR			PM PEAK HOUR		
			LOS	Average Control Delay (sec/veh)	95th-% Queue Length (veh)	LOS	Average Control Delay (sec/veh)	95th-% Queue Length (veh)
1	Buckner Lane & Thompson's Station Road E	Northbound Approach	F	429.9	62.0	F	2218.1	32.5
		Westbound Left Turn	A	8.1	0.7	C	20.1	7.3
2	Buckner Lane & Westchester Lane	Northbound Left Turn	A	8.6	0.0	B	11.9	0.3
		Eastbound Approach	F	227.4	16.7	F	51.8	2.3
3	Buckner Lane & Buckner Road	Northbound Left Turn	A	9.0	0.6	B	13.5	1.1
		Eastbound Approach	F	597.2	27.4	F	107.8	8.1
4	Buckner Lane & Twin Lakes Drive	Westbound Left Turn	F	1860.6	13.7	C	19.1	0.2
		Westbound Right Turn	C	15.1	2.2	B	10.3	0.2
		Southbound Left Turn	B	12.6	4.0	A	8.0	0.1
5	Buckner Lane & Spring Station Drive	Westbound Left Turn	F	75.4	2.2	E	39.6	3.4
		Westbound Right Turn	D	25.6	4.1	B	10.6	0.2
		Southbound Left Turn	B	10.8	1.3	A	8.0	0.1
Note: For two-way stop-controlled intersections an LOS is presented for each critical movement.								

Existing Conditions Analysis with Needed Improvements

Additional analyses have been conducted to determine the roadway and intersection improvements needed to mitigate the existing deficiencies in the study area. The following improvements are needed to provide acceptable levels of service for the existing traffic volumes in the study area.

Intersection of Buckner Lane and Thompson's Station Road East

- Widen Thompson's Station Road East in order to provide a westbound left turn lane with approximately 500 feet of storage plus taper.
- Widen Thompson's Station Road East to provide an eastbound right turn lane with approximately 300 feet of storage plus taper.
- Widen Buckner Lane to provide a northbound right turn lane with approximately 300 feet of storage plus taper.
- Install traffic signal control with permissive/protected left turn signal phasing for westbound Thompson's Station Road East.

Intersection of Buckner Lane and Westchester Lane

- Modify the eastbound approach of Westchester Lane to provide separate left and right turn lanes utilizing the median.
- Widen Buckner Lane to provide a northbound left turn deceleration lane with approximately 150 feet of storage plus taper.
- Widen Buckner Lane to provide a southbound right turn deceleration lane with approximately 150 feet of storage plus taper.

A deceleration lane is warranted for northbound left turns on Buckner Lane at Westchester Lane based on Harmelink methodology presented in *Volume Warrants for Left-Turn Storage Lanes at Unsignalized Intersections* and the existing traffic volumes. A deceleration lane is warranted for southbound right turns on Buckner Lane at Westchester Lane based on methodology presented in the *Intersection Channelization Design Guide (NCHRP 279)* and the existing traffic volumes.

Intersection of Buckner Lane and Buckner Road

- Widen Buckner Lane to provide a northbound left turn lane with approximately 200 feet of storage plus taper.
- Widen Buckner Lane to provide a southbound right turn lane with approximately 300 feet of storage plus taper.
- Install traffic signal control with protected/permissive left turn signal phasing for the northbound approach of Buckner Lane.

Table 2 below presents the results of the capacity analyses of the existing AM and PM peak hour volumes including roadway improvements identified above, which are needed in order to achieve acceptable levels of service for three of the study intersections.

In addition, it is recommended to provide or continue to provide a traffic control officer at the school access points on Buckner Lane during the morning arrival and afternoon dismissal on a regular basis in order to help facilitate turning movements entering and exiting the schools at Twin Lakes Drive and Spring Station Drive.

