Virtual Council Meeting Agenda
August 3, 2020
6:00 p.m.

1. Call to Order and Invocation ..... Mayor Ed Hooks
2. Public Comments ..... Mayor
3. Consent Agenda ..... Mayor
   a. Approval of Minutes –
      i. July 6, 2020 – Virtual Regular Meeting
      ii. July 8, 2020- Continued Public Hearings
   b. Petition for Voluntary Non-Contiguous Annexation- ABB
   c. Resolution Approving Financing for Purchase of Vehicles
4. Resolution of Recognition- Richard Hurst- 50 Yard Challenge ..... Mayor
5. Public Hearings- All Public Hearings will be voted upon at the CONTINUED meeting to be held on Wednesday, August 5, 2020 at 6:00pm
   a. Conditional Rezoning- CU-R-8 & CU-R-10 to R-12(CD)
      Tupelo Junction- 1818 Saddle Club Road by Lebanon
      Road 3, LLC, c/o James Parker, Jr., ... Chris Rollins, Assistant City Manager
   b. Quasi-judicial Board of Adjustment- Special Use Request-
      Temporary use of property located at 3445 Old Hillsborough
      Road by Alamance Community School.....Ashley Ownbey, Planner
6. Adjournment ..... Mayor

Mebane City Council - Virtual Meeting

August 3, 2020- 6:00 PM

The City of Mebane is taking measures to mitigate the spread of the COVID-19 virus including banning physical attendance at public meetings, employing social distancing, and implementing remote participation. The following will allow the public to attend the meeting by remotely accessing it on the internet.

For those without internet service, you can listen to the meeting by calling 919-304-9210, password 158962.

For people who plan to view the meeting, but not comment or participate, the City is providing a YouTube live stream by searching *City of Mebane* on YouTube or at the following link:

https://www.youtube.com/channel/UCoL1RXdRDMzK98p53TMoqww

For people who plan or think they may want to address the City Council during the Public Comment Period or the Public Hearing, see options below.

Option #1

- Email comment to info@cityofmebane.com. Written comments may be submitted at any time between the notice of the Public Hearing and 24 hours after the Public Hearing.
- Messages must be labeled Public Comment or Public Hearing in the subject line and must contain commenter's name and address.
- Comments received prior to the meeting will be read aloud by the City Clerk.

Option #2

- Email info@cityofmebane.com by **Monday, August 3, 2:00pm** to speak during the Public Comment Period or Public Hearing. When email is received, an email will be sent with instructions on how to register and speak during the Public Comment Period or Public Hearing.
- Messages must be labeled Public Comment or Public Hearing in the subject line and must contain commenter's name and address.
- Registered participants will be given an access code to speak at the meeting via Zoom, a remote conferencing service.
- Callers will be held in queue and asked to mute their phones or speakers until they are called on to speak.
- Speakers will be called in the order in which they are registered. Should time allow after all registered speakers have had a chance to speak, you may use the "raise hand" button on the Zoom interface to be recognized and staff will unmute you to give comment.
- Per authority of NCGS 143-318.17, if a person participating remotely willfully disrupts the Council meeting, then upon direction by the Mayor, such person may be removed from electronic participation, or his or her e-mail may not be read.

The Mebane City Council held its regular monthly meeting at 6:00 p.m., Monday, July 6, 2020. Due to public health concerns related to COVID-19, the meeting was held virtually via Zoom.

Council Present via Zoom:
Mayor Ed Hooks
Mayor Pro-Tem Jill Auditori
Councilmember Tim Bradley
Councilmember Patty Philipps
Councilmember Everette Greene
Councilmember Sean Ewing

City Staff Present at City Hall:
Assistant City Manager Chris Rollins
City Attorney Lawson Brown
City Clerk Stephanie Shaw
IT Director Kirk Montgomery
Planner Ashley Ownbey

City Staff Present via Zoom:
City Manager David Cheek
Finance Director Jeanne Tate
Development Director Cy Stober
HR Director Beatrice Hunter

Mayor Hooks called the virtual meeting to order and gave the invocation. Mr. Tommy Jones registered to speak during the meeting, however at the time Mayor Hooks called for Public Comments, Mr. Jones had not logged on to speak.

Mayor Hooks continued with opening discussion about a proposed Town Hall Meeting/Listening Session. The following are highlights from that discussion.

- Set meeting date for Wednesday, August 5th, directly following after the 6pm voting meeting
- Each speaker allowed 5 minutes
- All registered speakers will be allowed their 5 minutes no matter how long the meeting goes
- Speaker must be registered to participate
    - Registered participants will be brought in to the Zoom call in the order in which they registered
    - Speaking order will be posted on PowerPoint slide at the beginning of the meeting so participants know when they will be up to speak
    - Limit speakers to one time to speak, no repeats
- Council agreed that main objective is to listen

    - No back and forth dialog with the speaker
    - Need time to hear concerns, then Council will address at a later time, ex. another meeting
- Allow people to speak no matter their residential address
- Opening statement by Mayor to set guidelines for meeting
- David recommended that the meeting topic should be tied to recent national concerns, as those issues are what started the conversation for a Town Hall Meeting/Listening Session
    - Mr. Bradley said he feels setting the topic would "weigh the public discussion in one way or another"
    - Ms. Auditori said that Mr. Bradley makes a good point
    - Mr. Bradley said topic could be listed as "current issues"
    - Ms. Philipps suggested a topic of "we want to hear you"
- All City Department Heads should "attend" virtually but not expected to speak
- Allow speakers to register up until 5pm the day of the meeting
- Should be advertised separate from the regular meeting- ad in paper, Facebook, website, google ads
- Ms. Auditori would like for it to be clear that Council's lack of response during the meeting is not because they are not listening, they are listening, notes are being taken and Council will follow up to comments at a later time.

Mr. Rollins interrupted the discussion to let Mayor Hooks know that Mr. Jones had joined the meeting remotely via Zoom and was ready to address the Council with comments.

Tommy Jones, 307 E Dogwood Dr Mebane, NC 27302, stated that he recently participated in a healing rally, invited by Councilmember Ewing. He stated he met Mayor Hooks and others that attended. He said after that meeting, they discussed further the needs and concerns of the African-American community which is right now 24.7 percent of the population of Mebane. He said there are various concerns about social inequality, systemic racism, and police brutality and can fairly say he does not necessarily see as much in Mebane in the past five years that he has lived here but the underlying issues still remain. He said he is proposing that Council put together a minority-based, African-American based advisory committee. He said such a committee could provide comments and suggestions that could be recognized by the Council, that way proper decisions and proper acknowledgments can be made. Mr. Jones stated the only way to bridge the gap is to continue the conversation. He said they need more representation and he feels that an Advisory Committee to the Council is essential going forward within our City.

Mayor Hooks and Mr. Ewing thanked Mr. Jones for attending the meeting and for his comments. Mr. Cheek invited Mr. Jones to participate in the upcoming Town Hall/Listening Session meeting. He said mentioning the concerns and ideas he shared tonight at that meeting would be a good idea.

Mr. Jones thanked Mr. Cheek for that invite and shared that he thinks Council should verbally acknowledge speakers during the Listening Session, even if it is a prepared statement read at the end of the meeting.

Ms. Philipps agreed, that during the session, some type of acknowledgment should be made, assuring the speakers that they have been heard but suggested a follow up meeting would be the best time to provide responses, feedback and/or action. Council discussed a follow up meeting but did not set an official date.

Mr. Cheek said his understanding, based on what Mr. Jones said, is that while there may not be a conversation, a statement needs to be given at the end of the meeting acknowledging that Council and staff heard the speakers. Mr. Jones said that is exactly what he meant.

Mr. Jones thanked everyone, said goodbye and left the remote meeting.

Mr. Cheek introduced the City's new Human Resources Director Beatrice Hunter. He spoke highly of Ms. Hunter, her education, experience and training. Mr. Cheek also shared that she is a resident of Mebane. Ms. Hunter shared her excitement with the opportunity to be able to work in Mebane, live in Mebane and play in Mebane.

Mayor Hooks gave an overview of the Consent Agenda:

a. Approval of Minutes –
   i. June 1, 2020 – Virtual Regular Meeting
   ii. June 3, 2020- Continued Public Hearings
b. Hazard Mitigation Plan Resolution
c. Final Plat- Townes at Oakwood Square, Phase 1
d. Recommendation to the Alamance County Commissioners for Reappointment to the Alamance County Library Committee
e. Odor Control Chemicals Bid Results and Recommendation

Ms. Philipps made a motion, seconded by Ms. Auditori, to approve the consent agenda as presented. The motion carried unanimously.

Mayor Hooks announced that the next item is a public hearing and will not be voted on until the continued meeting which will be held on Wednesday, July 8, 2020.

A virtual Public Hearing was held a request from Dogwood Properties & Development Corporation for approval to rezone five (5) properties totaling +/-3.32 acres located at 1218 and 1228 South Fifth Street, as well as two (2) adjacent, unaddressed properties on South Fifth Street and one (1) unaddressed property on NC 119, from R-20 (Single-Family Residential) to B-2 (General Business). Mr. Stober presented the request. He explained that the properties are currently vacant lots, some with unoccupied dwellings on them. Their property boundaries were redefined through the right of way acquisition process to support the NC 119 Bypass transportation improvement project. The properties are in the G-4 Secondary Growth Area but adjacent to the G-1 Mixed Use (III) Cameron Lane Primary Growth Area. They are also less than 1,000 feet from the Interstate 40/85 interchange and isolated from nearby properties by the NC

119 Bypass and widened S. Third Street. Those properties are single-family residences to the north, east, and south; and commercial to the west and southwest.

Tony Tate, Landscape Architect and Land Planner with TMT Landscaping, Durham, NC, joined the virtual meeting via Zoom and provided a brief overview of the request. He explained that originally, he applied for a B-2(CD) (General Business Conditional Zoning) back in March but the Planning Board denied the request because he did not have a site plan. Since then he revised his application to B2 (General Use) and plans to market the properties as commercial. He stated he spoke with Mayor Hooks and the Mayor shared that the Council has an opportunity to restrict those uses. Mr. Tate presented the following proposed list of B2 uses to be restricted from the properties under consideration for rezoning.

Dogwood Properties Development Corporation **July 6, 2020**
Mebane City Council Presentation
Exhibit A

The property owner offers the following B2 uses to be restricted from for the rezoned properties at the pleasure of Mebane City Council.

1. Temporary Emergency Shelter
2. Communication Tower under 50' in height
3. Athletic Fields
4. Auditorium, Coliseum or Stadium
5. Batting Cages, Outdoor
6. Batting Cages, Indoor
7. Bingo Parlor
8. Campground/RV Park
9. Coin Operated Amusement
10. Country Club with Golf Course
11. Golf Course
12. Golf Driving Range
13. Automobile Parking (Commercial)
14. Blacksmith
15. Equipment Repair
16. Theater (Outdoor)
17. Boat Sales
18. Building Supply Sales
19. Fuel Oil Sales
20. Manufactured Home Sales
21. Recreational Vehicle Sales
22. Video Tape Rental and Sales
23. Communication or Broadcasting Facility
24. Taxi Terminal
25. Telephone Exchange
26. Transformer Stations
27. Beverage Products
28. Ice
29. Jewelry and Silverware Fabrication, No Plating
30. Printing and Publishing, Incidental to a Newspaper Office
31. Fireworks Stand
32. Video Gaming Arcade

Mr. Bradley asked for clarification about whether Council is considering an B2 Conditional Zoning or a straight B2 General Use zoning. Mr. Rollins explained that the original history was that Mr. Tate was asking for a conditional zoning from the very beginning and staff supported that conditional zoning which restricted the uses however when the request was presented to the Planning Board as part of that review the conditional zoning requires a site plan to be submitted, not just a restriction on the uses. So, when the Planning Board heard that, they were not in support of the conditional zoning. Therefore, Mr. Tate resubmitted for a straight B2 rezoning and the Planning Board approved recommending the straight B2 rezoning to Council. However, Mr. Tate still believes, and staff still believes, that conditional zoning makes the most sense even though he does not have a site plan. All of the proposed uses on the submitted list would be restricted from those properties. Mr. Bradley said if Council has the authority, he is perfectly satisfied with waiving the site plan in lieu of a more restricted zoning. He said there are residential properties facing these properties and he would feel more comfortable with restricted the uses. Mr. Stober said he has spoken with Mr. Rollins and Mr. Brown about the matter and Planning Staff is not empowered to make any recommendation in that regard but he does believe that Council has much more authority in negotiating the agreement with the applicant. Mr. Brown said from a legal stand point, Council can convert this to a conditional rezoning to include the restricted uses. He reminded Council that the City's Unified Development Ordinance (UDO) does include impervious surface limitations and setback requirements and the setbacks are generally enhanced when the business property is adjoining residential property, so there are some safeguards in the UDO. Mr. Ewing questioned if Mr. Tate owns the adjoining property and if the same zoning would apply. Mr. Stober stated that property was not advertised and cannot be considered at tonight's meeting. Ms. Philipps stated, if Council has the legal authority, she supports moving forward with the zoning including the restricted uses. She also requested that if the developer can preserve the mature trees on the properties, it would be ideal. Mr. Tate said he would certainly pass that request along to the developer and hopefully he will be doing the site plan and he would see what he could do about making that happen.

No one from the public spoke concerning the matter. Mayor Hooks asked for a motion to continue the public hearing. Mr. Ewing made a motion, seconded by Ms. Philipp's, to continue the public hearing until Wednesday, July 8, 2020 at 6:00pm. The motion carried unanimously per the roll call vote.

Mayor Hooks announced that the City is now accepting applications for vacancies on the Board of Adjustment, one position for the Alamance County ETJ and one position for the Orange County ETJ. He encouraged citizens to apply.

Mayor Hooks also thanked the West End Revitalization Association for their recent donations to the Police Department and Fire Department to help cover COVID-19 related costs. Both departments received $250 each.

Mr. Ewing thanked Reverend Keisha Bluford and Pastor Sammy Ballard for organizing the Unity March recently held in downtown Mebane. He also thanked Jay Starnes, owner of Fat Man and His Food, for providing barbeque for the event.

There being no further business, the meeting ended at 6:58pm.

Attest: _____ _____

Stephanie W. Shaw, City Clerk Ed Hooks, Mayor

The Mebane City Council held a continued meeting at 6:00 p.m., Monday, July 6, 2020. The July 6, 2020 meeting was continued per G.S. 166A-19.24, which states that when a public body conducts a public hearing as a remote meeting, it must allow for written comments on the subject of the public hearing to be submitted between publication of any required notice and 24 hours after the public hearing. Due to public health concerns related to COVID-19, the meeting was held virtually via Zoom.

Council Present via Zoom:
Mayor Ed Hooks
Councilmember Everette Greene
Councilmember Sean Ewing
Councilmember Tim Bradley
Councilmember Patty Philipps

Council Absent:
Mayor Pro-Tem Jill Auditori

City Staff Present via Zoom:
City Manager David Cheek
Assistant City Manager Chris Rollins
City Clerk Stephanie Shaw
Jeanne Tate, Finance Director
IT Director Kirk Montgomery
Development Director Cy Stober

City Staff Present via Phone:
City Attorney Lawson Brown

Per the requirement of G.S. 166A-19.24 the unanimous vote was conducted by roll call.

Mayor Hooks called the meeting to order. He then stated that tonight's meeting is a continuation of the public hearing held on Monday, July 6, 2020 on a request from Dogwood Properties Development Corporation to rezone 5 Parcels located at and adjacent to 1218 and 1228 S. Fifth Street from R-20 (Single Family Residential) to B-2 (General Business).

Clerk Shaw stated that no public comments were received. Mr. Greene made a motion, seconded by Mr. Ewing to close the public hearing.

Mr. Bradley made a motion, seconded by Ms. Philipps to, approve the B-2 Conditional rezoning as discussed and to include the restricted uses list as presented and a motion finding that the application is consistent with the objectives and goals in the City's 2017 Comprehensive Land Development Plan *Mebane By Design*. The request is for a property within the City's G-4 Secondary Growth Area and is "…generally residential and commercial in nature…" (Mebane CLP, p.66). The motion carried unanimously per the roll call vote.

There being no further business, the meeting was adjourned at 6:03pm.

Attest: _____
Stephanie W. Shaw, City Clerk

_____
Ed Hooks, Mayor

AGENDA ITEM #3B

Petition for Voluntary Non-Contiguous Satellite Annexation – ABB

Meeting Date
August 3, 2020

Presenter
Lawson Brown, City Attorney

Public Hearing
Yes ☐ No ☒

Summary

Staff received a petition requesting voluntary non-contiguous satellite annexation from ABB.

Background

The applicant is requesting the described property to be annexed into Mebane's Corporate Limits. This is a non-contiguous satellite annexation containing approximately 101.119 acres.

Financial Impact

The property will be added to the ad valorem tax base for the City once the property is annexed.

Recommendation

Staff recommends Council's acceptance of the petition, the Clerk's Certificate of Sufficiency and adoption of a Resolution setting a date of public hearing for September 14, 2020.

Suggested Motion

I make a motion to accept the petition, the Clerk's Certificate of Sufficiency and to adopt the resolution setting a date of public hearing for September 14, 2020.

Attachments

1. Petition
2. Clerk's Certificate of Sufficiency
3. Map
4. Resolution

PETITION REQUESTING A NON-CONTIGUOUS ANNEXATION

Annexation Process – Approximately a 2 Month Process

1st Month- Submit a Petition for Annexation to the City Council, the Clerk reports to City Council the Sufficiency of the Annexation and the City Council adopts a Resolution to set a Public Hearing

2nd Month- A Public Hearing is held and normally that same night, the City Council will adopt an Ordinance to set the effective date as the same or the Council will deny the request

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Date: 6/25/20

To the City Council of the City of Mebane:

1. We the undersigned owners of real property respectfully request that the area described in Paragraph 2 below be annexed to the City of Mebane.

2. The area to be annexed is non-contiguous to the City of Mebane and the boundaries of such territory are as follows:

**Please include a Description of Boundaries (Metes and Bounds) on a separate paper.*

**3. We acknowledge that any zoning vested rights acquired pursuant to G.S. 160A-385.1 or or G.S. 153A-344.1 must be declared and identified on this petition. We further acknowledge that failure to declare such rights on this petition shall result in a termination of vested rights previously acquired for the property. (If zoning vested rights are claimed, indicate below and attach proof.)

Name	Address	Do you declare vested rights (Yes or No)	Signature
1. David Onuscheck	6801 Industrial Drive Mebane, NC 27302	Yes	David Onuscheck Sr. VP & Corp Secretary
2. Bridget Smith	6801 Industrial Drive Mebane, NC 27302	Yes	Bridget Smith Secretary
3.			

*Municipality may wish to require metes and bounds description or map. (Provide 2 paper copies, an electronic copy and 3 mylars)

**This is one possible format for zoning vested rights declaration. This language may require modification to reflect the requirements of the municipal zoning vested rights ordinance, if any.

CERTIFICATE OF SUFFICIENCY

To the City Council of the City of Mebane, North Carolina:

I, Stephanie W. Shaw, City Clerk, do hereby certify that I have investigated the petition attached hereto and have found as a fact that said petition has been signed by all owners of real property lying in the area described therein, in accordance with G.S. 160A-58.2.

In witness whereof, I have hereunto set my hand and affixed the seal of the City of Mebane, this 3rd day of August, 2020

(SEAL) CITY OF MEBANE NORTH CAROLINA

Stephanie W. Shaw

Stephanie W. Shaw, City Clerk

SURVEYOR CERTIFICATION

I, THOMAS E. TEABO, PLS, HEREBY CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION, FROM DEED AND MAP REFERENCES AS NOTED ON SAID MAP; THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN FROM INFORMATION FROM DEED AND MAP REFERENCES AS NOTED ON SAID MAP.

THAT THE RATIO OF PRECISION OR POSITIONAL ACCURACY OF THE SURVEY AS CALCULATED IS 1: 10,000+, THAT THE BOUNDARIES NOT SURVEYED ARE SHOWN AS BROKEN LINES PLOTTED FROM INFORMATION OF RECORD; THAT THIS MAP WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED.

I HEREBY CERTIFY THAT THIS MAP WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL GPS SURVEY MADE UNDER MY SUPERVISION AND THE FOLLOWING INFORMATION WAS USED TO PERFORM THE SURVEY:

(1) CLASS OF SURVEY: "CLASS A"
(2) POSITIONAL ACCURACY: 0.04'
(3) TYPE OF GPS FIELD PROCEDURE: REAL-TIME KINEMATIC NETWORKS-NCVRS
(4) DATES OF SURVEY: 4/01/19 TO 1/27/20
(5) DATUM/EPOCH: NAD 83 (2011) EPOCH 2010.00
(6) PUBLISHED/FIXED-CONTROL USE: NCVRS
(7) GEOID MODEL: 2012 (CONUS)
(8) COMBINED GRID FACTOR(S): 0.999949133
(9) UNITS: US SURVEY FEET

PER G.S. 47-30 (F) 11 (J)-THE PROVISIONS OF THIS SECTION SHALL NOT APPLY TO BOUNDARY PLATS OF STATE LINES, COUNTY LINES, AREAS ANNEXED BY MUNICIPALITIES, NOR TO PLATS OF MUNICIPAL BOUNDARIES, WHETHER OR NOT REQUIRED BY LAW TO BE RECORDED.
WITNESS MY ORIGINAL SIGNATURE, LICENSE NUMBER AND AND SEAL THIS 19TH DAY OF FEBRUARY A.D., 2020.

PRELIMINARY - NOT FOR RECORDATION, SALES OR CONVEYANCES

SURVEYOR NC L-3920

NORTH CAROLINA PROFESSIONAL SEAL L-3920 LAND SURVEYOR THOMAS E. TEABO

OWNER
INDUSTRIAL CONNECTIONS & SOLUTIONS, LLC

MAILING ADDRESS:
4200 WILDWOOD PARKWAY
ATLANTA, GA 30339

SITE ADDRESS:
6801 INDUSTRIAL DRIVE
MEBANE, NC 27302

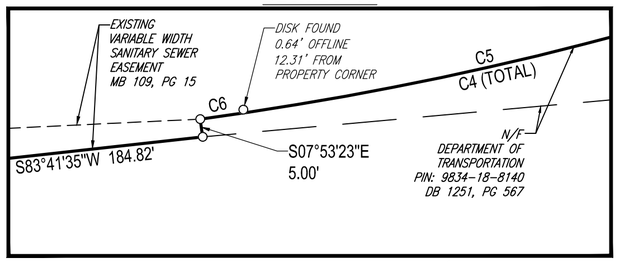
PLANNING DIRECTOR CERTIFICATION

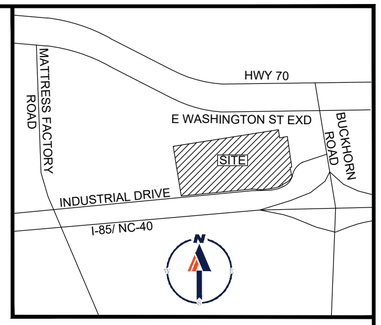
THIS TRACT OF LAND IS WITHIN THE CITY OF MEBANE'S JURISDICTION. NO APPROVAL IS REQUIRED OF THE PLANNING BOARD OR CITY COUNCIL.

_____, AUTHORIZED CITY OFFICIAL

_____, DATE

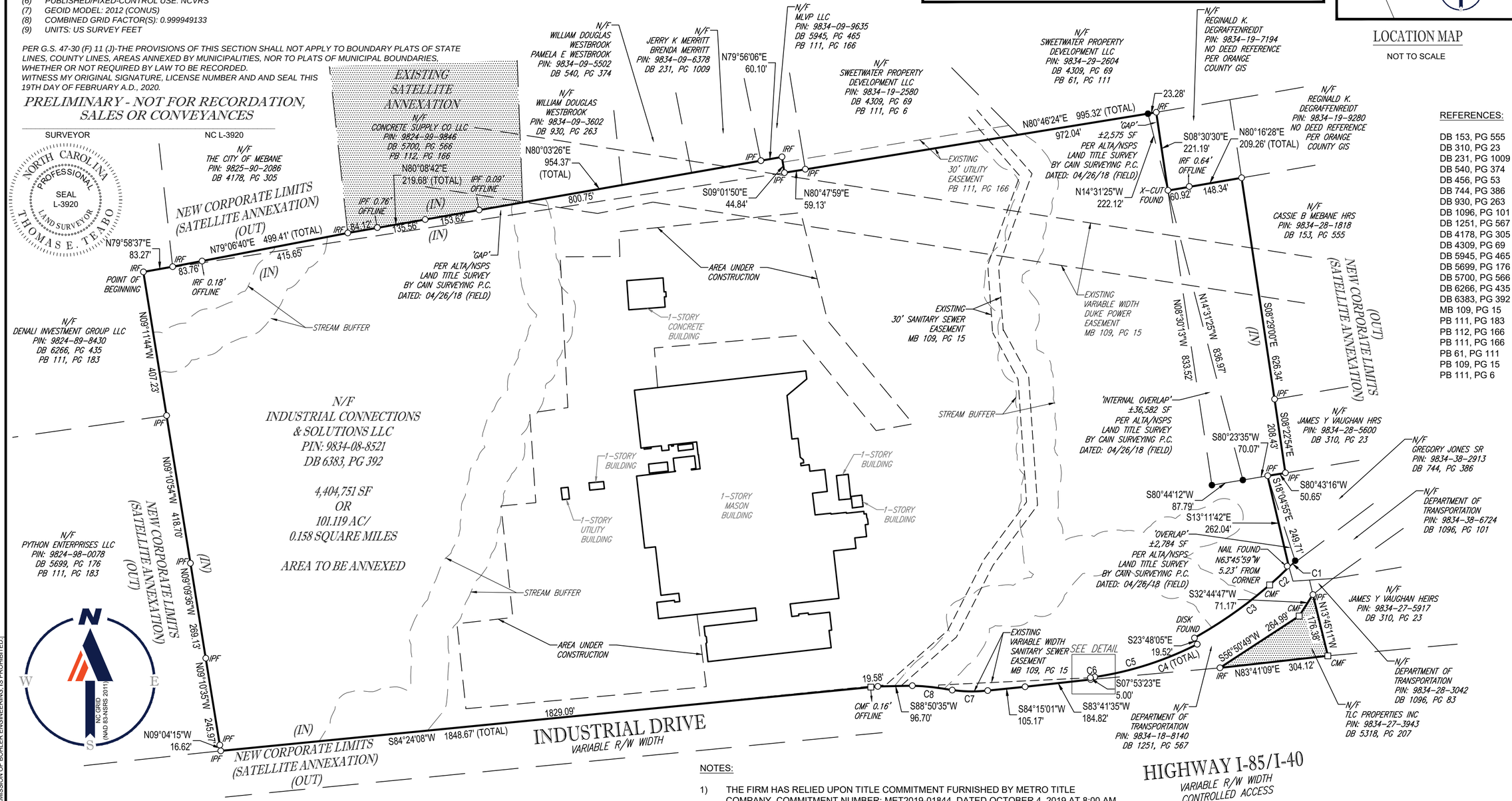
DETAIL 1"=30'





LOCATION MAP

NOT TO SCALE



REFERENCES:

DB 153, PG 555
DB 310, PG 23
DB 231, PG 1009
DB 540, PG 374
DB 456, PG 53
DB 744, PG 386
DB 930, PG 263
DB 1096, PG 101
DB 1251, PG 567
DB 4178, PG 305
DB 4309, PG 69
DB 5945, PG 465
DB 5699, PG 176
DB 5700, PG 566
DB 6266, PG 435
DB 6383, PG 392
MB 109, PG 15
PB 111, PG 183
PB 112, PG 166
PB 111, PG 166
PB 61, PG 111
PB 109, PG 15
PB 111, PG 6

LEGEND

- LINE SURVEYED
- LINE NOT SURVEYED
- □ CMF — CONCRETE MONUMENT FOUND
- ○ IPF — IRON PIPE FOUND
- ○ IRF — IRON REBAR FOUND
- ○ — IRON PIPE SET
- ● — COMPUTED POINT
- EXISTING CITY OF MEBANE MAIN CORPORATE LIMITS

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C1	1080.99'	25.00'	N44°50'43"E	25.00'	001°19'30"	12.50'
C2	1274.60'	73.63'	N47°05'24"E	73.62'	003°18'35"	36.83'
C3	1235.55'	258.12'	N54°50'25"E	257.65'	011°58'11"	129.53'
C4	930.98'	315.10'	N72°37'44"E	313.60'	019°23'33"	159.07'
C5	930.98'	302.79'	N72°15'00"E	301.46'	018°38'05"	152.74'
C6	930.98'	12.31'	N81°56'46"E	12.31'	000°45'28"	6.16'
C7	371.26'	99.38'	S89°14'08"E	99.08'	015°20'12"	49.99'
C8	741.76'	112.48'	N83°40'43"W	112.37'	008°41'17"	56.35'

NOTES:

1) THE FIRM HAS RELIED UPON TITLE COMMITMENT FURNISHED BY METRO TITLE COMPANY, COMMITMENT NUMBER: MET2019-01844, DATED OCTOBER 4, 2019 AT 8:00 AM WHILE AND IN PREPARING THIS SURVEY. THE SURVEYOR IS NOT RESPONSIBLE FOR TITLE EXCEPTIONS NOT DISCLOSED BY THE REFERENCED TITLE COMMITMENT.
2) AREAS COMPUTED BY COORDINATE METHOD.
3) PROPERTY SHOWN HEREON IS SUBJECT TO ALL RIGHTS-OF-WAY, EASEMENTS AND RESTRICTIONS OF RECORD.
4) ALL DISTANCES SHOWN ON SURVEY ARE HORIZONTAL GROUND DISTANCES UNLESS OTHERWISE NOTED.
5) THIS SURVEY DOES NOT REPRESENT A TITLE SEARCH BY THIS FIRM.
6) RIGHTS-OF-WAY INFORMATION IS BASED ON DEEDS AND MAPS OF RECORD.
7) NC GRID COORDINATES (NAD83) OBTAINED BY USING GPS, PRE THE NCVRS NETWORK.
8) BASIS OF BEARING SHOWN HEREON IS NC GRID (NAD 83 NSRS 2011).
9) VERTICAL DATUM SHOWN HEREON IS NAVD88.
10) THE PROPERTY SHOWN HEREON IS LOCATED IN FLOODZONE "ZONE X", AREA OF MINIMAL FLOODING, PER FLOOD INSURANCE RATE MAP 3710983400J, PANEL 9834 EFFECTIVE DATE FEBRUARY 2, 2007, AND ACCORDING TO INSURANCE RATE MAP 3710982400L PANEL 9824 EFFECTIVE DATE NOVEMBER 17, 2017.
11) THE PURPOSE OF THIS SURVEY IS TO PROVIDE A BOUNDARY FOR ANNEXATION INTO THE CITY OF MEBANE.
12) PROPERTY IS ZONED M-1.

FINAL PLAT
CITY OF MEBANE
CORPORATE LIMITS EXTENSION
CITY OF MEBANE NON-CONTIGUOUS (SATELLITE)
VOLUNTARY ANNEXATION
PINS: 9834-08-8521
DB 6383, PG 392
CITY OF MEBANE, CHEEKS TOWNSHIP,ORANGE COUNTY, NORTH CAROLINA

FILE NO.	DATE	FIELD DATE	CREW CHIEF	DRAWN	REVIEWED	APPROVED	SCALE	DWG. NO.
NSR192031	02/19/20	01/27/20	AS	BG	JT/TET	TET	1" = 200'	1 OF 1

BOHLER
4130 PARKLAKE AVENUE, SUITE 130 RALEIGH, NORTH CAROLINA 27612 919.578.9000
www.bohlerengineering.com
■ UPSTATE NEW YORK ■ BOSTON, MA ■ NEW YORK METRO ■ WARREN, NJ ■ PHILADELPHIA/SOUTHERN NJ ■ LEHIGH VALLEY, PA ■ SOUTHEASTERN PA ■ BALTIMORE, MD ■ SOUTHERN MARYLAND ■ NORTHERN VIRGINIA ■ WASHINGTON, DC ■ CENTRAL VIRGINIA ■ CHARLOTTE, NC ■ RALEIGH, NC

RESOLUTION FIXING DATE OF PUBLIC HEARING ON
QUESTION OF ANNEXATION PURSUANT TO G.S. 160A-58.2

WHEREAS, a petition requesting annexation of the non-contiguous area described herein has been received; and

WHEREAS, the Mebane City Council directed the City Clerk to investigate the sufficiency of the petition; and

WHEREAS, certification by the City Clerk as to the sufficiency of the petition has been made;

NOW, THEREFORE, BE IT RESOLVED, by the Mebane City Council of the City of Mebane, North Carolina that:

Section 1. A public hearing on the question of annexation of the non-contiguous area described herein will be held at the Mebane Municipal Building at 6:00 p.m. on September 14, 2020.

Section 2. The area proposed for annexation is described as follows:

Beginning at a point, said point being an iron rebar found, said iron rebar also being an easterly corner of the Now or Formerly Denali Investment Group, LLC property, said point also being THE POINT OF BEGINNING;

Thence departing said easterly corner of the Now or Formerly Denali Investment Group, LLC and running with a southerly line of the Now or Formerly Denali Investment Group, LLC property N 79° 58' 37" E 83.27' to an iron rebar found, said iron rebar being the southwesterly corner of the Now or Formerly City of Mebane property;

Thence departing said southerly line of the Now or Formerly Denali Investment Group, LLC property and running with the southerly line of the Now or Formerly City of Mebane property, the following courses and distances: N 79° 06' 40" E 83.76' to an iron rebar found, said iron rebar being 0.18' south of subject property line; N 79° 06' 40" E 415.65' to an iron rebar found, said iron rebar being the southwesterly corner of the Now or Formerly Concrete Supply Company, LLC property;

Thence departing the southerly line of the Now or Formerly City of Mebane property and running with the southerly line of the Now or Formerly Concrete Supply Company, LLC property the following courses and distances: N 80° 08' 42" E 84.12' to an iron pipe found, said iron pipe being 0.76' north of subject property line; N 80° 08' 42" E 135.56' to an iron pipe set; N 80° 03' 26" E 153.62' to an iron pipe found, said iron pipe being 0.09' north of subject property line;

Thence departing said iron pipe found and running with the southerly line of the Now or Formerly Concrete Supply Company, LLC, the Now or Formerly William Douglas Westbrook, the Now or Formerly William Douglas Westbrook et ux. and the Now or Formerly Jerry K. Merritt et ux. properties respectively N 80° 03' 26" E 800.75' to an iron pipe found, said iron pipe being a southeasterly corner of the Now or Formerly Jerry K. Merritt et ux. property;

Thence departing the southerly line of the Now or Formerly Jerry K. Merritt et ux. property and running with the southerly line of the Now or Formerly MLVP, LLC property the following courses and distances: N 79° 56' 06" E 60.10' to an iron rebar found; S 09° 01' 50" E 44.84' to an iron pipe found; N 80° 47' 59" E 59.13' to an iron pipe found, said pipe being the southwesterly corner of the Now or Formerly Sweetwater Property Development, LLC property;

Thence departing the southerly line of the Now or Formerly MLVP, LLC property and running with the southerly line of the Now or Formerly Sweetwater Property Development, LLC properties N 80° 46' 24" E 995.32' to an iron rebar found, said iron rebar being the northwesterly corner of the Now or Formerly Reginald K. Degraffenreidt property;

Thence departing the southerly line of the Now or Formerly Sweetwater Property Development, LLC property and running with the westerly line of the Now or Formerly Reginald K. Degraffenreidt property S 08° 30' 30" E 221.19' to an X-cut found;

Thence departing the westerly line of the Now or Formerly Reginald K. Degraffenreidt property and running with the southerly line of the Now or Formerly Reginald K. Degraffenreidt property, the following courses and distances: N 80° 16' 28" E 60.92' to an iron rebar found, said iron rebar being 0.64' north of subject property line; N 80° 16' 28" E 148.34' to an iron pipe set, said iron pipe being the southeasterly corner of the Now or Formerly Reginald K. Degraffenreidt property;

Thence departing the southerly line of the Now or Formerly Reginald K. Degraffenreidt property and running with the westerly line of the Now or Formerly Cassie B. Mebane HRS property S 08° 29' 00" E 626.34' to an iron pipe found, said iron pipe being the northwesterly corner of the Now or Formerly James Y. Vaughan HRS property;

Thence departing the westerly line of the Now or Formerly Cassie B. Mebane HRS property and running with the westerly line of the Now or Formerly James Y. Vaughan HRS property S 08° 22' 54" E 208.43' to an iron pipe found, said iron pipe being along with northerly line of the Now or Formerly Gregory Jones Sr. property;

Thence departing the westerly line of the Now or Formerly James Y. Vaughan HRS property and running with the northerly line of the Now or Formerly Gregory Jones SR property S 80° 43' 16" W 50.65' to an iron pipe found;

Thence departing the northerly line of the Now or Formerly Gregory Jones SR property and running with the westerly line of the Now or Formerly Gregory Jones SR property S 13° 11' 42" E 262.04' to a nail found, said nail being 5.23' northwest of subject property corner, said nail also being a northerly corner of the Now or Formerly Department of Transportation property;

Thence departing the westerly line of the Now or Formerly Gregory Jones SR property and running with the northerly line of the Now or Formerly Department of Transportation property, the following courses and distances:

Thence with a curve to the right, whose arc length is 73.63' and having a radius of 1274.60', with a chord bearing of S 47° 05' 24" W and distance of 73.62' to a concrete monument found;

Thence with a curve to the right, whose arc length is 258.12' and having a radius of 1235.55', with a chord bearing of S 54° 50' 25" W and distance of 257.65' to a disk found; S 23° 48' 05" E and distance of 19.52' to an iron pipe set;

Thence with a curve to the right, whose arc length is 302.79' and having a radius of 930.98', with a chord bearing of S 72° 15' 00" W and distance of 301.46' to a disk found, said disk being 0.64' north of subject property line and 12.31' northeast from subject property corner;

Thence with a curve to the right, whose arc length is 12.31' and having a radius of 930.98', with a chord bearing of S 81° 56' 46" W and distance of 12.31' to an iron pipe set; S 07° 53' 23" E and distance of 5.00' to an iron pipe set, said iron pipe being along the northerly rights-of-way of Industrial Drive;

Thence departing the northerly line of the Now or Formerly Department of Transportation property and running with the northerly rights-of-way of Industrial Drive, the following courses and distances: S 83° 41' 35" W and distance of 184.82' to an iron pipe set; S 84° 15' 01" W and distance of 105.17' to an iron pipe set;

Thence with a curve to the right, whose arc length is 99.38' and having a radius of 371.26', with a chord bearing of N 89° 14' 08" W and distance of 99.08' to an iron pipe set;

Thence with a curve to the left, whose arc length is 112.48' and having a radius of 741.76', with a chord bearing of N 83° 40' 43" W and distance of 112.37' to an iron pipe set; S 88° 50' 35" W and distance of 96.70' to a computed point; S 84° 24' 08" W and distance of 19.58' to a concrete monument found, said concrete monument being 0.16' south of subject property line; S 84° 24' 08" W and distance of 1829.09' to an iron pipe found, said iron pipe being a southeasterly corner or the Now or Formerly Python Enterprises, LLC property;

Thence departing the northerly rights-of-way of Industrial Drive and running with the easterly line of the Now or Formerly Python Enterprises, LLC property, the following courses and distances: N 09° 04' 15" W and distance of 16.62' to an iron pipe found; N 09° 10' 35" W and distance of 245.97' to an iron pipe found; N 09° 09' 36" W and distance of 269.13' to an iron pipe found; N 09° 10' 54" W and distance of 418.70' to an iron pipe found, said iron pipe being the southeasterly corner of the Now or Formerly Denali Investment Group, LLC property;

Thence departing the easterly line of the Now or Formerly Python Enterprises, LLC property and running with the easterly line of the Now or Formerly Denali Investment Group, LLC property N 09° 11' 44" W and distance of 407.23' to an iron rebar found, said iron rebar being THE POINT OF BEGININNING and containing 4,404,751 square feet or 101.119 acres, more or less.

Section 3. Notice of the public hearing shall be published once in the Mebane Enterprise, a newspaper having general circulation in the City of Mebane, at least ten (10) days prior to the date of the public hearing.

_____
Ed Hooks, Mayor

ATTEST:

_____

Stephanie W. Shaw, City Clerk

AGENDA ITEM #3C

Financing proposal for Public Works Vehicles

Meeting Date
August 3, 2020

Presenter
Wayne Pore, Public Works Director
Jeanne D. Tate, Finance Director

Public Hearing
Yes ☐ No ☒

Summary

In response to a request for proposals, the City has received bids for financing the purchase of two Public Works trucks. Staff is making a recommendation based on these proposals, and the attached resolution approving the financing terms requires City Council approval.

Background

On July 6, 2020, the City issued a request for proposals for installment financing for the purchase of vehicles for the Public Works department. We received proposals from five institutions as shown below. The rates presented are representative of the current rate environment, and the staff recommends approval. The financing will result in planned annual debt payments, and no tax rate increase is expected.

Financial Impact

All proposals received were for 5-year terms with level principal payments. Some proposals included closing costs or other fees. US Bancorp offered the lowest rate with no additional fees. Their proposal would include a prepayment penalty of 3% due on the balance on any payment date after 13 months. Interest over the 5-year term totals $16,117.48.

Debt payments would begin in February 2021, with one payment occurring during the current FY21 budget. Future years' principal plus interest payments will decline each year. No tax or rate increase is expected to result from the debt.

	5 Year Term ($430,000)	
Financial Institution	Interest Rate	Total Principal, Interest and Fees
American National	2.45%	455,219.55
BB&T	1.93%	454,897.00
First Bank	1.99%	455,435.83
US Bancorp	1.363%	446,117.48
Wells Fargo	Non-disclosure requested	

Recommendation

Staff recommends adoption of the resolution approving the issuance and terms of the financing agreement.

Suggested Motion

Motion to adopt the attached resolution approving the issuance and financing agreement with US Bancorp.

Attachments

1. Resolution approving financing terms

RESOLUTION AUTHORIZING THE EXECUTION AND DELIVERY OF A MASTER TAX-EXEMPT INSTALLMENT PURCHASE AGREEMENT, AND RELATED INSTRUMENTS, AND DETERMINING OTHER MATTERS IN CONNECTION THEREWITH.

WHEREAS, the governing body of the City of Mebane ("Purchaser") desires to obtain certain property (the "Property") described in the Property Schedule to the Master Tax-Exempt Installment Purchase Agreement (collectively, the "Agreement") with U.S. Bancorp Government Leasing and Finance, Inc. ("Seller"), the form of which has been available for review by the governing body of Purchaser prior to this meeting; and

WHEREAS, the Property is essential for the Purchaser to perform its governmental functions; and

WHEREAS, Purchaser has taken the necessary steps, including those relating to any applicable legal bidding requirements, to arrange for the acquisition of the Property; and

WHEREAS, Purchaser proposes to enter into the Agreement with Seller substantially in the forms presented to this meeting.

NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BODY OF PURCHASER AS FOLLOWS:

Section 1. It is hereby found and determined that the terms of the Agreement in the forms presented to this meeting and incorporated in this resolution are in the best interests of Purchaser for the acquisition of the Property.

Section 2. The Agreement and the acquisition and financing of the Property under the terms and conditions as described in the Agreement are hereby approved. The City Manager or designee of Purchaser and any other officer of Purchaser who shall have power to execute contracts on behalf of Purchaser be, and each of them hereby is, authorized to execute, acknowledge and deliver the Agreement with any changes, insertions and omissions therein as may be approved by the officers who execute the Agreement, such approval to be conclusively evidenced by such execution and delivery of the Agreement. The City Manager and any other officer of Purchaser who shall have power to do so be, and each of them hereby is, authorized to affix the official seal of Purchaser to the Agreement and attest the same.

Section 3. The proper officers of Purchaser be, and each of them hereby is, authorized and directed to execute and deliver any and all papers, instruments, opinions, certificates, affidavits and other documents and to do or cause to be done any and all other acts and things necessary or proper for carrying out this resolution and the Agreement.

Section 4. Pursuant to Section 265(b) of the Internal Revenue Code of 1986, as amended (the "Code"), Purchaser hereby specifically designates the Agreement as a "qualified tax-exempt obligation" for purposes of Section 265(b)(3) of the Code. The City

shall not take or omit to take any action the taking or omission of which shall cause its interest payments on this financing to be includable in the gross income for federal income tax purposes of the registered owners of the interest payment obligations. The City hereby designates its obligations to make principal and interest payments under the Financing Documents as "qualified tax-exempt obligations" for the purpose of Internal Revenue Code Section 265(b)(3).

Section 5. The City intends that the adoption of this resolution will be a declaration of the City's official intent to reimburse expenditures for the project that is to be financed from the proceeds of the USBGLF financing described above. The City intends that funds that have been advanced, or that may be advanced, from the City's general fund, or any other City fund related to the project, for project costs may be reimbursed from the financing proceeds.

The undersigned further certifies that the above resolution has not been repealed or amended and remains in full force and effect and further certifies that the Agreement executed on behalf of Purchaser are the same as presented at such meeting of the governing body of Purchaser, excepting only such changes, insertions and omissions as shall have been approved by the officers who executed the same.

Date: _____, 2020

_____

Purchaser

By:_____

(Signature of Secretary, Board Chairman or other member of the Governing Body)

Name: _____

Title: _____

Attested By: _____

(Signature of one additional person who can witness the passage of this Resolution)

Name: _____

Title: _____

OFFICE OF THE MAYOR

Resolution Recognizing Richard Hurst for Exemplary Service to the Citizens of Mebane

WHEREAS, the City of Mebane would like to recognize and show its appreciation for one of its exceptional citizens, Richard Hurst of 1049 South Third Street in Mebane, and

WHEREAS, Richard decided to accept a challenge from Raising Men Lawn Care Service of Madison, Alabama, and

WHEREAS, Raising Men Lawn Care Service is designed to promote awareness for the youth of the future and a platform where the younger members of the community can give back to the community, and

WHEREAS, Raising Men Lawn Care Service issued a challenge to youth around the world to cut 50 lawns free for the elderly, disabled, single parents, veterans, & anyone in need of help, and

WHEREAS, Richard accepted this challenge on July 26, 2019, and completed the 50th yard 364 days later on July 25, 2020, and

WHEREAS, Richard's exemplary service and sacrifice is an example of how to unite our extraordinary local community by the simple act of helping others, and

NOW, THEREFORE BE IT RESOLVED, on behalf of the City of Mebane, its citizens, and staff, the Mayor and City Council, by this Resolution and public record, formally express sincere appreciation to Richard Hurst for his dedication to the City of Mebane.

BE IT FURTHER RESOLVED that this Resolution is made a part of the official minutes of the City of Mebane and that an official copy of this expression of our appreciation is presented to Richard Hurst.

Signed, sealed, and delivered
this 3rd day of August 2020.

(SEAL)

Ed Hooks, Mayor
City of Mebane

AGENDA ITEM #5A

RZ 20-04

Conditional Rezoning – Tupelo Junction (formerly "The Landing at Lake Michael)

Presenter

Chris Rollins, Assistant City Manager

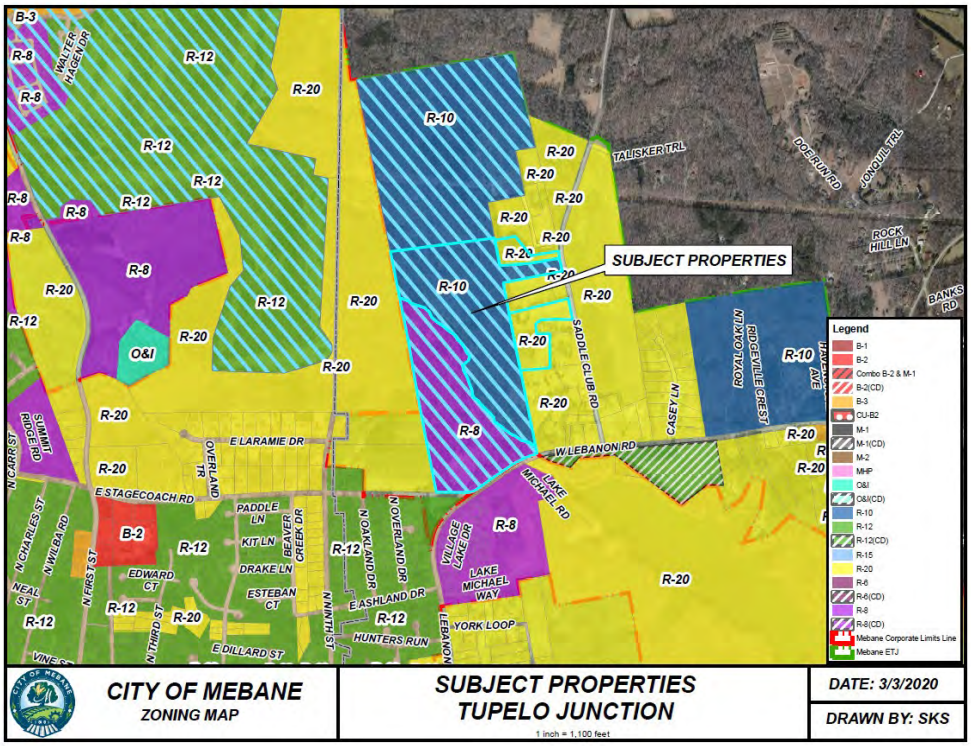
Applicant

Lebanon Road 3, LLC,
c/o James Parker, Jr.
320 Executive Court
Hillsborough, NC 27278

Public Hearing

Yes ☒ No ☐

Zoning Map



Property

1818 Saddle Club Road Orange County GPIN #9826416085

Proposed Zoning

R-12(CD)

Current Zoning

CU-R-10 & CU-R-8

Size

+/-93.5 acres

Surrounding Zoning

R-8, R-10, R-12(CD), R-20

Surrounding Land Uses

Residential & Vacant

Utilities

To be extended at developer's expense

Floodplain

Yes

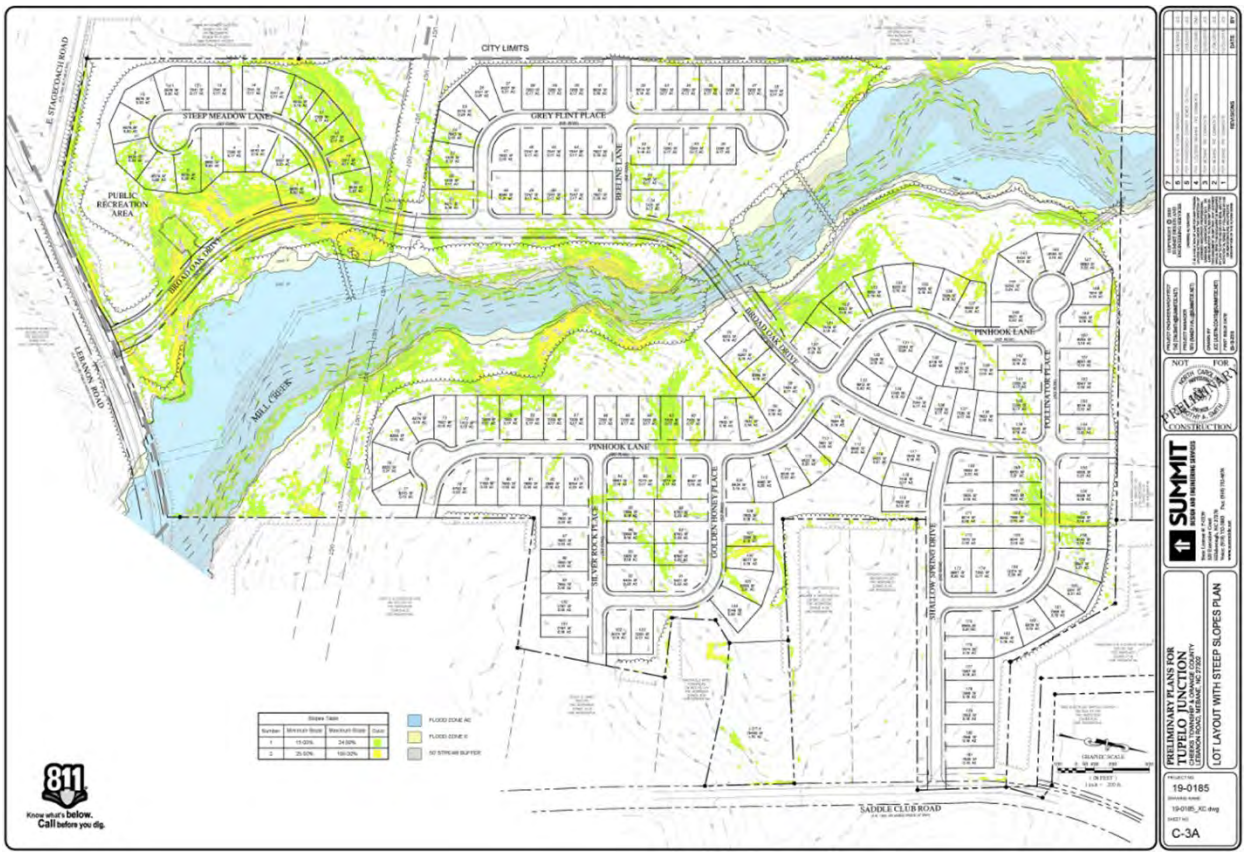
Watershed

Yes

City Limits

No

Site Plan



Summary

Lebanon Road 3, LLC, c/o James Parker, Jr., is requesting approval to conditionally rezone +/-93.5 acres of a +/-179.23-ac property located at 1818 Saddle Club Road (Orange County – ETJ) from CU-R-8 & CU-R-10 (Conditional Use Permit - Single-Family Residential) to R-12(CD) (Single Family Residential Conditional Zoning District) to allow "Tupelo Junction" a subdivision with 181 single family homes as a Residential Cluster Development. The property is located in Orange County outside of the City Limits within the Extra-Territorial Jurisdiction (ETJ). Lebanon Road Partners has the property under contract to purchase, contingent upon approval of the conditional rezoning.

The site-specific plan onsite amenities & dedications include the following:

- The applicant proposes to construct all internal roads with 5' sidewalks.

- 4,325' of a 10'-wide asphalt multiuse path to connect to the dedicated multiuse path on Stagecoach Road, cross Lebanon Road to the entrance of Lake Michael Park, and through the extent of the property, stubbing at the northern property limit. This is required by the City's adopted *Bicycle and Pedestrian Transportation Plan*.

- The applicant is proposing to donate +/-1.0 acres of private recreation area for use by the HOA members, including a clubhouse and dog park.

Requested waivers:

- The UDO requires front setbacks of 30' and the applicant is requesting that they be reduced to 25'.
- The UDO requires side setbacks of 10', 18' - corner lots, and the applicant is requesting that they be reduced to 5' minimum, and 13' corner lots.
- The UDO requires rear setbacks of 25' and the applicant is requesting that they be reduced to 20'.
- The UDO requires a minimum lot width of 85' and the applicant is requesting that they be reduced to 60'.
- The UDO calculates that the applicant provide 5.17 ac in public recreation area and the applicant is requesting a waiver to provide 1.48 ac (4,325 linear feet) of public greenways (as required by the City's *Bicycle and Pedestrian Transportation Plan*) and 1.0 ac in private recreation area .

The Technical Review Committee (TRC) has reviewed the site plan and the applicant has revised the plan to reflect the comments.

Financial Impact

The developer will be required to make all of the improvements at his own expense.

Recommendation

The Planning Staff recommends approval of the request.

Suggested Motion

1. Motion to approve the R-12(CD) zoning as presented.

2. Motion to find that **the application is consistent** with the objectives and goals in the City's 2017 Comprehensive Land Development Plan *Mebane By Design*. The request:

   - ☐ Is for a property within the City's G-4 Secondary Growth Area and is "…generally residential and commercial in nature…" (Mebane CLP, p.66);
   - ☐ Does not develop 50% of the property in a Conservation Area that features Mill Creek (p. 67);
   - ☐ Is providing community facilities in the form of a greenway that connects to Lake Michael Park, consistent with Growth Management Goal 1.4 (p. 17, 83);
   - ☐ Improves the safety and confidence of pedestrians crossing Lebanon Road, consistent with Public Facilities and Infrastructure Goal 2.1 (p.17, 84);

- ☐ Provides a greenway connection across Lebanon Road to Lake Michael Park, consistent with Open Space and Natural Resource Protection Goal 4.2 (p. 17 & 89);

- ☐ Provides a greenway and open space in a developing area, connecting to other locations, consistent with Open Space and Natural Resource Protection Goal 4.3 (p. 17, 89, & 90); and

- ☐ Provides a greenway, as required in the City's *Bicycle and Pedestrian Transportation Plan*.

3. Motion to **deny** the B-2(CD) rezoning as presented due to a lack of

    a. Harmony with the surrounding zoning or land use

    OR

    b. Consistency with the objectives and goals in the City's 2017 Comprehensive Land Development Plan *Mebane By Design*.

Attachments

1. Zoning Amendment Application
2. Zoning Map
3. Site Plan
4. Planning Project Report
5. Builder Architectural Commitments for Single-Family Home Construction
6. Preliminary Water and Sewer System Approval Letter
7. Technical Memorandum – City Engineering Review
8. Tupelo Junction (formerly titled "The Landing at Lake Michael") Traffic Impact Analysis (TIA)
9. Tupelo Junction TIA Review from Ramey, Kemp, and Associates

APPLICATION FOR A ZONING AMENDMENT

Application is hereby made for an amendment to the Mebane Zoning Ordinance as follows:

Name of Applicant: Lebanon Road 3, LLC

Address of Applicant: 504 Meadowland Drive, Hillsborough, NC 27278

Address and brief description of property to be rezoned: approximately 36.7 acres located west of Mill Creek and north of Lebanon Road (SW portion of PIN 9826416085)

Applicant's interest in property: (Owned, leased or otherwise) contract purchaser

*Do you have any conflicts of interest with: Elected/Appointed Officials, Staff, etc.?

Yes ___ Explain: _____ No X

Type of re-zoning requested: downzoning from CU-R-8 to R-10(CD)

Sketch attached: Yes X No _____

Reason for the requested re-zoning: replace a 2005 Special Use Permit site plan with a conditional zoning residential cluster development site plan.

Signed: _____

for Lebanon Road 3, LLC

Date: 9-10-19

Action by Planning Board: _____

Public Hearing Date: _____ Action: _____

Zoning Map Corrected: _____

The following items should be included with the application for rezoning when it is returned:

1. Tax Map showing the area that is to be considered for rezoning.
2. Names and addresses of all adjoining property owners within a 300' radius (Include those that are across the street).
3. $300.00 Fee to cover administrative costs.
4. The information is due 15 working days prior to the Planning Board meeting. The Planning Board meets the 2nd Monday of each month at 6:30 p.m. Then the request goes to the City Council for a Public Hearing the following month. The City Council meets the 1st Monday of each month at 6:00 p.m.

APPLICATION FOR A ZONING AMENDMENT

Application is hereby made for an amendment to the Mebane Zoning Ordinance as follows:

Name of Applicant: Lebanon Road 3, LLC

Address of Applicant: 504 Meadowland Drive, Hillsborough, NC 27278

Address and brief description of property to be rezoned: approximately 6.0 acres located west of Saddle Club Road (eastern portion of PIN 9826416085)

Applicant's interest in property: (Owned, leased or otherwise) contract purchaser

*Do you have any conflicts of interest with: Elected/Appointed Officials, Staff, etc.?

Yes ___ Explain: _____ No X

Type of re-zoning requested: From R-20 to R-12(CD)

Sketch attached: Yes X No _____

Reason for the requested re-zoning: replace a 2005 (amended 2006) Special Use Permit site plan with a conditional zoning residential cluster development site plan (add'l property)

Signed: _____

for Lebanon Road 3, LLC

Date: 9-10-19

Action by Planning Board: _____

Public Hearing Date: _____ Action: _____

Zoning Map Corrected: _____

The following items should be included with the application for rezoning when it is returned:

1. Tax Map showing the area that is to be considered for rezoning.
2. Names and addresses of all adjoining property owners within a 300' radius (Include those that are across the street).
3. $300.00 Fee to cover administrative costs.
4. The information is due 15 working days prior to the Planning Board meeting. The Planning Board meets the 2nd Monday of each month at 6:30 p.m. Then the request goes to the City Council for a Public Hearing the following month. The City Council meets the 1st Monday of each month at 6:00 p.m.

APPLICATION FOR A ZONING AMENDMENT

Application is hereby made for an amendment to the Mebane Zoning Ordinance as follows:

Name of Applicant: Lebanon Road 3, LLC

Address of Applicant: 504 Meadowland Drive, Hillsborough, NC 27278

Address and brief description of property to be rezoned: approximately 49.2 acres located east of Mill Creek and west of Saddle Club Road (SE portion of PIN 9826416085)

Applicant's interest in property: (Owned, leased or otherwise) contract purchaser

*Do you have any conflicts of interest with: Elected/Appointed Officials, Staff, etc.?

Yes ___ Explain: _____ No X

Type of re-zoning requested: downzoning from CU-R-10 to R-12(CD)

Sketch attached: Yes X No _____

Reason for the requested re-zoning: replace a 2005 (amended 2006) Special Use Permit site plan with a conditional zoning residential cluster development site plan.

Signed: _____

for Lebanon Road 3, LLC

Date: 9-10-19

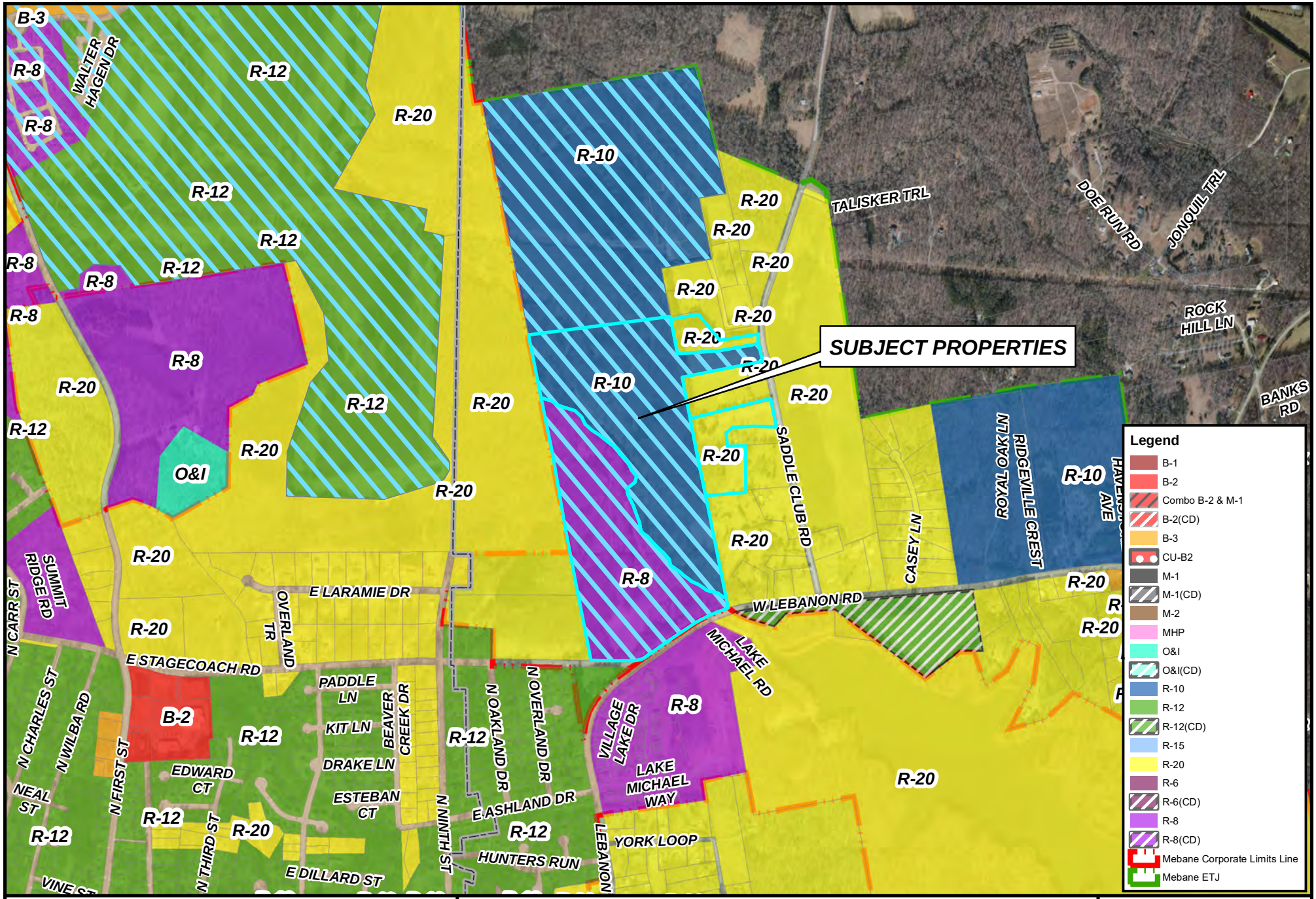
Action by Planning Board: _____

Public Hearing Date: _____ Action: _____

Zoning Map Corrected: _____

The following items should be included with the application for rezoning when it is returned:

1. Tax Map showing the area that is to be considered for rezoning.
2. Names and addresses of all adjoining property owners within a 300' radius (Include those that are across the street).
3. $300.00 Fee to cover administrative costs.
4. The information is due 15 working days prior to the Planning Board meeting. The Planning Board meets the 2nd Monday of each month at 6:30 p.m. Then the request goes to the City Council for a Public Hearing the following month. The City Council meets the 1st Monday of each month at 6:00 p.m.



CITY OF MEBANE
ZONING MAP

SUBJECT PROPERTIES
TUPELO JUNCTION

1 inch = 1,100 feet

DATE: 3/3/2020

DRAWN BY: SKS

PUBLIC SERVICE CONTACTS :

WATER: CITY OF MEBANE PUBLIC WORKS DEPT.
KYLE SMITH
636 CORRIGIDOR STREET
MEBANE, NC 27302
(919) 563-3401

SEWER: CITY OF MEBANE PUBLIC WORKS DEPT.
KYLE SMITH
636 CORRIGIDOR STREET
MEBANE, NC 27302
(919) 563-3401

FIRE: CITY OF MEBANE
BOB LOUIS, CHIEF
450 N. FIRST STREET
MEBANE, NC 27302
(919) 563-5718

GAS: PSNC ENERGY / DOMINION ENERGY
BRIAN SMITH
2541 WHILDEN DRIVE
DURHAM, NC 27713
(919) 598-7454
BRIAN.SMITH@SCANA.COM

ELECTRIC: PIEDMONT ELECTRIC
2500 S. NC 86
MEBANE, NC 27302
(336) 732-2123

TELEPHONE: AT&T
AARON BOYKINS
(336) 508-3237

STATE ROADWAYS: NCDOT - DIVISION 7, DISTRICT 1
CHARLES N. EDWARDS (CHUCK), PE
DISTRICT ENGINEER
115 E. CRESCENT SQUARE DRIVE
PO BOX 766
GRAHAM, NC 27253
(336) 570-6833

PLANNING: CITY OF MEBANE
MONTRENA HADLEY, MPA, CZO
PLANNING OFFICER
102 S. 5TH STREET
MEBANE, NC 27302
(919) 563-9990

SOLID WASTE: CITY OF MEBANE PUBLIC WORKS DEPT.
106 E. WASHINGTON STREET
MEBANE, NC 27302
(919) 563-5901

RECYCLING: WASTE INDUSTRIES
703 E. GILBREATH STREET
GRAHAM, NC 27253
(336) 229-0525

EROSION CONTROL: ORANGE COUNTY PLANNING & INSPECTIONS DEPT.
STEVE KALTENBACH
EROSION CONTROL & STORMWATER OFFICER II
131 W. MARGARET LANE
HILLSBOROUGH, NC 27278
(919) 245-2587

OWNER
LEES BEES, INC.
JEFFREY R. LEE
jeffreyrlee@yahoo.com
1818 SADDLE CLUB ROAD
MEBANE, NC 27302

DEVELOPER
LEBANON ROAD 3, LLC
c/o JAMES PARKER, JR.
320 EXECUTIVE COURT
HILLSBOROUGH, NC 27278
(919) 732-3883 (PHONE)
JAMES.PARKER@SUMMITDE.NET

PLANNER
THE DESIGN RESPONSE, INC.
215 E. CHATHAM ST., SUITE 125
CARY N.C. 27511
(919) 469-2080 (OFFICE)
THEDESIGNRESPONSE.COM
JACK L. SMYRE, PE, AICP

ENGINEER CONTACT
SUMMIT DESIGN & ENGINEERING SERVICES
TIMOTHY A. SMITH, PE
320 EXECUTIVE COURT
HILLSBOROUGH, NC 27278
(919) 732-3883 (PHONE)
(919) 732-6676 (FAX)
TIM.SMITH@SUMMITDE.NET

PRELIMINARY PLANS
FOR
TUPELO JUNCTION

RESIDENTIAL CLUSTER DEVELOPMENT

ORANGE COUNTY, CHEEKS TOWNSHIP
LEBANON ROAD, MEBANE, NC 27302

SUBMITTAL #1 : SEPTEMBER 10, 2019
SUBMITTAL #2 : OCTOBER 22, 2019
SUBMITTAL #3 : NOVEMBER 26, 2019
SUBMITTAL #4 : DECEMBER 20, 2019
SUBMITTAL #5 : JANUARY 21, 2020
SUBMITTAL #6 : FEBRUARY 11, 2020

PARCEL
PIN: 9826-41-6085
DB. 6364, PG. 131
ZONING : R-20
179.23 ACRES (PER GIS)

SITE LOCATION MAP
SCALE: 1" = 300'

VICINITY MAP
SCALE: 1" = 2,000'

SHEET INDEX

SHEET NUMBER	SHEET TITLE
C-1	COVER SHEET
C-2	EXISTING CONDITIONS PLAN
C-3	OVERALL SITE & UTILITY PLAN
C-3A	LOT LAYOUT WITH STEEP SLOPES PLAN
C-4	OVERALL GRADING & STORM DRAINAGE PLAN
C-5	STREET DETAILS
A200	CLUBHOUSE BUILDING ELEVATIONS

CONSTRUCTION BUILD-OUT SCHEDULE

PHASE	# OF LOTS	APPROX. COMPLETION
I	20	SPRING 2021
II	34	SPRING 2022
III	46	SPRING 2023
IV	26	SPRING 2024
V	55	SPRING 2025

TRC NOTES:

1. THE NEW CULVERT FOR ON-SITE CREEK CROSSING SHALL PASS THE 100 YEAR STORM WITHOUT TOPPING THE ROADWAY. SIZING AND MATERIAL TO BE DETERMINED WITH THE CONSTRUCTION DRAWINGS.
2. ALL NEW ROADS ARE CONSIDERED LOCAL RESIDENTIAL AS DETERMINED BY THE PROJECT TRAFFIC ENGINEER AND WILL BE BUILT TO CITY STANDARDS AND MAINTAINED BY THE CITY OF MEBANE AFTER FINAL ACCEPTANCE.
3. THIS SUBDIVISION WILL BE PHASED AS SHOWN ON THE PLANS. THE END OF EACH PHASE SHALL PROVIDE SOME TYPE OF TURNAROUND FOR SERVICE AND EMERGENCY VEHICLES, THAT WILL BE APPROVED BY THE CITY OF MEBANE WITH THE CONSTRUCTION DRAWINGS.
4. THIS PROJECT IS SUBJECT TO REZONING AND ANNEXATION BY THE CITY OF MEBANE.
5. A TIA WAS CREATED FOR THIS PROJECT AND APPROVED BY THE CITY OF MEBANE AND N.C.D.O.T.
6. TWO ENTRANCE FEATURES SHALL BE PROVIDED AT EACH ENTRANCE INTO THE SITE.
7. THE AMENITY AREA, PARKING LOT, AND STORMWATER CONTROL MEASURES SHALL BE SCREENED WITH LANDSCAPING AND/OR BERMS. ALSO, THE RECREATION AREA SHALL BE SCREENED FROM THE RESIDENTIAL LOTS WITHIN THE SITE. ALL SCREENING SHALL BE IN ACCORDANCE WITH THE MEBANE UDO AND WILL BE INCLUDED WITH THE LANDSCAPING PLANS PROVIDED WITH THE CONSTRUCTION DRAWINGS FOR APPROVAL BY THE CITY OF MEBANE. ANY STORMWATER CONTROL MEASURES THAT POND OR HOLD 2 FEET OF WATER SHALL BE FENCED FOR SAFETY.
8. A CULTURAL RESOURCES ASSESSMENT HAS BEEN PROVIDED BY THE THE NC STATE HISTORIC PRESERVATION OFFICE. NO HISTORIC RESOURCES WERE FOUND WITHIN THE PROJECT AREA. WE HAVE REQUESTED THEM TO TAKE ANOTHER LOOK INTO THE STAGECOACH ROCK AND ARE AWAITING THEIR RESPONSE. THE "STAGECOACH ROCK" HAS BEEN DEEMED AS A POSSIBLE SAFETY HAZARD TO VEHICULAR TRAFFIC BY NCDOT. RELOCATION OF THE ROCK SHALL BE COORDINATED WITH AND APPROVED BY N.C.D.O.T. THIS NEW LOCATION SHALL BE EITHER ON SITE OR AT LAKE MICHAEL PARK.
9. MAINTENANCE OF ALL COMMON AREAS WILL BE THE RESPONSIBILITY OF THE HOA FOR THIS SUBDIVISION.
10. THE LIMITS OF DISTURBANCE WILL TYPICALLY FOLLOW THE GRADING LIMITS. ALL OPEN SPACES AND UNDISTURBED AREAS WILL BE FENCED OFF ALONG TREE CANOPIES TO PRESERVE EXISTING VEGETATION WHERE SHOWN ON THE PLANS.
11. THE SUBDIVISION ROAD NAMES SHOWN HEREON HAVE BEEN APPROVED BY BOTH ALAMANCE COUNTY AND ORANGE COUNTY.
12. A PAYMENT-IN-LIEU WILL BE PROVIDED BY THE DEVELOPER TO THE CITY OF MEBANE FOR THE FUTURE INSTALLATION OF SIDEWALK WITHIN TUPELO JUNCTION PROPERTY STREET FRONTAGE ALONG SADDLE CLUB ROAD. THIS WILL BE NEGOTIATED WITH THE CONSTRUCTION PLAN APPROVALS.
13. STORMWATER CONTROL MEASURE (SCM) ACCESS EASEMENTS ARE NOT SHOWN ON THE PLANS FOR CLARITY.
14. WILLOW OAK STREET TREES (2.5" CALIPER AND 10' MIN. HEIGHT AT PLANTING) SHALL BE PROVIDED ALONG BROAD OAK DRIVE FROM LEBANON ROAD TO MILL CREEK, BETWEEN THE BACK OF CURB AND THE MULTI-USE PATH.
15. A MINIMUM OF ONE ORNAMENTAL OR UNDERSTORY TREE SHALL BE PLANTED IN THE FRONT YARD OF EACH LOT. AND PROVIDED BY THE BUILDER.
16. THE LEFT TURN LANE ALONG LEBANON ROAD SHALL BE CONSTRUCTED NO LATER THAN PHASE II AND / OR NO LATER THAN THE CONSTRUCTION OF THE 50TH HOME.
17. OPEN SPACE SHALL NOT BE USED FOR FUTURE STRUCTURES EXCEPT FOR INTENDED RECREATIONAL PURPOSES AND IS ACCESSIBLE TO ALL RESIDENTS OF THIS DEVELOPMENT OR GENERAL PUBLIC.
18. ALL NOTED PRIVATE COMMON ELEMENTS, INCLUDING BUT NOT LIMITED TO THE PRIVATE RECREATION AMENITIES, ENTRANCE FEATURES, STORMWATER CONTROL MEASURES AND STREET TREES ARE THE RESPONSIBILITY OF THE HOMEOWNERS ASSOCIATION (HOA)
19. THE CURRENT PLANS INDICATE PRELIMINARY DRAINAGE EASEMENTS OVER PIPES AND ENGINEERED SWALES. AS PHASED CONSTRUCTION DRAWINGS ARE FINALIZED ALL DRAINAGE WAYS (5 CFS OR MORE) SHALL HAVE A DEDICATED DRAINAGE EASEMENT PER THE CITY OF MEBANE STORM SEWER DESIGN MANUAL WHETHER PIPED OR UN-PIPED.

SITE INFORMATION

OWNER: LEES BEES, INC.
JEFFREY R. LEE
jeffreyrlee@yahoo.com
1818 SADDLE CLUB ROAD
MEBANE, N.C. 27302

DEVELOPER: LEBANON ROAD 3, LLC
320 EXECUTIVE COURT
HILLSBOROUGH, NC 27278
(919) 732-3883 (PHONE)
JAMES PARKER, JR.

PARCEL ID: 9826-41-6085
REFERENCE: DB/PG 6364/131

LAND AREA: 93.5 +/- ACRES

PROPERTY ADDRESS: LEBANON ROAD & SADDLE CLUB RD.
MEBANE, NC

PROPERTY IS LOCATED WITHIN MEBANE ETJ
EXISTING ZONING: CU-R-8 & CU-R-10
PROPOSED ZONING: R-12 (CD)CURRENT USE: VACANT
PROPOSED USE: SINGLE FAMILY RESIDENTIAL CLUSTER DEVELOPMENT

JURISDICTION: MEBANE
STATE: NORTH CAROLINA

WATERSHED: GRAHAM - MEBANE LAKE PUBLIC WATER SUPPLY (WS-II) - BALANCE OF WATERSHED AREA

LOTS ALLOWED w/ REZONING: 3.63 DU/AC. = 339
PROPOSED LOTS: 181

IMPERVIOUS AREA
ALLOWED (30% MAX): 28.05 AC
PROVIDED: 25.72 AC (27.5%)

HOUSES (181 LOTS x 4,000 SF) = 724,000 SF
PUBLIC ROADWAYS & SIDEWALKS = 352,010 SF
MULTI-USE PATH = 44,350 SF
TOTAL PROVIDED = 1,120,360 SF (25.72 AC) 27.5%

TREE CANOPY AREA
PRESERVED TREE CANOPY = 25.1 AC
PLANTED BUFFERS = 0.4 AC
PLANTED EVERGREEN TREES (SEEDLINGS) ON GRADED SLOPES = 3.5 AC
PLANTED STREET TREES AND FRONT YARD TREES = 1.8 AC
TOTAL TREE CANOPY = 30.8 AC (33% OF TOTAL AREA)

PRIVATE COMMON OPEN SPACE (CLUSTER)
REQUIRED (SUM OF REDUCTIONS BELOW BASE LOT AREA): 16.42 AC. (17.56%)
COMPREHENSIVE PLAN GOAL FOR CONSERVATION AREAS: 28.05 AC. (30%)
PROVIDED: 50.22 AC. (53.7%)
ACTIVE (PUBLIC AND PRIVATE RECREATION SPACE): 2.48 AC. (2.65%)
PASSIVE (NON-RECREATIONAL HOA PROPERTY): 47.74. AC. (51.06%)

RECREATION SPACE:
PRIVATE RECREATION SPACE PROVIDED:
0.88 AC. (CLUBHOUSE, PLAYGROUND, PLAY FIELD, GAMES, SHELTERS)
0.12 AC. (DOG PARK AND GAZEBO)
1.00 AC. (TOTAL PRIVATE RECREATION SPACE PROVIDED)
PUBLIC RECREATION SPACE REQUIRED: (181 LOTS) X (1/35 AC./LOT) = 5.17 AC.
PUBLIC RECREATION SPACE PROVIDED:
(4,600 LF GREENWAY/MULTI-USE PATH) X (14 FT. WIDE CORRIDOR) = 1.48 AC.
PUBLIC RECREATION SPACE DEFICIT:
(5.17 AC. REQUIRED) - (1.48 ACRES PROVIDED) = 3.69 AC. DEFICIT
POTENTIAL PAYMENT-IN-LIEU FOR DEFICIT:
TAX VALUE PER AC. (PARENT TRACT): ($802,950) ÷ (179.23 ACRES) = $4,480/AC
(3.69 AC. DEFICIT) X ($4,480/AC.) = $16,531 POTENTIAL PAYMENT-IN-LIEU
PROPOSED PAYMENT-IN-LIEU FOR PUBLIC RECREATION SPACE DEFICIT: $0
THE ESTIMATED COST OF THE PUBLIC INFRASTRUCTURE PROVIDED FOR USE BY THE GENERAL PUBLIC (GREENWAYS & MULTI-USE PATHS) IS $281,500 AND IS CONSIDERATION UNDER SECTION 6-7.1.I OF THE UDO FOR COUNCIL TO NOT REQUIRE AN ADDITIONAL PAYMENT-IN-LIEU BY LOWERING THE AMOUNT OF PUBLIC RECREATION SPACE REQUIRED TO MATCH THE AMOUNT OF PUBLIC RECREATION SPACE PROVIDED.

ROADS & RIGHT-OF-WAYS
LINEAR FEET OF PUBLIC ROADS: 9,985 FT
AREA OF NEW PUBLIC R/W: 530,218 SF

CITY OF MEBANE PUBLIC WATER, SANITARY SEWER, & ROADWAYS SHALL BE PROVIDED FOR THIS DEVELOPMENT.

PUBLIC WATER MAIN: 10,095 LF
PUBLIC SAN. SEWER: 8,987 LF
PUBLIC SIDEWALK: 10,285 LF
PUBLIC MULTI-USE PATH: 4,325 LF

PROPOSED BUILDING SETBACKS (R-12 CD)
FRONT: 25 FT.
SIDE: 5 FT.
REAR: 20 FT.
CORNER: 13 FT.

STANDARD R-12 ZONING SETBACKS (NOT USED)
FRONT: 30 FT.
SIDE: 10 FT.
REAR: 25 FT.
CORNER: 18 FT.

811 Know what's below. Call before you dig.

CONTRACTOR SHALL NOTIFY "NC811" (811) OR (1-800-632-4949) AT LEAST 3 FULL BUSINESS DAYS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED. CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENT OF "NC811". REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.

THE DESIGN RESPONSE
215 E. Chatham St., Suite 125
P.O. Box 3585, Cary, NC 27519
thedesignresponse.com
(919) 469-2080

7			
6			
5	PER TRC COMMENTS	2/11/2020	JCC
4	PER 1/3/2020 MEBANE TRC COMMENTS	1/21/2020	DMC
3	PER MEBANE TRC COMMENTS	12/20/2019	JCC
2	PER MEBANE TRC COMMENTS	11/26/2019	JCC
1	PER MEBANE TRC COMMENTS	10/22/2019	JCC
	REVISIONS	DATE	BY

PROJECT ENGINEER/ARCHITECT
TAS (TIM.SMITH@SUMMITDE.NET)
PROJECT MANAGER
RFH (RANDY.HALL@SUMMITDE.NET)
DRAWN BY
JCC (JUSTIN.COATS@SUMMITDE.NET)
FIRST ISSUE DATE
09-10-2019

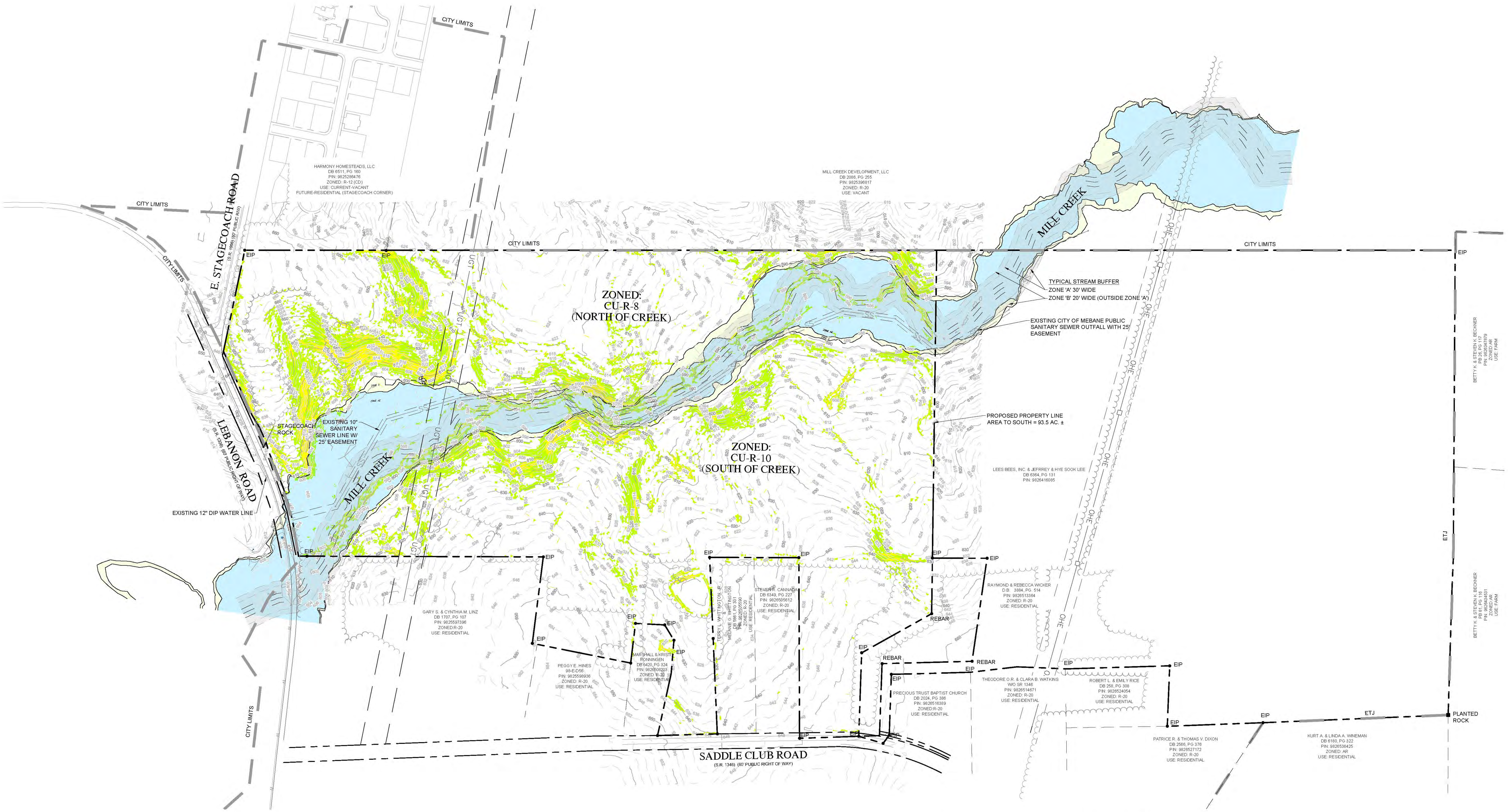
NOT FOR CONSTRUCTION
PRELIMINARY
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030817 TIMOTHY A. SMITH

SUMMIT DESIGN AND ENGINEERING SERVICES
State License #: P-0339
320 Executive Court
Hillsborough, NC 27278
Voice: (919) 732-3883 Fax: (919) 732-6676
www.summitde.net

PRELIMINARY PLANS FOR
TUPELO JUNCTION
CHEEKS TOWNSHIP & ORANGE COUNTY
LEBANON ROAD, MEBANE, NC 27302

COVER SHEET

PROJECT NO. 19-0185
DRAWING NAME: 19-0185_CS.dwg
SHEET NO. C-1



Slopes Table			
Number	Minimum Slope	Maximum Slope	Color
1	15.00%	24.99%	
2	25.00%	100.00%	

LEGEND

- FLOOD ZONE AE
- FLOOD ZONE X
- 50' STREAM BUFFER

GENERAL NOTES:

1. PROJECT BOUNDARY INFORMATION TAKEN FROM PLAT PREPARED BY R.S. JONES & ASSOC.,INC., ENTITLED:SURVEY FOR LEE'S BEES,INC & JEFFREY R. LEE AND HYE SOOK LEE DATED APRIL13,2016 RECORDED IN THE ORANGE COUNTY REGISTRY PB/PG 115/185.
2. EXISTING TOPO TAKEN FROM LIDAR.
3. WETLANDS DO EXIST WITHIN THIS PROPERTY AND SHALL BE VERIFIED PRIOR TO PLAN APPROVALS.
4. FLOOD PLAIN INFORMATION TAKEN FROM F.I.R.M. 3710982500L AND PANEL NO. 9825, DATED: 11/17/2017.
5. LEE'S BEES PROPERTY AREA SHOWN WITHOUT TOPO. IS NOT PART OF THE TUPELO JUNCTION PROJECT. LAND WILL BE SUBDIVIDED AS PART OF THIS PROJECT.
6. MILL CREEK STREAM BUFFER OF 50' IS FROM TOP OF BANK, EACH SIDE OF CREEK.