TABLE 2: EXISTING PEAK HOUR LEVELS OF SERVICE WITH ROADWAY IMPROVEMENTS

NO.	INTERSECTION	TURNING MOVEMENT	AM PEAK HOUR			PM PEAK HOUR		
			LOS	Average Control Delay (sec/veh)	95th-% Queue Length (veh)	LOS	Average Control Delay (sec/veh)	95th-% Queue Length (veh)
1	Buckner Lane & Thompson's Station Road E (Signalized)	Eastbound Through	C	21.0	0.3	C	20.9	2.4
		Eastbound Right Turn	C	24.2	0.8	F	95.8	11
		Westbound Left Turn	B	17.2	3.7	B	14.3	18.1
		Westbound Through	B	11.8	1.2	A	4.4	0.7
		Northbound Left Turn	B	19.2	9.7	C	21.5	2.4
		Northbound Right Turn	B	19.8	1.2	A	7.8	0.6
		Overall Intersection	**B**	**19.2**	--	**D**	**43.4**	--
2	Buckner Lane & Westchester Lane	Northbound Left Turn	A	8.6	0.0	B	11.2	0.2
		Eastbound Left Turn	F	175.5	11.4	E	45.6	1.6
		Eastbound Right Turn	B	13.0	0.6	C	20.4	0.2
3	Buckner Lane & Buckner Road (Signalized)	Eastbound Approach	C	23.6	4.8	D	44.2	2.3
		Northbound Left Turn	B	11.8	2	A	9.4	1.3
		Northbound Through	A	8.4	6.3	A	4.0	1.8
		Southbound Through	C	20.2	6.3	B	13.3	8.9
		Southbound Right Turn	B	12.6	0	C	22.8	1.8
		Overall Intersection	**B**	**15.7**	--	**B**	**18.5**	--

Note: For signalized intersections, an overall LOS is presented. For two-way stop-controlled intersections an LOS is presented for each critical movement.

Conclusion

As demonstrated by the analyses presented in the original TIS and this addendum memo, the existing AM and PM peak hour traffic volumes in the study area generally exceed the available roadway and intersection capacity, which results in extreme delays and queues experienced at specific locations/turning movements and contributing to longer travel times through the study area. Therefore, significant roadway infrastructure improvements are needed under the existing conditions without the addition of any new traffic generated by the proposed rezoning development. The analyses show that the existing intersection operations can be significantly improved to generally acceptable levels of service by constructing turn lanes at intersections and installing traffic signals at Buckner Lane and Thompson's Station Road East and at Buckner Lane and Buckner Road as previously detailed.

2660 BUCKNER LANE REZONING
TRAFFIC IMPACT STUDY
Prepared by:
RPM Transportation Consultants, LLC

EXECUTIVE SUMMARY

Project Description

The purpose of this study is to analyze the traffic impacts associated with the 2660 Buckner Lane Master Plan as well as address the initial phases of development. The property is located on the east side of Buckner Lane between Thompson's Station Road East and Spring Station Drive in Spring Hill, Tennessee. The proposed mixed-use development will be developed in several phases, which is expected to occur over a 20-year period. The Buckner Lane Property master plan includes a mix of land uses including residential (single and multifamily), retail, restaurant, office, and hotel.

The property totals approximately 781 acres. It is bounded on the west by Buckner Lane, single family homes, and two schools. The property is bounded on the east by Interstate 65, on the north by Thompson's Station Road East, on the south by existing single-family development. The property is currently farm land and zoned agricultural.

Over the past couple of years, the City of Spring Hill has undertaken three transportation planning studies to identify and plan for future transportation improvements in the vicinity of the project site. These studies include an Interchange Access Request for I-65, a study of Buckner Lane between Thompson's Station Road East and Duplex Road (State Route 247), and a study of Buckner Road between Buckner Lane and I-65. While these studies have not been finalized, all include assumptions for increased density and a mixture of land uses for the 2660 Buckner Lane Property.

In this study, the current operating characteristics of the adjacent roadways and intersections in the vicinity of the project site are evaluated. The expected trips generated by the proposed development are determined and distributed to the roadway network based on the development master plan, which includes phasing of the mixed-use development program and the anticipated street network through the site. The adjacent roadways and intersections are then reevaluated to determine the anticipated traffic impacts of the project. Finally, recommendations are presented, including roadway improvements and/or traffic control improvements that are needed to accommodate the expected traffic.