GRAPHIC SCALE
100 0 50 400 200 400
(IN FEET)
1 inch = 200 ft.

Know what's **below.**
Call before you dig.

7			
6			
5	PER TRC COMMENTS	2/11/2020	JCC
4	PER 1/3/2020 MEBANE TRC COMMENTS	1/21/2020	DMC
3	PER MEBANE TRC COMMENTS	12/20/2019	JCC
2	PER MEBANE TRC COMMENTS	11/26/2019	JCC
1	PER MEBANE TRC COMMENTS	10/22/2019	JCC
	REVISIONS	DATE	BY

PROJECT ENGINEER/ARCHITECT
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PROJECT MANAGER
RFH (RANDY.HALL@SUMMITDE.NET)
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FIRST ISSUE DATE
09-10-2019

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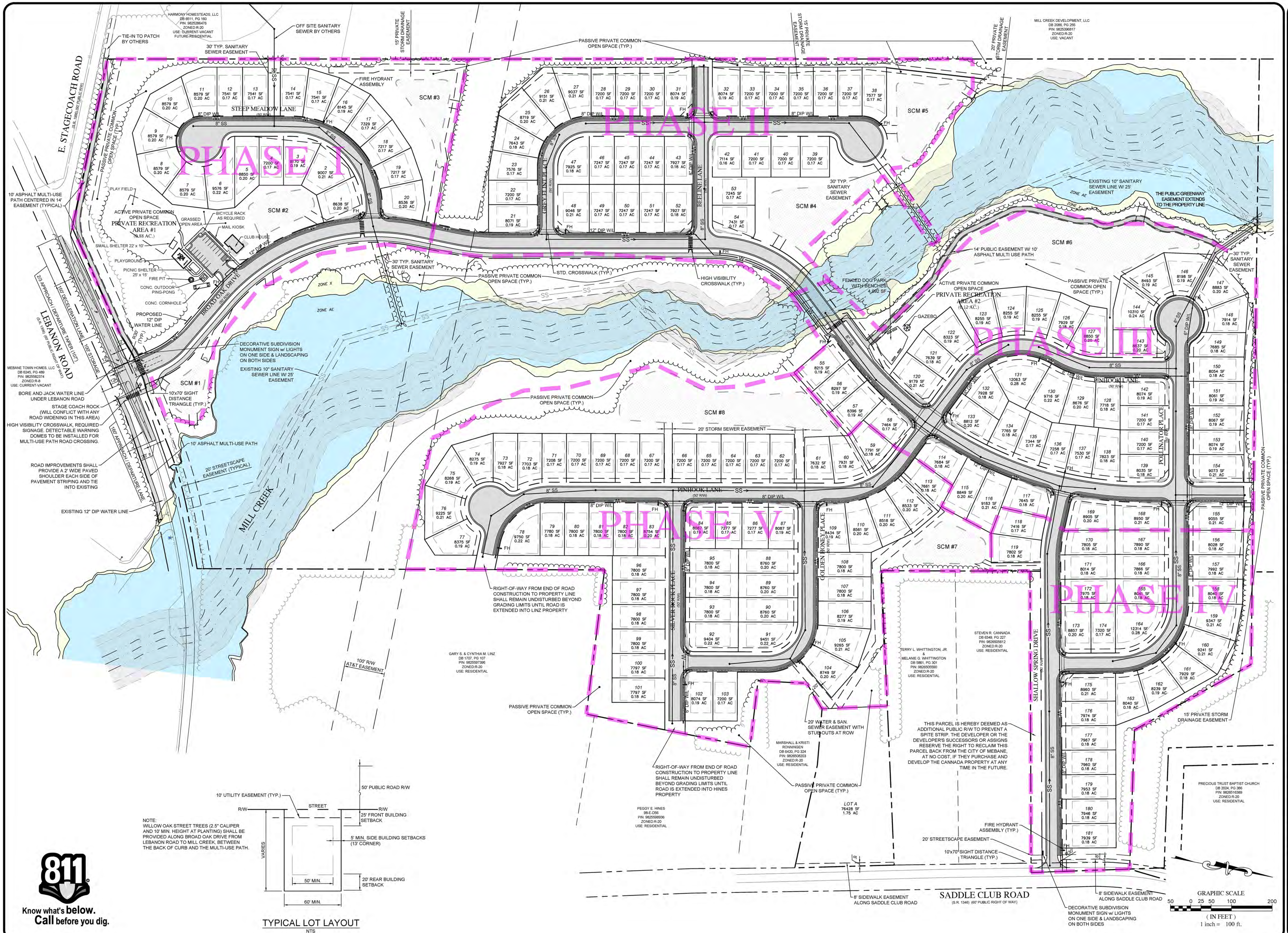
PRELIMINARY PLANS FOR TUPELO JUNCTION
CHEEKS TOWNSHIP & ORANGE COUNTY
LEBANON ROAD, MEBANE, NC 27302

EXISTING CONDITIONS PLAN

PROJECT NO.
19-0185
DRAWING NAME:
19-0185_XC.dwg
SHEET NO.
C-2



REVISIONS	DATE	BY
7		
6 PER TRC COMMENTS	2/11/2020	JCC
5 PER 1/3/2020 MEBANE TRC COMMENTS	1/3/2020	DMC
4 PER MEBANE TRC COMMENTS	12/20/2019	JCC
3 PER MEBANE TRC COMMENTS	11/26/2019	JCC
2 PER MEBANE TRC COMMENTS	10/22/2019	JCC
1		

PROJECT ENGINEER/ARCHITECT: TAS (TIM.SMITH@SUMMITDE.NET)
PROJECT MANAGER: RFH (RANDY.HALL@SUMMITDE.NET)
DRAWN BY: JCC (JUSTIN.COATS@SUMMITDE.NET)
FIRST ISSUE DATE: 05-10-2019

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PRELIMINARY

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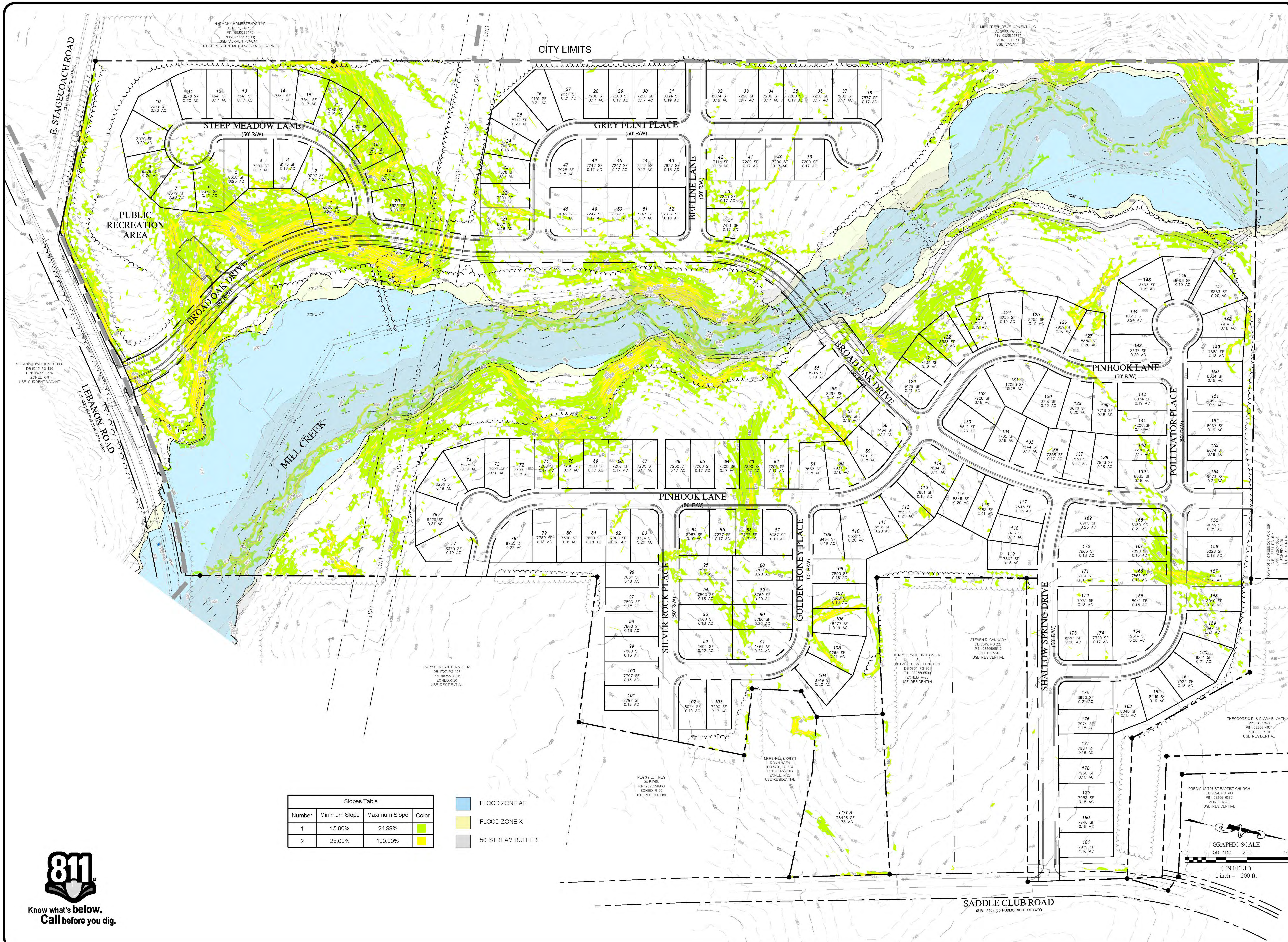
PRELIMINARY PLANS FOR
TUPELO JUNCTION
CHEEKS TOWNSHIP & ORANGE COUNTY
LEBANON ROAD, MEBANE, NC 27302

OVERALL SITE & UTILITY PLAN

PROJECT NO. 19-0185
DRAWING NAME: 19-0185_S.dwg
SHEET NO. C-3



Slopes Table

Number	Minimum Slope	Maximum Slope	Color
1	15.00%	24.99%	
2	25.00%	100.00%	

No.	Revisions	Date	By
7			
6			
5	PER TRC COMMENTS	2/11/2020	JCC
4	PER 1/3/2020 MEBANE TRC COMMENTS	1/21/2020	DMC
3	PER MEBANE TRC COMMENTS	12/20/2019	JCC
2	PER MEBANE TRC COMMENTS	11/26/2019	JCC
1	PER MEBANE TRC COMMENTS	10/22/2019	JCC

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FIRST ISSUE DATE
08-10-2019

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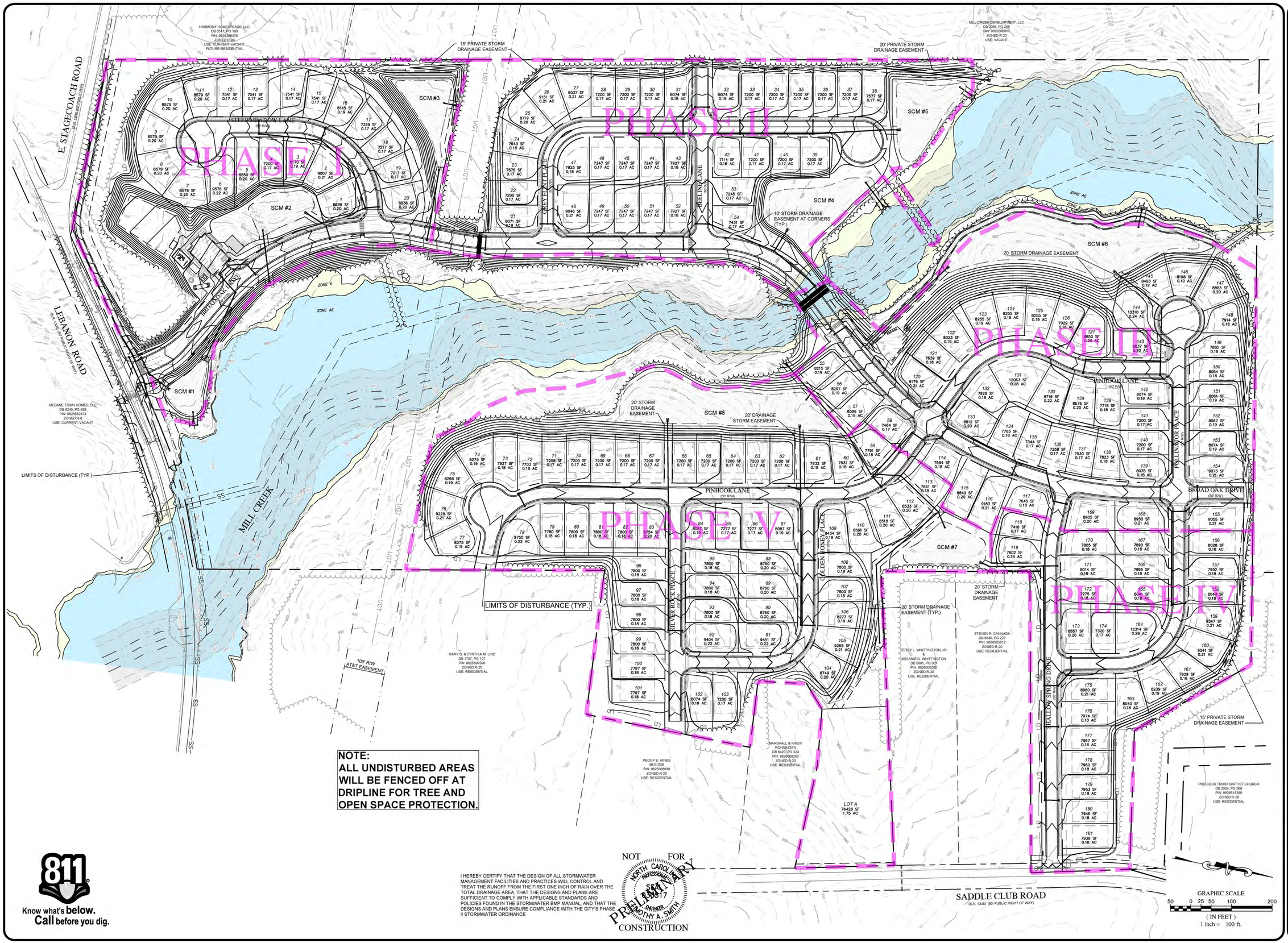
PRELIMINARY PLANS FOR TUPELO JUNCTION
CHEEKS TOWNSHIP & ORANGE COUNTY
LEBANON ROAD, MEBANE, NC 27302

LOT LAYOUT WITH STEEP SLOPES PLAN

PROJECT NO.
19-0185
DRAWING NAME:
19-0185_XC.dwg
SHEET NO.
C-3A



Know what's **below.**
Call before you dig.

I HEREBY CERTIFY THAT THE DESIGN OF ALL STORMWATER MANAGEMENT FACILITIES AND PRACTICES WILL CONTROL AND TREAT THE RUNOFF FROM THE FIRST ONE INCH OF RAIN OVER THE TOTAL DRAINAGE AREA; THAT THE DESIGNS AND PLANS ARE SUFFICIENT TO COMPLY WITH APPLICABLE STANDARDS AND POLICIES FOUND IN THE STORMWATER BMP MANUAL, AND THAT THE DESIGNS AND PLANS ENSURE COMPLIANCE WITH THE CITY'S PHASE II STORMWATER ORDINANCE

NOT FOR PRELIMINARY CONSTRUCTION
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030017
TIMOTHY A. SMITH

BY	DATE	REVISIONS
JCC	3/11/2020	6 PER TRC COMMENTS
DMC	1/31/2020	4 PER 1/3/2020 MEBANE TRC COMMENTS
JCC	12/20/2019	3 PER MEBANE TRC COMMENTS
JCC	11/26/2019	2 PER MEBANE TRC COMMENTS
JCC	10/22/2019	1 PER MEBANE TRC COMMENTS

PROJECT ENGINEER/ARCHITECT
TAS (TIM.SMITH@SUMMITDE.NET)
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TIMOTHY A. SMITH

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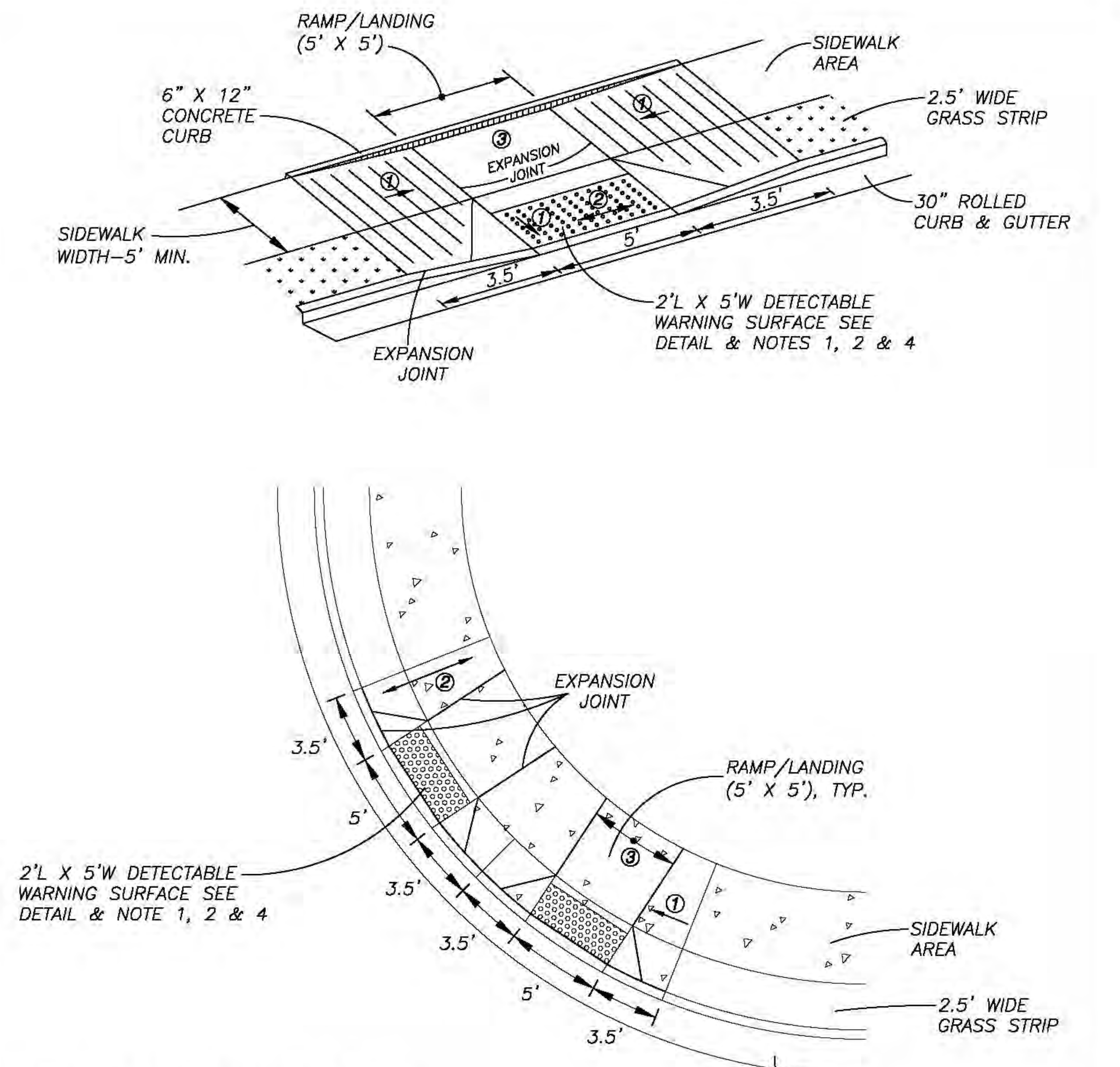
PRELIMINARY PLANS FOR TUPELO JUNCTION
CHEEKS TOWNSHIP & ORANGE COUNTY
LEBANON ROAD, MEBANE, NC 27302

OVERALL GRADING & STORM DRAINAGE PLAN

PROJECT NO.
19-0185
DRAWING NAME:
19-0185_G.dwg
SHEET NO.
C-4



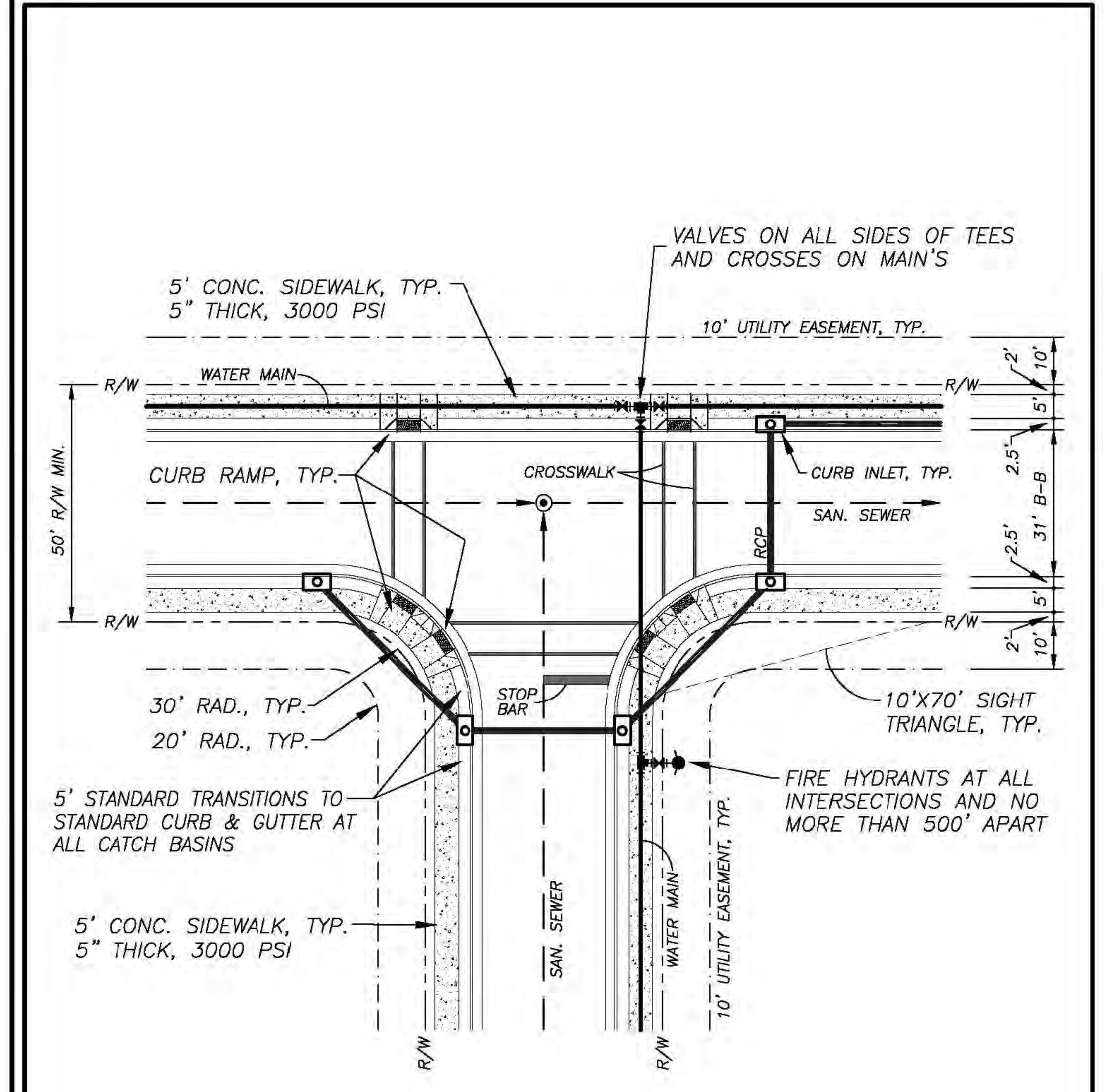
1. 8.33% (12:1) MAX. RAMP SLOPE
2. CROSS SLOPE: 2.00%
3. CURB RAMPS REQUIRE A (5'–0") MINIMUM LANDING WITH A MAXIMUM GROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.
4. CAST IN PLACE TRUNCATED DOMES MUST BE USED ON ALL NEW CURB RAMPS.

ST–10

CITY OF MEBANE STANDARD

CURB RAMP

SCALE: N.T.S. DATE: 11/18/19 JOB NO.: WDF

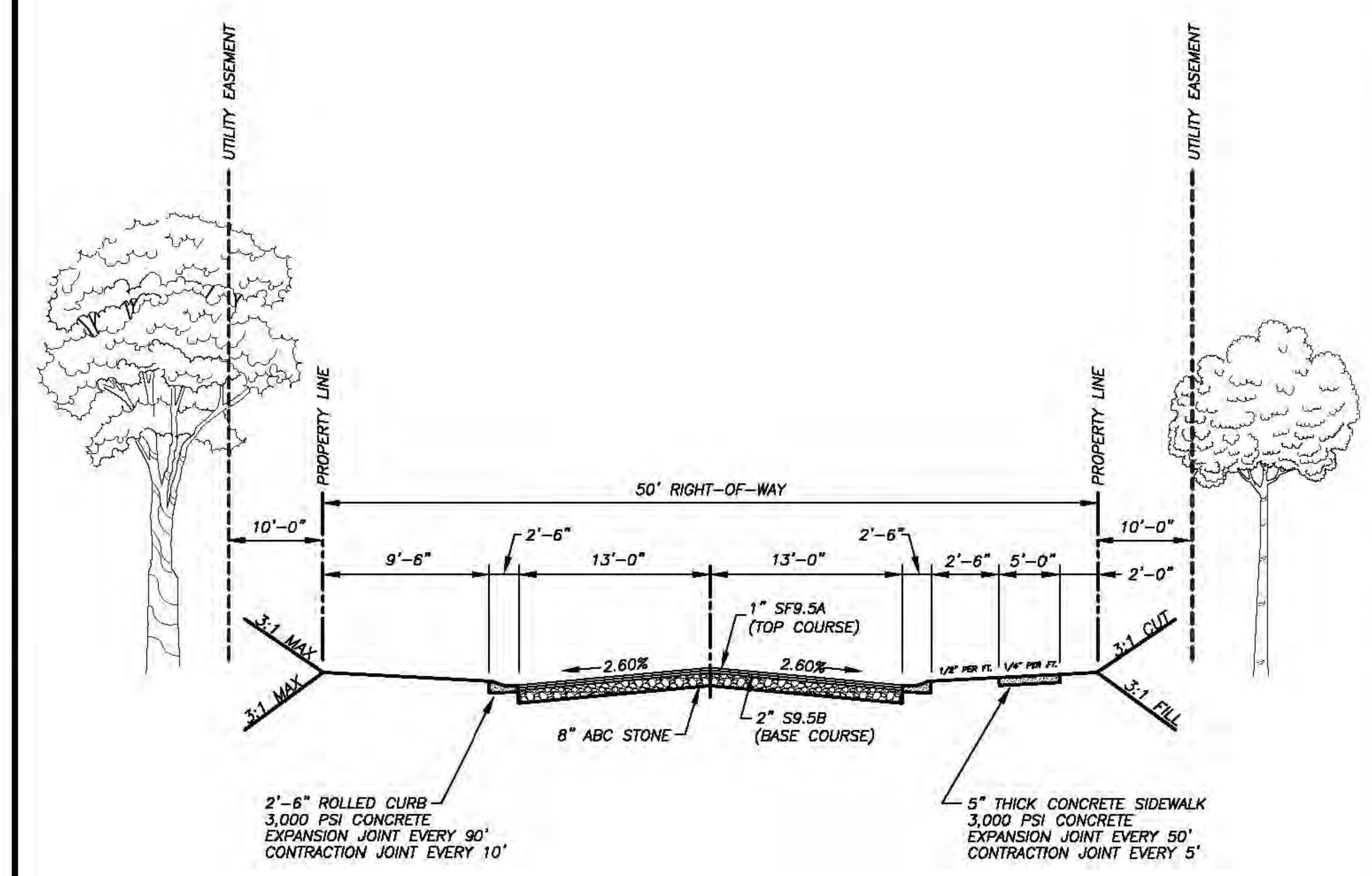


ST–3

CITY OF MEBANE STANDARD

GENERAL SUBDIVISION REQUIREMENTS FOR ROADWAYS AND UTILITIES

SCALE: N.T.S. DATE: 11/18/19 DRAWN BY: WDF



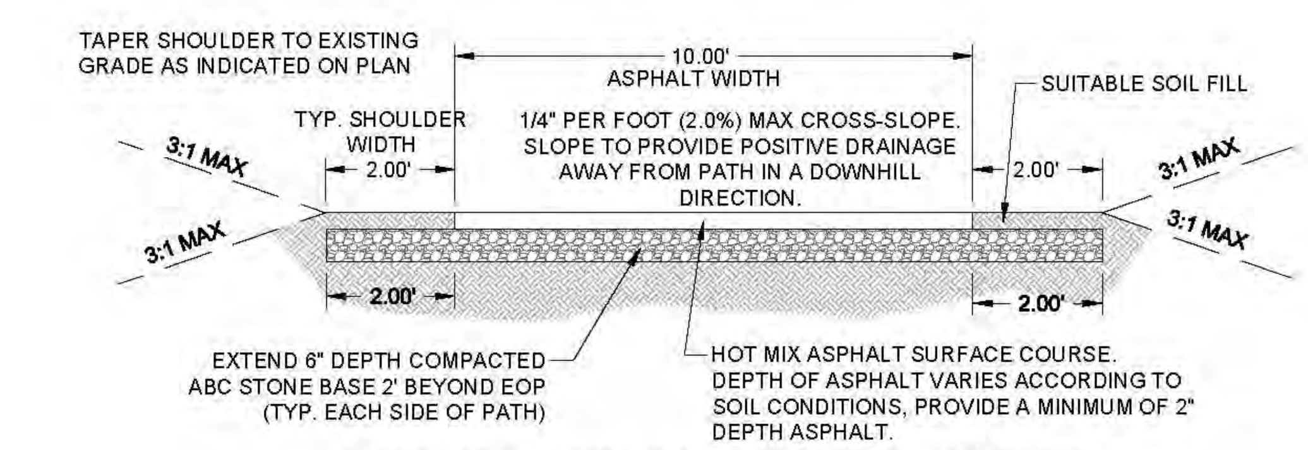
NOTES:
1. ALL ASPHALT CEMENT PLANT MIX AND METHOD OF PLACEMENT SHALL COMPLY WITH N.C. DOT STANDARD SPECIFICATIONS.
2. ALL WORK SHALL COMPLY WITH N.C. DOT STANDARD SPECIFICATIONS.
3. TOP COURSE TO BE PLACED WITHIN 12 MONTHS OF ASPHALT BASE COURSE.
4. COMMERCIAL AND INDUSTRIAL STREET SECTIONS TO BE DETERMINED ON A CASE BY CASE BASIS.
5. WHERE NEW SIDEWALK CROSSES EXISTING GRAVEL DRIVEWAY, SIDEWALK NEEDS TO BE 6" THICK.
6. PROVIDE APPROVED NCDOT SEALANT OVER ALL EXPANSION JOINTS ALONG CONCRETE CURBS AND CONCRETE SIDEWALKS.
7. CUT FILL SLOPE EXCEEDING MAXIMUM MUST BE APPROVED BY THE CITY ENGINEER.
8. SIDEWALK MUST BE LOCATED ON ONE SIDE OF THE STREET EXCEPT WHEN CITY PROJECT APPROVAL REQUIRES ON BOTH SIDES.
9. STREET TREES ARE TO BE LOCATED BEHIND THE UTILITY EASEMENT.

ST–1

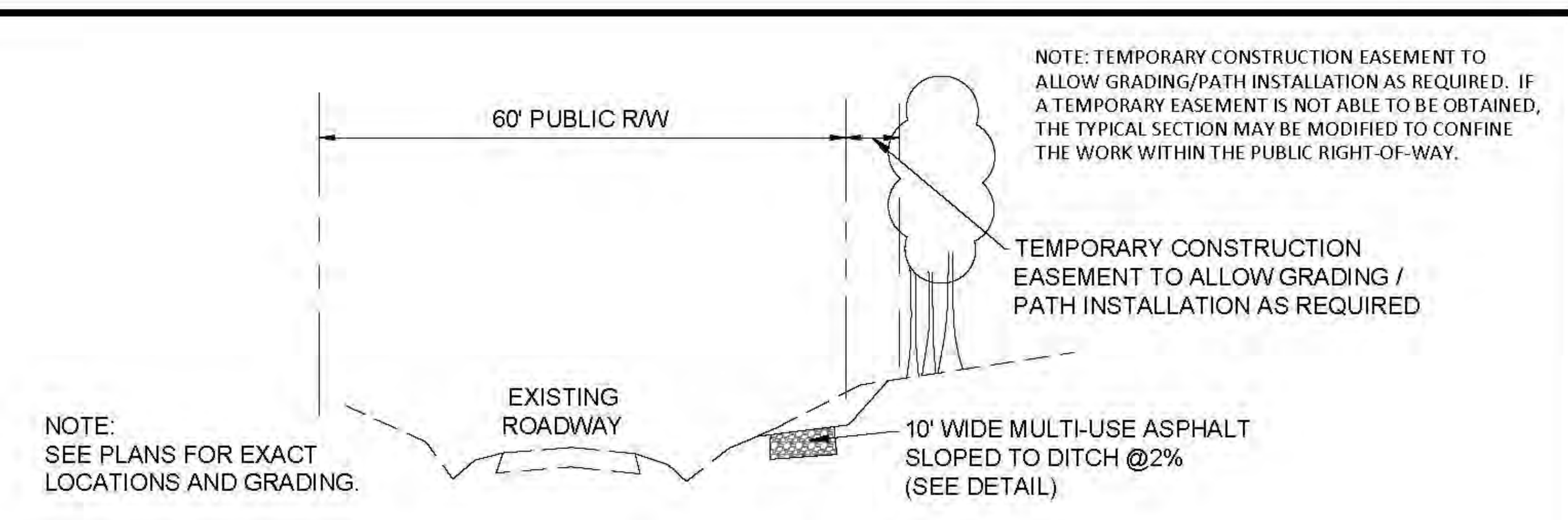
CITY OF MEBANE STANDARD

RESIDENTIAL STREET SECTION (50' ROW – 31' B–B)

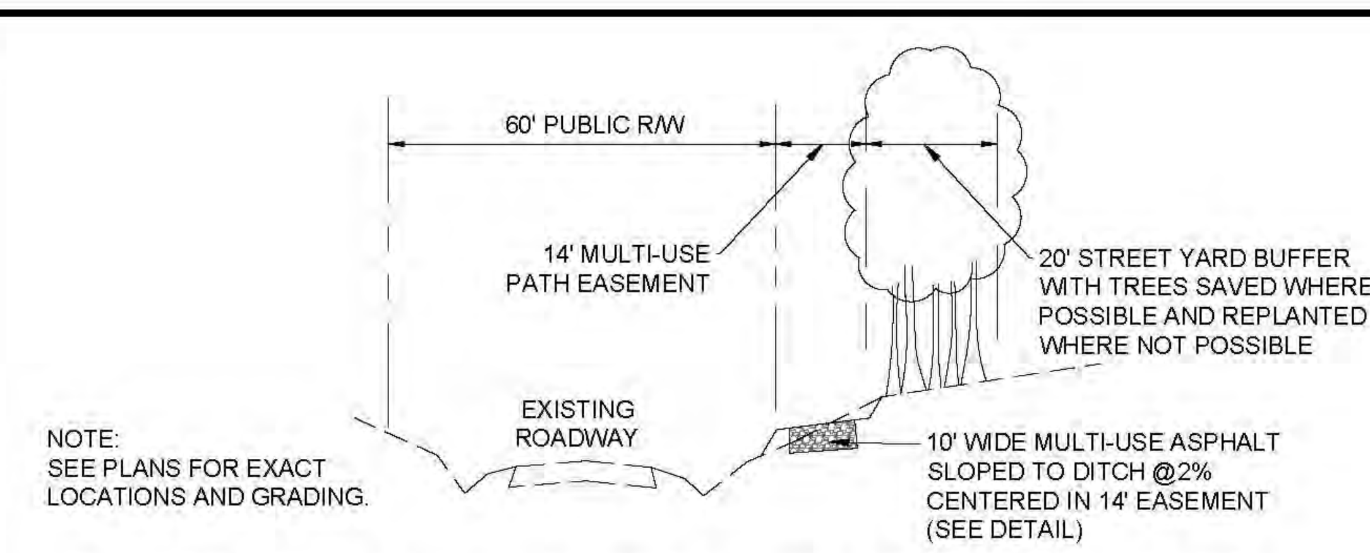
SCALE: N.T.S. DATE: 8/3/17 DRAWN BY: SKS



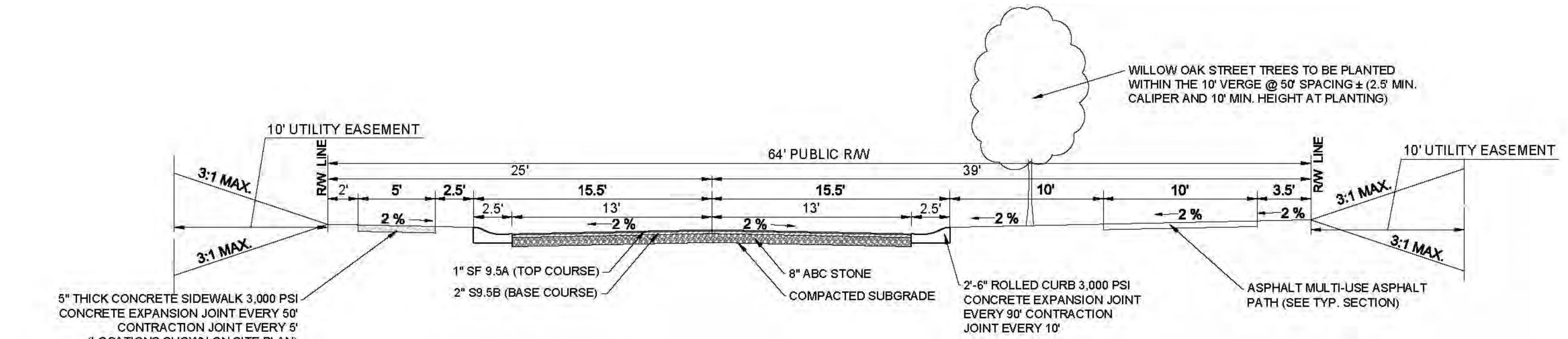
TYPICAL MULTI-USE PATH SECTION - (ASPHALT)
(NOT TO SCALE)



TYP. SECTION ALONG LEBANON ROAD (SOUTH SIDE) SHOWING NEW MULTI-USE PATH IN EXISTING PUBLIC R/W
NTS



TYP. SECTION ALONG STAGE COACH RD. & LEBANON RD. SHOWING NEW MULTI-USE PATH & STREETYARD BUFFER (NORTH SIDE)
NTS



31' B-B BROAD OAK DRIVE - TYPICAL SECTION FROM LEBANON ROAD TO MILL CREEK CROSSING
NTS

NO.	REVISIONS	DATE	BY
7			
6			
5	PER TRC COMMENTS	2/11/2020	JCC
4	PER 1/3/2020 MEBANE TRC COMMENTS	1/21/2020	DMC
3	PER MEBANE TRC COMMENTS	12/20/2019	JCC
2	PER MEBANE TRC COMMENTS	11/26/2019	JCC
1	PER MEBANE TRC COMMENTS	10/23/2019	JCC

PROJECT ENGINEER/ARCHITECT TAS (TIM.SMITH@SUMMITDE.NET)
PROJECT MANAGER RFH (RANDY.HALL@SUMMITDE.NET)
DRAWN BY JCC (JUSTIN.COATS@SUMMITDE.NET)
FIRST ISSUE DATE 05-10-2019

NOT FOR CONSTRUCTION — PRELIMINARY

SUMMIT DESIGN AND ENGINEERING SERVICES
State License #: P-0339
320 Executive Court
Hillsborough, NC 27278
Voice: (919) 732-3883 Fax: (919) 732-6676
www.summitde.net

PRELIMINARY PLANS FOR TUPELO JUNCTION
CHEEKS TOWNSHIP & ORANGE COUNTY
LEBANON ROAD, MEBANE, NC 27302

STREET DETAILS

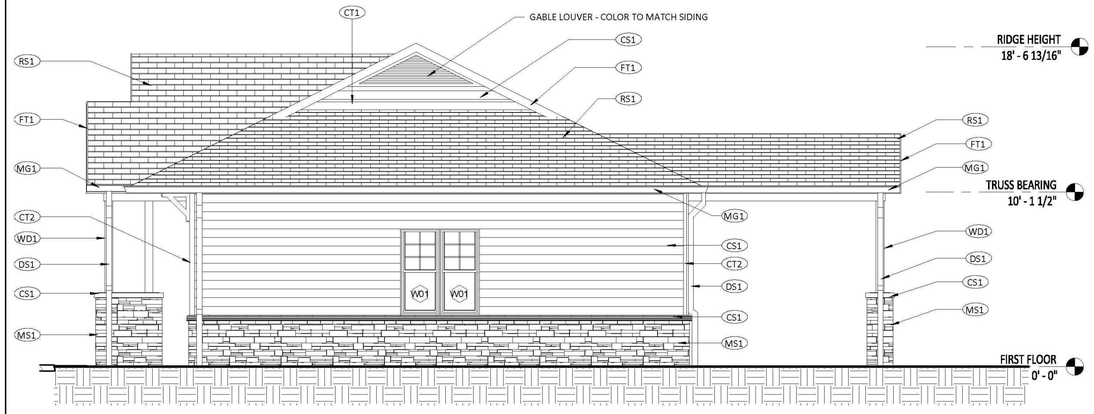
PROJECT NO. 19-0185
DRAWING NAME: 19-0185_D.dwg
SHEET NO. C-5

1 FRONT ELEVATION

1/4" = 1'-0"

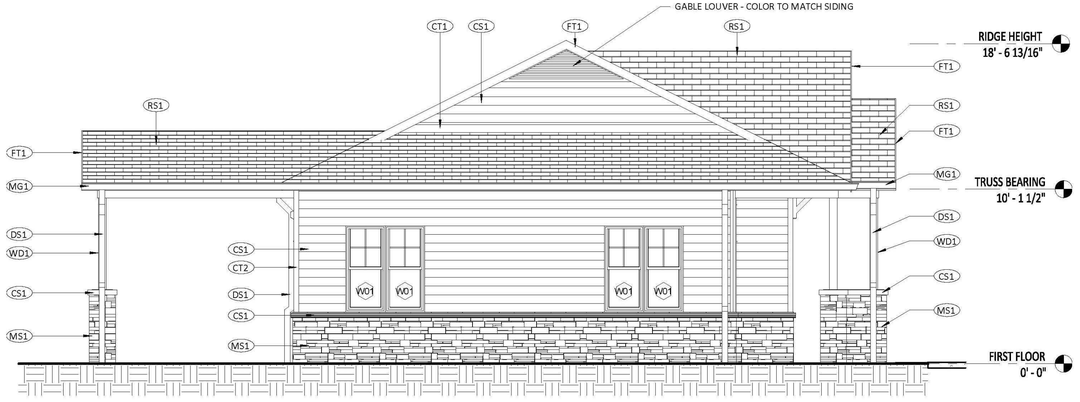
3 REAR ELEVATION

1/4" = 1'-0"



2 RIGHT ELEVATION

1/4" = 1'-0"



4 LEFT ELEVATION

1/4" = 1'-0"

Stae License #: P-0339
1110 Navaho Drive, Suite 600
Raleigh, NC 27609
Voice: (919) 322-0115 Fax: (919) 322-0116
www.SummitDE.net

SUMMIT DESIGN AND ENGINEERING SERVICES PLLC
REGISTERED ARCHITECTURAL FIRM
CERT. NO. 52006
NORTH CAROLINA
RALEIGH

PRELIMINARY NOT FOR CONSTRUCTION

NO	REVISIONS	DATE
A		

NEW CLUBHOUSE FOR

TUPELO JUNCTION

MEBANE, NC

DRAWN BY:	BJM
CHECKED BY:	BJM
FIRST ISSUE DATE:	mm/dd/yyyy

PROJECT NO.
17-0385.040

EXTERIOR ELEVATIONS

A200

NOTE "A"
SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED OR CONSIDERED DURING THIS SURVEY. ALL BUILDINGS, SURFACE AND SUBSURFACE IMPROVEMENTS ON AND ADJACENT TO THE SITE ARE NOT NECESSARILY SHOWN HEREON. NO STATEMENT IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND CONTAINERS WHICH MAY AFFECT THE USE OF THIS TRACT.