Data Collection

In order to provide data for the traffic impact analysis, manual traffic counts were obtained for the following intersections:

- Buckner Lane & Thompson's Station Road East
- Buckner Lane & Westchester Lane
- Buckner Lane & Buckner Road
- Buckner Lane & Twin Lakes Drive
- Buckner Lane & Spring Station Drive

The City of Spring Hill provided traffic volume data that was collected for the City's transportation studies that are underway. The traffic data that was provided by the City was supplemented by RPM Transportation Consultants, specifically for the intersection of Buckner Lane and Westchester Lane. The existing peak hour traffic volumes show that the study area experiences heavy commuter traffic flows in the northbound direction during the AM peak hour and in the southbound direction during the PM peak hour. Additionally, the two schools located on the east side of Buckner Lane south of Buckner Road generate high volumes of AM peak hour traffic entering and exiting the schools.

Projection of Future Traffic Volumes

As previously mentioned, this study evaluates three scenarios of development of the master plan in order to identify the amount of traffic expected to be generated as the development builds out as well as to determine the roadway improvements necessary to accommodate the development. The three scenarios include 1) Phase 1, 2) Phases 1 and 2, and 3) full buildout, which includes Phases 1 – 5. It is assumed that Phases 1 and 2 would be constructed prior to the construction of an I-65 Interchange, and the remaining phases of development would not commence until an I-65 Interchange is constructed. Therefore, the Full Buildout scenario assumes the I-65 Interchange is in place and Buckner Road is extended to I-65 and further east to Lewisburg Pike. The Full Buildout of the property is anticipated to occur over a 20-year horizon. Table 1 presents the development program for the three scenarios. Development of the property is expected to begin on the west side of the property along Buckner Lane and expand to the east and south with the later phases.

TABLE 1: DEVELOPMENT SCENARIOS

DEVELOPMENT SCENARIO	PHASE(S)	LAND USES & SIZES*					HORIZON YEAR
		Single-Family (d.u.)	Multi-Family (d.u.)	Retail/ Restaurant (s.f.)	Office (s.f.)	Hotel (rooms)	
Scenario 1	1	159	-	280,962	--	--	2021
Scenario 2	1 & 2	342	1,238	751,410	--	--	2026
Scenario 3	1 – 5	774	2,152	1,281,862	3,902,250	400	2037
FULL BUILDOUT		**774**	**2,152**	**1,281,862**	**3,902,250**	**400**	**2037**

*Development program provided by Southeast Venture, LLC

It is important to note that the land uses and sizes in Table 1 represent the expected maximum development intensity for the master plan and rezoning request; however, market demand may result in variations in sizes.

A traffic generation process was used to estimate the amount of traffic expected to be generated by the proposed project for the three development scenarios. Factors for the trip generation were taken from ITE's Trip Generation, Ninth Edition. The proposed 2660 Buckner Lane property rezoning will allow for a mix of land uses at relatively high density. Based on information provided by Southeast Venture, LLC, Phase 1 is expected to include single-family residential lots and commercial retail and restaurant land uses. The total of Phases 1 and 2 is expected to include single-family and multi-family residential units as well as commercial retail and restaurant land uses. The Full Buildout of the master plan is expected to include single-family and multi-family units, commercial retail and restaurant land uses, office land uses, and hotel land uses.

Data presented in the ITE publication, Trip Generation Handbook, show that developments containing multiple land uses will commonly have internal trips. A process was used to estimate the number of internal trips that can be expected between land uses for the three development scenarios. Given the development's size, it is important to note that the internal trips may still occur as vehicular trips between land uses within the development along the internal street network, and the intention of the internal capture rate is to account for traffic generated by the development that will not be external traffic on the existing street network.

Studies have shown that most new retail and restaurant developments generate relatively little "new" traffic. The traffic volumes entering and exiting new retail sites are usually either captured ("pass-by") trips from the adjacent street or diverted trips

from streets serving other destinations. This traffic will be on the roadway system and will be passing by the site even if the proposed development is not constructed. Data presented in the Trip Generation Handbook was utilized to estimate pass-by traffic expected for the retail and restaurant uses.