NOTE "B"
THE LOCATION OF UNDERGROUND UTILITIES AS SHOWN ARE BASED ON VISIBLE EVIDENCE AND DRAWINGS PROVIDED TO THE SURVEYOR. LOCATION OF UNDERGROUND UTILITIES AND STRUCTURES MAY VARY FROM LOCATIONS SHOWN HEREON, AND ADDITIONAL BURIED UTILITIES MAY EXIST. CONTACT THE APPROPRIATE UTILITY COMPANIES FOR INFORMATION REGARDING BURIED UTILITIES.

NOTE "C"
ALL DISTANCES ARE HORIZONTAL GROUND AND AREA BY COORDINATE COMPUTATION.

NOTE "D"
THIS SURVEY WAS DONE WITHOUT A TITLE SEARCH AND IS BASED ON REFERENCED INFORMATION. THERE MAY EXIST OTHER DOCUMENTS OF RECORD WHICH COULD AFFECT THIS PROPERTY

NOTE "E"
EXCEPT AS SPECIFICALLY STATED OR SHOWN, THIS SURVEY DOES NOT REPORT ANY OF THE FOLLOWING: EASEMENTS, OTHER THAN THOSE VISIBLE DURING FIELD EXAMINATION, BUILDING SETBACKS, RESTRICTIVE COVENANTS, ZONING OR LAND USE REGULATIONS AND ANY FACTS WHICH A TITLE SEARCH MAY DISCLOSE.

NOTE "F"
WETLANDS, JURISDICTIONAL WATERS OR OTHER CONDITIONS WHICH MAY BE REGULATED BY FEDERAL OR STATE OR LOCAL AGENCIES WERE NOT INVESTIGATED DURING THIS SURVEY. RIPARIAN BUFFERS AND OTHER RESTRICTIONS ON DEVELOPMENT MAY BE REQUIRED.

NOTE "G"
SEE PLATS:

"LEE'S BEES INC. & JEFFREY R. LEE AND HYE SOOK LEE" BY R.S. JONES PLS, DATED JUNE 30, 2016, AND RECORDED IN PB 115 PAGE 185.

"FINAL RECOMBINATION OF THE PROPERTY OF: LEE'S BEES, INC" BY JOSEPH G. STUTTS, PLLC, DATED DECEMBER 13, 2017 AND RECORDED IN PB 118 PAGE 34.

NOTE "H"
NO NCGS MONUMENTS WERE FOUND WITHIN 2000' OF THIS SITE.

NOTE "I"
THIS PROPERTY IS WITHIN THE BACK CREEK PROTECTED WATERSHED OF THE CAPE FEAR RIVER BASIN.

NOTE "J"
FLOOD ZONES ARE BASED ON GIS SHAPE FILES PROVIDED BY THE NORTH CAROLINA FLOOD RISK INFORMATION SYSTEM (FRIS), THIS INFORMATION CAN ALSO BE SEEN ON FIRM MAPS; MAP #3710982500L REVISED 11/17/17 & MAP #3710982600L REVISED 11/17/17. THIS PROPERTY IS LOCATED IN "ZONE AE" AREAS THE PORTIONS OF THIS PROPERTY ARE LOCATED IN "ZONE AE" AND SHOWN HEREON.

SYMBOL LEGEND	
◯	IRON PIN SET
◉	IRON PIN FOUND
	DECIDUOUS TREE
⊢	SIGN
Ⓢ	SANITARY MANHOLE
	STORM INLET
Ⓓ	STORM MANHOLE
E	ELECTRIC BOX
	GUY WIRE ANCHOR
	LIGHT POLE
	POWER POLE
GM	GAS METER
T	TELEPHONE BOX
	FIRE HYDRANT
WV	WATER VALVE
Ⓦ	WATER WELL
IPS	IRON PIPE SET
EIP	EXISTING IRON PIPE
R/W	RIGHT OF WAY
TR.	TRACT

℄ (PROPERTY LINE)	———
℄ NOT SURVEYED	———
RIGHT OF WAY LINE	— — —
FIBER OPTIC LINE	——FO——
OVERHEAD ELECTRIC LINE	——E——

LINE TABLE		
LINE #	LENGTH	DIRECTION
L1	84.98'	N13°03'57"W
L2	294.34'	S81°09'09"W
L3	368.25'	N12°23'08"W
L4	81.97'	S08°47'18"E
L5	190.80'	S17°32'35"E
L6	323.83'	N12°23'53"W
L7	249.17'	S81°02'54"W
L8	41.75'	N63°28'52"W
L9	103.57'	N05°10'48"E
L10	30.34'	S80°15'06"W
L11	29.59'	N08°08'52"W
L12	46.23'	N77°56'49"W
L13	215.14'	S79°50'26"W
L14	70.06'	N65°19'07"W
L15	109.59'	N12°23'32"W
L16	125.56'	S12°15'11"E
L17	124.04'	S65°17'47"E
L18	153.47'	N79°14'20"E
L19	116.57'	S08°16'28"E
L20	85.16'	S12°46'49"E
L21	29.52'	S78°51'52"W
L22	249.81'	S12°13'19"E
L23	28.94'	N87°54'34"W
L24	144.50'	S12°34'08"E
L25	28.01'	S86°37'02"W
L26	31.22'	S11°11'59"E
L27	203.52'	N89°06'42"W
L28	36.65'	N33°45'17"W
L29	63.68'	N33°45'17"W
L30	32.28'	N33°45'17"W

CURVE TABLE						
CURVE #	RADIUS	LENGTH	DELTA	TANGENT	CHORD BEARING	CHORD
C1	1483.21'	180.01'	6°57'13"	90.11'	S67° 45' 48"W	179.90'
C2	1483.21'	219.46'	8°28'40"	109.93'	S60° 02' 52"W	219.26'
C3	1483.21'	5.78'	0°13'24"	2.89'	S71° 21' 06"W	5.78'
C4	1630.39'	265.87'	9°20'36"	133.23'	S76° 58' 17"W	265.58'

I, THOMAS TELLUP, PLS NO. 4298, CERTIFY THAT NC GRID TIE DATA SHOWN ON THIS PLAT WAS OBTAINED FROM AN ACTUAL GPS SURVEY MADE UNDER MY SUPERVISION AND THE FOLLOWING INFORMATION WAS USED TO PERFORM THE SURVEY:

(1) CLASS OF SURVEY: 'A'
(2) POSITIONAL ACCURACY: 0.07'
(3) TYPE OF GPS FIELD PROCEDURE: VRS
(4) DATES OF SURVEY: 1/24/2020
(5) DATUM/EPOCH: NAD 83/2011
(6) HELD VRS
(7) GEOID MODEL: 2012B
(8) COMBINED GRID FACTOR: 0.999966143
(9) UNITS: US SURVEY FEET

"I THOMAS TELLUP, PLS NO. 4298, CERTIFY THAT THIS MAP WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DEED DESCRIPTION RECORDED IN BOOK/PAGE:(AS NOTED HEREON) OR OTHER REFERENCE SOURCE:(AS NOTED HEREON)); THAT THE BOUNDARIES NOT SURVEYED ARE INDICATED IN A BROKEN LINETYPE AS DRAWN FROM INFORMATION IN BOOK/PAGE:(AS NOTED HEREON) OR OTHER REFERENCE SOURCE:(AS NOTED HEREON); THAT THE RATIO OF PRECISION OR POSITIONAL ACCURACY IS 1:10000+; AND THAT THIS MAP MEETS THE REQUIREMENTS OF THE STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA (21 NCAC 56. 1600). THIS MAP WAS DRAWN IN ACCORDANCE WITH G.S. 47.30 AS AMENDED. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS 6TH DAY OF MARCH 2020.

NORTH CAROLINA PROFESSIONAL SEAL L-4298 LAND SURVEYOR THOMAS A. TELLUP

PRELIMINARY PLAT

PROFESSIONAL LAND SURVEYOR REG. NUMBER L-4298

SUMMIT DESIGN & ENGINEERING, SERVICES, PLLC. REG. NUMBER P-0339

BETTY K. BECKNER
STEVEN K. BECKNER
PIN# 9826347879
07-E-46
PB 26/117
DB 796/453

ALAMANCE COUNTY LINE
ORANGE COUNTY LINE

STATION 'C'
11+17.81
LINE B-C

N82°35'50"E
66.07'(TIE)

LINE PER
PB 26/117

N78°41'17"E
840.91'

LINE PER
PB 81/116

N80°54'27"E
427.06'

N79°26'08"E
1267.76'

APPARENT DEED GAP 'A' SEE PB 115/185
AREA=0.160 ACRES

N81°43'31"E
103.18'

N80°50'20"E
531.61'

BETTY K. BECKNER
STEVEN K. BECKNER
PIN# 9826434531
PB 81/116

N81°01'05"E
157.60'(TIE)

ANN MOSS JOYNER
PIN# 9826536425
DB 6643/750
PB 116/35

ZONE "X"
ZONE "AE"
FLOODWAY
REGULATORY

S13°17'29"E
758.17'

S13°01'53"E
391.76'

NAVD 88
NAD 83/11

N10°54'05"W 1,117.81'

SEE DB 6106/429
TR. 2
PB 115/140

S81°35'51"W
90.97'
S08°49'00"E
55.01'
S80°34'53"W
134.70'

JEFFREY R. LEE
HYE SOOK LEE
PIN# 9826511986
DB 3260/14
DB 6134/377
LOT 1
PB 97/34
RECOMBINED WITH
TR. 1A
PB 115/140 IN
PB 115/185

N10°42'32"W
479.17'
N13°28'29"W
528.22'

247.47'
S81°20'16"W

PATRICE R. DIXON
THOMAS V. DIXON
PIN# 9826527172
DB 2566/376

ROBERT LENARD RICE
EMILY RICE
PIN# 9826524054
DB 258/308

S12°34'05"E
427.12'

ECM
STATION 'B'
0+00.0
LINE B-C

ECM
STATION 'B'
32+69.9
LINE A-B

DUKE POWER TRANSMISSION POWER LINES
PER PLAT BOOK 54 PAGE 188

90'
PER
PB 115/185

N79°26'31"E
69.72'

L18
L16
L15
L14
L17
L13
L11
L12
L19
L10
L4(TIE)

THEODORE OLIVE
WATKINS
CLARA B R
PIN# 9826514671

SEE DB 6106/429
TR. 3
PB 115/140

N79°50'22"E
216.60'
S18°05'18"E
232.90'
S11°58'09"E
34.82'
L5(TIE)

N87°23'09"E
426.12'
S10°52'23"E
91.81'
S10°36'03"E
131.73'

PRECIOUS TRUST
BAPTIST CHURCH
PIN# 9826516389
DB 3035/386
PB 84/163

L3(TIE)
L6(TIE)

REBECCA WICKER
RAYMOND WICKER
PIN# 9826513364
DB 3884/514
PB 90/139 LOT 1A
PB 60/45
(PORTION OF LOT 1)
SEE PB 75/31

N79°53'17"E
227.53'
S40°07'22"E
328.11'

L8(TIE)
L9(TIE)
L7(TIE)
L2(TIE)
L1(TIE)

TR. 1A
PB 115/140
DB 6106/461
RECOMBINED WITH
LOT 1
PB 97/34 IN
PB 115/185

N81°06'28"E
341.83'

L20
S12°54'15"E
157.07'

L21
S78°51'52"W
709.77'
S12°54'14"E
168.46'(TIE)

STEVEN R. CANNADA
PIN# 9826505612
DB 6349/227
PB 60/45 LOT 4

S10°39'35"E
183.69'
S77°41'19"W
746.17'(TIE)
S10°47'13"E
182.24'

ANTHONY HENDRICKSON
AMANDA HENDRICKSON
PIN# 9826505590
DB 6629/2364
PB 60/45 LOT 5

S12°49'38"E
167.05'(TIE)
N76°09'59"E
30.15'

722.52'
N76°33'09"E

L22
L23
L24
L25

S83°49'36"W
137.83'
N88°57'24"W
258.48'
S47°42'16"W
73.14'
S08°10'30"E
119.59'
N85°50'17"E
164.07'

MARSHALL RONNINGEN
KRISTI RONNINGEN
PIN# 9826508203
DB 6420/324
PB 118/34

S85°48'47"W
302.13'(TIE)

PEGGY E. HINES
PIN# 9825598936
DB 394/317

SADDLE CLUB ROAD (SR 1346)
(60' PUBLIC R/W)

N10°54'53"W
680.50'(TIE)
N10°43'17"W
680.36'(TIE)

SEE DB 6364/131
PB 118/34

410.04'
S00°24'04"W

20' INGRESS, EGRESS
& REGRESS EASEMENT
(PB 118-34)

SEE
DETAIL 'A'

356.16'
S86°03'17"W

GARY S. LINZ
CINDY M. LINZ
PIN# 9825597396
DB 1603/515
DB 1707/107
DB 6654/1986
PB 55/138
PB 75/94
PB 96/2 LOT 3
REMAINDER

S09°01'17"E
202.18'
S10°55'03"E
902.11'(TIE)

SEE
DETAIL 'B'

SEE
DETAIL 'C'

LINE PER
DB 6654/1986

LINE PER DB 1603/515
AND PB 55/138

ATT SIGN

51" OAK

FO
AT&T CABLE

S11°28'59"E
808.93'

OPIO ADBULLAH
PIN# 9825588917
DB 6214/32
PB 93/146 LOT 1
PB 96/2

GARY S LINZ
CINDY M LINZ
PIN# 9825691102
DB 1603/515
PB 93/146 LOT 2

TIMOTHY &
PATTY M NIPPER
PIN# 9825680973
DB 4597/292
PB 90/161

JEFFERY S WOODS
PIN# 9825682935
DB 5893/361
PB 90/161

100'
PER
PB 115/185

STATION 'A'
0+00
LINE A-B

ZONE "X"
ZONE "AE"
FLOODWAY
REGULATORY

LAKE MICHAEL TRIBUTARY

S10°51'38"E
107.76'(TIE)

C4(TIE)

20' PERMANENT SANITARY
SEWER EASEMENT. SEE ALSO TEMP
CONSTRUCTION EASEMENTS
DB 6620/65 AND DB 6441/103

20' PERMANENT SANITARY
SEWER EASEMENT. SEE ALSO
TEMP CONSTRUCTION EASEMENT
DB 6441/94

SEE
DETAIL 'D'

C1
C2

SEE
DB 225/382

SEE
DB 225/380

MEBANE TOWN HOMES LLC
PIN# 9825584502
DB 6245/489
PB 121/40

MEBANE TOWN HOMES LLC
DB 5880/575 TRACT 5.
SEE LOT 1 PB 51/120, BEING A PART OF THE 5.14 ACRES DESCRIBED IN DB 129/124

SEE DB 129/124 CONVEYING 5.14 ACRES FROM RALPH D. HUGGINS TO ARDIS J. HATCH AND WIFE NANNIE BELL HATCH.

SEE DEED CONVEYING THE PORTION OF THEIR PROPERTY DESCRIBED IN DB 129/124 LYING NORTH OF THE CENTERLINE OF LEBANON CHURCH ROAD FROM ARDIS J. HATCH AND WIFE NANNIE BELL HATCH TO R. F. PAYNE AND WIFE HELEN B. PAYNE DATED MAY 12, 1970 DB 225/382.

SEE DB 225/385 CONVEYING 144.854 ACRES (INCLUDING THE LAND DESCRIBED IN DB 225/380 AND DB 225/382) AS SHOWN ON PB 18/38 FROM R. F. PAYNE AND WIFE HELEN B. PAYNE TO C.J. BALCKMANN AND WIFE KARLA F. BALCKMANN AND JOHN T. SESSIONS AND WIFE NINA C. SESSIONS.

MEBANE TOWNHOMES LLC
DB 5880/575 TRACT 5 DOES NOT REFER THE THE LAND DESCRIBED IN DB 225/382.

SEE ALSO DB 1432/575, DB 1465/86, DB 2057/259, DB 3390/41.

SEE DB 6654/1986 CONVEYING 0.23 ACRE FROM "LEE'S BEES, INC TO GARY S. LINZ & WIFE, CINDY M. LINZ.

MEBANE TOWN HOMES LLC
PIN# 9825582300
DB 6245/489
PB 101/192

MEBANE TOWN HOMES LLC
PIN# 9825587303
DB 6245/489
LOT 2 PB 51/120

MEBANE TOWNHOMES LLC
DB 5880/575 TRACT 4

BEING THE REMAINDER OF THAT 10 ACRE TRACT CONVEYED FROM W. H. COBURN AND WIFE MELBA B. COBURN TO JOHN T. TURNER AND WIFE LOUISE C. TURNER IN DB 132/564.

SEE DEED CONVEYING ALL OF THAT PORTION OF THEIR PROPERTY DESCRIBED IN DB 132/564 LYING NORTH OF THE CENTERLINE OF THE LEBANON CHURCH ROAD FROM JOHN T. TURNER AND WIFE LOUISE C. TURNER TO R. F. PAYNE AND WIFE HELEN B. PAYNE DATED MAY 12, 1970 DB 225/380.

SEE DB 225/385 CONVEYING 144.854 ACRES (INCLUDING THE LAND DESCRIBED IN DB 225/380 AND DB 225/382) AS SHOWN ON PB 18/38 FROM R. F. PAYNE AND WIFE HELEN B. PAYNE TO C.J. BACLKMANN AND WIFE KARLA F. BALCKMANN AND JOHN T. SESSIONS AND WIFE NINA C. SESSIONS.

SEE ESTATE FILE 83-E-336.

SEE DB 537/457 DATED SEPTEMBER 30, 1985 (CORRECTIVE DEED CORRECTING DB 493/273) CONVEYING A 2.328 ACRE PORTION OF THE PROPERTY DESCRIBED IN DB 132/564 FROM SHIRLEY T. HARRIS AND HUSBAND JASPER R. HARRIS TO TERESA T. DALLAS. SEE PB 40/93.

MEBANE TOWN HOMES LLC DB 5880/575 TRACT 4 CONVEYS THE 10 ACRE TRACT DESCRIBED IN DB 132/564 SAVE AND EXCEPT THE PROPERTY DESCRIBED IN DB 225/380 AND DB 537/487.

SEE ALSO DB 3612/73.

LEE'S BEES INC
JEFFREY R. LEE
HYE SOOK LEE
PIN# 9826416085
DB 6106/429
TR. 2 PB 115/140
TR. 3 PB 115/140
TR. 4 PB 115/140
DB 6364/131
PB 118/34
SEE PB 115/185

TOTAL AREA=179.130 ACRES

SEE DB 6106/429
TR. 4
PB 115/140

MILL CREEK
DEVELOPMENT COMPANY
PIN# 9825396817
DB 2086/255
SEE DB 879/248

25' SANITARY SEWER
EASEMENT CITY OF MEBANE
(PB 98/61)

N10°53'56"W 3,269.85'

HARMONY HOMESTEADS LLC
PIN# 9825286476
DB 6511/160
PB 72/74

N10°54'49"W
574.62'

TEMP
CONSTRUCTION
EASEMENT
DB 6441/103

EAST STAGECOACH ROAD
(SR 1376)

L26
L27
L28
L29
L30

TERESA T DALLAS
PIN# 9825473967
DB 537/487
PB 40/93

NC GRID
COORDINATE
N=858132.75
E=1924679.48

LEBANON ROAD (SR 1306)

N54°50'08"E
676.82'

R/W

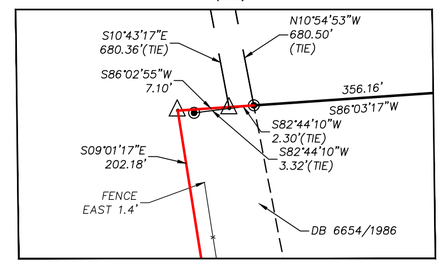
VILLAGE AT LAKE
MICHAEL TOWNHOME
ASSOCIATION INC
PIN# 9825476974
DB 6606/384
PB 116/66

VILLAGE AT LAKE
MICHAEL TOWNHOME
ASSOCIATION INC
PIN# 9825487072
DB 6606/384
PB 116/53

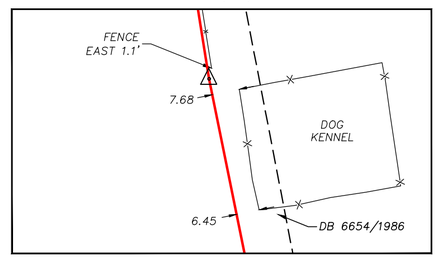
VILLAGE AT LAKE
MICHAEL TOWNHOME
ASSOCIATION INC
PIN# 9825488159
DB 6606/384
PB 101/192

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 200 ft.

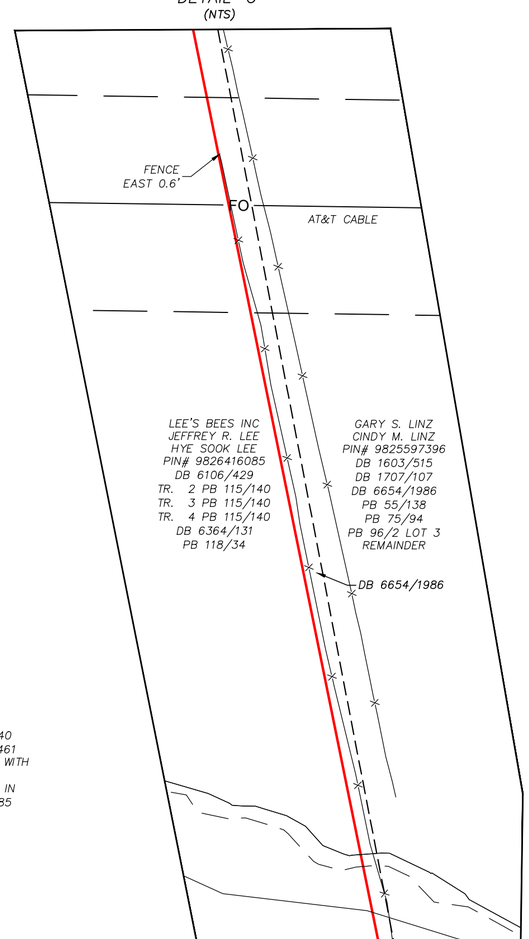
DETAIL 'A'
(NTS)



DETAIL 'B'
(NTS)



DETAIL 'C'
(NTS)



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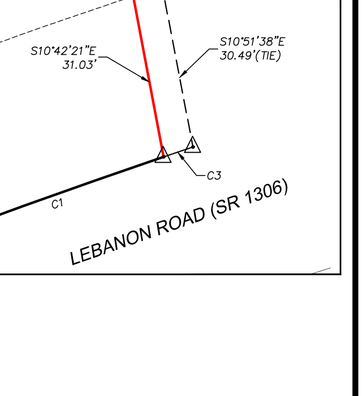
(NTS)



VICINITY MAP
NOT TO SCALE

PROJECT NO.
19-0185

DRAWING NO.
19-0185_PROPERTY_SURVEY-REV

PROPERTY SURVEYED FOR
LEE'S BEES INC

CHEEKS TWP., ORANGE CO., NORTH CAROLINA
FIELD WORK PERFORMED MARCH 18, 2020
PROPERTY AS DESCRIBED IN DEED BOOK 6106 PAGE 429 &
DEED BOOK 6364 PAGE 131
STANDING IN THE NAME OF
JEFFREY R. LEE & HYE SOOK LEE

SUMMIT DESIGN AND ENGINEERING SERVICES
Creatively Inspired - Technically Executed
License #: P-0339
320 Executive Court
Hillsborough, NC 27278-8551
Voice: (919) 732-3883 Fax: (919) 732-6676
www.summitde.net

CLIENT'S ADDRESS
1818 SADDLE CLUB RD
MEBANE, NC 27302

PROJECT MANAGER

DRAWN BY
RH/MJP

SCALE
1"=200'

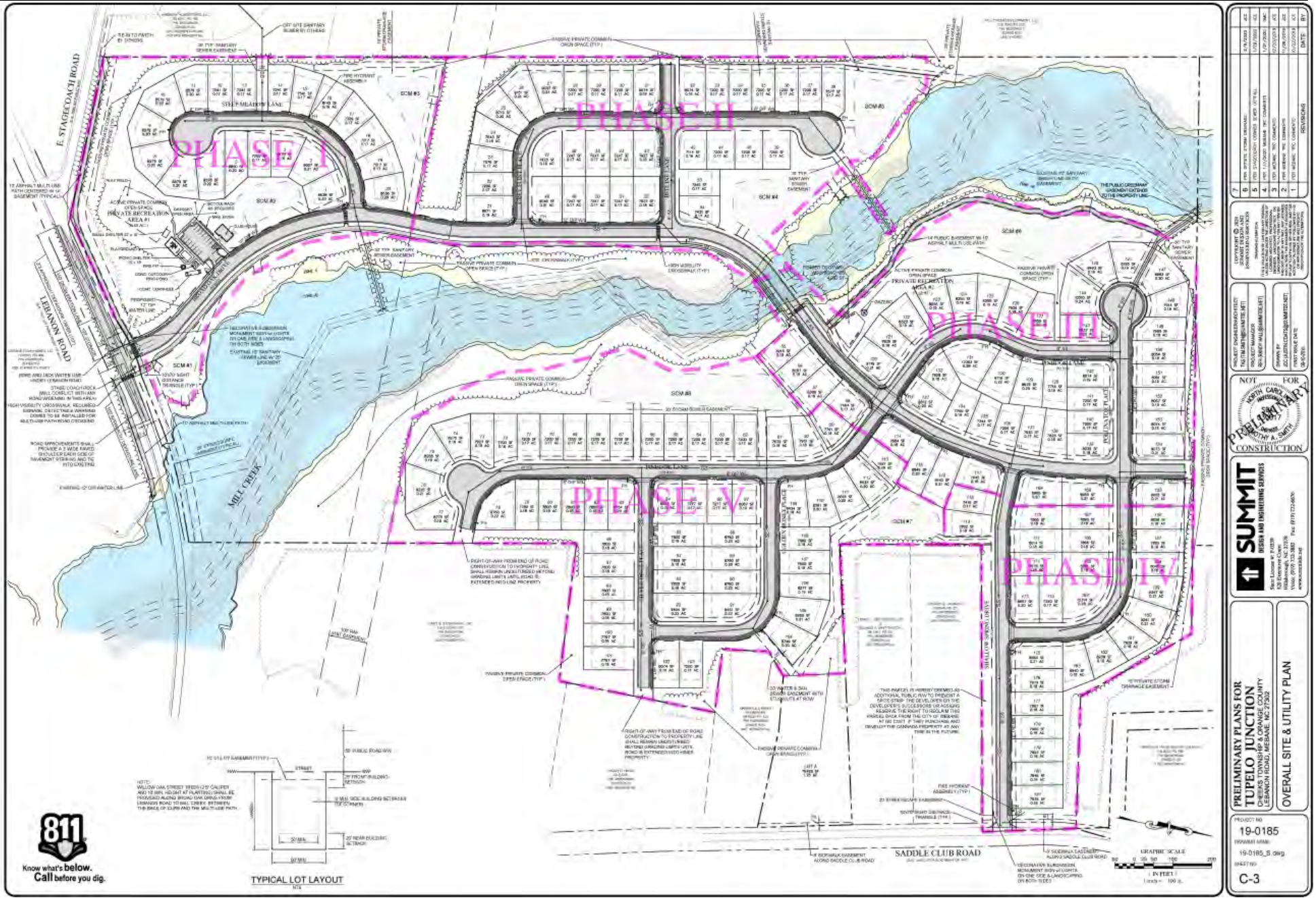
	REVISIONS	DATE	BY
6			
5			
4			
3			
2			
1			
0			

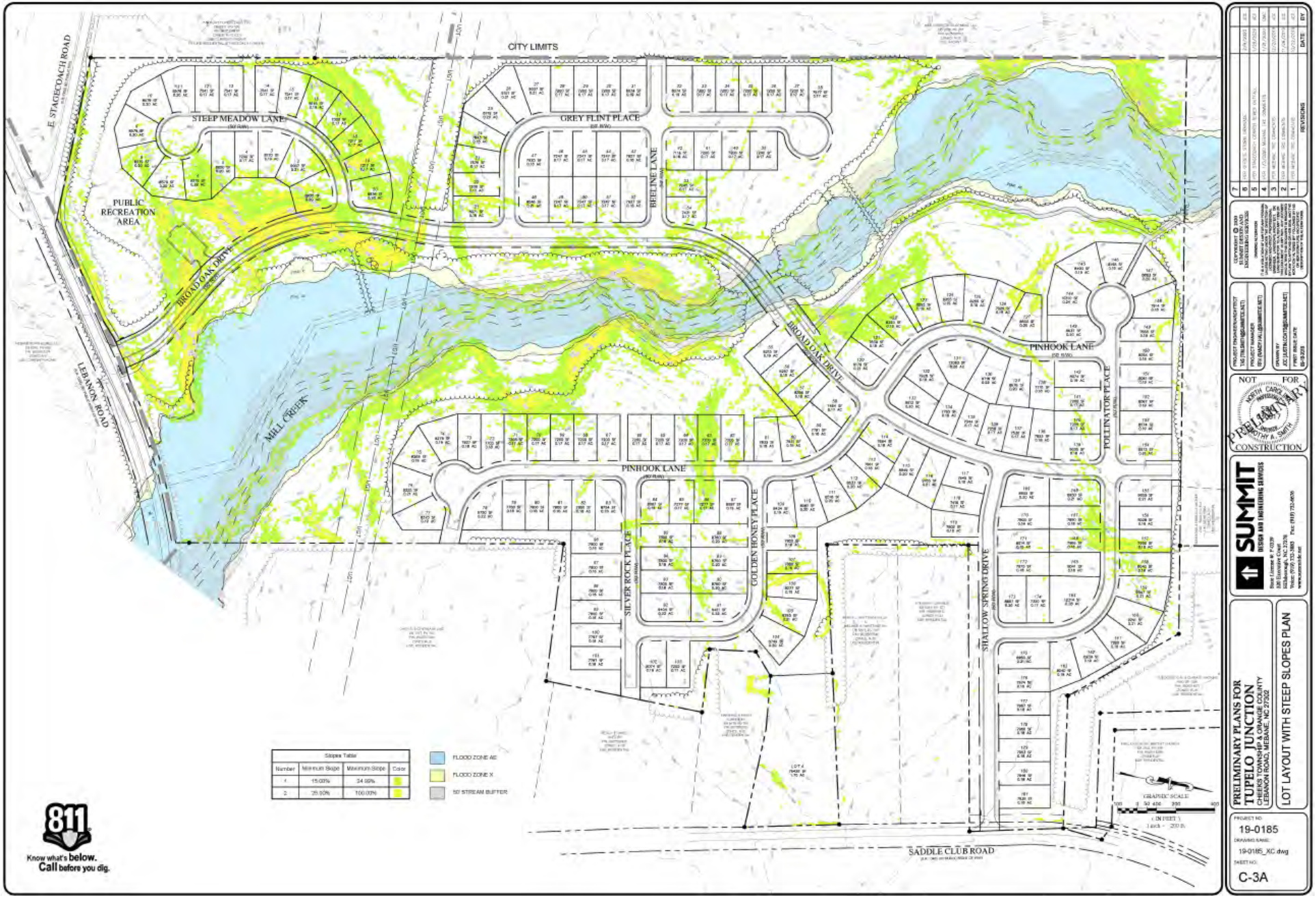
N:\2019\19-0185.010 Lebanon Rd LLC - The Landing at Lake Michael\Unsorted\SURVEY\DWG_SURVEY\19-0185_PROPERTY-SURVEY-REV.dwg, 7/24/2020 11:19:29 AM, 1:1

PLANNING PROJECT REPORT

DATE	03/02/20
PROJECT NUMBER	RZ 20-04
PROJECT NAME	Tupelo Junction
APPLICANT	Lebanon Road 3, LLC c/o James Parker, Jr. 320 Executive Court Hillsborough, NC 27278

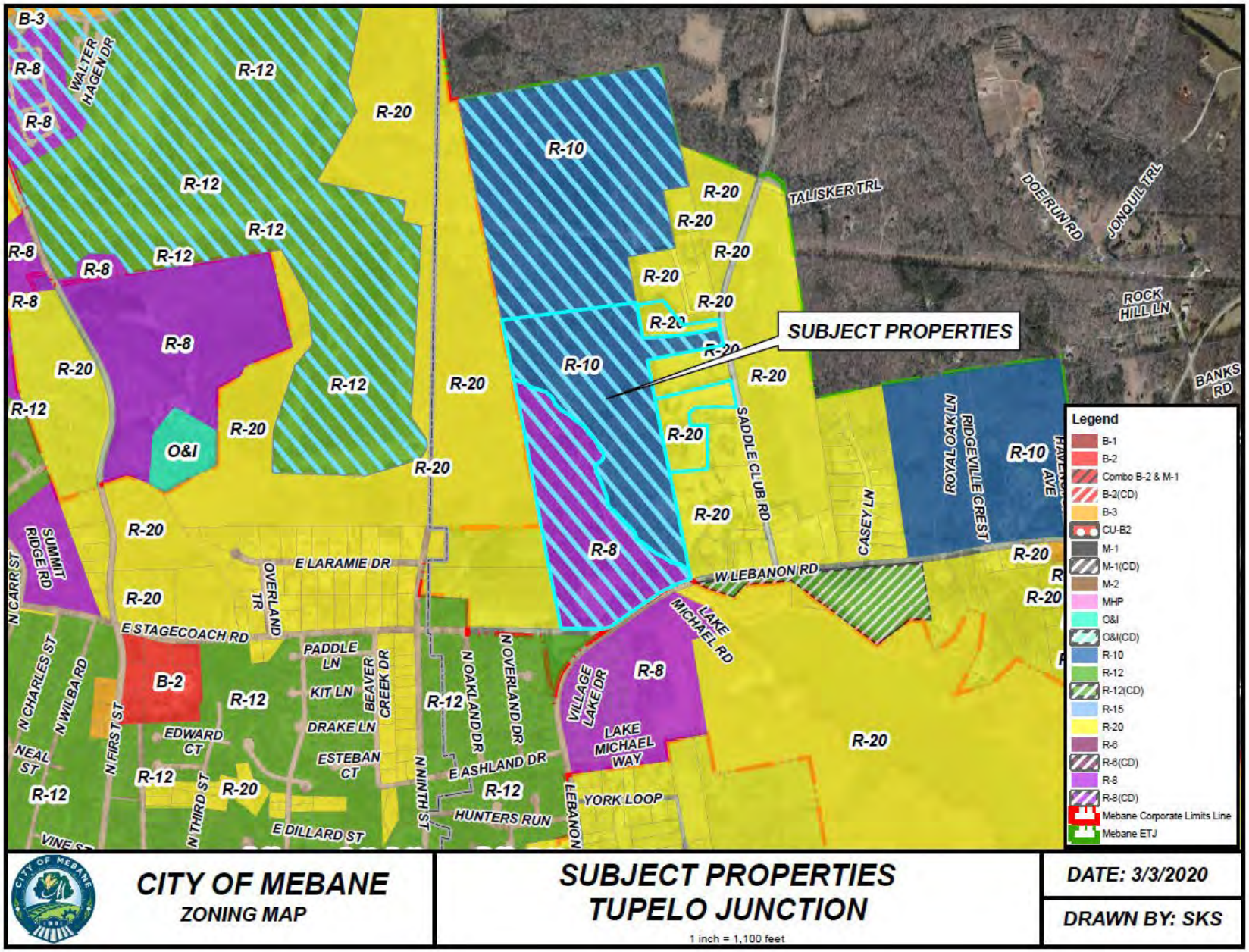
CONTENTS


PHASE I
PHASE II
PHASE III
PHASE IV
PHASE V
E. STAGECOACH ROAD
LEBANON ROAD
MILL CREEK
STEP MEADOW LANE
SADDLE CLUB ROAD
PRELIMINARY PLANS FOR
TUPELO JUNCTION
CHEEKS TOWNSHIP & ORANGE COUNTY
LEBANON ROAD, MEBANE, NC 27302
OVERALL SITE & UTILITY PLAN
PROJECT NO
19-0185
DRAWING NAME
19-0185_S.dwg
SHEET NO
C-3
NOT FOR CONSTRUCTION
PRELIMINARY
SUMMIT
DESIGN AND ENGINEERING SERVICES
Know what's below. Call before you dig.
TYPICAL LOT LAYOUT
GRAPHIC SCALE


CITY LIMITS
E. STAGECOACH ROAD
LEBANON ROAD
STEEP MEADOW LANE
GREY FLINT PLACE
BEELINE LANE
PUBLIC RECREATION AREA
BROADOAK DRIVE
MILL CREEK
PINHOOK LANE
POLLINATOR PLACE
SILVER ROCK PLACE
GOLDEN HONEY PLACE
SHALLOW SPRING DRIVE
SADDLE CLUB ROAD
Slopes Table
Number
Minimum Slope
Maximum Slope
Color
1
15.00%
24.99%
2
25.00%
100.00%
FLOOD ZONE AE
FLOOD ZONE X
50' STREAM BUFFER
GRAPHIC SCALE
(IN FEET)
1 inch = 200 ft.
Know what's below.
Call before you dig.
811
NOT FOR CONSTRUCTION
PRELIMINARY
SUMMIT
DESIGN AND ENGINEERING SERVICES
PRELIMINARY PLANS FOR
TUPELO JUNCTION
CHEEKS TOWNSHIP & ORANGE COUNTY
LEBANON ROAD, MEBANE, NC 27302
LOT LAYOUT WITH STEEP SLOPES PLAN
PROJECT NO.
19-0185
DRAWING NAME:
19-0185_XC.dwg
SHEET NO.
C-3A
REVISIONS
DATE
BY

ZONING REPORT

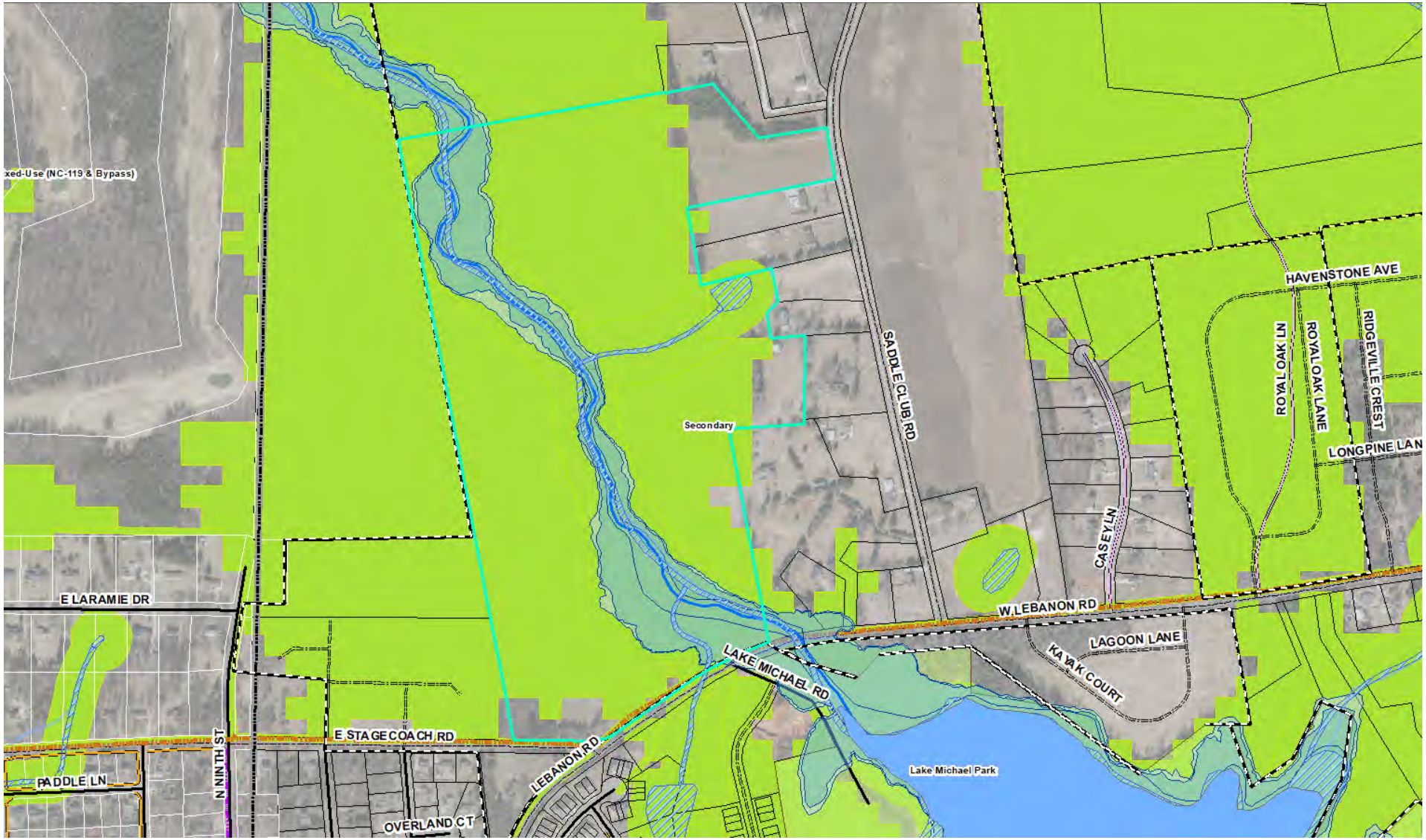
EXISTING ZONE	CU-R-8 & CU-R-10 (Conditional Use Residential [*2005 Mebane Zoning Ordinance*])
REQUESTED ACTION	R-12(CD) (Single-Family Residential, Conditional Zoning District)
CONDITIONAL ZONE?	☒YES ☐NO
CURRENT LAND USE	Vacant, Forested
PARCEL SIZE	+/-93.5 acres of a +/-179.23 parent parcel
PROPERTY OWNERS	Lees's Bees, Inc. c/o Jeffrey R. Lee 1818 Saddle Club Road Mebane, NC 27302 GPINs 9826416085
LEGAL DESCRIPTION	The applicant proposes to rezone +/-93.5 acres of a +/-179.23 ac tract from CU-R-8 & CU-R-10 (Conditional Use Residential) to R-12(CD) (Single-Family Residential, Conditional Zoning District) to allow for a Residential Cluster development of 181 lots.
AREA ZONING & DISTRICTS	All properties to the east and west are R-20 (Single-Family Residential) except for the "Stagecoach Corner" properties to the southwest, which are zoned R-12(CD). The parent property of this proposed rezoning area is to the north and zoned CU-R-10. The vested rights for that Conditional Use permit are expired. All other properties to the north are zoned R-20. The properties to the south are zoned R-8, R-12, and R-20.
SITE HISTORY	The property has been vacant and forested except for a single-family residence at the northern end of the parent property. This property was approved for a Conditional Use Permit and rezoning request in 2005 for a Master Planned community called The Landing at Lake Michael. The vested rights for that plan are expired.
	STAFF ANALYSIS
CITY LIMITS?	☐YES ☒NO
PROPOSED USE BY-RIGHT?	☐YES ☒NO
SPECIAL USE?	☐YES ☒NO
EXISTING UTILITIES?	☒YES ☐NO
POTENTIAL IMPACT OF PROPOSED ZONE	The proposed zoning district will be a continuance of the R-12 zoning to the west and the south. It will introduce denser zoning to the more rural areas to the north and east, though there are other Residential Cluster developments farther to the east.


SUBJECT PROPERTIES
TALISKER TRL
DOE RUN RD
JONQUIL TRL
ROCK HILL LN
BANKS RD
WALTER HAGEN DR
SADDLE CLUB RD
CASEY LN
ROYAL OAK LN
RIDGEVILLE CREST
W LEBANON RD
LAKE MICHAEL RD
LAKE MICHAEL WAY
VILLAGE LAKE DR
E LARAMIE DR
E STAGECOACH RD
OVERLAND TR
N OVERLAND DR
N OAKLAND DR
BEAVER CREEK DR
PADDLE LN
KIT LN
DRAKE LN
EDWARD CT
ESTEBAN CT
E ASHLAND DR
HUNTERS RUN
YORK LOOP
E DILLARD ST
N CARR ST
SUMMIT RIDGE RD
N CHARLES ST
N WILBA RD
N FIRST ST
N THIRD ST
NEAL ST
N NINTH ST
LEBANON
B-3
R-8
R-12
R-20
R-10
O&I
B-2
Legend
B-1
B-2
Combo B-2 & M-1
B-2(CD)
B-3
CU-B2
M-1
M-1(CD)
M-2
MHP
O&I
O&I(CD)
R-10
R-12
R-12(CD)
R-15
R-20
R-6
R-6(CD)
R-8
R-8(CD)
Mebane Corporate Limits Line
Mebane ETJ
CITY OF MEBANE
ZONING MAP
SUBJECT PROPERTIES
TUPELO JUNCTION
1 inch = 1,100 feet
DATE: 3/3/2020
DRAWN BY: SKS

LAND USE REPORT

EXISTING LAND USE	Vacant & Forested
PROPOSED LAND USE & REQUESTED ACTION	The applicant is requesting a conditional rezoning to develop +/-93.5 acres of a +/-179.23 ac tract for a Residential Cluster development of 181 lots.
PROPOSED ZONING	R-12(CD) (Single-Family Residential, Conditional Zoning District)
PARCEL SIZE	+/-93.5 acres of a +/-179.23 parent parcel
AREA LAND USE	All properties to the north and east are used for large-lot single-family residences that do not use municipal utilities. The properties to the west are currently vacant but the four parcels to the southwest were approved for a Residential Cluster development called "Stagecoach Corner". The properties directly south of the subject property are Lake Michael Park, the townhome community "The Villages at Lake Michael", and a R-12 vacant lot.
ONSITE AMENITIES & DEDICATIONS	The applicant proposed to provide a 4,325'-long, 10'-wide public multiuse path connecting to the dedicated multiuse path on Stagecoach Road, extended across Lebanon Road to the entrance of Lake Michael Park, and through the extent of the project, stubbing it at the northern property line. The applicant is also proposing to provide full-canopy street trees on Broad Oak Drive and +/-1.0 ac in private recreation amenities, including a play area with a clubhouse and a dog park, all of which will be HOA-maintained.
WAIVER REQUESTED	☒YES ☐NO
DESCRIPTION OF REQUESTED WAIVER(S)	85' lot width required, 60' requested; 30' front yard setback, 25' requested; 25' rear yard setback required, 20' requested; and 10' side setback required, 5' minimum requested, with 13' minima requested for corner lots. A payment *in lieu* of providing sidewalk on the frontage along Saddle Club Road is requested.

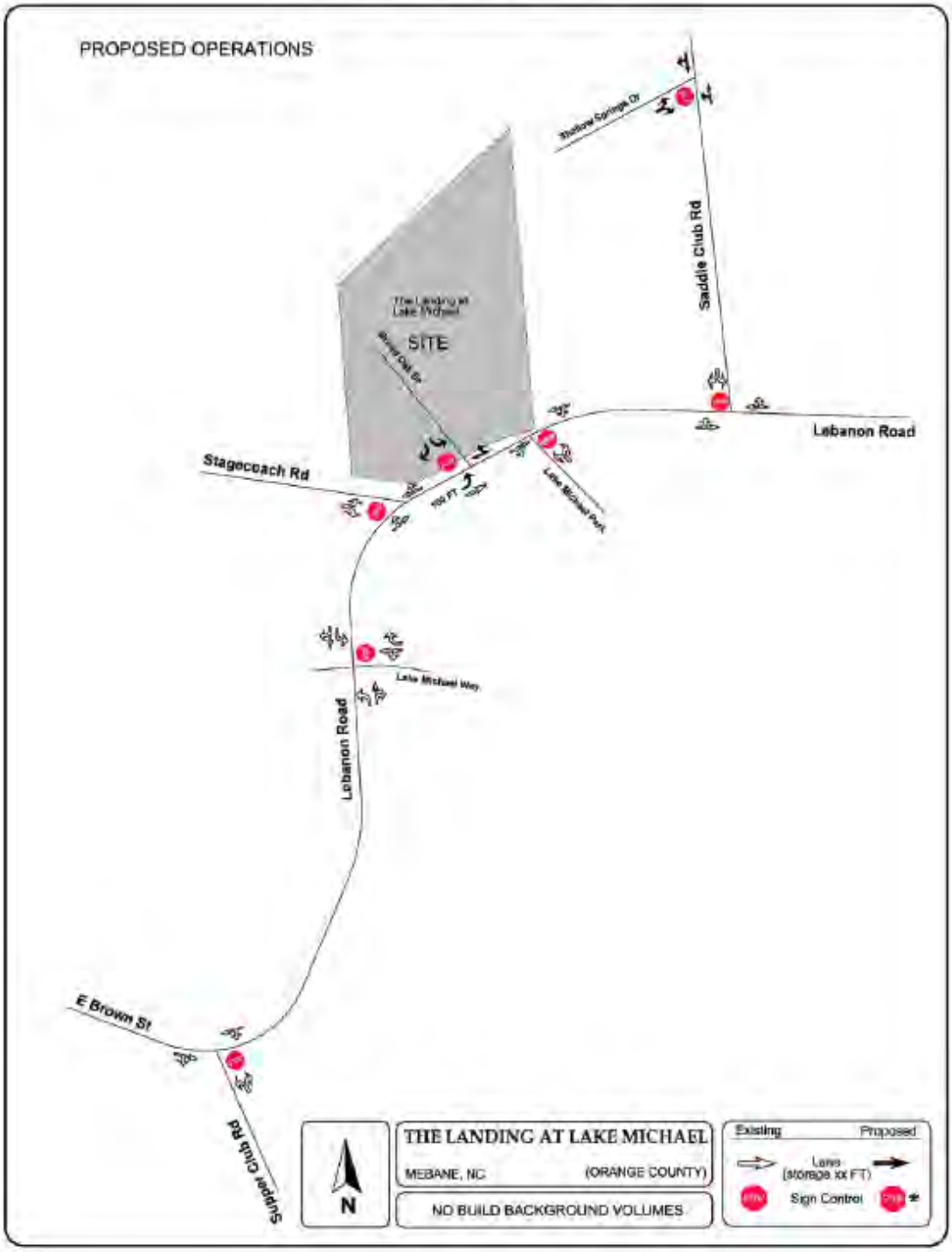
CONSISTENCY WITH *MEBANE BY DESIGN* STRATEGY	
LAND USE GROWTH STRATEGY DESIGNATION(S)	G-4 Secondary Growth Area Conservation Area
OTHER LAND USE CONSIDERATIONS	Graham-Mebane Reservoir Water Supply (WS-II) Watershed
MEBANE BY DESIGN GOALS & OBJECTIVES SUPPORTED	GROWTH MANAGEMENT 1.4 Ensure that adequate community facilities are integrated into new development to reduce distances to parks, schools and community centers.
	PUBLIC FACILITIES AND INFRASTRUCTURE 2.1 Improve safety and confidence of pedestrian access across major streets, including I-40/85, US-70, NC-119, Mebane-Oaks Road and other highly-traveled roadways.
	OPEN SPACE AND NATURAL RESOURCE PROTECTION 4.2 Provide greenways, parks and open space connectivity between different land uses and across major transportation corridors, thereby advancing safety and health.
	OPEN SPACE AND NATURAL RESOURCE PROTECTION 4.3 Support park, greenway, and open space expansion in developed and developing areas, prioritizing connectivity between each location.
MEBANE BY DESIGN GOALS & OBJECTIVES NOT SUPPORTED	


xed-Use (NC-119 & Bypass)
Secondary
SADDLE CLUB RD
HAVENSTONE AVE
ROYAL OAK LN
ROYAL OAK LANE
RIDGEVILLE CREST
LONGPINE LAN
CASEY LN
E LARAMIE DR
W LEBANON RD
LAGOON LANE
KAYAK COURT
LAKE MICHAEL RD
E STAGECOACH RD
LEBANON RD
N NINTH ST
PADDLE LN
OVERLAND CT
Lake Michael Park

UTILITIES REPORT

AVAILABLE UTILITIES	☒YES ☐NO
PROPOSED UTILITY NEEDS	Per the memorandum from Franz Holt of AWCK, the projected is estimated to require 43,440 gallons per day of water and sewer service to support the development's 181 single-family residences. It features 8" sewer lines and 8" and 6" water lines that will be served by the 10" sewer line along Mill Creek and an 10" water line from Lebanon Road.
UTILITIES PROVIDED BY APPLICANT	Applicant has pledged to provide all on-site utilities, as described in AWCK's Technical Memo.
MUNICIPAL CAPACITY TO ABSORB PROJECT	The City has adequate Water & Sewer Supply to meet the domestic and fire flow demands of the project.
CONSISTENCY WITH MEBANE LONG RANGE UTILITY PLAN?	☒YES ☐NO
ADEQUATE STORMWATER CONTROL?	☒YES ☐NO
INNOVATIVE STORMWATER MANAGEMENT?	☐YES ☒NO
TRANSPORTATION NETWORK STATUS	
CURRENT CONDITIONS	Lebanon Road is a state-maintained secondary route with an average daily traffic volume of 3,700 trips at this location. It has a current Level Of Service (LOS) C and is projected to have a LOS D in 2040. It has a Safety Score of 44.6, which reflects a history of some traffic incidents on this road section.
TRAFFIC IMPACT ANALYSIS REQUIRED?	☒YES ☐NO
DESCRIPTION OR RECOMMENDED IMPROVEMENTS	The applicant will provide a left-turn lane with 100' feet of storage on a widened section of Lebanon Road to enter at Broad Oak Lane.
CONSISTENCY WITH THE MEBANE BICYCLE AND PEDESTRIAN TRANSPORTATION PLAN?	☒YES ☐NO
MULTIMODAL IMPROVEMENTS PROVIDED BY APPLICANT?	☒YES ☐NO
DESCRIPTION OF MULTIMODAL IMPROVEMENTS	The applicant proposes to provide 4,325' in multiuse paths in and around the development, connecting to the multiuse path dedicated along Stagecoach Road and extending it to the entrance of Lake Michael Park. The applicant will provide a high-visibility crossing of Lebanon Road to realize this connection. The multiuse path will be stubbed at the property boundary to the north. The applicant also proposes to provide 10,285' in sidewalks internal to the project, though they are requesting to pay *in lieu* for sidewalks along Saddle Club Road. Bicycle racks are being provided at all private recreation facilities.

PROPOSED TRAFFIC OPERATIONS



STAFF RECOMMENDATION

STAFF ZONING RECOMMENDATION	☒ APPROVE ☐ DISAPPROVE
STAFF SPECIAL USE FINDING	☐ CONSISTENT ☐ NOT CONSISTENT……..WITH *MEBANE BY DESIGN*
RATIONALE	The proposed development "Tupelo Junction" is consistent with the guidance provided within *Mebane By Design*, the Mebane Comprehensive Land Development Plan. Specifically, it serves Goals 1.4, 2.1, 4.2, and 4.3, and commits >50% of the space for protection in this Conservation Area. The proposed project will be developed as a Residential Cluster subdivision compliant with the watershed overlay district and providing an offsite multiuse path.
PUBLIC INTEREST CONFORMANCE?	
ENDANGER PUBLIC HEALTH OR SAFETY?	☐YES ☐NO
SUBSTANTIALLY INJURE THE VALUE OF ADJOINING OR ABUTTING PROPERTY?	☐YES ☐NO
HARMONIOUS WITH THE AREA IN WHICH IT IS LOCATED?	☐YES ☐NO
CONSISTENT WITH *MEBANE BY DESIGN*, THE MUNICIPAL COMPREHENSIVE LAND DEVELOPMENT PLAN?	☐ The application is consistent with the objectives and policies for growth and development contained in the City of Mebane Comprehensive Land Development Plan, *Mebane By Design*, and, as such, has been recommended for approval. ☐ The application is not fully consistent with the objectives and policies for growth and development of the City of Mebane Comprehensive Land Development Plan, *Mebane By Design*, but is otherwise in the public interest and has been recommended for approval. The Comprehensive Land Development Plan must be amended to reflect this approval and ensure consistency for the City of Mebane's long-range planning objectives and policies. ☐ The application is not consistent with the objectives and policies for growth and development of the City of Mebane Comprehensive Land Development Plan, *Mebane By Design*, and, as such, has been recommended for denial.

Tupelo Junction

Builder Commitments

Exterior Specifications:

- Siding: fiber cement
- Trim: composite
- Roofing: 20-year asphalt shingles
- Gutters: 5” gutters and downspouts
- Optional exterior materials based on elevation and options purchased
    - standing seam metal roofs (24 gauge)
    - fiber cement shakes and board & batt
    - alternate vinyl window colors
    - brick veneer
- Roof overhang: 12”
- Main roof pitch: minimum 8:12
- Foundation: monoslab (exposed concrete parked on front elevation)
- Sod: front yard
- Street tree: one in front yard (near ROW)
- Driveway: 18’ width to ROW (if longer than 25’ then taper to 12’ at ROW)
- Garages: 1 & 2 car
- Front porches: included on some plans, optional on others

Plans:

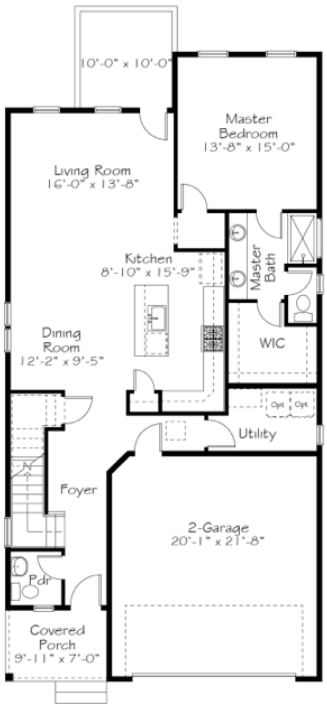
- Ranch plans: 1400-2000 SF, 3-4 bedrooms, 2-3 baths (1-2 plans)
- 1.5-story plans: 1600-2400 SF, 3-4 bedrooms, 2-4 baths (1-2 plans)
- 2-story plans: 1600-2800 SF, 3-5 bedrooms, 2.5-4 baths (3-4 plans)

The following renderings and floorplans are representative of the types of product that Garman Homes intends to build in Tupelo Junction.

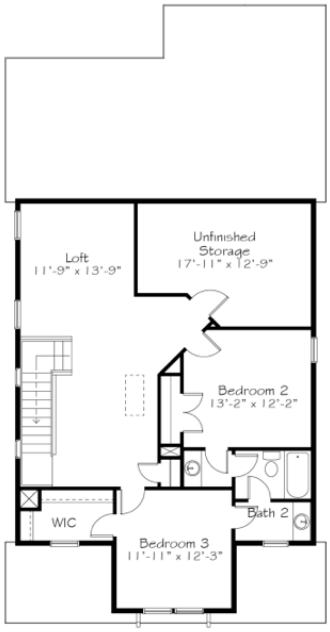
BLISS

Bliss A

Bliss B



1st Floor

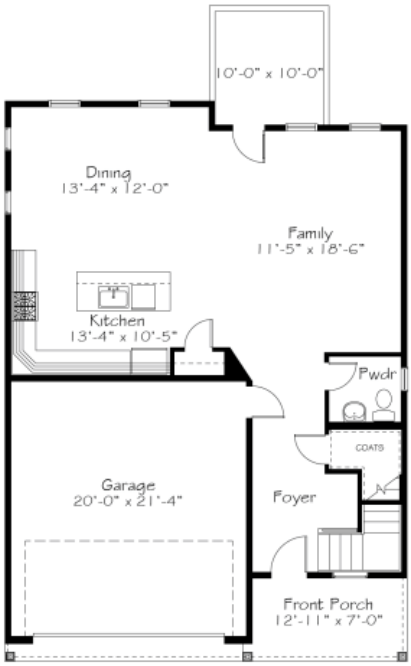


2nd Floor

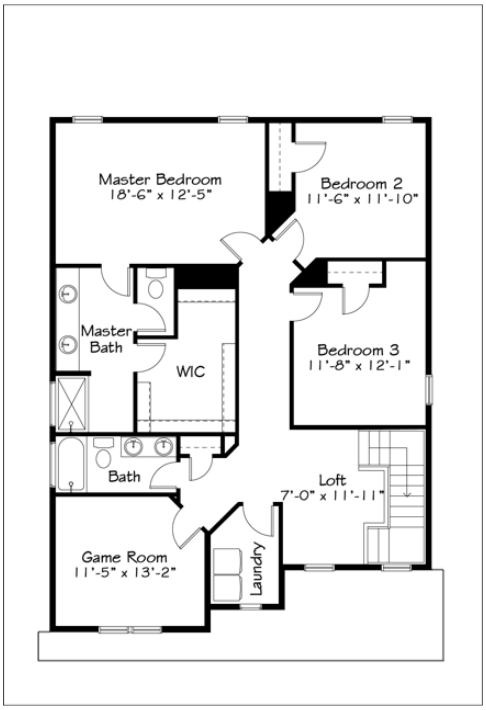
GO

Go A

Go B



1st Floor

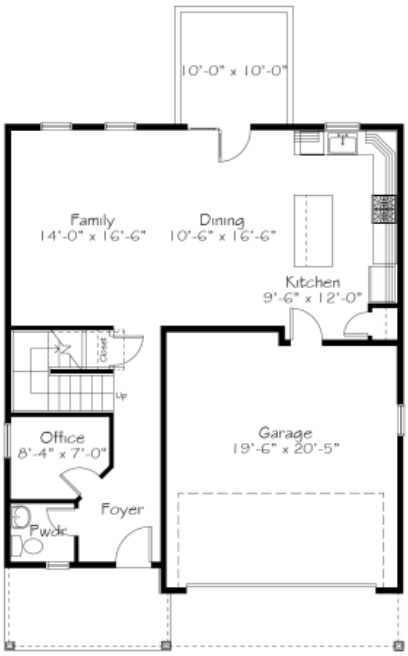


2nd Floor

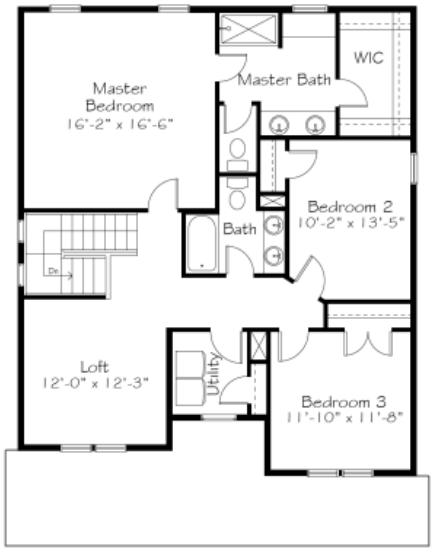
HAPPY

Happy B

Happy C



1st Floor

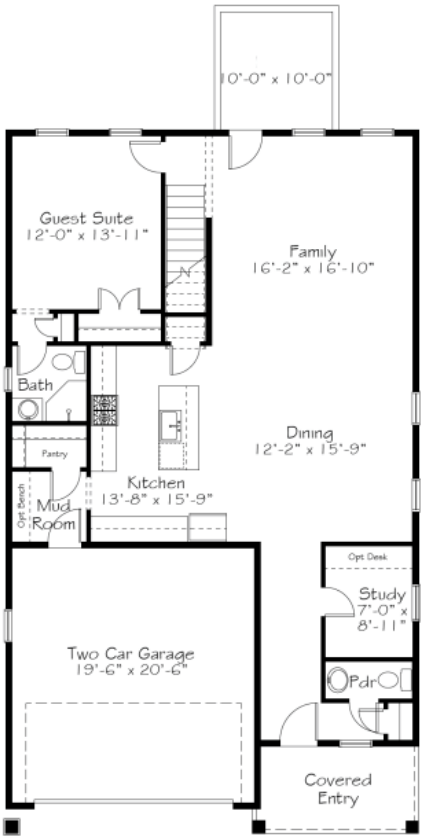


2nd Floor

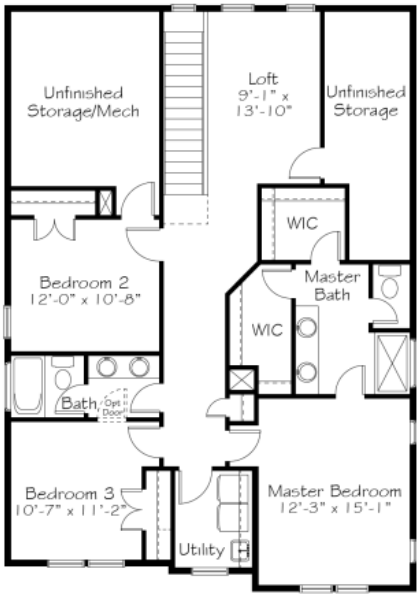
JOY

Joy A

Joy B



1st Floor



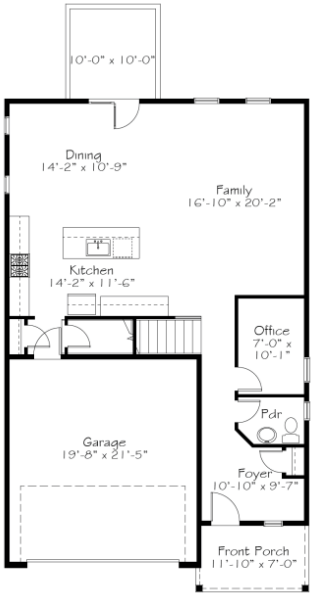
2nd Floor

LUCKY

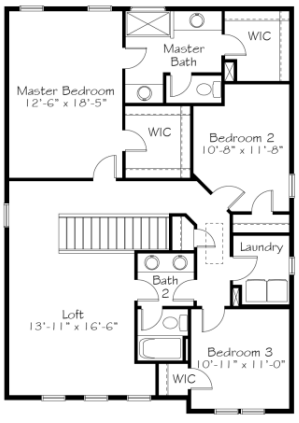
Lucky A

Lucky B

Lucky C



1st Floor



2nd Floor

March 5, 2020

Mr. Tim Smith, PE
Summit Design and Engineering Services
504 Meadowland Drive
Hillsborough, NC 27278-8851

Subject: Tupelo Junction– Water and Sewer System

Dear Mr. Smith:

Regarding the Preliminary Site Plans for Tupelo Junction and in accordance with paragraph 7-4.3 A.3.a. in the UDO, this memo is provided to indicate that I have reviewed the preliminary water and sewer system layout and find it acceptable and meeting City of Mebane requirements as follows:

A. Water system – The project is proposed to be served from one 12-inch connection to the City's existing 12-inch water line along Lebanon Road. Internal to the project site is a proposed 12-inch water line along Broad Oak Drive. The remaining streets will be served from this line with 8-inch and 6 inch water line extensions with appropriate valves and fire hydrant spacing. When designed and installed to City and State standards, these public lines will become part of the City's water system. The estimated daily water use for this project is 43,440 gallons per day (181 homes at 240 gallons per day each). The City has adequate water capacity available to meet the domestic demand and fire flow requirements of this project.

B. Sanitary Sewer system – The project is proposed to be served with 8-inch sanitary sewer extensions from three separate connections with the City's existing 10-inch gravity sewer outfall, which parallels Mill Creek. Internal to the project site are proposed 8-inch sewer lines with appropriate manhole spacing. When designed and installed to City and State standards, these public lines will become part of the City's sanitary sewer collection system. The estimated daily sewer use for this project is 43,440 gallons per day (181 homes at 240 gallons per day each). The City has adequate sewer capacity available at the downstream North Regional Sewer Pump Station and at the WRRF to meet this demand.

If there are any questions, please let me know.
Sincerely,

Franz K. Holt, P.E. City Engineer
CC: Montrena Hadley, Planning Officer and Cy Stober, Planning Director
Chris Rollins, Assistant City Manager
Kyle Smith, Utilities Director

Technical Memorandum

Date: March 5, 2020

To: Montrena Hadley, Planning Officer

From: Franz K. Holt, P.E.

Subject: Tupelo Junction– City Engineer review

City Engineering has reviewed the Preliminary Site Plans for Tupelo Junction submitted February 11th, 2020 by Tim Smith, P.E. with Summit Design and Engineering Services and provides the following technical comments.

A. General

Tupelo Junction is a proposed phased residential single family residential cluster development proposed to be built on 93.5 acres on the north side of Lebanon Road (S. R. 1306) across form the between E. Stagecoach Road and Saddle Club Road . The project proposes 181 single family lots with a min. lot size of 7,200 square feet as allowed by the UDO for R-12 Cluster Development (which allows for a 40% reduction in lot size with the balance of the lot area being placed in private common open space).

The property is in the Graham-Mebane Lake public water supply watershed non-critical area. Plans show using the high-density option which is allowed with new engineered stormwater control facilities receiving storm water runoff from proposed new development (max. built upon area of 30%).

Water and sewer service is provided from a 12-inch water line along Lebanon Road and a 10-inch sewer outfall along Mill Creek which runs through the middle of the proposed development.

Internal streets are considered local and constructed to a 31-ft. b-b curb and gutter section with a 5-ft. wide concrete sidewalk being typically located on one side of the street. A 10-ft. wide asphalt multi-use path (City maintained) is proposed along Broad Oak Drive from the entrance on Lebanon Road on the creek side of the roadway with street tree plantings (HOA maintained). Where Broad Oak Drive crosses Mill Creek the 10-ft. asphalt multi-use path (City maintained) will continue along Mill Creek to the end of the development. In addition, the developer plans to install a 10-ft. wide asphalt multi-use path (City maintained) along Lebanon Road connecting to the proposed multi-use path at Stagecoach Corner Development on E. Stagecoach Road and to the Lake Michael Road entrance. No sidewalk is planned along Saddle Club Road with acceptance of a payment in lieu by the City being recommended. All streets, multi-use path, and sidewalks are to be constructed to City standards and will be made public when completed for City ownership, operation, and maintenance.

The project includes street connections with Lebanon Road, which will include a left turn lane and to Saddle Club Road with no proposed turn lanes.

B. Availability of City Water and Sewer

Regarding the Preliminary Site Plans for Tupelo Junction and in accordance with paragraph 7-4.3 A.3.a. in the UDO, this memo is provided to indicate that I have reviewed the preliminary water and sewer system layout and find it acceptable and meeting City of Mebane requirements as follows:

1. Water system – The project is proposed to be served from one 12-inch connection to the City's existing 12-inch water line along Lebanon Road. Internal to the project site is a proposed 12-inch water line along Broad Oak Drive. The remaining streets will be served from this line with 8-inch and 6 inch water line extensions with appropriate valves and fire hydrant spacing. When designed and installed to City and State standards, these public lines will become part of the City's water system. The estimated daily water use for this project is 43,440 gallons per day (181 homes at 240 gallons per day each). The City has adequate water capacity available to meet the domestic demand and fire flow requirements of this project.

2. Sanitary Sewer system – The project is proposed to be served with 8-inch sanitary sewer extensions from three separate connections with the City's existing 10-inch gravity sewer outfall, which parallels Mill Creek. Internal to the project site are proposed 8-inch sewer lines with appropriate manhole spacing. When designed and installed to City and State standards, these public lines will become part of the City's sanitary sewer collection system. The estimated daily sewer use for this project is 43,440 gallons per day (181 homes at 240 gallons per day each). The City has adequate sewer capacity available at the downstream North Regional Sewer Pump Station and at the WRRF to meet this demand.

C. Watershed Overlay District and Phase II Stormwater Requirements

1. Watershed Overlay District requirements are provided under Sec. 5.2 of the UDO.
   These requirements in the UDO are for the Back-Creek Watershed, which includes the Graham-Mebane Lake. This project lies in the GWA non-critical area allowing up to 30% built upon area with engineered stormwater controls. The proposed stormwater management devices shown on the plans are intended to receive stormwater runoff from the proposed new development and will meet the requirements of the Water Supply Watershed Rules. Upon the project being completed and the site being stabilized with permanent ground cover, the stormwater management devices temporarily serving as erosion control measures will be converted to the designed permanent stormwater management device (owned and

maintained by the property owners' association). A 20-year maintenance bond and annual inspection fee will be posted with the City upon completion of the stormwater management devices.

2. Phase II Stormwater Post Construction Ordinance
   Sec. 5.4 in the UDO provides standards for Storm Water Management and 5.4.F requires compliance with the Mebane Post Construction Runoff Ordinance (which is a stand-alone ordinance titled the Phase II Stormwater Post Construction Ordinance (SPCO)). The standards in the UDO are general standards as the Ordinance itself provides detailed standards. The SPCO does apply to this project as it will disturb more than one acre of land and it is estimated that the new built upon will be more than 24% of the site. The project proposes to provide eight stormwater management devices (all devices where perm. water surface is 2 feet or more are to be fenced as required by ordinance). These devices will be designed to meet the SPCO as a part of final construction plan submittal/approval process. All stormwater management devices will be owned and maintained by the property owners' association.

D. Storm Drainage System

Sec. 5-4. D. in the UDO provides requirements for storm drainage systems. The preliminary site plans include a preliminary piping layout that indicates certain pipe locations, inlets, and discharge points. Stormwater flows from these pipes will be transported to stormwater management devices. Design of the storm drainage system will be in accordance with the City's Storm Drainage Design Manual.

E. Street Access

Proposed streets shown on the plans are considered local and to be constructed to City of Mebane standards (31' B-B width and rolled curb and gutter) with sidewalk located typically on one side. These local streets will connect to Lebanon Road and Saddle Club Road. Four street stubs are provided to adjacent properties for possible future extension. Also shown is a left turn lane on Lebanon Road with 100' of storage. All improvements to and along Lebanon Road will meet NCDOT design and construction requirements. NCDOT encroachment agreements and driveway permit applications are where connecting to or working with NCDOT road right-of-ways.

F. Construction Plan Submittal

Sec. 7-6.7. A. in the UDO indicates that construction plans for all street facilities, including water and sewer facilities, shall be submitted following preliminary plat or site plan approval; therefore, construction plans are not required as a part of the site plan review. A utility plan is provided which generally shows the proposed water lines, sewer lines, and storm drainage and stormwater

management devices to indicate that the project is feasible for utility service and providing stormwater management. Appendix E which is included in the UDO is a Construction Document checklist which is to be provided when construction plans are submitted after Preliminary Site Plan approval.

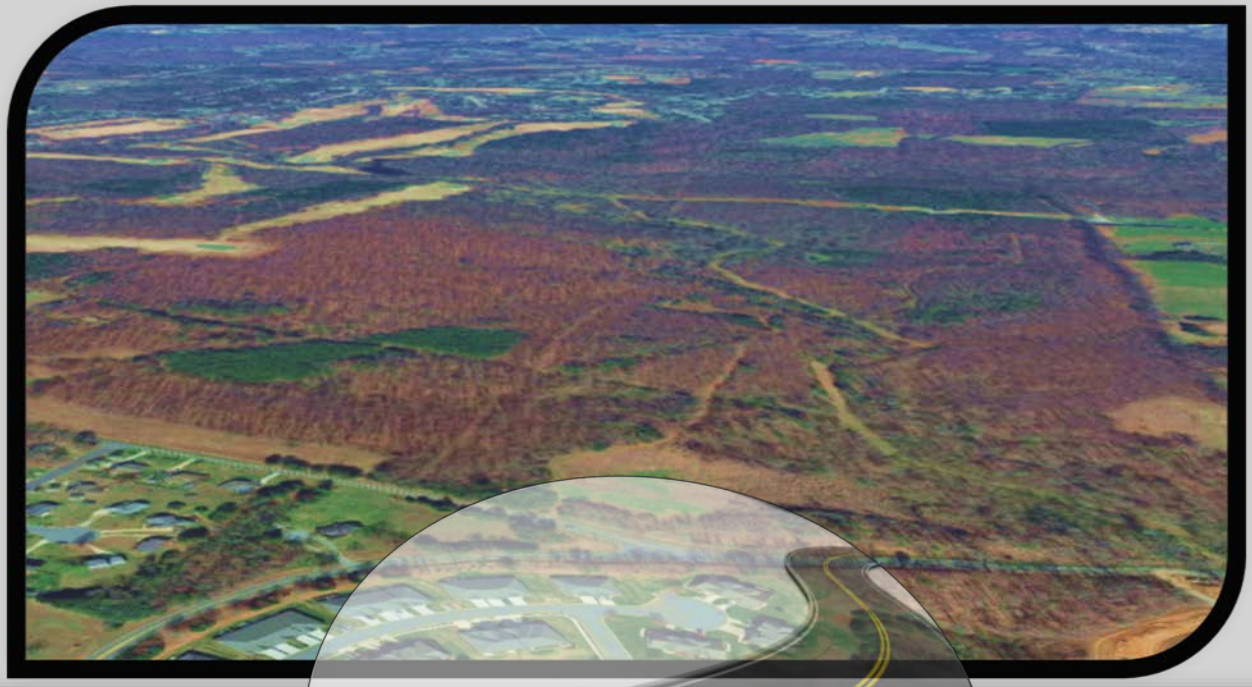
Based on city engineering review of the referenced preliminary site plans, it is my opinion that said plans are in substantial compliance with the UDO.

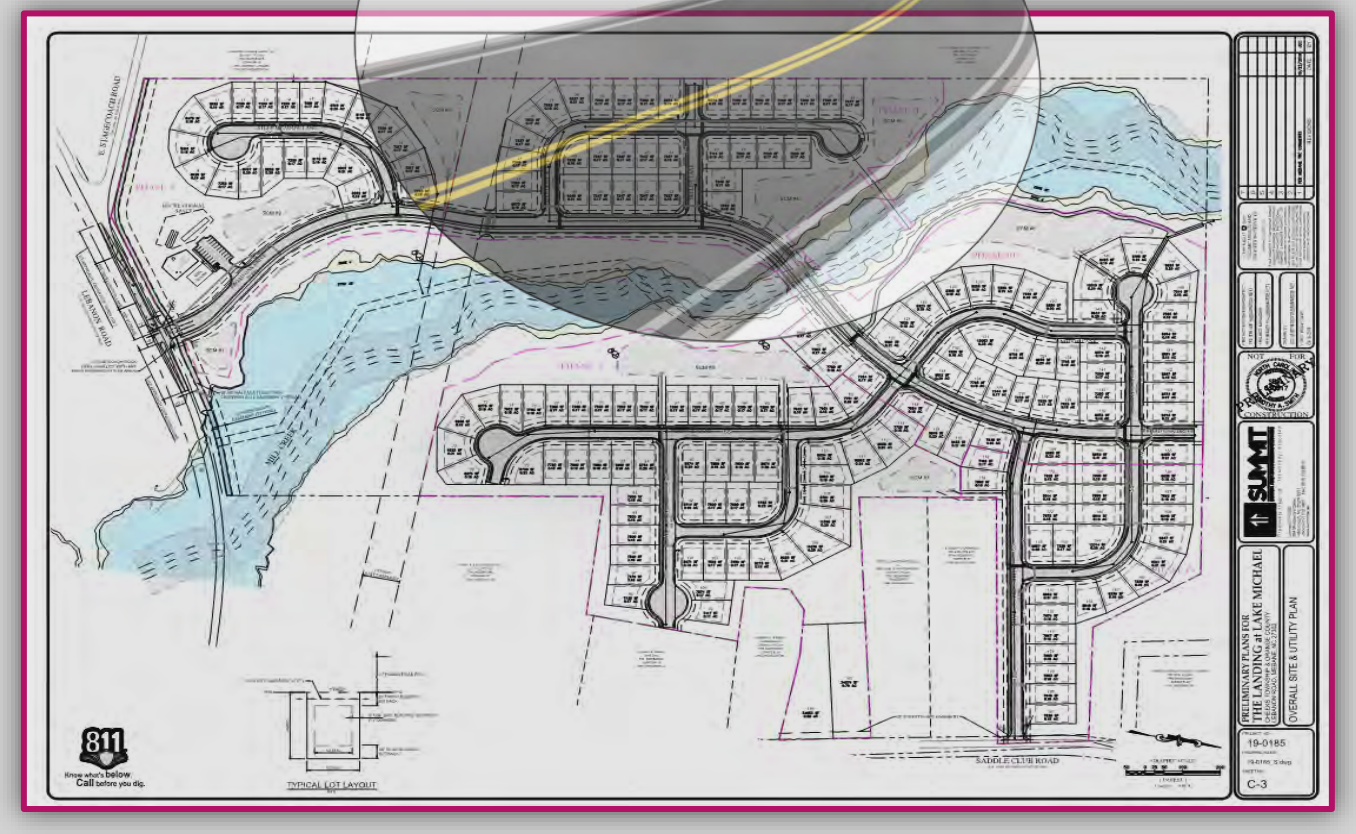
SUMMIT
DESIGN AND ENGINEERING SERVICES

NOVEMBER 2019

Traffic Impact Analysis

The Landing at Lake Michael
Lebanon Road Mebane, NC
Prepared for Lebanon Road , LLC





The Landing at Lake Michael
Lebanon Road (SR 1306) & Broad Oak Drive
Mebane, North Carolina

Traffic Impact Analysis

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11/25/2019

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November 2019

Executive Summary

Introduction

A proposed subdivision consisting of one hundred eighty-four (184) single family homes is planned to be constructed on a site that is along the north side of Lebanon Road (SR 1306) in the City of Mebane in Orange County, North Carolina. The development is being proposed on a single large parcel, totaling approximately 179 acres. The development will be built in five (5) phases over a five-year period after work commences in 2020. Two site entrances are proposed, one on Lebanon Road near Stagecoach Road, and a second access on Saddle Club Road north of Lebanon Road. The access points will be street type entrances, with one entry lane and two exit lanes onto Lebanon Road, and one entry lane and one exit lane for the access onto Saddle Club Road. The accesses will be built to NCDOT and City of Mebane standards, where all internal streets are proposed to be City maintained streets.