Conservatively, no reductions were applied for walking, biking, or transit. Though given the close proximity to existing residential developments and two schools as well as the network of sidewalks, greenways and bikeways planned as part of the development, some external trips are expected to be accomplished by walking and biking.

Table 2 presents the daily, AM, and PM peak hour trip generation for each of the three scenarios of the proposed development. As shown, Scenario 1 of the 2660 Buckner Lane mixed-use development can be expected to generate approximately 11,557 new vehicle trips per day. The AM and PM peak hour trip generations for Scenario 1 will equal approximately 600 and 888 new trips, respectively. These trips represent the new traffic that will be generated by Scenario 1. As shown in Table 2, Scenario 2 of the development can be expected to generate approximately 31,731 new vehicle trips per day. The AM and PM peak hour trip generations for Scenario 2 will equal approximately 1,849 and 2,004 new trips, respectively. These trips represent the new traffic that will be generated by the buildout of Phases 1 and 2. Scenario 3, which includes the full buildout of the development master plan, is expected to generate approximately 68,719 new vehicle trips per day. The AM and PM peak hour trip generations for the full buildout of the 2660 Buckner Lane mixed-use development will equal approximately 5,315 and 6,902 new trips, respectively.

TABLE 2: DEVELOPMENT TRIP GENERATION

LAND USE	SIZE	GENERATED TRAFFIC				
		DAILY TRAFFIC	AM PEAK		PM PEAK	
			Enter	Exit	Enter	Exit
SCENARIO 1 – PHASE 1						
Retail (LUC 820)	252,866 s.f.	7,912	156	89	350	367
Restaurant (LUC 932)	28,096 s.f.	2,277	135	121	80	37
Residential Single-Family (LUC 210)	159 d.u.	1,368	27	72	34	20
SCENARIO 1 SUBTOTAL		11,557	318	282	464	424
SCENARIO 1 TOTAL		**11,557**	**600**		**888**	
SCENARIO 2 – PHASES 1 & 2						
Retail (LUC 820)	676,296 s.f.	15,997	278	161	648	561
Restaurant (LUC 932)	75,141 s.f.	6,497	333	331	202	98
Residential Single-Family (LUC 210)	342 d.u.	2,767	58	160	91	61
Residential Multifamily (LUC 220 & 230)	1,238 d.u.	6,470	110	418	214	129
SCENARIO 2 SUBTOTAL		31,731	779	1,070	1,155	849
SCENARIO 2 TOTAL		**31,731**	**1,849**		**2,004**	
SCENARIO 3 – FULL BUILDOUT						
Office (LUC 710)	3,902,250 s.f.	18,073	2,697	135	688	3,419
Retail (LUC 820)	1,153,676 s.f.	21,221	253	148	741	685
Restaurant (LUC 932)	128,186 s.f.	10,390	393	378	284	118
Residential Single-Family (LUC 210)	774 d.u.	5,866	130	313	193	140
Residential Multifamily (LUC 220 & 230)	2,152 d.u.	10,443	170	576	316	206
Hotel (LUC 310)	400 rooms	2,726	120	2	51	61
SCENARIO 3 SUBTOTAL		68,719	3,763	1,552	2,273	4,629
SCENARIO 3 TOTAL		**68,719**	**5,315**		**6,902**	
Note: Calculations above represent only new traffic generated by the project site. Internal and pass-by trips are not included in the numbers above.						