Summit Design & Engineering analyzed the development to determine the potential traffic impacts that this project may have on the roadway network. The analysis will identify any transportation improvements that may be required to accommodate the impacts of both the projected background traffic and the new development traffic. The following intersections were included in the study:

- Lebanon Road (SR 1306) & Supper Club Road (SR 1304)
- Lebanon Road (SR 1306) & Stagecoach Road (SR 1376)
- Lebanon Road (SR 1306) & Broad Oak Dr. (Site Dr. #1)
- Lebanon Road (SR 1306) & Lake Michael Park
- Lebanon Road (SR 1306) & Saddle Club Road (SR 1346)
- Saddle Club Road (SR 1346) & Shallow Spring Dr. (Site Dr. #2)

The Vicinity Map shows the location of the site near Mebane, NC, and the intersections in the vicinity that are part of this Traffic Impact Analysis. The subject intersections were analyzed for the following scenarios:

- 2019 Existing Conditions
- 2025 Future No Build Conditions
- 2025 Future Build Conditions

Data was collected at the four existing subject intersections for the AM and PM peak hours, from 6 AM to 9 AM and from 4 PM to 7 PM to allow for determining the exact peak hours. The turn movement counts were collected on October 17, 2019 while all traditional and year-round schools were in session. The data was collected in 15-minute intervals at all locations to determine the exact peak hour within the data collection period.

A scoping discussion was held with City of Mebane Planning staff, as well as NCDOT Division 7 staff, to obtain background information and to determine the elements to be covered in this Traffic Impact Analysis (TIA). The topics discussed involved selecting the intersections to be studied, the background growth rate, and any recently approved developments and/or TIP projects that may be impacted or create an impact on the study area.

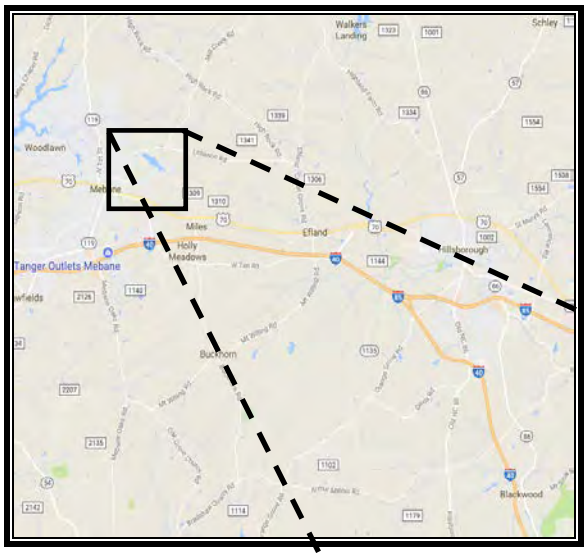
Based on discussions with City and NCDOT staff, it was determined that the study corridor would include the main public street intersections along Lebanon Road from and including the intersection at Supper Club Road to the intersection at Saddle Club Road. Within this area on this corridor are intersections at Ashland Drive/Lake Michael Way, York Road, York Loop Road, Stagecoach Road, and Lake Michael Park entrance. With the exception of Stagecoach Road and Lake Michael Park entrance (also an access for Phase II of the Villages of Lake Michael), all new site generated trips are expected to be through movements at these intersections, and therefore it was determined these intersections would not need to be included in the study. There are no current or future TIP projects approved and/or funded in the area within the scope of the site buildout.

As part of the City of Mebane Unified Development Ordinance, there is consideration to provide a capacity analysis of all transportation modes. However, in light of the lack of a transit system in the area, it was agreed that analysis of the transit mode would not be necessary for this study, but bicycle and pedestrian modes will be applicable. In addition, City staff requested to provide a report on the speed of traffic along Lebanon Road as part of the study. NCDOT District office indicated that a report of the speed data would need to be referred to NCDOT Traffic Engineer in the Division office for determination of any change requests in posted speed limits on state-maintained roadways.

There are developments in the area that have been recently approved and under construction that will need to be considered as part of this Traffic Impact Analysis, namely the future trips created when they are completed. These developments are The Villages of Lake Michael, the Retreat at Lake Michael, Stagecoach Corner, and the Havenstone subdivision. The Villages of Lake Michael is nearly complete, with only 22 townhouse units remaining to be built, and should be completed in 2020. The remaining named developments have construction underway, but are not expected to have any units complete before 2021, although it is anticipated that all units in those developments are expected to be completed within the study period of this TIA.

Following the scoping discussion, the NCDOT TIA Checklist was completed and submitted to the City of Mebane, in lieu of a traditional Memorandum of Understanding. The “Needs” section and “Scoping” sections were completed and sent to both City of Mebane and NCDOT for signatures. A copy of the TIA Checklist submittal is included in Appendix B.

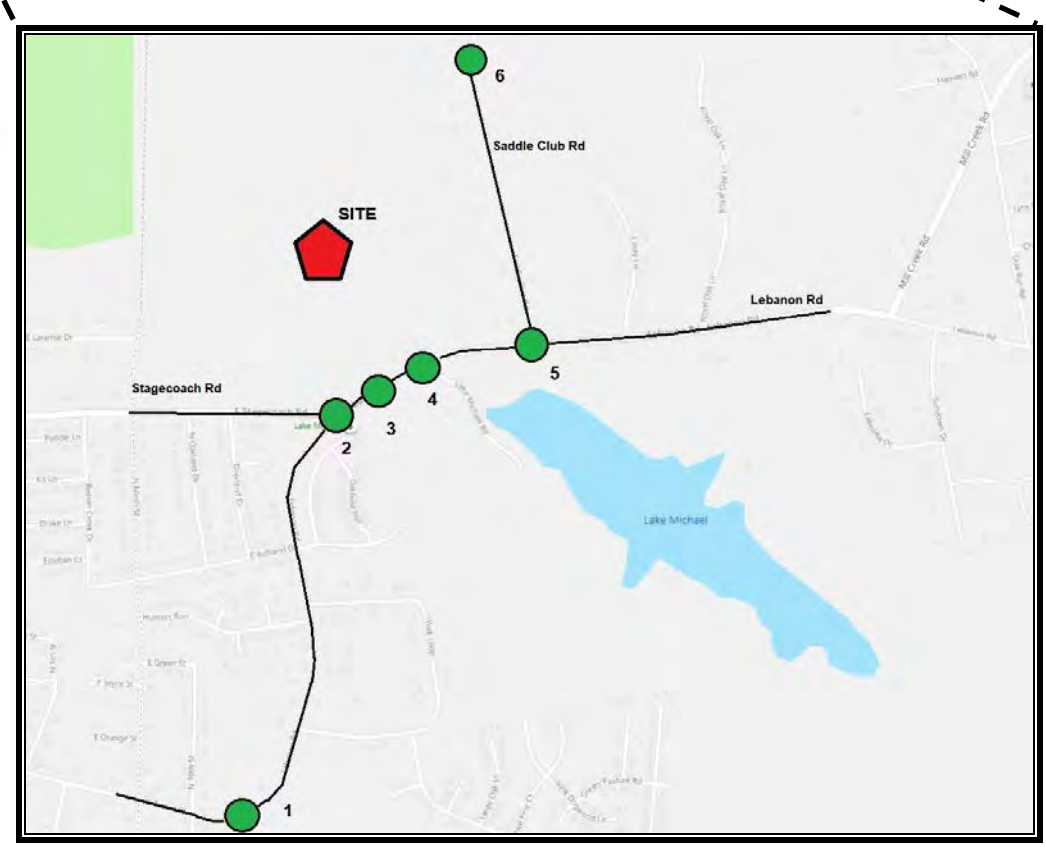
VICINITY MAP



LEGEND

= Study Area Intersection

1 – Supper Club Rd
2 – Stagecoach Rd
3 – Site Dr. #1
4 – Lake Michael Park
5 – Saddle Club Rd.
6 – Site Dr. #2



Trip Generation

The site generation potential of the proposed development was computed using the 10th Edition of *ITE Trip Generation Manual*. The trip generation calculated trips based on a total build of one hundred eighty-four (184) Single Family Homes (ITE Land Use Code 210). The developer plans to construct the subdivision in five phases over a period of 5 years. Per NCDOT Congestion Management Standards, and the Rate vs. Equation Spreadsheet effective July 1, 2018, the trip generation was calculated using the Equation for the adjacent street peak hour data.

The weekday average daily trips generated, as well as AM and PM Peak Hour trips by development phase are shown for the proposed land use in the table below:

SUMMARY OF SITE TRIP GENERATION

					Wkday Avg # Trips			Adjacent Street Traffic Volumes: Weekday AM Peak Hr			Weekday PM Peak Hr		
Phase	ITE Code	Land Use	Size	Units	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Buildout	210	SFHOUSE	184	Dwelling Units	911	911	1822	34	101	135	115	67	182
				Unadjusted Volume	**911**	**911**	**1822**	**34**	**101**	**135**	**115**	**67**	**182**
				Internal Capture				0	0	0	0	0	0
				Pass-By Trips				0	0	0	0	0	0
				Volume Added to Adjacent Streets	**911**	**911**	**1822**	**34**	**101**	**135**	**115**	**67**	**182**

Source: *ITE Trip Generation Manaul, 10th Edition*

For a residential type land use, pass-by trips are not utilized, as those type types apply to retail and service type land uses. Similarly, there are no internal capture trips to account for in a residential development.

The total unadjusted volumes were calculated to be 135 trips during the AM peak hour (34 entering and 101 exiting), and 182 trips during the PM peak hour (115 entering and 67 exiting). The average weekday trips have been calculated to be 1,822 total, with 911 entering trips and 911 exiting trips.

Adjacent Developments

There are several approved and planned developments within the study area that were identified by the City of Mebane planning staff that could either impact or be impacted by the proposed development. There are four adjacent developments that must be considered for this study: the Villages of Lake Michael, the Retreat at Lake Michael, Stagecoach Corner, and Havenstone. Only the Villages of Lake Michael is partially constructed with occupied units, the other three are under construction, and do not have any residential units constructed and occupied to date.

The Villages of Lake Michael is a townhouse development being constructed to the east of Lebanon Road, off Lake Michael Way south of Stagecoach Road. It is a development of 159 townhomes, and at present has 22 townhome units left that are under construction. With 22 units still to be built, the remaining new trips generated, were derived by simple ratio of the full buildout trip assignment for each access to the 22 remaining units, and trips assigned to the background traffic analysis.

The Retreat at Lake Michael is a single-family home subdivision that has been approved to be constructed on the south side of Lebanon Road, just east of Saddle Club Road. This development proposes to construct 43 homes by the end of 2021. The trip assignments calculated for this development were revised from data available from the original Traffic Study, and assigned to the roadway network using the same distributions. The name of this development in the original Traffic Study was known as the Villas at Havenstone.

The Havenstone subdivision is a single-family subdivision that has been approved to be constructed on the north side of Lebanon Road, east of both Saddle Club Road, and the Retreat at Lake Michael subdivision. This subdivision is under construction to build 169 units in two phases, with estimated completions in 2022 and 2024 respectively. This development was also required to have a Traffic Impact Analysis submitted, and the trip assignments for this TIA were derived directly from that study.

For the Havenstone subdivision, as well as the Retreat at Lake Michael, trip distributions and assignments east of Saddle Club Road had to be determined for use in this TIA, since the study intersections for those developments did not include either Stagecoach Road or Supper Club Road. The trip distribution ratios that were determined for the Landing at Lake Michael for these two intersections were applied to the trips to and from the west for these two approved developments. The similarity in land use type, location and traffic patterns support the distribution ratios for all of these developments.

A proposed development on Stagecoach Road, named Stagecoach Corner was a development of a size that did not require any traffic study as part of its approval. Since the location of Stagecoach Corner is not on Lebanon Road, and is slightly further west of the other developments, a slightly different yet still similar, trip distribution would be appropriate. A simple distribution of trips to and from the development of 60 % to/from the west and 40 % to/from the east is a reasonable estimation of the trips. A 50/50 split of trips at Stagecoach Road and Lebanon Road intersection of Stagecoach Corner generated traffic would provide a pattern of trips similar to the adjacent developments.

The Villages at Lake Michael constructed a left turn lane and right turn lane on Lebanon Road at their entrance on Lake Michael Way. These improvements have been completed prior to this TIA being developed, and are therefore were used in all analyses, although this intersection is not included as a study intersection for the report. No other roadway improvements were recommended or constructed by the adjacent developments that fall within the study area for this study.

Trip Distribution

The primary site trips for the proposed development were distributed based upon the existing traffic patterns, and engineering judgement. Since there have been several residential developments in the area recently approved, the trip distributions closely resemble the adjacent developments' distributions. Also to note, the Landing at Lake Michael development had a Traffic Impact Analysis completed around 2005, although with a larger number of homes proposed, but trip distributions were developed as part of that TIA submittal. A review of the existing turning movement counts at the subject intersections indicate directional flow in the peak hours, primarily westbound in the morning (towards the City), and eastbound in the afternoon. The distribution ratios developed for the adjacent developments applied 30 % of trips to/from the east of the site (generally) and 70 % of trips to/from the west. Similar ratios were developed for the Landing at Lake Michael, however additional ratios were included for the Stagecoach Road and Supper Club Road intersections on Lebanon Road due to their proximity to the site.

Based on the information available from the adjacent developments Traffic Impact Analyses, the primary trip distributions for the site have been estimated to be:

- 70 % to/from the west on Lebanon Road
- 30 % to/from the east on Lebanon Road

Additional distributions were then made to account for trips being further split onto the surrounding roadway network. A small percentage of trips to/from the north on Saddle Club Road were applied to the site, similar to the adjacent developments. A similar split in trips was made at the Supper Club Road intersection on Lebanon Road, following the recommendations from the earlier Landing at Lake Michael TIA.

After review of the turn movement data at the Stagecoach Road intersection, a slight revision in the original distribution for this intersection was developed to split the new trip distribution more evenly to reflect current traffic patterns. The remaining trip distributions developed in the earlier TIA for the Landing at Lake Michael were also applied for the study. All remaining distributions are listed here:

- 5 % to/from the west on E. Brown Street
- 30 % to/from the south on Supper Club Road
- 30 % to/from the west on Stagecoach Road

The traffic distributions utilized for dividing traffic in and out of the two access points was determined in the same manner as the earlier Traffic Impact Analysis. For the main access on Lebanon Road, it was determined that 75 % of the traffic entering the subdivision would use this drive, and the remaining 25% entering traffic would use the access drive on Saddle Club Road. Of the traffic entering the Saddle Club Road access, it was determined that 15 % of that traffic would originate from east of the site, and the remaining 10 % would be split between 5 % from the west and 5 % from the north. For exiting traffic, the distributions match with the entering traffic, with 25 % of the trips leaving from the Saddle Club Road access, and 75 % of the trips using the main access on Lebanon Road.

The results of the study are presented as follows, listed by intersection:

Lebanon Road & Supper Club Road

The proposed development, and the adjacent developments under construction, will add new trips to this unsignalized intersection, including through movements onto westbound E. Brown Street, as well as turning movements to and from Supper Club Road. The Level of Service for this intersection will remain at A for the AM peak hour and B for the PM peak hour. This will provide adequate capacity in its current configuration for several years after the project buildout.

Lebanon Road & Stagecoach Road

The proposed development, and the adjacent developments under construction, will add new trips to this intersection that would be turning movements on Stagecoach Road, as well as through movements on Lebanon Road. The Level of Service for this intersection will remain at B for the AM peak hour, and for the PM peak hour will decrease to LOS C. Although the Level of Service decreases under the Buildout conditions, it continues to be well above the target LOS of D, and the increase in delay per vehicle averages approximately 17%. This will provide adequate capacity in its current configuration for several years after the project buildout.

Lebanon Road & Broad Oak Drive (Site Drive #1)

The proposed development will add new trips with the buildout of the site to this intersection, with new trips entering and exiting at Broad Oak Drive, the main entrance to the subdivision. The trips will be added as south bound left and right turns from Broad Oak Drive, and left and right turns from Lebanon Road into the site. None of these movements experience excessive delays or queues, in Buildout analysis, and a left turn lane was configured for Lebanon Road at the site driveway with 100 feet of storage. The Level of Service for the intersection overall is B, with 10.3 second average delay, with the left turn exiting the site experience slightly longer average delay than the right turns exiting the same site driveway.

Lebanon Road & Lake Michael Park

The proposed development, and the adjacent developments under construction, will add new trips to this intersection with the buildout of the site however, only the new trips generated by the buildout of the Villages of Lake Michael will add any turning traffic at this intersection. All other adjacent developments, as well as the proposed site will add through movements only at this intersection. The intersection will experience LOS A in the AM peak hour, and LOS B in the PM Peak hour under all conditions.

Lebanon Road & Saddle Club Road

The proposed development, and the adjacent developments under construction, will add new trips to this signalized intersection with the buildout of the site, on all approaches and all movements. There are no turn lanes on any of the approaches of the intersection, but existing volumes are such that there is adequate capacity to handle the additional trips generated by all of the adjacent

developments and the proposed site. The intersection will experience LOS B in both AM and PM peak hours for the future No Build and Buildout analysis periods.

Lebanon Road & Shallow Spring Drive (Site Drive #2)

The proposed development will add new trips with the buildout of the site to this intersection, with new trips entering and exiting at Shallow Spring Drive, the secondary entrance to the subdivision. The trips will be added as eastbound left and right turns from Shallow Spring Drive, and left and right turns from Saddle Club Road into the site. The intersection will operate at LOS A in both the AM and PM peak hour with very little delay.

A summary of the existing, No Build conditions and Build conditions is provided below indicating the capability of the roadway network to handle the new trips generated by this site.

HCM 6th Edition
Level of Service Summary

	AM PEAK	Approach	2019 EXISTING	2025 NO BUILD	2025 BUILD
1	Lebanon Rd. & Supper Club Rd.		A (8.8)	A (8.9)	A (9.0)
2	Lebanon Rd. & Stagecoach Rd.		A (9.7)	B (10.8)	B (11.6)
3	Lebanon Rd. & Broad Oak Dr. (Site Dr. #1)	SBL	-	-	B (11.6)
		SBR	-	-	B (10.1)
4	Lebanon Rd. & Lake Michael Park		A (9.0)	A (9.6)	A (9.8)
5	Lebanon Rd. & Saddle Club Rd.		A (9.2)	B (10.1)	B (10.6)
6	Saddle Club Rd. & Shallow Spring Dr. (Site Dr. #2)		-	-	A (8.7)

	PM PEAK	Approach	2019 EXISTING	2025 NO BUILD	2025 BUILD
1	Lebanon Rd. & Supper Club Rd.		A (9.5)	B (10.0)	B (10.4)
2	Lebanon Rd. & Stagecoach Rd.		B (11.4)	B (14.6)	C (18.4)
3	Lebanon Rd. & Broad Oak Dr. (Site Dr. #1)	SBL	-	-	C (16.2)
		SBR	-	-	B (10.1)
4	Lebanon Rd. & Lake Michael Park		B (11.0)	B (12.7)	B (13.1)
5	Lebanon Rd. & Saddle Club Rd.		A (9.3)	B (10.6)	B (11.5)
6	Saddle Club Rd. & Shallow Spring Dr. (Site Dr. #2)		-	-	A (8.7)

LOS (delay in seconds)
Note: for unsignalized conditions, LOS and delay indicates only minor street approach with longest delay.

Speed Study Results

The City of Mebane requested that a speed study be conducted on Lebanon Road east of the development site where the posted speed limit is 55 MPH. This segment of roadway is presently outside the City Limits, but is likely to be annexed with the completion of the developments along Lebanon Road, sometime in the future. Typically speed limit reduction requests are coordinated between municipalities and appropriate NCDOT Division office, so the information provided in this study is for informational purposes only for the City.

The results of the speed data collection show similar results for both days collected, indicated by the 85th percentile speed in the report. The 85th percentile speed is the speed at which 85% of drivers at travelling at or below, based on roadway and environment conditions. The results for the speed study are indicated below:

SPEED STUDY RESULTS

DATE: Wednesday, October 16, 2019						
Street Name	Direction	Percentiles				
		15th	50th	Average	85th	95th
Lebanon Road (SR 1306)	Eastbound	41	47	47	54	58
Lebanon Road (SR 1306)	Westbound	40	46	46	53	57

DATE: Thursday, October 17, 2019						
Street Name	Direction	Percentiles				
		15th	50th	Average	85th	95th
Lebanon Road (SR 1306)	Eastbound	41	47	47	53	58
Lebanon Road (SR 1306)	Westbound	33	44	43	52	55

As indicated above, the 85th percentile speed for both directions, on both days was between 52 and 54 MPH. With a posted speed limit of 55 MPH, the present posting appears to be supported by the data collected.

Bicycle and Pedestrian Level of Service (BLOS/PLOS) Results

There are several different methods to analyze bicycle and pedestrian modes of transportation, and to determine the Bicycle Level of Service (BLOS) and Pedestrian Level of Service (PLOS), but the method to be used to do this is generally site and network dependent. The *Highway Capacity Manual* can be used to determine a LOS value for each mode of transportation, but it too varies by the chapter of the Manual being utilized.

Separately, but part of the basis for the research and development of the BLOS/PLOS for the *Highway Capacity Manual*, use of the BLOS/PLOS Calculator developed by Sprinkle Consulting is possible that can evaluate features that are not dependent upon pedestrian volumes or bicycle volumes. These analyses developed and utilized the "Level of Traffic Stress" measure that determined how well the features of sidewalks, bicycle paths and lanes, and density of users related to the comfort level of each

user. A corresponding chart of values was factored from algorithms derived from research, that set a scale from A to F, similar to automobile LOS, but not based on delay values that is used for the automobile mode. This model is still used across the US for many cities, large and small, and represents a reasonable estimation of Level of Service where pedestrian and bicycle counts are unavailable.

For the evaluation of this site, the developer has committed to the construction of sidewalks within the subdivision on all streets, as well as a ten-foot wide multi-use path extension from adjacent developments through the site. The multi-use path will also be constructed on Lebanon Road to complete a connection between the entrance to Lake Michael Park to the east of the site, and to the same proposed path to be constructed as part of the Stagecoach Corner subdivision on Stagecoach Road. The path will be separated from the travel lanes of Lebanon Road at a comfortable distance varying between 17 and 23 feet, and will cross from the north side of Lebanon Road to the south side at the main site intersection at Broad Oak Drive. By crossing the path at this location, it provides a logical crossing point to allow motorists, cyclists and pedestrians to determine the respective movements of vehicles, bikes and pedestrians to minimize conflicts. The crossing will include a high-visibility type crosswalk and appropriate signage on Lebanon Rd.

Within the subdivision, the multi-use path is proposed to be constructed on the waterway side of the main street, Broad Oak Drive, where there are no lots proposed, thereby eliminating any interruption of the path by driveways to homes. The path crosses Broad Oak Drive approximately halfway along its length, to connect to the continuation of the path along the stream through the subdivision. There are sidewalks proposed on the subdivision streets along one side of each street, as required in the UDO, and are five (5) feet in width. All sidewalks will be constructed with ADA compliant curb ramps at intersections, in accordance with City of Mebane standards. The results of each condition's analysis are summarized below:

BLOS / PLOS SUMMARY
LEBANON ROAD

	2019	2025	
	EXISTING	NO BUILD	BUILD
Bicycle LOS	C (3.43)	D (3.63)	C (3.45) - Seg 1 C (3.40) - Seg 2
Pedestrian LOS	D (3.97)	D (4.18)	B (2.29) - Seg 1 B (2.09) - Seg 2

LOS	MODEL SCORE
A	≤ 1.50
B	1.51 - 2.50
C	2.51 - 3.50
D	3.51 - 4.50
E	4.51 - 5.50
F	> 5.50

The Buildout Level of Service indicates an improvement in the Level of Service for both pedestrians and cyclists, since the proposed development will be providing a left turn lane for the site, as well as the multi-use path connection along both segments. The analysis provides intuitive results to the differences the pedestrian and bicycle features included in a project can have for various related buildout or no-build conditions. These improvements show a significant improvement in the Level of Service by the addition of the multi-use path on Lebanon Road.

Conclusions and Recommendations

In summary, the residential development site on the north side of Lebanon Road, east of Stagecoach Road in Mebane (Orange County) was analyzed for three (3) separate conditions including 2019 Existing Conditions and 2025 Build and No Build Conditions. The trip generation analysis indicates that the proposed development of one hundred eighty-four (184) single family homes to be constructed in five (5) phases starting in 2020 is expected to generate a total of 1,822 trips per day, with 135 trips during the AM peak hour, and 182 trips in the PM peak hour at buildout. For the purposes of this study, the total volume added to the adjacent roadway network was not reduced for any pass-by trips or Internal Capture trips, since this is a residential subdivision. All scenarios were configured according to NCDOT Congestion Management requirements for capacity analysis. New trips added to the study area from approved adjacent developments presently under construction were considered and included in the future traffic analysis. An analysis of the Bicycle Level of Service and Pedestrian Level of Service was also calculated as required by the City of Mebane Unified Development Ordinance.

For this site construction, two new street accesses will be built for the site that will provide access from Lebanon Road and from Saddle Club Road. The site access on Lebanon Road will be constructed approximately halfway between Stagecoach Road and the entrance to Lake Michael Park, and allow for one entering lane and two exiting lanes. The site access on Saddle Club Road will be constructed approximately 2,100 feet north of Lebanon Road, and allow for one entering lane and one exiting lane. In addition to the roadway network within the site, and required sidewalks, the development will also construct a 10-foot wide multi-use path that connects to Lake Michael Park, and a similar path being constructed on Stagecoach Road as part of an adjacent development. The trial will also be constructed within the subdivision to provide a direct connection for residents of the subdivision, as well as providing future access to adjacent vacant properties. Construction of the project is expected to begin in 2020 and be completed by the end of 2025, pending agency approvals.

Summit Design & Engineering collected traffic count information at the existing intersections, calculated the trip generation for the site development and analyzed the traffic impacts to formulate the recommendations in this study. Discussions with NCDOT Division 7 staff as well as City of Mebane Planning Department staff were conducted to determine the complete scope of the report, including the multi-modal aspects of the study. A speed study on Lebanon Road was also completed at the request of the City, to provide information to the City and NCDOT concerning the possible need for further review of the posted speed limit on Lebanon Road in the vicinity of these subdivisions and the greenway trail.

The existing roadway network demonstrated the ability to adequately handle the added site trips to the network with only minimal improvements, as the Existing, Future No Build and Future Buildout analysis Level of Service indicates adequate roadway capacity under the current operating conditions.

A summary of the results for the study intersections are as follows:

Lebanon Road & Supper Club Road

Analysis of the existing approaches during build conditions indicate that the intersection movements will operate at acceptable levels of service. There is adequate capacity available to handle additional traffic for the proposed site, the adjacent developments under construction and annual growth.

No improvements are recommended for this intersection.

Lebanon Road & Stagecoach Road

The existing configuration shows slight increases in delay for both peak hours for No Build and buildout conditions. All of the increased delay is associated with the Stagecoach Road movements, under stop sign control, but continue to provide adequate future capacity as well as minimal delay.

No improvements are recommended for this intersection

Lebanon Road & Broad Oak Drive (Site Drive #1)

The construction of the development will create this new intersection on Lebanon Road, and provide a left turn lane into the site as well as two lanes exiting the development. All of the delay is associated with the new access drive, with minimal queuing in the left turn lane recommended to be constructed as part of the development. There is adequate capacity available on Lebanon Road to handle additional traffic for the adjacent developments, the proposed site, as well as annual growth.

Construct a new site access road on the north side of Lebanon Road, approximately 374 feet feet east of Stagecoach Road with one entry lane and two exit lanes. Construct a left turn lane on the new site access road with 100 feet of storage and appropriate taper.

Construct a left turn lane on Lebanon Road eastbound at the site access road, with 100 feet of storage and appropriate taper. The construction of this turn lane should be completed within the second phase of the project, to be coordinated with the construction of the multi-use path and its connection to the adjacent development.

Lebanon Road & Lake Michael Park

Analysis of the existing approaches during build conditions indicate that the intersection movements will operate at acceptable levels of service. There is adequate capacity available to handle additional traffic for the proposed site, the adjacent developments under construction and annual growth.

Lebanon Road & Lake Michael Park (continued)

No improvements are recommended for this intersection.

Lebanon Road & Saddle Club Road

Analysis of the existing approaches during build conditions indicate that the intersection movements

will operate at acceptable levels of service. There is adequate capacity available to handle additional traffic for the proposed site, the adjacent developments under construction and annual growth.

No improvements are recommended for this intersection.

Saddle Club Road & Shallow Spring Drive (Site Drive #2)

The construction of the development will create this new intersection on Saddle Club Road, and provide a single entrance and exit for the proposed site. There is adequate capacity available to handle additional traffic for the adjacent developments, the proposed site, as well as annual growth.

Construct a new site access road on the west side of Saddle Club Road, approximately 2,100 feet north of Lebanon Road, with one entry lane and one exit lane. The site access shall be constructed with the Phase IV build of the subdivision.

All driveway accesses roadway shall be constructed to City of Mebane standards and specifications and per the City's Unified Development Ordinance. Any NCDOT requirements related to NCDOT maintained roadways will be designed to NCDOT standards and specifications.

In conclusion, this study has reviewed the impacts of both background traffic conditions and the proposed traffic to be generated by the site as well as the adjacent developments presently under construction, studied the impacts to the roadway network, and has determined that there will be adequate capacity for future traffic. In addition, this study provided a Level of Service analysis for bicycle and pedestrian modes, and found that the amenities and features proposed with the construction of this development will enhance and improve the non-automobile modes of transportation in the area. Speed information was collected for further evaluating the speed on Lebanon Road by NCDOT, as the adjacent developments are built to completion.

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February 20, 2020

TO: Cy Stober, AICP
Development Director – City of Mebane
E: cstober@cityofmebane.com

FROM: Jessica McClure, PE
Ramey Kemp and Associates, Inc.
E: jmcclure@rameykemp.com

SUBJECT: **Tupelo Junction (formerly The Landing at Lake Michael) TIA Review Comments**

Mr. Stober:

Ramey Kemp and Associates, Inc. (RKA) has reviewed the subject TIA and issues the following comments.

Study Summary

The proposed site is a residential development with 184 single family homes located north of Lebanon Road between Stagecoach Road and Saddle Club Road in Mebane, NC. Full buildout is anticipated in 2025. Access is proposed via an unsignalized, full movement driveway on Lebanon Road and an unsignalized, full movement driveway on Saddle Club Road. The development is anticipated to generate approximately 1,820 daily trips during a typical weekday – with 135 occurring during the morning (AM) peak hour and 182 occurring during the afternoon (PM) peak hour.

Existing (2019) traffic conditions, No Build (2025) traffic conditions, and Buildout (2025) traffic conditions were analyzed. Analysis results indicate that all study intersections are expected to operate acceptably under each scenario. Based on traffic volumes, an eastbound left-turn lane with 100' of full width storage plus appropriate taper is recommended on Lebanon Road at the Site Driveway (Broad Oak Drive).

A speed study was also conducted along Lebanon Road. Results indicate the 85th percentile speeds (threshold typically used to set speed limits) were reported between 52 miles per hour (mph) and 54 mph. The existing speed limit on this section of Lebanon Road is 55 mph. No speed limit modifications are recommended at this time.

The City of Mebane 2040 Comprehensive Transportation Plan (CTP) recommends a shared-use path across the development frontage to accommodate bicyclists and pedestrians. This is consistent with Mebane's Bicycle and Pedestrian Plan. The development will provide connectivity to the proposed shared-use path that will also be constructed by adjacent developments and a high visibility crossing of Lebanon Road at the main Site Driveway (Board Oak Drive) to provide access to Lake Michael Park.

Based on the review of the Tupelo Junction (formerly The Landing at Lake Michael) TIA, no additional improvements within the study area are recommended.

The following comments relate to deviations from various NCDOT and/or City analysis guidelines. A revised TIA based on these comments is not requested.

TIA Report

1. Traffic counts collected at the study intersections appear reasonable.

2. There are some minor imbalances in the adjacent development traffic. This is likely due to rounding and the proportional reductions used to determine remaining development densities. This is not anticipated to significantly impact analysis results.

3. The trip distribution is reasonable and generally consistent with similar developments in the area.

4. The AM peak hour site trips calculated by RKA resulted in 33 entering trips and 102 exiting trips compared to 34 and 101 in the TIA. This is likely due to rounding and is not anticipated to significantly impact analysis results as the total number of AM peak hour trips is the same.

5. Figure 7: Primary Site Trip Assignment – The entering trips in the PM peak hour are short by one trip. There are minor imbalances in traffic volumes between Broad Oak Drive and Stagecoach Road (loss of one trip in both the AM and PM peak hours). These are not anticipated to significantly impact analysis results.

6. Figure 8: 2025 Site Buildout Traffic – there are minor inconsistencies between some volumes (NB right-turn and WB left-turn) at the intersection of Lebanon Road and Lake Michael Park across Figure 8, the appendix calculations and Synchro. However, these volumes are relatively low and are not anticipated to significantly impact the analysis results.

7. Figure 10: Proposed Traffic Operations – The Stop signs at the site driveways should be indicated as proposed by using an asterisk as noted in the legend.

8. The bicycle and pedestrian LOS analysis approach and results are reasonable.

9. The speed study approach and results are reasonable. No modifications to the speed limit would be warranted at this time based on the 85th percentile speeds, which range from 52 mph to 54 mph. The existing speed limit is 55 mph.

Synchro / SimTraffic Analyses

10. NCDOT Congestion Management Guidelines indicate a volume of 4 should be used for any allowable movements that have actual counts lower than 4. Several movements in the Synchro files have volumes less than 4. However, these volumes are relatively low and are not anticipated to significantly impact the analysis results.

11. NCDOT Congestion Management Guidelines state a total flow period of 60 minutes and a peak flow period of 15 minutes should be used for SimTraffic analyses. Typically, this would be achieved by a seeding period of at least 10 minutes, followed by four 15-minute intervals with the peak hour factor adjusted for the third quarter hour. A seeding period and a single 60-minute internal with no peak hour factor adjustment was used for this analysis. However, the study intersections are under capacity and the queuing results would not be significantly impacted by this change.

AGENDA ITEM #5B

SUP 20-02

Board of Adjustment Special Use Permit–

Alamance Community School Temporary Use Request

Presenter

Ashley Ownbey, City Planner

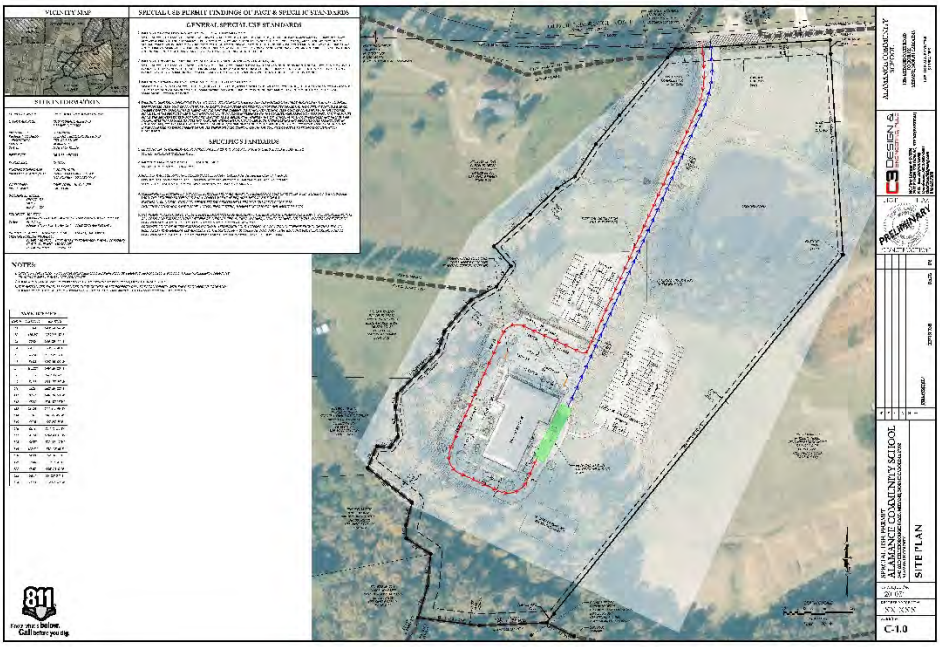
Applicant

Alamance Community School
c/o Leslie Hall Paynter
1024 Mebane Oaks Road
P.O. Box 155
Mebane, NC 27302

Public Hearing

Yes ☒ No ☐ Quasi-Judicial - BOA

Site Plan



Property
3445 Old Hillsborough Road, Mebane, NC 27302
GPIN 9813498204

Proposed Zoning
N/A

Current Zoning
R-20

Size
+/-16.42

Surrounding Zoning
R-20, R-12, R-6

Surrounding Land Uses
Single-Family Residential, Residential Cluster Developments

Utilities
On Site

Floodplain
No

Watershed
No

City Limits
Yes

Summary

Alamance Community School c/o Leslie Hall Paynter, a newly approved charter school, is requesting approval of a special use request to temporarily have Alamance Community School use the Crosslink Community Church's facilities (3445 Old Hillsborough Road) until its permanent campus in Graham is completed and approved for occupancy. Per the Mebane Unified Development Ordinance, all elementary and secondary schools must be approved as a special use by the Mebane Board of Adjustment.

The applicant is proposing to use the existing facilities with no improvements or changes. A traffic study was completed by Ramey, Kemp, and Associates on behalf of the applicant, per NC General Statute, and reviewed by the NC Department of Transportation Municipal School Transportation Assistance staff. The City of Mebane *2040 Comprehensive Transportation Plan* and the *Bicycle and Pedestrian Transportation Plan* both call for a 10' multiuse path along Old Hillsborough Road but this offsite improvement for a safe non-automobile access to the school will not be provided due to the temporary nature of the site use and was part of the approval process for Crosslink Church.

The Technical Review Committee (TRC) has reviewed the site plan and the applicant has revised the plan to reflect the comments. The applicant has an agreement to use the property as a temporary special use, pending approval by the Board of Adjustment.

Financial Impact

No improvements are proposed for the site and no revenue is anticipated from the proposed use.

Recommendation

The Planning staff has reviewed the request for harmony with the zoning of the surrounding area and consistency with the City's adopted plans and recommends approval.

Suggested Motion

1. Motion to approve special use request for an Elementary/Secondary School as presented

   and

2. Motion to find that the request is both reasonable and in the public interest because it finds that it:

   a. Will not materially endanger the public health or safety;
   b. Will not substantially injure the value of adjoining or abutting property;
   c. Will be in harmony with the area in which it is located; and
   d. Will not be fully consistent with the objectives and goals in the City's adopted plans, failing to realize a recommended 10' multiuse path along Old Hillsborough Road recommended in both the City's *2040 Comprehensive Transportation Plan* and *Bicycle and Pedestrian Transportation Plan*. Due to the temporary nature of the use request, these offsite improvements would be unreasonably burdensome upon the applicant. Otherwise, the request is consistent with the City's adopted plans, specifically:

- ☐ The goals and objectives of the G-2 Primary Residential (VI) Growth Area (Jones Drive & South Mebane Oaks Road)

3. Motion to deny the special use permit as presented due to a failure to satisfy any one of the four criteria required for approval (NOTE: criterion for failure must be specified)

Attachments

1. Special Use Permit Application
2. Zoning Map
3. Site Plan
4. Planning Project Report
5. Preliminary Water and Sewer System Approval Letter
6. Traffic Analysis
7. MSTA Review of Traffic Analysis
8. NCDOT District Office Review of Traffic Analysis
9. Appraisal Report

APPLICATION FOR A SPECIAL USE PERMIT

Application is hereby made for an amendment to the Mebane Zoning Ordinance as follows:

Name of Applicant: **Alamance Community School**

Address of Applicant: **3445 Old Hillsborough Rd, Mebane, NC 27302**

Address and brief description of property: **3445 Old Hillsborough Rd, Mebane, NC 27302.**

Existing church with parking facility.

Applicant's interest in property: (Owned, leased or otherwise) **Leased for temporary use.**

*Do you have any conflicts of interest with: Elected/Appointed Officials, Staff, etc.?

Yes ___ Explain: _____ No **X**

Type of request: **Temporary use as a school.**

Sketch attached: Yes **X** No _____

Reason for the request: **Temporary use as a charter school until permanent building is finished at a separate location. Period of use expected to be no longer than 90 days.**

Signed: Leslie Hall Poynter

Date: 05-28-20

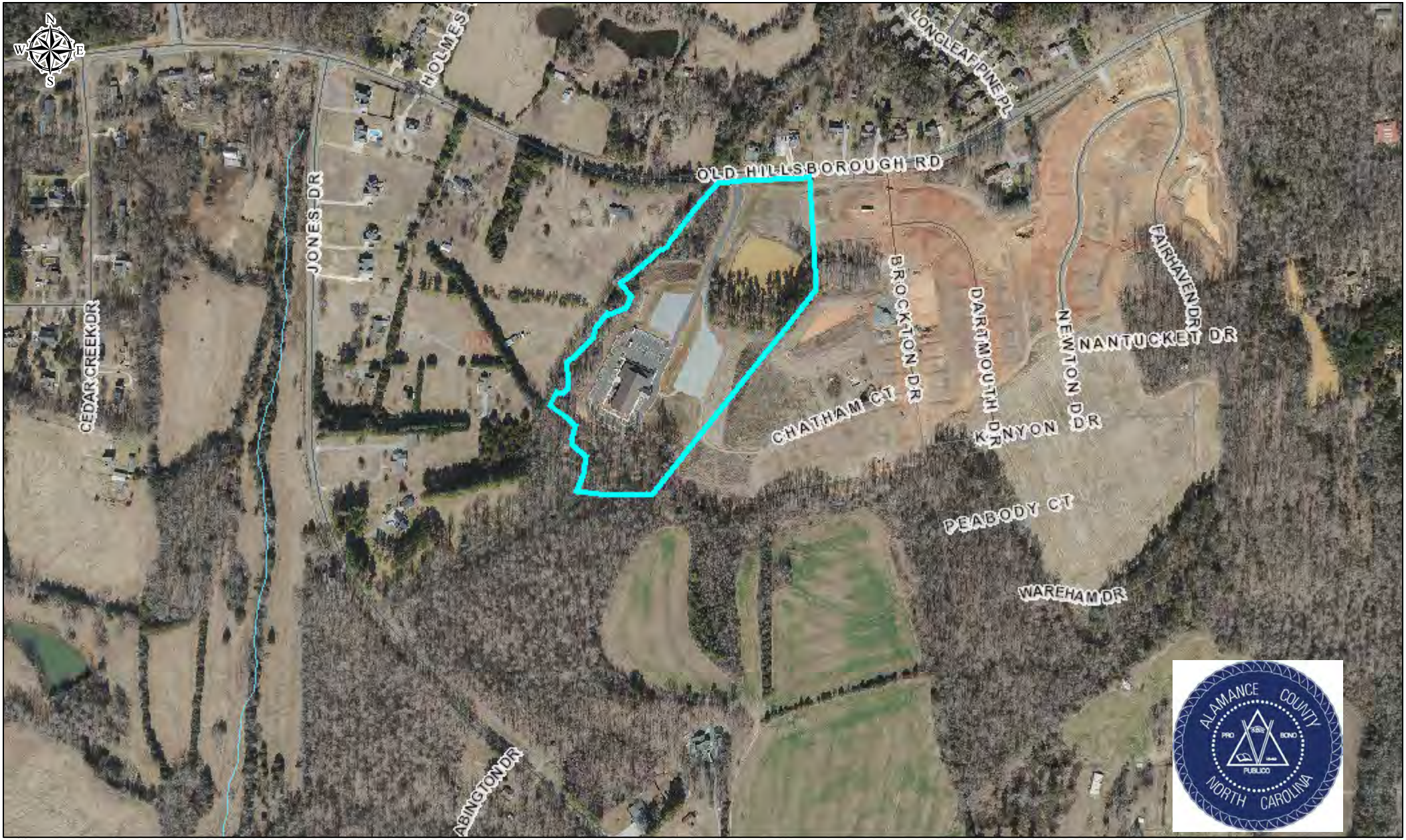
Action by Planning Board: _____

Public Hearing Date: _____Action: _____

Zoning Map Corrected: _____

The following items should be included with the application for rezoning when it is returned:

1. Tax Map showing the area that is to be considered.
2. Names and addresses of all adjoining property owners within a 300' radius (Include those that are across the street).
3. $400.00 Fee to cover administrative costs.
4. The information is due 15 working days prior to the Planning Board meeting. The Planning Board meets the 2nd Monday of each month at 6:30 p.m. Then the request goes to the City Council for a Public Hearing the following month. The City Council meets the 1st Monday of each month at 6:00 p.m.



Owner Name: CROSSLINK COMMUNITY CHURCH

1030 MEBANE OAKS ROAD
MEBANE, NC 27302

GPIN: 9813498204
PID: 10-25-130

ABSS Bus Stop Meal Delivery

Heavy Industrial Development Applicants

APPLIED FOR PERMIT

PERMIT APPROVED

PERMIT RENEWED

UNDER CONSTRUCTION

May 28, 2020

0 0.065 0.13 mi

Alamance County GIS

DISCLAIMER:
The datasets and maps available are not survey grade or a legal document. They are a best approximation of what is on the ground, but do contain errors. The data comes from various sources nationally, the state of North Carolina, and here in Alamance County. Alamance County will not be held responsible for the misuse, misrepresentation, or misinterpretation of the data or maps. These maps and data are a service provided for the benefit for Alamance County citizens. We constantly strive to improve the quality and expand the amount of data and maps available.

ALAMANCE COUNTY shall assume no liability for any errors, omissions, or inaccuracies in the information provided regardless of how caused; or any decision made or action taken or not taken by user in reliance upon any information or data furnished hereunder. The user knowingly waives any and all claims for damages against any and all of the entities comprising the Alamance County GIS System that may arise from the mapping data. Date: 5/28/2020

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2537 E. LYON STATION RD, STE 102
PO BOX 361
CREEDMOOR, NC 27522
919-625-7368

Special Use Permit Findings of Fact & Specific Standards

General Special Use Standards

1. Will not materially endanger the public health or safety; or
   Since the proposed use is occupying an existing structure of recent construction, the public water and sanitary components are already addressed and to current code, therefore proposing no endangerment to the public health, safety and welfare of the general public. Additionally, existing facility has sufficient distance from the Old Hillsborough Road Right of way to accommodate the required stacking of the proposed use. Hence, the safety of public transportation and travel within the public right of way or at the entrance to the site in not anticipated to materially endanger the public.

2. Will not substantially injure the value of adjoining or abutting property; or
   Since the proposed use is occupying the existing structure currently used as a church, both being institutional type uses, there is no injury to the existing value of surrounding properties. Additionally, based upon prior experience and projects, there has been no injury to values of surrounding properties related to Institutional Uses, whether school or place of worship.

3. Will be in harmony with the area in which it is to be located; or
   Given the activities of the proposed use, hours of operation, and distance from adjacent properties, the use of the church as a school would maintain the harmony of the surrounding uses and community with no material impacts to the quality of life of the surrounding property owners.

4. Will be in general conformity with the land use plan or other plans and policies officially adopted by the City Council.
   The proposed use would be consistent with existing and future adopted plans for the City of Mebane. The current zoning is R-20 CD, whereby the City officials have already found that the current use as an institutional use would be consistent with the adopted plans. Being the proposed use is also institutional, it would be in keeping with the consistencies previously approved. As far as future plans, the growth strategy for this area is noted as G-2, Residential, whereby the City is hoping to encourage nodes and village type communities that provide services and amenities within. Institutional uses such as the existing and proposed uses are included in those uses required to create and complete the village/community node. The lot size of the existing property is such that it is very large compared to the footprint of the use, therefore also complying with the county's objective to promote conservation development.

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919-625-7368

Specific Standards

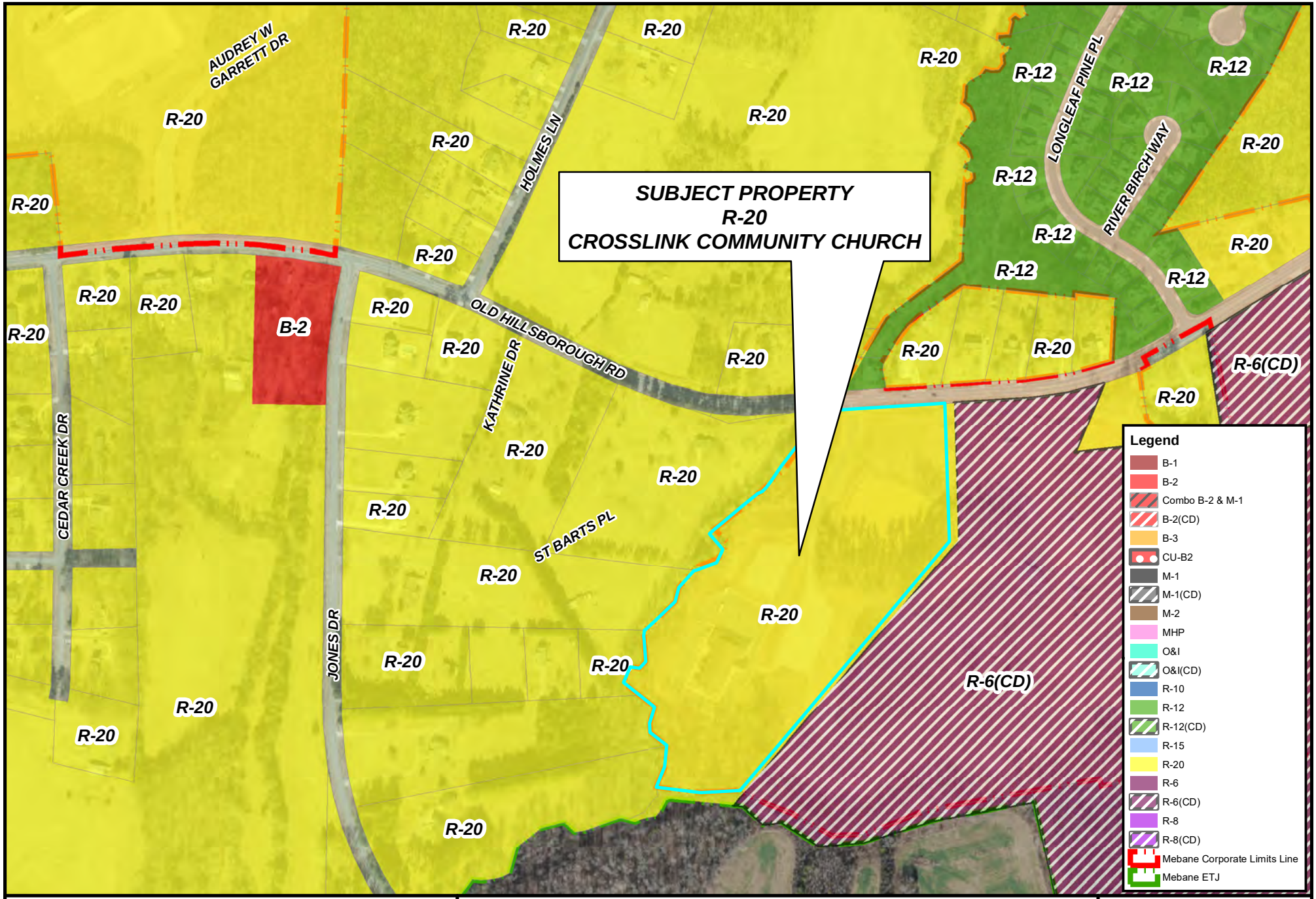
1. Development Standards are Required: RA-20, R-20, R-15, R-12, R-10, R-8, R-6, O&I, B-2, and B-3 districts.
   Subject property is zoned R-20.

2. Minimum Area: Minimum lot size shall be 3 acres.
   Subject property is ±16.18 acres.

3. Vehicular Access: Principal access shall be from a collector or higher capacity road.
   Existing access is from Old Hillsborough Road, which is at minimum a collector road.

4. Screening: All parking lots shall be screened from all adjoining residential uses or residentially-zoned lots by a buffer yard. The required buffer yard shall comply with the requirements of Section 6-3.
   Existing parking facilities are already set back sufficiently from neighboring properties.

5. Site Plans: In addition to the site plan requirements of Appendix A, the required site plan shall show (i) the proposed points of access and egress and the pattern of internal circulation, loading, and unloading and (ii) the location of extent of playgrounds, athletic fields, and other outdoor recreation areas.
   Proposed point of access/egress is on Old Hillsborough Road. Internal circulation pattern is shown on the site plan. Vegetated areas immediately adjacent to the school may be used for outdoor activities, however, there are no formal playgrounds or athletic fields proposed since the use is expected to be short term.



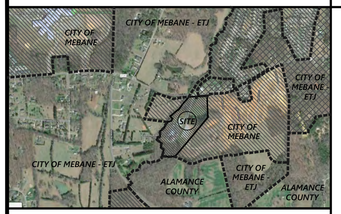
CITY OF MEBANE
ZONING MAP

SUBJECT PROPERTY
3445 OLD HILLSBOROUGH RD
1 inch = 400 feet

DATE:7/27/2020

DRAWN BY: SKS

VICINITY MAP



SITE INFORMATION

CURRENT OWNER:	CROSSLINK COMMUNITY CHURCH
OWNER ADDRESS:	1030 MEBANE OAKS ROAD MEBANE, NC 27302
PIN NUMBER:	9813498204
PROPERTY ADDRESS:	3445 OLD HILLSBOROUGH ROAD
JURISDICTION:	CITY OF MEBANE
COUNTY:	ALAMANCE
STATE:	NORTH CAROLINA
REFERENCE:	DB 3176 / PG 554
PARCEL SIZE:	16.42 AC
EXISTING ZONING/USE:	R-20 /CHURCH
PROPOSED ZONING/USE:	R-20 /ELEMENTARY SCHOOL (TEMPORARY - 60 DAYS MAX.)
WATERSHED:	CANE CREEK - HAW RIVER
RIVER BASIN:	CAPE FEAR
BUILDING SETBACKS:	
FRONT -	30'
SIDE -	10'
REAR -	25'
STUDENTS:	400 TOTAL (OPERATING AT 50% CAPACITY - ONLY 200 STUDENTS PER DAY)
STAFF:	40 TOTAL (OPERATING AT 50% CAPACITY - ONLY 20 STAFF PER DAY)
PARKING REQUIRED:	20 SPACES (5 SPACES + 1 SPACE/EMPLOYEE)
EXISTING PARKING PROVIDED:	
PAVED PARKING:	117 SPACES (109 STANDARD, 8 ADA ACCESSIBLE)
GRAVEL PARKING:	140 SPACES
TOTAL PARKING:	257 SPACES

SPECIAL USE PERMIT FINDINGS OF FACT & SPECIFIC STANDARDS

GENERAL SPECIAL USE STANDARDS

1. *WILL NOT MATERIALLY ENDANGER THE PUBLIC HEALTH OR SAFETY; OR*
   SINCE THE PROPOSED USE IS OCCUPYING AN EXISTING STRUCTURE OF RECENT CONSTRUCTION, THE PUBLIC WATER AND SANITARY COMPONENTS ARE ALREADY ADDRESSED AND TO CURRENT CODE, THEREFORE PROPOSING NO ENDANGERMENT TO THE PUBLIC HEALTH, SAFETY AND WELFARE OF THE GENERAL PUBLIC. ADDITIONALLY, EXISTING FACILITY HAS SUFFICIENT DISTANCE FROM THE OLD HILLSBOROUGH ROAD RIGHT OF WAY TO ACCOMMODATE THE REQUIRED STACKING OF THE PROPOSED USE. HENCE, THE SAFETY OF PUBLIC TRANSPORTATION AND TRAVEL WITHIN THE PUBLIC RIGHT OF WAY OR AT THE ENTRANCE TO THE SITE IN NOT ANTICIPATED TO MATERIALLY ENDANGER THE PUBLIC.
2. *WILL NOT SUBSTANTIALLY INJURE THE VALUE OF ADJOINING OR ABUTTING PROPERTY; OR*
   SINCE THE PROPOSED USE IS OCCUPYING THE EXISTING STRUCTURE CURRENTLY USED AS A CHURCH, BOTH BEING INSTITUTIONAL TYPE USES, THERE IS NO INJURY TO THE EXISTING VALUE OF SURROUNDING PROPERTIES. ADDITIONALLY, BASED UPON PRIOR EXPERIENCE AND PROJECTS, THERE HAS BEEN NO INJURY TO VALUES OF SURROUNDING PROPERTIES RELATED TO INSTITUTIONAL USES, WHETHER SCHOOL OR PLACE OF WORSHIP.
3. *WILL BE IN HARMONY WITH THE AREA IN WHICH IT IS TO BE LOCATED; OR*
   GIVEN THE ACTIVITIES OF THE PROPOSED USE, HOURS OF OPERATION, AND DISTANCE FROM ADJACENT PROPERTIES, THE USE OF THE CHURCH AS A SCHOOL WOULD MAINTAIN THE HARMONY OF THE SURROUNDING USES AND COMMUNITY WITH NO MATERIAL IMPACTS TO THE QUALITY OF LIFE OF THE SURROUNDING PROPERTY OWNERS.
4. *WILL BE IN GENERAL CONFORMITY WITH THE LAND USE PLAN OR OTHER PLANS AND POLICIES OFFICIALLY ADOPTED BY THE CITY COUNCIL.*
   THE PROPOSED USE WOULD BE CONSISTENT WITH EXISTING AND FUTURE ADOPTED PLANS FOR THE CITY OF MEBANE. THE CURRENT ZONING IS R-20 CD, WHEREBY THE CITY OFFICIALS HAVE ALREADY FOUND THAT THE CURRENT USE AS AN INSTITUTIONAL USE WOULD BE CONSISTENT WITH THE ADOPTED PLANS. BEING THE PROPOSED USE IS ALSO INSTITUTIONAL, IT WOULD BE IN KEEPING WITH THE CONSISTENCIES PREVIOUSLY APPROVED. AS FAR AS FUTURE PLANS, THE GROWTH STRATEGY FOR THIS AREA IS NOTED AS G-2: RESIDENTIAL, WHEREBY THE CITY IS HOPING TO ENCOURAGE NODES AND VILLAGE TYPE COMMUNITIES THAT PROVIDE SERVICES AND AMENITIES WITHIN. INSTITUTIONAL USES SUCH AS THE EXISTING AND PROPOSED USES ARE INCLUDED IN THOSE USES REQUIRED TO CREATE AND COMPLETE THE VILLAGE/COMMUNITY NODE. THE LOT SIZE OF THE EXISTING PROPERTY IS SUCH THAT IT IS VERY LARGE COMPARED TO THE FOOTPRINT OF THE USE, THEREFORE ALSO COMPLYING WITH THE COUNTY'S OBJECTIVE TO PROMOTE CONSERVATION DEVELOPMENT.

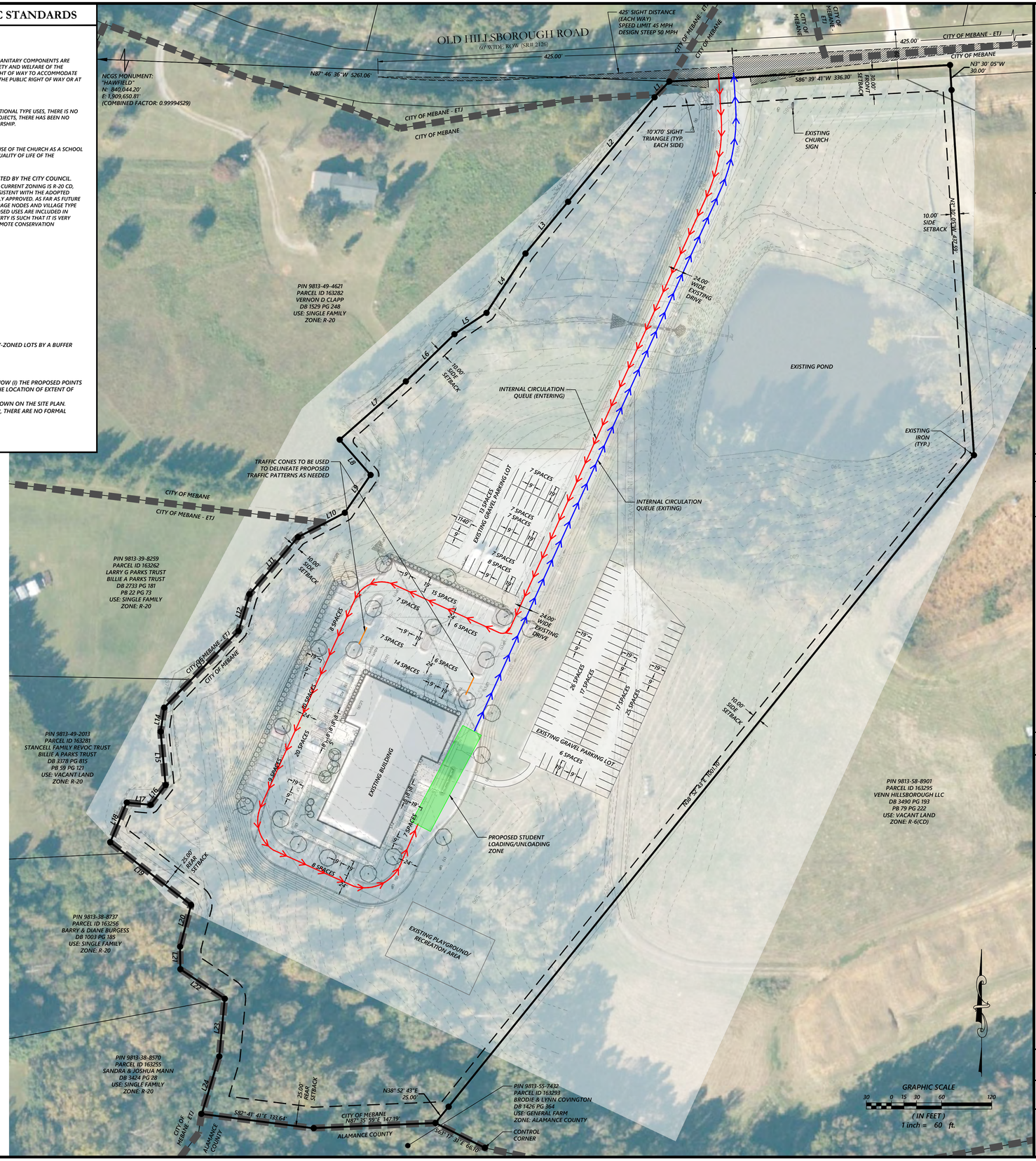
SPECIFIC STANDARDS

1. *DEVELOPMENT STANDARDS ARE REQUIRED: RA-20, R-20, R-15, R-12, R-10, R-8, R-6, O&I, B-2, AND B-3 DISTRICTS.*
   SUBJECT PROPERTY IS ZONED R-20.
2. *MINIMUM AREA: MINIMUM LOT SIZE SHALL BE 3 ACRES.*
   SUBJECT PROPERTY IS ±16.18 ACRES.
3. *VEHICULAR ACCESS: PRINCIPAL ACCESS SHALL BE FROM A COLLECTOR OR HIGHER CAPACITY ROAD.*
   EXISTING ACCESS IS FROM OLD HILLSBOROUGH ROAD, WHICH IS AT MINIMUM A COLLECTOR ROAD.
   SCHOOL USE SHALL NOT COMPETE WITH ANY CHURCH USES FOR PARKING.
4. *SCREENING: ALL PARKING LOTS SHALL BE SCREENED FROM ALL ADJOINING RESIDENTIAL USES OR RESIDENTIALLY-ZONED LOTS BY A BUFFER YARD. THE REQUIRED BUFFER YARD SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 6-3.*
   EXISTING PARKING FACILITIES ARE ALREADY SET BACK SUFFICIENTLY FROM NEIGHBORING PROPERTIES.
   CHURCHES AND SCHOOLS HAVE SAME LANDSCAPING CRITERIA, ELIMINATING NEED FOR ANY IMPROVEMENTS.
5. *SITE PLANS: IN ADDITION TO THE SITE PLAN REQUIREMENTS OF APPENDIX A, THE REQUIRED SITE PLAN SHALL SHOW (I) THE PROPOSED POINTS OF ACCESS AND EGRESS AND THE PATTERN OF INTERNAL CIRCULATION, LOADING, AND UNLOADING AND (II) THE LOCATION OF EXTENT OF PLAYGROUNDS, ATHLETIC FIELDS, AND OTHER OUTDOOR RECREATION AREAS.*
   PROPOSED POINT OF ACCESS/EGRESS IS ON OLD HILLSBOROUGH ROAD. INTERNAL CIRCULATION PATTERN IS SHOWN ON THE SITE PLAN. VEGETATED AREAS IMMEDIATELY ADJACENT TO THE SCHOOL MAY BE USED FOR OUTDOOR ACTIVITIES, HOWEVER, THERE ARE NO FORMAL PLAYGROUNDS OR ATHLETIC FIELDS PROPOSED SINCE THE USE IS EXPECTED TO BE SHORT TERM.

NOTES:

1. *EXISTING CONDITIONS TAKEN FROM PROPOSED LANDSCAPING PLAN BY TIMMONS GROUP DATED 9-9-15 AND TITLED "CROSSLINK COMMUNITY CHURCH AS WELL AS ALAMANCE COUNTY GIS.*
2. *THERE ARE NO PROPOSED IMPROVEMENTS TO THE EXISTING DEVELOPMENT, ONLY A CHANGE OF USE*
3. *IT IS ANTICIPATED THAT ALL EXISTING FEATURES OF THE SUBJECT PROPERTY REMAIN IN CONFORMITY WITH THE CITY OF MEBANE CODE AND THEREFORE MEET ALL OF THE REQUIREMENTS OF THE CITY UDO REGARDING SITE PLANS FOR SPECIAL USE PERMITS*

PARCEL LINE TABLE		
LINE #	DISTANCE	BEARING
L1	22.04'	S43° 34' 54"W
L2	166.25'	N39° 36' 37"E
L3	80.15'	S39° 29' 44"W
L4	84.92'	S33° 16' 24"W
L5	46.14'	S56° 21' 37"W
L6	81.08'	S45° 46' 05"W
L7	105.28'	S48° 38' 20"W
L8	56.03'	S41° 06' 49"E
L9	54.67'	S34° 15' 06"W
L10	63.20'	S62° 28' 22"W
L11	89.71'	S40° 18' 50"W
L12	45.82'	S16° 37' 25"W
L13	127.51'	S44° 06' 48"W
L14	29.09'	S8° 39' 45"W
L15	64.16'	S5° 25' 03"E
L16	29.70'	S37° 11' 56"W
L17	28.74'	N84° 43' 15"W
L18	51.38'	S22° 37' 19"W
L19	122.42'	S52° 12' 16"E
L20	51.58'	S14° 50' 19"W
L21	27.00'	S0° 51' 41"E
L22	63.67'	S56° 24' 01"E
L23	69.41'	S5° 23' 04"W
L24	71.90'	S16° 59' 49"W



811 Know what's **below.** **Call** before you dig.

ALAMANCE COMMUNITY SCHOOL
1024 MEBANE OAKS ROAD
PO BOX 155
MEBANE, NORTH CAROLINA
LESLIE HALL PAYNTER
919.504.1388

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Creedmoor, NC 27522-0361
www.c3engineering.com
919.625.2368

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NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER 042 CHAD E. ABBOTT
PRELIMINARY

	BY	DATE	REVISIONS
6			
5			
4			
3			
2			
1			

SPECIAL USE PERMIT
ALAMANCE COMMUNITY SCHOOL
3445 OLD HILLSBOROUGH ROAD, MEBANE, NORTH CAROLINA 27302
ALAMANCE COUNTY

SITE PLAN

C3 PROJECT #: 20-031
REVIEW PROJECT #: XX-XXX
SHEET #: C-1.0

PLANNING PROJECT REPORT

DATE	07/02/20
PROJECT NUMBER	SUP 20-02
PROJECT NAME	Alamance Community School Temporary Use Request
APPLICANT	Alamance Community School c/o Leslie Hall Paynter 1024 Mebane Oaks Road P.O. Box 155 Mebane, NC 27302

CONTENTS

VICINITY MAP

SITE INFORMATION

CURRENT OWNER: CROSSLINK COMMUNITY CHURCH

OWNER ADDRESS: 1030 MEBANE OAKS ROAD
MEBANE, NC 27302

PIN NUMBER: 9813498204
PROPERTY ADDRESS: 3445 OLD HILLSBOROUGH ROAD
JURISDICTION: CITY OF MEBANE
COUNTY: ALAMANCE
STATE: NORTH CAROLINA

REFERENCE: DB 3176 / PG 554

PARCEL SIZE: 16.42 AC

EXISTING ZONING/USE: R-20 /CHURCH
PROPOSED ZONING/USE: R-20 /ELEMENTARY SCHOOL (TEMPORARY - 60 DAYS MAX.)

WATERSHED: CANE CREEK - HAW RIVER
RIVER BASIN: CAPE FEAR

BUILDING SETBACKS:
FRONT - 30'
SIDE - 10'
REAR - 25'

STUDENTS: 400 TOTAL
(OPERATING AT 50% CAPACITY - ONLY 200 STUDENTS PER DAY)
STAFF: 40 TOTAL
(OPERATING AT 50% CAPACITY - ONLY 20 STAFF PER DAY)

PARKING REQUIRED: 20 SPACES (5 SPACES + 1 SPACE/EMPLOYEE)
EXISTING PARKING PROVIDED:
PAVED PARKING: 117 SPACES (109 STANDARD, 8 ADA ACCESSIBLE)
GRAVEL PARKING: 140 SPACES
TOTAL PARKING: 257 SPACES

SPECIAL USE PERMIT FINDINGS OF FACT & SPECIFIC STANDARDS

GENERAL SPECIAL USE STANDARDS

1. WILL NOT MATERIALLY ENDANGER THE PUBLIC HEALTH OR SAFETY; OR
   SINCE THE PROPOSED USE IS OCCUPYING AN EXISTING STRUCTURE OF RECENT CONSTRUCTION, THE PUBLIC WATER AND SANITARY COMPONENTS ARE ALREADY ADDRESSED AND TO CURRENT CODE. THEREFORE PROPOSING NO ENDANGERMENT TO THE PUBLIC HEALTH, SAFETY AND WELFARE OF THE GENERAL PUBLIC. ADDITIONALLY, EXISTING FACILITY HAS SUFFICIENT DISTANCE FROM THE OLD HILLSBOROUGH ROAD RIGHT OF WAY TO ACCOMMODATE THE REQUIRED STACKING OF THE PROPOSED USE. HENCE, THE SAFETY OF PUBLIC TRANSPORTATION AND TRAVEL WITHIN THE PUBLIC RIGHT OF WAY OR AT THE ENTRANCE TO THE SITE IN NOT ANTICIPATED TO MATERIALLY ENDANGER THE PUBLIC.

2. WILL NOT SUBSTANTIALLY INJURE THE VALUE OF ADJOINING OR ABUTTING PROPERTY; OR
   SINCE THE PROPOSED USE IS OCCUPYING THE EXISTING STRUCTURE CURRENTLY USED AS A CHURCH, BOTH BEING INSTITUTIONAL TYPE USES, THERE IS NO INJURY TO THE EXISTING VALUE OF SURROUNDING PROPERTIES. ADDITIONALLY, BASED UPON PRIOR EXPERIENCE AND PROJECTS, THERE HAS BEEN NO INJURY TO VALUES OF SURROUNDING PROPERTIES RELATED TO INSTITUTIONAL USES, WHETHER SCHOOL OR PLACE OF WORSHIP.

3. WILL BE IN HARMONY WITH THE AREA IN WHICH IT IS TO BE LOCATED; OR
   GIVEN THE ACTIVITIES OF THE PROPOSED USE, HOURS OF OPERATION, AND DISTANCE FROM ADJACENT PROPERTIES, THE USE OF THE CHURCH AS A SCHOOL WOULD MAINTAIN THE HARMONY OF THE SURROUNDING USES AND COMMUNITY WITH NO MATERIAL IMPACTS TO THE QUALITY OF LIFE OF THE SURROUNDING PROPERTY OWNERS.

4. WILL BE IN GENERAL CONFORMITY WITH THE LAND USE PLAN OR OTHER PLANS AND POLICIES OFFICIALLY ADOPTED BY THE CITY COUNCIL.
   THE PROPOSED USE WOULD BE CONSISTENT WITH EXISTING AND FUTURE ADOPTED PLANS FOR THE CITY OF MEBANE. THE CURRENT ZONING IS R-20 CD, WHEREBY THE CITY OFFICIALS HAVE ALREADY FOUND THAT THE CURRENT USE AS AN INSTITUTIONAL USE WOULD BE CONSISTENT WITH THE ADOPTED PLANS. BEING THE PROPOSED USE IS ALSO INSTITUTIONAL, IT WOULD BE IN KEEPING WITH THE CONSISTENCIES PREVIOUSLY APPROVED. AS FAR AS FUTURE PLANS, THE GROWTH STRATEGY FOR THIS AREA IS NOTED AS G-2, RESIDENTIAL, WHEREBY THE CITY IS HOPING TO ENCOURAGE NODES AND VILLAGE TYPE COMMUNITIES THAT PROVIDE SERVICES AND AMENITIES WITHIN, INSTITUTIONAL USES SUCH AS THE EXISTING AND PROPOSED USES ARE INCLUDED IN THOSE USES REQUIRED TO CREATE AND COMPLETE THE VILLAGE/COMMUNITY NODE. THE LOT SIZE OF THE EXISTING PROPERTY IS SUCH THAT IT IS VERY LARGE COMPARED TO THE FOOTPRINT OF THE USE, THEREFORE ALSO COMPLYING WITH THE COUNTY'S OBJECTIVE TO PROMOTE CONSERVATION DEVELOPMENT.

SPECIFIC STANDARDS

1. DEVELOPMENT STANDARDS ARE REQUIRED: RA-20, R-20, R-15, R-12, R-10, R-8, R-6, O&I, B-2, AND B-3 DISTRICTS.
   SUBJECT PROPERTY IS ZONED R-20.

2. MINIMUM AREA: MINIMUM LOT SIZE SHALL BE 3 ACRES.
   SUBJECT PROPERTY IS ±16.18 ACRES.

3. VEHICULAR ACCESS: PRINCIPAL ACCESS SHALL BE FROM A COLLECTOR OR HIGHER CAPACITY ROAD.
   EXISTING ACCESS IS FROM OLD HILLSBOROUGH ROAD, WHICH IS AT MINIMUM A COLLECTOR ROAD.
   SCHOOL USE SHALL NOT COMPETE WITH ANY CHURCH USES FOR PARKING.

4. SCREENING: ALL PARKING LOTS SHALL BE SCREENED FROM ALL ADJOINING RESIDENTIAL USES OR RESIDENTIALLY-ZONED LOTS BY A BUFFER YARD. THE REQUIRED BUFFER YARD SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 6-3.
   EXISTING PARKING FACILITIES ARE ALREADY SET BACK SUFFICIENTLY FROM NEIGHBORING PROPERTIES.
   CHURCHES AND SCHOOLS HAVE SAME LANDSCAPING CRITERIA, ELIMINATING NEED FOR ANY IMPROVEMENTS.

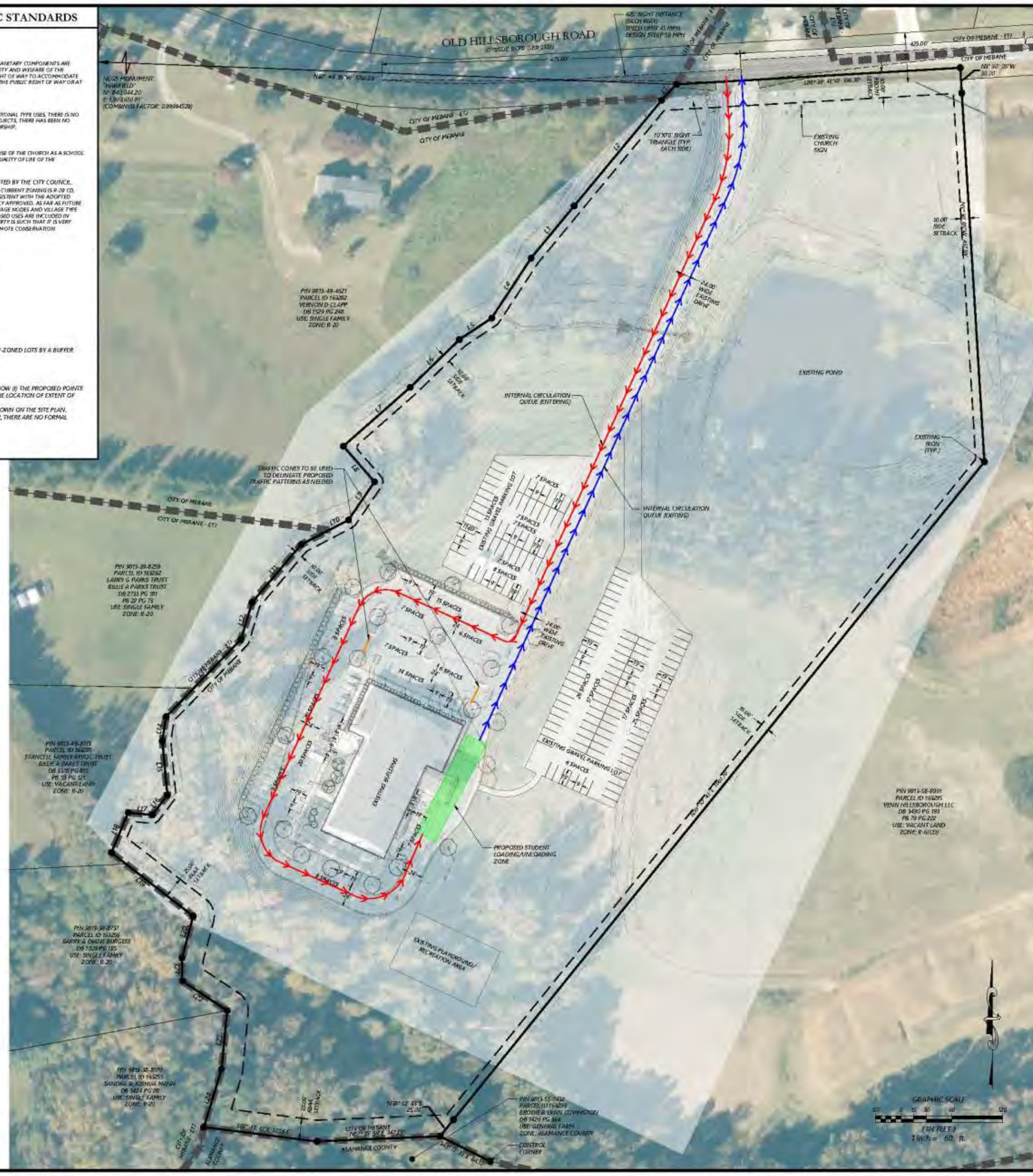
5. SITE PLANS: IN ADDITION TO THE SITE PLAN REQUIREMENTS OF APPENDIX A, THE REQUIRED SITE PLAN SHALL SHOW (I) THE PROPOSED POINTS OF ACCESS AND EGRESS AND THE PATTERN OF INTERNAL CIRCULATION, LOADING, AND UNLOADING AND (II) THE LOCATION OF EXTENT OF PLAYGROUNDS, ATHLETIC FIELDS, AND OTHER OUTDOOR RECREATION AREAS.
   PROPOSED POINT OF ACCESS/EGRESS IS ON OLD HILLSBOROUGH ROAD. INTERNAL CIRCULATION PATTERN IS SHOWN ON THE SITE PLAN. VEGETATED AREAS IMMEDIATELY ADJACENT TO THE SCHOOL MAY BE USED FOR OUTDOOR ACTIVITIES, HOWEVER, THERE ARE NO FORMAL PLAYGROUNDS OR ATHLETIC FIELDS PROPOSED SINCE THE USE IS EXPECTED TO BE SHORT TERM.

NOTES:

1. EXISTING CONDITIONS TAKEN FROM PROPOSED LANDSCAPING PLAN BY TIMMONS GROUP DATED 9-9-15 AND TITLED "CROSSLINK COMMUNITY CHURCH AS WELL AS ALAMANCE COUNTY GIS.
2. THERE ARE NO PROPOSED IMPROVEMENTS TO THE EXISTING DEVELOPMENT, ONLY A CHANGE OF USE
3. IT IS ANTICIPATED THAT ALL EXISTING FEATURES OF THE SUBJECT PROPERTY REMAIN IN CONFORMITY WITH THE CITY OF MEBANE CODE AND THEREFORE MEET ALL OF THE REQUIREMENTS OF THE CITY UDO REGARDING SITE PLANS FOR SPECIAL USE PERMITS

PARCEL LINE TABLE		
LINE #	DISTANCE	BEARING
L1	22.04'	S43° 34' 54"W
L2	106.25'	N39° 36' 37"E
L3	80.15'	S38° 29' 44"W
L4	84.92'	S33° 16' 24"W
L5	46.14'	S56° 21' 37"W
L6	81.08'	S45° 46' 05"W
L7	105.28'	S48° 38' 20"W
L8	56.03'	S41° 06' 49"E
L9	54.67'	S34° 15' 06"W
L10	63.20'	S62° 28' 22"W
L11	89.71'	S40° 18' 50"W
L12	45.82'	S16° 37' 25"W
L13	127.51'	S44° 06' 48"W
L14	29.09'	S8° 38' 45"W
L15	64.16'	S5° 25' 03"E
L16	29.70'	S37° 11' 56"W
L17	28.74'	N84° 43' 15"W
L18	51.38'	S22° 37' 19"W
L19	122.42'	S52° 12' 16"E
L20	51.58'	S14° 50' 19"W
L21	27.00'	S0° 51' 41"E
L22	63.67'	S56° 24' 01"E
L23	69.41'	S5° 25' 04"W
L24	71.90'	S16° 59' 49"W

811 Know what's below. Call before you dig.



ALAMANCE COMMUNITY SCHOOL
1024 MEBANE OAKS ROAD
PO BOX 135
MEBANE, NORTH CAROLINA
LESLIE HALL PAYNTER
919.304.1388

C3 DESIGN & ENGINEERING, PLLC

NOT FOR CONSTRUCTION
PRELIMINARY

#	REVISIONS	DATE	BY
1	FIRST ISSUED		
2			
3			
4			
5			
6			

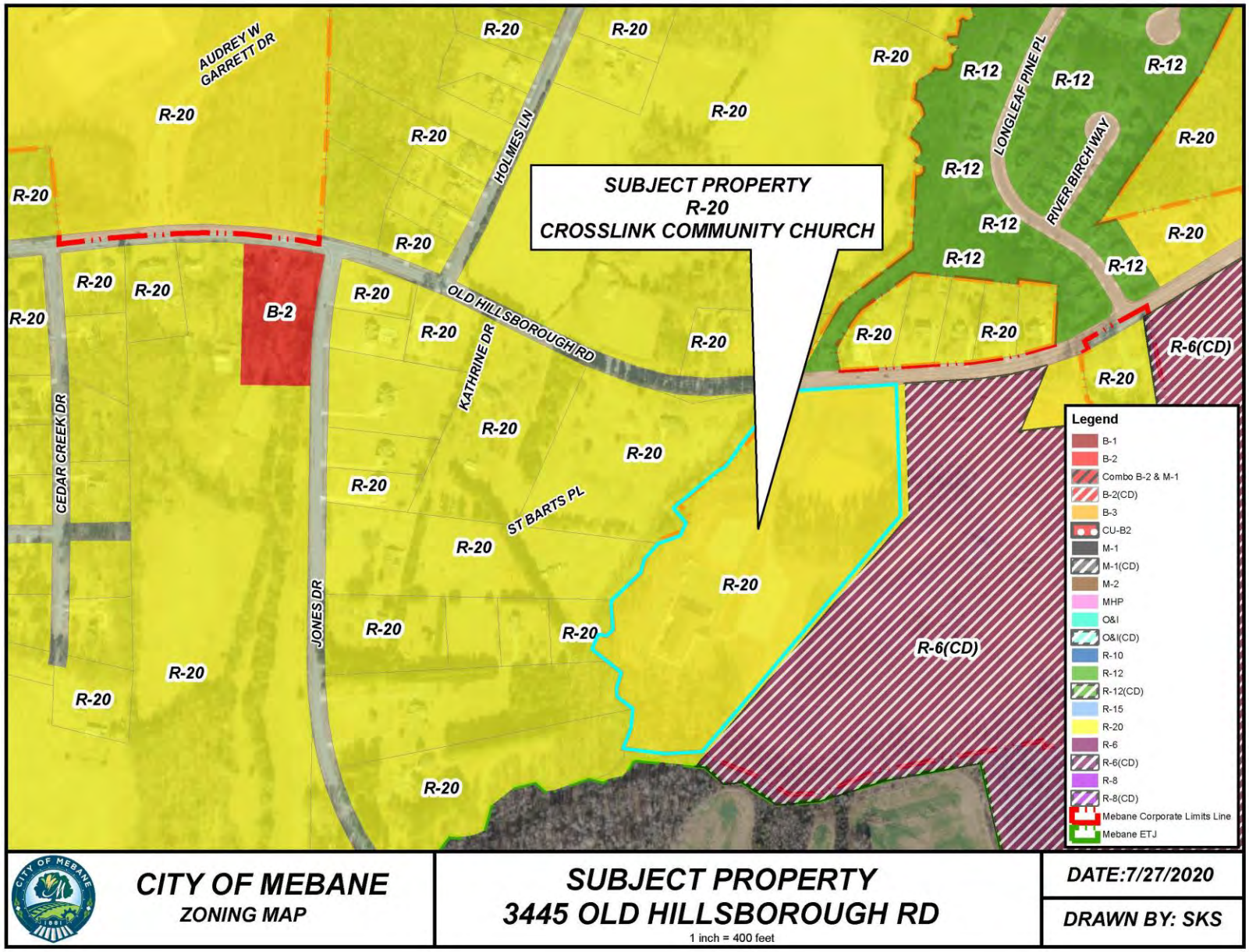
SPECIAL USE PERMIT
ALAMANCE COMMUNITY SCHOOL
3445 OLD HILLSBOROUGH ROAD, MEBANE, NORTH CAROLINA 27302
ALAMANCE COUNTY

SITE PLAN

C3 PROJECT #: 20-031
REVIEW PROJECT #: XX-XXX
SHEET #: C-1.0

ZONING REPORT

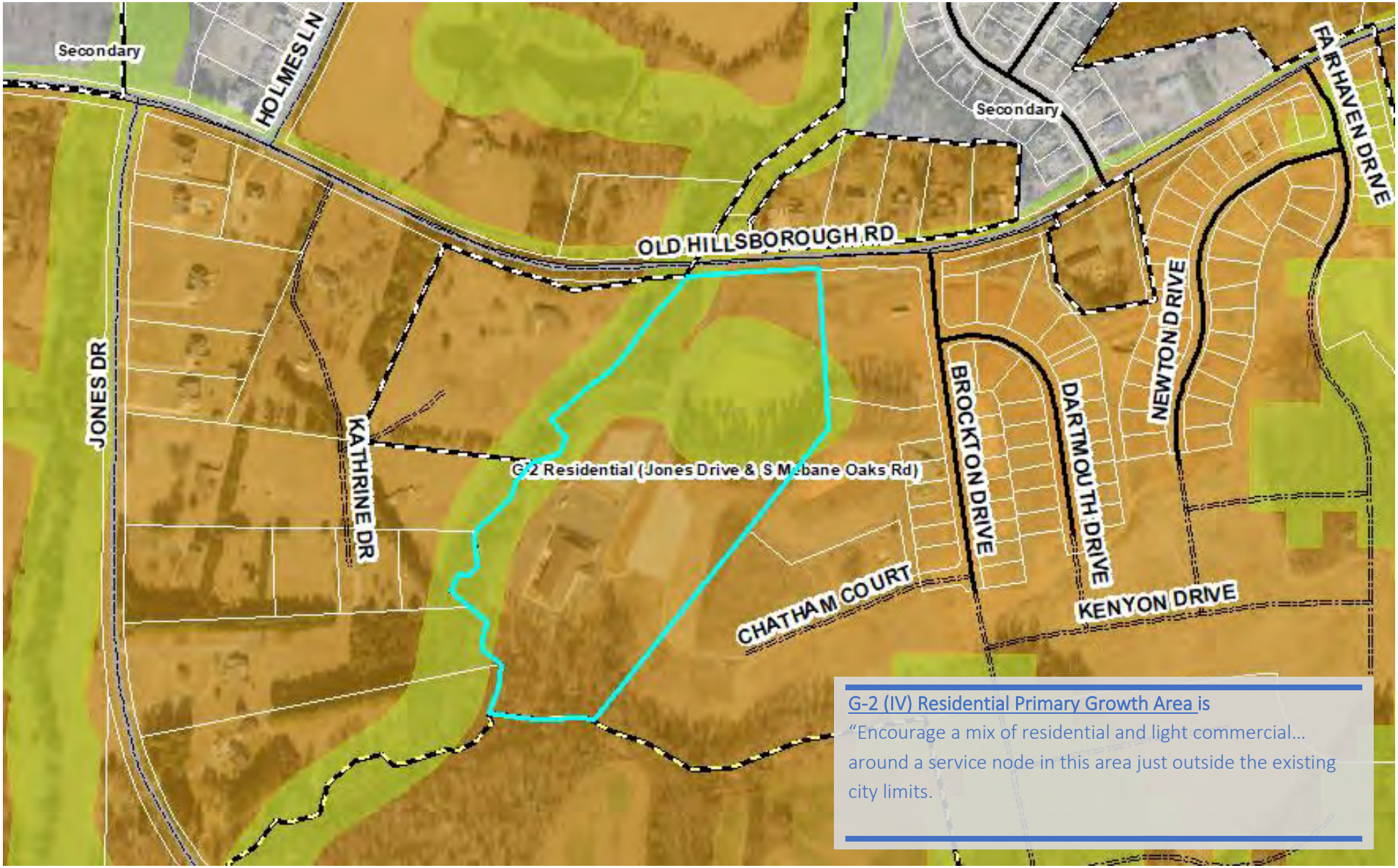
EXISTING ZONE	R-20 (Single-Family Residential)
REQUESTED ACTION	N/A
CONDITIONAL ZONE?	☐YES ☒NO
CURRENT LAND USE	Crosslink Community Church, peak use on Sundays
PARCEL SIZE	+/-16.42 ac
PROPERTY OWNERS	Crosslink Community Church 1030 Mebane Oaks Road Mebane, NC 27302 GPIN 9813498204
LEGAL DESCRIPTION	The applicant is requesting a special use permit be granted for this church to be temporarily used as a K-3 charter school until their primary campus in Graham is able to be occupied. The period of use will not exceed 90 days.
AREA ZONING & DISTRICTS	All properties surrounding the subject property are zoned R-20 with the exception of the R-6 Residential Cluster to the east, which is the Magnolia Glen development, and the R-12 Residential Cluster to north across Old Hillsborough Road, which is the Arbor Creek development
SITE HISTORY	The property has been the site of Crosslink Community Church since 2017. There is no proposed change in this primary use.
	STAFF ANALYSIS
CITY LIMITS?	☒YES ☐NO
PROPOSED USE BY-RIGHT?	☐YES ☒NO
SPECIAL USE?	☒YES ☐NO
EXISTING UTILITIES?	☒YES ☐NO
POTENTIAL IMPACT OF PROPOSED ZONE	There is no rezoning request, only a special use request to use the existing building and facilities for a new, temporary use.