Source: *Trip Generation*, Ninth Edition

Directional distributions of traffic generated by the property were developed for each land use for the three scenarios. As previously mentioned, it is assumed that a Buckner Road will be extended to Lewisburg Pike to the east and will include an interchange with I-65 prior to Full Buildout of the development. However, an interchange is not assumed to be in place for the initial phases of development. For Scenario 1 (Phase 1)

and Scenario 2 (Phase 1 and Phase 2), the directional distributions generally reflect the existing travel patterns developed from the existing peak hour traffic volumes. The master plan of the development includes an extensive and connected internal street network, which is assumed to be constructed as adjacent phases are developed in order to provide access and circulation for the development phases. The directional distributions were used to assign the AM and PM peak hour traffic generations to the street network. Capacity analyses were conducted for the study intersections for Scenario 1 and Scenario 2 to determine the projected operations of the intersections during the AM and PM peak hours as well as to identify necessary transportation infrastructure improvements for each respective scenario. Capacity analyses were not conducted for Scenario 3 (Full Buildout) due to the unknown regional shift in traffic that will occur with the construction of a new interchange. Those capacity analyses will be included in the City's transportation planning studies, which have a broader scope, using information and data presented in this traffic impact study.

Conclusions and Recommendations

The 2660 Buckner Lane Property is located at the northeastern corner of the City of Spring Hill, Tennessee. The applicant is seeking rezoning in order to develop the property as a Gateway Planned zoning district that will allow the highest intensity of development within the Spring Hill community with a variety of land uses, which is consistent with the City's *Spring Hill Rising 2040 Plan*. This traffic impact study evaluates the proposed development and resulting traffic generation at Phase 1, Phase 2, and Full-buildout. The analyses presented in this study were utilized to determine the transportation improvements necessary to accommodate the traffic generated by Phase 1 and Phase 2 of the development prior to the construction of the anticipated I-65 interchange and Buckner Road Extension. The following specific transportation improvements are recommended in order to accommodate the existing and development traffic at Phase 1 and Phase 2:

PHASE 1

<u>Buckner Lane</u>

- Realign Buckner Lane between Thompson's Station Road East and Buckner Road. A major goal of this realignment is to improve the existing sight distance restriction along Buckner Lane south of Thompson's Station Road East, which is currently restricted due to vertical curvature. The design of Buckner Lane should consider realigning the street to the east of the hilltop at the northwest corner of the property, so that adequate sight distance can be provided.
- Widen Buckner Lane between Thompson's Station Road East and Buckner Road to provide a minimum of two travel lanes in each direction with a center two-

way left-turn lane or landscaped median to accommodate left turn lanes where needed.
- The Buckner Lane improvements should include bike lanes and sidewalks on both sides.

Intersection of Buckner Lane and Thompson's Station Road East

- Widen Thompson's Station Road East in order to provide a westbound left turn lane.
- Widen Thompson's Station Road East in order to provide an eastbound right turn lane with channelization to an added lane on Buckner Lane in the southbound direction.
- Install traffic signal control with permissive/protected left turn signal phasing for Thompson's Station Road East.
- Bicycle treatments and pedestrian facilities should be considered in the design of the intersection geometry and traffic signal.

Intersection of Buckner Lane and Westchester Lane/Residential Loop

- Extend Westchester Lane to intersect with the realigned Buckner Lane, and reconstruct the Westchester Lane approach to include a separate eastbound left turn lane and a shared through/right turn lane.
- Align the proposed new residential street with Westchester Lane. The design of the new residential street should include a separate westbound left turn lane and a shared through/right turn lane at the intersection.
- Stop-control should be provided for the eastbound and westbound approaches of Westchester Lane and the new residential street.

Intersection of Buckner Lane and Buckner Road

- Construct a southbound left turn lane on Buckner Lane.
- The outside southbound through lane should be signed and pavement marked as a right turn lane at this intersection.
- Construct a northbound left turn lane on Buckner Lane.
- Construct a second northbound through lane on Buckner Lane.
- Extend Buckner Road east of Buckner Lane to provide access to the Phase 1 parcels and internal street network.
- At a minimum, the westbound approach of Buckner Road Extension should include one left turn lane, one through lane, and one right turn lane.
- Install traffic signal control with protected/permissive left turn signal phasing for the northbound and southbound approaches of Buckner Lane.
- Bicycle treatments and pedestrian facilities should be considered in the design of the intersection geometry and traffic signal.

These transportation network improvements are recommended to be constructed in order to accommodate Phase 1 of the master plan; however, it may be appropriate to construct the improvements in more discreet phases depending on the order that parcels within Phase 1 come online. These improvements will provide acceptable traffic operations through the completion of Phase 1.

PHASE 2

In addition to the transportation improvements that are identified for Phase 1, the following improvements are recommended to be constructed by the development if not previously constructed by other parties prior to the completion of Phase 2 of the development program (as analyzed in this TIS or a development plan of similar density):

Buckner Lane

- Buckner Lane should be widened between Buckner Road and Duplex Road per the City's *Buckner Lane Study*, which recommends providing two travel lanes in each direction and a center two-way left-turn lane or raised median with turn lanes at intersections.

Buckner Road

- Buckner Road should be widened between Buckner Lane and Columbia Pike per the City's *Buckner Road Study*, which recommends providing two travel lanes in each direction and left turn lanes at intersections where deemed appropriate.
- Buckner Road should be extended east of Buckner Lane to provide access to the Phase 2 parcels and internal street network.

Intersection of Buckner Lane and Westchester Lane/Residential Loop

- Install traffic signal control when a traffic study indicates signal warrants are met per the MUTCD.
- The eastbound approach of Westchester Lane and the westbound approach of Residential Loop should include one left turn lane and one shared through/right turn lane.
- The northbound approach of Buckner Lane should include one left turn lane, one through lane, and one shared through/right turn lane.
- The southbound approach of Buckner Lane should include one left turn lane, two through lanes, and one right turn lane.

Intersection of Buckner Lane and Buckner Road/Buckner Road Extension

- All four approaches to the intersection should include one left turn lane, two through lanes, and one right turn lane.

Intersection of Buckner Lane and Twin Lakes Drive

- Install traffic signal control when a traffic study indicates signal warrants are met per the MUTCD.

Intersection of Buckner Lane and Spring Station Drive

- Install traffic signal control when a traffic study indicates signal warrants are met per the MUTCD.

Intersection of Buckner Lane and Road C

- The eastbound and westbound approaches of Road C should include one shared lane for all turning movements.
- The northbound and southbound approaches of Buckner Lane should include one left turn lane, one through lane, and one shared through/right turn lane.

Intersection of Buckner Road Extension and Road D

- Install all-way stop-control as interim traffic control prior to completion of Buckner Road Extension.
- The northbound and southbound approaches of Road D should include one shared lane for all turning movements.
- The eastbound and westbound approaches of Buckner Road Extension should include one shared through/left turn lane and one shared through/right turn lane.

Intersection of Buckner Road Extension and Road E

- Install all-way stop-control as interim traffic control prior to completion of Buckner Road Extension.
- The northbound approach of Road E should include one shared through/left turn lane.
- The southbound approach of Road E should include one shared through/right turn lane.
- The eastbound approach of Buckner Road Extension should include one left turn lane and one right turn lane.

These recommended transportation network improvements should be constructed before completion of development Scenario 2, which includes Phases 1 and 2 (as analyzed in this TIS or a development plan of similar density). However, it may be

appropriate to construct the improvements in more discreet phases depending on the order that parcels within Phase 2 come online. No further development should be permitted beyond Phase 2 until an interchange at I-65 is constructed that provides direct access to the property. As the property develops, parcel-specific traffic studies may be needed or required at the City's discretion to identify phasing of the recommended improvements within each development phase. It is anticipated that travel patterns in the study area will change with the construction of the development, planned roadway and intersection improvements in the vicinity of the project site, as well as the construction of a new I-65 interchange near the project site. Therefore, these parcel-specific traffic studies should be conducted to confirm the conclusions of this analysis and to more specifically define the design details of the roadway improvements, such as turn lane storage lengths and traffic control within the study area.

In summary, the traffic that is expected to be generated by the allowable development for the proposed 2660 Buckner Lane rezoning can be accommodated with significant and extensive roadway improvements in the study area paired with a well-connected internal street network. The recommended improvements associated with the proposed development are generally consistent with the City's plans to improve Buckner Lane and Buckner Road as well as its plan to pursue approval and construction of a new I-65 interchange between Thompson's Station Road East and Duplex Road. All roadway and intersection improvements associated with construction of development on the 2660 Buckner Lane property should be coordinated with the City of Spring Hill.