SUBJECT PROPERTY
R-20
CROSSLINK COMMUNITY CHURCH
AUDREY W GARRETT DR
HOLMES LN
OLD HILLSBOROUGH RD
KATHRINE DR
CEDAR CREEK DR
JONES DR
ST BARTS PL
LONGLEAF PINE PL
RIVER BIRCH WAY
B-2
R-20
R-12
R-6(CD)
Legend
B-1
B-2
Combo B-2 & M-1
B-2(CD)
B-3
CU-B2
M-1
M-1(CD)
M-2
MHP
O&I
O&I(CD)
R-10
R-12
R-12(CD)
R-15
R-20
R-6
R-6(CD)
R-8
R-8(CD)
Mebane Corporate Limits Line
Mebane ETJ
CITY OF MEBANE
ZONING MAP
SUBJECT PROPERTY
3445 OLD HILLSBOROUGH RD
1 inch = 400 feet
DATE:7/27/2020
DRAWN BY: SKS

LAND USE REPORT

EXISTING LAND USE	Church
PROPOSED LAND USE & REQUESTED ACTION	The applicant is requesting a special use permit for a K-3 school to accommodate up to 200 students for a temporary period of no longer than 90 days until their primary campus in Graham may be occupied.
PROPOSED ZONING	N/A
PARCEL SIZE	+/-16.42
AREA LAND USE	All of the surrounding land uses are single-family residences, though their density varies depending upon whether they are served by municipal utilities or not.
ONSITE AMENITIES & DEDICATIONS	The applicant is not proposing to provide any new amenities or dedications, though Crosslink Community Church still has outstanding obligations.
WAIVER REQUESTED	☐YES ☒NO
DESCRIPTION OF REQUESTED WAIVER(S)	

CONSISTENCY WITH *MEBANE BY DESIGN* STRATEGY	
LAND USE GROWTH STRATEGY DESIGNATION(S)	G-2 Primary Residential (VI) Growth Area (Jones Drive & South Mebane Oaks Road) Conservation Area
MEBANE BY DESIGN GOALS & OBJECTIVES SUPPORTED	
MEBANE BY DESIGN GOALS & OBJECTIVES NOT SUPPORTED	



G-2 (IV) Residential Primary Growth Area is

"Encourage a mix of residential and light commercial… around a service node in this area just outside the existing city limits.

UTILITIES REPORT

AVAILABLE UTILITIES	☒YES ☐NO
PROPOSED UTILITY NEEDS	The applicant proposes to use the existing utilities of Crosslink Community Church. Per the memo from City Engineer Franz Holt, this facility can accommodate a student population of 200 with associated faculty.
UTILITIES PROVIDED BY APPLICANT	None
MUNICIPAL CAPACITY TO ABSORB PROJECT	N/A
CONSISTENCY WITH MEBANE LONG RANGE UTILITY PLAN?	☒YES ☐NO
ADEQUATE STORMWATER CONTROL?	☒YES ☐NO
INNOVATIVE STORMWATER MANAGEMENT?	☐YES ☒NO
TRANSPORTATION NETWORK STATUS	
CURRENT CONDITIONS	Old Hillsborough Road at this location experiences an average of 6,400 trips per day and has a level of service (LOS) D. With nearby transportation improvements, it is forecast to improve to a LOS C. Old Hillsborough Road at the Jones Drive intersection has a Safety Score of 66.7, with two people killed in automobile crashes, three pedestrians struck, and two people injured.
TRAFFIC IMPACT ANALYSIS REQUIRED?	☒YES ☐NO
DESCRIPTION OR RECOMMENDED IMPROVEMENTS	A traffic study was completed by Ramey, Kemp, and Associates and reviewed by NCDOT District and Municipal & School Transportation Assistance Unit staff. Per the memo from District Engineer C.N. Edwards, Jr., none of the external improvements described in the study are required. Internal modifications and implementation of the traffic management plan are the responsibility of the school.
CONSISTENCY WITH THE MEBANE BICYCLE AND PEDESTRIAN TRANSPORTATION PLAN?	☒YES ☐NO
MULTIMODAL IMPROVEMENTS PROVIDED BY APPLICANT?	☐YES ☒NO
DESCRIPTION OF MULTIMODAL IMPROVEMENTS	The applicant does not propose to make any multimodal improvements due to the temporary nature of the requested special use.

STAFF RECOMMENDATION

STAFF ZONING RECOMMENDATION	☐ APPROVE ☐ DISAPPROVE
STAFF SPECIAL USE FINDING	☒ CONSISTENT ☐ NOT CONSISTENT……WITH *MEBANE BY DESIGN*
RATIONALE	The proposed development "Alamance Community School Temporary Use" is consistent with the guidance provided within *Mebane By Design*, the Mebane Comprehensive Land Development Plan, and is in harmony with the surrounding zoning of the area. Given the temporary nature of the use request, multimodal improvements consistent with the City's *2040 Comprehensive Transportation Plan* or *Bicycle and Pedestrian Transportation Plan* are not proposed.
PUBLIC INTEREST CONFORMANCE?	
ENDANGER PUBLIC HEALTH OR SAFETY?	☐YES ☐NO
SUBSTANTIALLY INJURE THE VALUE OF ADJOINING OR ABUTTING PROPERTY?	☐YES ☐NO
HARMONIOUS WITH THE AREA IN WHICH IT IS LOCATED?	☐YES ☐NO
CONSISTENT WITH *MEBANE BY DESIGN*, THE MUNICIPAL COMPREHENSIVE LAND DEVELOPMENT PLAN?	☐ The application is consistent with the objectives and policies for growth and development contained in the City of Mebane Comprehensive Land Development Plan, *Mebane By Design*, and, as such, has been recommended for approval. ☐ The application is not fully consistent with the objectives and policies for growth and development of the City of Mebane Comprehensive Land Development Plan, *Mebane By Design*, but is otherwise in the public interest and has been recommended for approval. The Comprehensive Land Development Plan must be amended to reflect this approval and ensure consistency for the City of Mebane's long-range planning objectives and policies. ☐ The application is not consistent with the objectives and policies for growth and development of the City of Mebane Comprehensive Land Development Plan, *Mebane By Design*, and, as such, has been recommended for denial.

Technical Memorandum

Date: July 24th, 2020

To: Ashley Ownbey, Planner

From: Franz K. Holt, P.E. FH

Subject: Alamance Community School – City Engineering review

City Engineering has reviewed the revised site plan for the Alamance Community School (ACS) received July 23, 2020 prepared by Chad Abbott, P.E. with C3 Design & Engineering, PLLC. Comments are as follows:

A. General Summary

1. Crosslink Church is proposed to be used as the temporary location for the ACS.
2. No additional stormwater control measures are required at the existing facility.
3. No additional water and sewer improvements are required at the existing facility.
4. Revised car "stacking" plan meets suggested revision from Ramey Kemp (role as traffic engineer for the City of Mebane).
5. No additional driveway improvement connections are required or proposed at Old Hillsborough Rd.
6. NCDOT may need to provide a temporary driveway permit for the temporary change is use (church to school). NCDOT has indicated that if any off-site roadway improvements are needed, they will not be a City of Mebane responsibility to install.

B. Availability of City Water and Sewer

Regarding the site plan and in accordance with paragraph 7-4.3 A.3.a. in the UDO, this memo is provided to indicate that I have reviewed the existing water and sewer system layout and find that it adequately meets the proposed change in temporary use as follows:

1. Water system – No changes proposed or needed to the existing water system based on a probable temporary use of less than 2,000 gallons per day.

2. Sanitary Sewer system – No changes needed to the existing sewer system based on a probable temporary use of less than 2,000 gallons per day. Downstream sewer pump stations and WRRF can handle this temporary demand. Food service prep not done on site so no additional related grease trap concerns.

C. Watershed Overlay District and Phase II Stormwater Requirements

1. Watershed Overlay District requirements are provided under Sec. 5.2 of the UDO.

   These requirements in the UDO are for the Back-Creek Watershed, which includes the Graham-Mebane Lake. The project is tributary to the Little Haw Creek; a Class V watershed and the Watershed Overlay District requirements do not apply to this project. This type of watershed classification (Class V) does not have density restrictions or built upon restrictions as required for the Graham Mebane Lake watershed.

2. Phase II Stormwater Post Construction Ordinance

   Sec. 5.4 in the UDO provides standards for Storm Water Management and 5.4.F requires compliance with the Mebane Post Construction Runoff Ordinance (which is a stand-alone ordinance titled the Phase II Stormwater Post Construction Ordinance (SPCO)). The standards in the UDO are general standards as the Ordinance itself provide detailed standards. While the standard is applicable, the threshold of land disturbance of less than 1 acre being shown exempts the project for any new stormwater control requirements.

D. Storm Drainage System

Sec. 5-4. D. in the UDO provides requirements for storm drainage systems. No new storm drain improvements are proposed or needed.

E. Street Access and Traffic Analysis

Access to Old Hillsborough Road is unchanged. The City's Traffic Analysis by Ramey Kemp indicated proposed car "stacking" recommendations which are met with the revised site plan. As of this memo date there are recommendations for additional striping on Jones Road at the Old Hillsborough Road intersection and on Old Hillsborough Road at NC 119. NCDOT has not completed their review which could alter these recommendations. NCDOT has also indicated that any required improvements will not be a City of Mebane responsibility to install.

F. Construction Plan Submittal – We do not anticipate any additional drawings being required.

RAMEY KEMP ASSOCIATES
Moving forward.

T 919 872 5115
5808 Faringdon Place
Raleigh, NC 27609

July 6, 2020

Cy Stober, AICP
SchoolDev
106 East Washington Street
Mebane, NC 27302
Phone: (919)563-9990
Email: cstober@cityofmebane.com

Subject: Traffic Analysis
Alamance Community Charter Temporary Site – Mebane, NC

Dear Mr. Stober:

This letter provides the findings of a traffic analysis prepared by Ramey Kemp & Associates, Inc. (RKA) for the proposed Alamance Community Charter Temporary Site to be temporarily located at the existing Crosslink Community Church (3457 Old Hillsborough Road) in Mebane, North Carolina. The purpose of the study is to evaluate anticipated traffic impacts caused by the proposed temporary site. The site will use the existing driveway of the Crosslink Community Church (Site Access). The scope for the following capacity analysis was requested by the City of Mebane (City) and not required by the North Carolina Department of Transportation (NCDOT).

The proposed temporary school is anticipated to have a maximum of 400 total students enrolled at the school; however, **due to the COVID-19 pandemic and because it will be a temporary space, the school will only have a maximum of 220 students at any given time on campus**. Based on discussion with the project team, all students will be in grades K-3. The temporary school is anticipated to be operational for a maximum of 45 days and no buses are anticipated to be provided during that time. Refer to Figure 1 located in the Appendix A for a site location map. Refer to Figure 2 located in Appendix A for the Crosslink Community Church site plan.

This analysis considers No-Build (2020) and Build (2020) traffic conditions for the study intersections during the weekday AM and PM peak hours. The study network was analyzed using the weekday PM peak hour (4:00 – 6:00 PM) of the network, which is expected to occur after the school day (8:25 AM – 3:25 PM) has ended. The bell schedule is also anticipated to be offset from the nearby schools which would lower volumes further during both the weekday AM and PM peak hours. The existing schools' bell schedules and the proposed school's bell schedule are as follows:

- Audrey W Garrett Elementary: 8:00 AM – 3:25 PM
- Hawfields Middle School: 7:50 AM – 2:40 PM
- Proposed Alamance Community Charter Temporary School: 8:25 AM – 3:25 PM

Based on the above schedules, the anticipated bell schedule for the temporary site is expected to start at least 25 minutes after nearby schools. This time would be expected to allow adjacent school traffic to leave the network. Utilizing the weekday AM and PM peak hours is expected to provide a conservative analysis and result in higher delays than what would be expected during the school AM and PM peak hours.

Internal analysis was performed utilizing Synchro and SimTraffic and simulated based on NCDOT Municipal and School Transportation Assistance (MSTA) requirements per the MSTA School Calculator.
Based on the scoping meeting attended on June 4th, 2020, the study area consists of the following intersections as identified by the City:

- Old Hillsborough Road / Trollingwood Hawfields Road and NC 119*
- Old Hillsborough Road and Jones Drive*
- Old Hillsborough Road and Mebane Oaks Road*
- Old Hillsborough Road and Site Access

*Based on the scoping meeting on June 4th, 2020, these intersections were only required to be analyzed for the City. NCDOT only required analysis at the intersection of Old Hillsborough Road and Site Access.

Campus Features

The proposed school will be temporarily located at the existing Crosslink Community Church (3457 Old Hillsborough Road) in Mebane, NC. The site has an existing driveway (Site Access) with one ingress and two egress lanes. It should be noted that no buses are not expected to be provided at the site.

Loading Operations

Two alternatives were considered for the circulation pattern of the site. Alternative 1 would allow entering vehicles to enter the site and follow a counterclockwise flow around the building and drop students off at the east entrance. Alternative 2 would allow parents to perform a clockwise movement around the building and drop students off at the west entrance. The study intersections are not expected to be impacted by these alternatives and thus were not expected to change between Alternative 1 and Alternative 2. Refer to the Stacking section of this report for more information.

Existing Roadways

Existing lane configurations at the study intersections, lane widths, storage capacities, and other roadway information was collected by Ramey Kemp Associates. Existing lane configurations can be found in Figure 3. Table 1, on the following page, provides a summary of the data collected.

Table 1: Existing Roadway Inventory

Road Name	Route Number	Typical Cross Section	Speed Limit	Maintained By	2017 AADT (vpd)
NC 119	NC 119	2-lane undivided	45 mph	NCDOT	23,000
Trollingwood Hawfields Road	SR 1981	2-lane undivided	45 mph	NCDOT	6,600
Old Hillsborough Road	SR 2126	2-lane undivided	45 mph	NCDOT	6,300
Jones Drive	N/A	2-lane undivided	45 mph	NCDOT	N/A
Mebane Oaks Road	SR 1007	2-lane undivided	45 mph	NCDOT	26,000

Existing (2020) Traffic Volumes

Based on the scoping meeting on June 4th, 2020, it was determined that peak hour counts were not required. Traffic counts from previous studies were used for the study intersections. These counts were performed in 2017 and 2019. In order to develop the existing traffic volumes these counts were grown to the year 2020 using a 1% annual growth rate. This methodology was approved by the City and NCDOT. Refer to the following, No-Build (2020) Peak Hour Conditions, section of this report for more information.

No-Build (2020) Peak Hour Conditions

Due to the COVID-19 pandemic, traffic count data from Cambridge Park and Mebane Oaks Residential were utilized at the following study intersections during a typical weekday AM (7:00 – 9:00 AM) and PM (4:00 – 6:00 PM) peak periods. Refer to Figure 4 for an illustration of the projected (2020) volumes:

- Old Hillsborough Road / Trollingwood Hawfields Road and NC 119 (October 2017)
- Old Hillsborough Road and Jones Drive (October 2017)
- Old Hillsborough Road and Mebane Oaks Road (November 2019)

Traffic count data was not available for the intersection of Old Hillsborough Road and Site Access; however, it was assumed that no non-school related traffic would be expected to/from Crosslink Community Church during the proposed temporary school's peak hours. Through volumes were balanced through this intersection along Old Hillsborough Road, as appropriate. The No-Build (2020) included traffic volumes from 2017 and 2019 as listed above. These volumes were grown to 2020 utilizing a 1% annually compounded

growth rate, as determined during scoping, based on historical data. Trips from the following adjacent developments were assumed between the count dates and No-Build (2020):

- Cambridge Park
- The Meadows
- Magnolia Glen

Table 2, below, provides a summary of the above adjacent developments.

Table 2: Adjacent Development Information

Development Name	Location	Build-Out Year	Land Use / Intensity	TIA Performed
Cambridge Park	East of Turner Road and west of Jones Drive	2021*	Phase 1: 122 single-family homes Phase 2: 160 single-family homes	November 2017 by RKA
The Meadows	Northwest of the intersection of Bowman Road and Ben Wilson Road	2020	330 single-family homes and 51 townhomes	August 2016 by Davenport
Magnolia Glen	South of Old Hillsborough Road and east of Jones Drive	2021	138 single-family homes and 106 'active adult' detached homes	June 2015 by Davenport

*Phases 1 and 2 are anticipated to be built-out by 2021

It should be noted that the addition of the trips from these developments is to provide a conservative analysis, as it is likely that the peak hours of the above developments will not coincide with the proposed temporary school. Additionally, based on the residential nature of the adjacent developments, it is likely that there could be interaction between the temporary school and adjacent developments. Adjacent development trips are provided in Figure 5.

Identified adjacent development volumes were added to the projected (2020) traffic volumes to develop the No-Build (2020) peak hour traffic volumes shown in Figure 6. It should be noted that improvements from the above adjacent developments were not included in this study to provide conservative analysis results, as determined during scoping. The adjacent developments identified the following improvements:

<u>Old Hillsborough Road / Trollingwood Hawfields Road and NC 119</u>

- Signal timing adjustments.
- Extend the westbound left-turn lane on NC 119 to approximately 225 feet of storage.

<u>Old Hillsborough Road and Mebane Oaks Road</u>

- Provide signalization once warranted and approved by NCDOT and the City.

- Construct an exclusive northbound left-turn lane with 150 feet of storage.
- Construct an exclusive southbound left-turn lane with 150 feet of storage.

Additionally, NCDOT TIP Project U-6013 is anticipated to widen NC 119 from Trollingwood Hawfields Road to Lowes Boulevard. Part of this project includes improving the intersection of Old Hillsborough Road / Trollingwood Hawfields Road and NC 119 with turn lanes on the northbound and westbound approaches; however, the project is not anticipated to be built-out until 2023. Due to the build-out year and temporary nature of the school, these improvements were not included in future analysis for the proposed temporary school.

Trip Generation

Average weekday daily and peak hour trips for the proposed public school were generated by utilizing the MSTA School Calculator, which is based on traffic count data that has been collected at school sites statewide. The calculator provides a conservative estimate of the anticipated traffic generated by the proposed school on an average school day.

The proposed temporary school is anticipated to have a maximum of 400 total students enrolled at the school; however, **due to the COVID-19 pandemic and because it will be a temporary space, the school will only have a maximum of 220 students at any given time on campu**s. Additionally, the temporary site is not anticipated to offer any buses. For a charter school (grades K-3) with 220 students and no buses, the Traffic Calculator estimates 27 staff members, 123 parent drivers during the weekday AM peak hour, and 87 parent drivers during the school PM peak hour. Refer to Table 3, below, for a summary of the trip generation. Refer to Appendix B for MSTA calculations.

Table 3: Trip Generation Summary

LAND USE	TRIP GENERATOR	DAILY TRIPS	WEEKDAY AM PEAK HOUR (VPH)		SCHOOL PM PEAK HOUR (VPH)	
			Entering	Exiting	Entering	Exiting
Erwin Elementary School (220 Students)	27 Staff	54	27	0	0	27*
	Parents	420	123	123	87*	87*
Total Site Trips		**474**	**150**	**123**	**87***	**114***

*Based on the anticipated school PM carpool operational hours, minimal parent trips are expected to occur during the weekday PM (4:00 – 6:00 PM) peak period assumed for this study, so including these volumes in the PM analysis is expected to provide conservative results.

It is estimated that the proposed development would generate approximately 474 total site trips (237 entering and 237 exiting) on the roadway network during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that approximately 273 site trips (150 entering and 123 exiting) will occur during the weekday AM peak hour and 201 site trips (87 entering and 114 exiting) will occur during the school PM peak hour. It should be noted that the PM peak hour of the school is expected to occur prior to the weekday PM (4:00 – 6:00 PM) peak period assumed for this study based on the anticipated school bell schedule. This methodology is expected to provide conservative results.

Trip Distribution and Assignment

Trip distribution percentages used in assigning site traffic for parents and staff for this development were estimated based on a combination of existing traffic patterns, anticipated school districting, and engineering judgment. It is estimated that trips will be distributed as follows:

- 60% to/from the west via Trollingwood Hawfields Road
- 25% to/from the north via Mebane Oaks Road
- 10% to/from the south via NC 119
- 5% to/from the south via Jones Drive

This methodology was reviewed and approved during scoping. It should be noted that the anticipated school districting was based on the ultimate location of Alamance Community Charter to be located in the northeast quadrant of Jimmie Kerr Road and Kronsberg Court in Graham, North Carolina. Refer to Appendix C for a copy of approved scoping documentation.

The site trip distribution for the proposed temporary site is included in Figure 7. The site trip assignment for the proposed site is shown in Figure 8. Parents and staff are expected to follow a similar distribution; therefore, are shown on the same figures.

Build (2020) Peak Hour Conditions

The proposed site trips were added to the No-Build (2020) peak hour traffic volumes to develop the Build (2020) peak hour traffic volumes shown in Figure 9. Peak hour factors for each movement were adjusted in the analysis of build conditions since school trips occur during a short time period. A peak hour factor of 0.50 was used for all school trips. A weighted average was used to determine the peak hour factor for movements that included both school and non-school traffic.

Capacity Analysis

The No-Build (2020) and Build (2020) peak hour traffic volumes were analyzed to determine the expected levels of service at the study intersections under existing roadway conditions with the site fully built-out. Study intersections were analyzed using the methodology outlined in the *Highway Capacity Manual, 6th Edition* (HCM) published by the Transportation Research Board. Capacity and level of service are the design criteria for this traffic study. A computer software package, Synchro (Version 10.3), was used to complete the analyses for all of the study area intersections. Please note that the capacity analysis of a two-way stop-control intersection does not provide an overall level of service for an intersection; only delay for an approach with a conflicting movement. Capacity analysis at all study intersections was completed according to the City's UDO, NCDOT Congestion Management Guidelines, and NCDOT MSTA Guidelines. The results of the analysis are presented in the following section of this report.

Old Hillsborough Road / Trollingwood Hawfields Road and NC 119

The existing signalized intersection of Old Hillsborough Road / Trollingwood Hawfields Road and NC 119 was analyzed under No-Build (2020) and Build (2020) conditions with existing lane configurations and traffic control. Refer to Table 4 for a summary of the analysis results. Synchro capacity analysis reports are attached in Appendix D. Simtraffic reports are attached in Appendix G.

Table 4: Analysis Summary of Old Hillsborough Road [NB] / Trollingwood Hawfields Road [SB] and NC 119 [EB/WB]

ANALYSIS SCENARIO	APPROACH	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE*	
			Approach LOS (Delay)	Overall LOS (Delay)	Approach LOS (Delay)	Overall LOS (Delay)
No-Build (2020) Conditions	EB	1 LT, 1 TH-RT	D	E (62)	D*	D* (49*)
	WB	1 LT, 1 TH-RT	C		D*	
	NB	1 LT, 1 TH-RT	F		D*	
	SB	1 LT, 1 TH-RT	D		D*	
Build (2020) Conditions	EB	1 LT, 1 TH-RT	D	F (94)	D*	E* (60*)
	WB	1 LT, 1 TH-RT	C		D*	
	NB	1 LT, 1 TH-RT	F		E*	
	SB	1 LT, 1 TH-RT	E		E*	
Build (2020) with Conditions <u>with Improvements</u>	EB	1 LT, 1 TH-RT	E	E (67)	E*	E* (59*)
	WB	<u>1 LT**</u>, 1 TH-RT	D		E*	
	NB	**1 LT*****, 1 TH-RT	E		D*	
	SB	1 LT, 1 TH-RT	D		E*	

* Denotes delay expected during weekday PM peak hour of intersection. The intersection is expected to operate better during the school peak hour.
** Extend the left-turn lane to approximately 225 feet of storage and appropriate deceleration and taper length.
*** Restripe the left-turn lane to approximately 550 feet of storage and appropriate deceleration and taper length.
Improvements committed by adjacent developments <u>underlined</u>.

Capacity analysis indicates that the intersection of Old Hillsborough Road / Trollingwood Hawfields Road and NC 119 is expected to operate at an overall LOS E during the weekday AM peak hour and an overall LOS D during the weekday PM peak hour under No-Build (2020) conditions. The intersection is expected to degrade to an overall LOS F during the weekday AM peak hour and an overall LOS E during the weekday PM peak hour. It should be noted that the weekday PM delays would be expected to be lower during the school PM peak hour, since there is a lot of residential within the vicinity of the site and residential land uses typically generate traffic during two distinct peak periods, the weekday AM (7:00 – 9:00 AM) and weekday PM (4:00 – 6:00 PM) peak periods.

Based on SimTraffic simulations under Build (2020) conditions, the westbound left-turn lane along NC 119 and northbound left-turn lane along Old Hillsborough Road are anticipated to exceed the existing storage during the weekday PM peak hour. It should be noted that the Cambridge Park adjacent development is committed to

lengthening the westbound left-turn lane along NC 119 and there is additional lane width along the northbound approach (Old Hillsborough Road) that is currently gored out that could provide additional storage length with minimal added pavement width. Additionally, weekday PM queuing would be expected to be lower during the school PM peak hour, since there is a lot of residential within the vicinity of the site and residential land uses typically generate traffic during two distinct peak periods, the weekday AM (7:00 – 9:00 AM) and weekday PM (4:00 – 6:00 PM) peak periods.

The Cambridge Park adjacent development is committed to lengthening the westbound left-turn lane on NC 119 to approximately 225 feet of storage and appropriate deceleration and taper length, as well as providing signal timing adjustments under Phase 2. Based on coordination with the City and NCDOT, these improvements were not included under No-Build (2020) nor Build (2020) conditions (without improvements) to provide a conservative estimation of traffic conditions at the build-out of the proposed temporary school should the improvements not be constructed by Fall 2020. Additionally, NCDOT TIP Project U-6013 will be implementing further improvements to the intersection, such as turn lanes on the northbound and westbound approaches. The build-out of NCDOT TIP Project U-6013 (2023) is expected to occur after the site is anticipated to be completed (2020) and the site is expected to be open for a maximum of 45 days; therefore, these improvements by NCDOT TIP Project U-6013 were not included in the analysis.

It should be noted that the proposed temporary school is only anticipated to contribute about 7 percent of traffic to the study intersection. With signal timing adjustments and a 225 feet of full width storage on the westbound left-turn lane (NC 119) per the Cambridge Park improvements and an extended northbound left-turn lane (Old Hillsborough Road) with approximately 550 feet of full width storage, the study intersection is anticipated to operate with overall delays comparable to No-Build (2020) conditions and queuing is anticipated to be contained within the turn lanes. Based on the low amount of added overall traffic to the study intersection, the future impact of NCDOT TIP Project U-6013, and the temporary nature of the development, only extending the northbound left-turn lane (Old Hillsborough Road) to approximately 550 feet of full width storage is recommended by the proposed site at this study intersection.

Old Hillsborough Road and Jones Drive

The existing unsignalized intersection of Old Hillsborough Road and Jones Drive was analyzed under No-Build (2020) and Build (2020) conditions with the lane configurations and traffic control shown in Table 5. Refer to Table 5 for a summary of the analysis results. Synchro capacity analysis reports are attached in Appendix E. Simtraffic reports are attached in Appendix G.

Table 5: Analysis Summary of Old Hillsborough Road and Jones Drive

ANALYSIS SCENARIO	APPROACH	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE*	
			Approach LOS (Delay)	Overall LOS (Delay)	Approach LOS (Delay)	Overall LOS (Delay)
No-Build (2020) Conditions	EB WB NB	1 TH-RT 1 LT-TH 1 LT-RT	-- A[1] D[2]	N/A	-- A[1*] E[2*]	N/A
Build (2020) Conditions	EB WB NB	1 TH-RT 1 LT-TH 1 LT-RT	-- A[1] F[2]	N/A	-- A[1*] F[2*]	N/A
Build (2020) Conditions **with Improvements**	EB WB NB	1 TH-RT 1 LT-TH 1 LT, **1 RT****	-- A[1] F[2]	N/A	-- A[1*] F[2*]	N/A

1. Level of service for major-street left-turn movement.
2. Level of service for minor-street approach.

Improvements by developer in **Bold.**

* Denotes delay expected during weekday PM peak hour of intersection. The intersection is expected to operate better during the school peak hour.

**Restripe the northbound approach to include an exclusive left-turn lane and an exclusive right-turn lane with 25 feet of storage and appropriate taper.

Capacity analysis at the intersection of Old Hillsborough Road and Jones Drive indicates that the major-street left-turn movement is expected to operate at LOS A during the weekday AM and PM peak hours under all analysis conditions. Under No-Build (2020) conditions, the minor-street approach is expected to operate at LOS D during the weekday AM peak hour and LOS E during the weekday PM peak hour. Under Build (2020) conditions the minor-street approach is expected to operate at LOS F during the weekday AM and PM peak hours.

It should be noted that the site trip distribution was based on the anticipated districting for the ultimate location of Alamance Community Charter, to be located in the northeast quadrant of Jimmie Kerr Road and Kronsberg Court in Graham, North Carolina. Based on the anticipated school districting, the proposed temporary school is only expected to contribute approximately 2% of traffic to the total northbound approach volume at this study intersection. Additionally, the proposed development is only anticipated to contribute traffic volume to the northbound right-turn movement at this intersection which is expected to operate with

less delays than the northbound left-turn movement, as it is only expected to conflict with the eastbound through movement.

Turn lanes were considered and, while they were expected to improve delays, the turn lanes were not anticipated to improve the minor-street approach to an acceptable level-of-service during the weekday AM and PM peak hours. It was determined that a signal would be necessary for the intersection to operate at acceptable levels-of-service during the weekday AM and PM peak hours. Build (2020) traffic volumes were analyzed utilizing the criteria contained in the *Manual on Uniform Traffic Control Devices* (MUTCD) and it was determined that peak hour warrants would be expected to be met at the build-out of the proposed development. It should be noted that this methodology assumes that school related traffic is generated during the weekday PM peak hour, which is conservative based on the proposed school's anticipated bell schedule (8:25 AM – 3:25 PM) and since there is a lot of residential within the vicinity of the site and residential land uses typically generate traffic during two distinct peak periods, the weekday AM (7:00 – 9:00 AM) and weekday PM (4:00 – 6:00 PM) peak periods. It is also unlikely that the intersection will satisfy the MUTCD 8-hour and 4-hour warrants based on the types of land uses within the study area (residential and school, which generate traffic during distinct peaks). With this in consideration, and the fact that the site will only be open for a short time, a signal is not recommended.

Due to the low contribution of site related traffic to the minor-street approach, the conservative nature of the analysis, and the temporary nature of the site, it is recommended that the developer restripe the northbound approach to include an exclusive left-turn lane and an exclusive right-turn lane with 25 feet of storage and appropriate taper. It should be noted that the northbound approach is has the pavement for an exclusive northbound right-turn lane. This improvement is expected to lower expected delays and queue lengths on the northbound approach.

Old Hillsborough Road and Mebane Oaks Road

The existing all-way stop controlled intersection of Old Hillsborough Road and Mebane Oaks Road was analyzed under No-Build (2020) and Build (2020) conditions with existing lane configurations and traffic control. It should be noted that the Cambridge Park adjacent development is committed to a traffic signal once warranted and approved by NCDOT. Refer to Table 6 for a summary of the analysis results. Synchro capacity analysis reports are attached in Appendix F. Simtraffic reports are attached in Appendix G.

Table 6: Analysis Summary of Old Hillsborough Road and Mebane Oaks Road

ANALYSIS SCENARIO	APPROACH	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE*	
			Approach LOS (Delay)	Overall LOS (Delay)	Approach LOS (Delay)	Overall LOS (Delay)
No-Build (2020) Conditions	EB	1 LT-TH-RT	C[3]	C (15)	C[3]*	F* (51*)
	WB	1 LT-TH-RT	B[3]		B[3]*	
	NB	1 LT-TH-RT	B[3]		C[3]*	
	SB	1 LT-TH-RT	B[3]		F[3]*	
Build (2020) Conditions	EB	1 LT-TH-RT	C[3]	C (19)	C[3]*	F* (70*)
	WB	1 LT-TH-RT	B[3]		C[3]*	
	NB	1 LT-TH-RT	C[3]		C[3]*	
	SB	1 LT-TH-RT	C[3]		F[3]*	
Build (2020) Conditions <u>with Improvements</u>	EB	1 LT-TH-RT	C	C (24)	C*	C* (21*)
	WB	1 LT-TH-RT	A		B*	
	NB	<u>1 LT,</u> 1 TH-RT	C		C*	
	SB	<u>1 LT,</u> 1 TH-RT	C		B*	

3. Level of service for all-way stop-control approach.
* Denotes delay expected during weekday PM peak hour of intersection. The intersection is expected to operate better during the school peak hour.
Improvements committed by adjacent developments <u>underlined</u>.

Capacity analysis at the intersection of Old Hillsborough Road and Mebane Oaks Road indicates that the intersection is expected to operate at an overall LOS C during the weekday AM peak hour and an overall LOS F during the weekday PM peak hour under No-Build (2020) and Build (2020) conditions. The northbound and southbound approaches are expected to degrade from a LOS B during No-Build (2020) conditions to a LOS C during Build (2020) conditions during the weekday AM peak hour. It should be noted that these delays are just under the LOS C threshold and the development is not anticipated to have a significant impact.

Based on the improvements by adjacent developments, a traffic signal was considered. Build (2020) traffic volumes were analyzed utilizing the criteria contained in the *Manual on Uniform Traffic Control Devices* (MUTCD) and it was determined that peak hour warrants would not be expected to be met at the build-out of the proposed development. It is also unlikely that the intersection will satisfy the MUTCD 8-hour and 4-hour warrants based on the types of land uses within the study area (residential and school, which generate traffic during distinct peaks); however, it was determined that a traffic signal would be necessary for the intersection

to operate at acceptable levels-of-service. It should be noted that the proposed temporary school is anticipated to contribute only about 5 percent of traffic to the study intersection. Due to the low anticipated traffic contribution by the proposed school, the committed improvements by adjacent developments, and the temporary nature of the proposed school, no improvements are recommended by the developer at this study intersection.

Old Hillsborough Road and Site Access

The existing unsignalized intersection of Old Hillsborough Road and Site Access was analyzed under Build (2020) conditions with the lane configurations and traffic control shown in Table 7. While this intersection is an existing intersection, it was not analyzed during the No-Build (2020) conditions because it was assumed no peak hour traffic would be using the site driveway. Refer to Table 7 for a summary of the analysis results. Synchro capacity analysis reports are attached.

Table 7: Analysis Summary of Old Hillsborough Road and Site Access

ANALYSIS SCENARIO	APPROACH	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE*	
			Approach LOS (Delay)	Overall LOS (Delay)	Approach LOS (Delay)	Overall LOS (Delay)
Build (2020) Conditions	EB WB NB	1 TH-RT 1 LT-TH 1 LT- RT	-- A[1] D[2]	N/A	-- A[1]* D[2]*	N/A

1. Level of service for major-street left-turn movement.
2. Level of service for minor-street approach.

* Denotes delay expected during weekday PM peak hour of intersection. The intersection is expected to operate better during the school peak hour.

Capacity analysis at the intersection of Old Hillsborough Road and Site Access indicates that the major-street left-turn movement is expected to operate at a LOS A during the weekday AM and PM peak hours under Build (2020) conditions. The northbound minor-street approach is expected to operate at a LOS D during the weekday AM and PM peak hours. An eastbound right turn lane was warranted based on NCDOT turn lane warrants; however, due to the low delays of the intersection and the fact that the site is only expected to be open for a short duration (maximum of 45 days), turn lanes are not recommended.

Stacking

For a 220-student capacity charter school serving grades K-3, the MSTA School Traffic Calculator indicates an average internal stacking demand of 954 feet and a maximum high demand internal stacking need of 1,241 feet for student pick-up and drop-off. The maximum high demand internal stacking length accounts for an additional 30% of stacking length compared to the average day in the MSTA School Traffic Calculator. Two alternatives were considered for the circulation pattern of the site, as follows:

- Alternative 1 – entering vehicles navigate through the site in a counterclockwise direction around the building and drop students off at the east entrance
    - Students that sit in the passenger side of the vehicle may need to walk between cars due to the school being on the driver side of the car during (un)loading operations
        - It should be noted that it is recommended that children be seated in the back seat in vehicles until the age of 12 in North Carolina and all at the proposed temporary school are anticipated to be less than 12 years old (grades K-3)
- Alternative 2 – entering vehicles navigate through the site in a clockwise direction around the building and drop students off at the west entrance
    - Ingress and egress traffic would need to cross in order to allow vehicles to exit the site

Alternative 1 has an internal stacking length of 1,570 feet (single stacked). Alternative 2 is expected to have approximately 1,409 feet (single stacked) of internal stacking. Both alternatives are expected to meet the high demand stacking length as estimated by the MSTA School Calculator; however, Alternative 2 would require the ingress and egress traffic to cross in order to allow vehicles to exit the site. Alternative 1 is recommended due to the additional provided internal stacking length and to prevent ingress and egress traffic conflicts on-site. Refer to the Traffic Management Plan (TMP), included in Appendix I, for more information.

The pick-up/drop-off loop layout was analyzed using Synchro and SimTraffic to determine if the stacking provided is anticipated to accommodate the volume of drop-off/pick-ups during the peak school period. Based on SimTraffic simulations, the storage provided on the school loop should be more than sufficient to handle the expected stacking.

Findings and Summary

This traffic analysis was conducted to determine the potential traffic impacts for the proposed Alamance Community Charter Temporary Site. The school system has indicated the maximum student population will be 220 students. It is expected to open to students in Fall 2020 and will be located at the existing Crosslink Community Church (3457 Old Hillsborough Road) in Mebane, North Carolina.

It is estimated that the proposed development would generate approximately 474 total site trips (237 entering and 237 exiting) on the roadway network during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that approximately 273 site trips (150 entering and 123 exiting) will occur during the weekday AM peak hour and 201 site trips (87 entering and 114 exiting) will occur during the school PM peak hour of the school.

Based on the scoping meeting attended on June 4th, 2020, the study area consists of the following intersections as identified by the City:

- Old Hillsborough Road / Trollingwood Hawfields Road and NC 119*
- Old Hillsborough Road and Jones Drive*

- Old Hillsborough Road and Mebane Oaks Road*
- Old Hillsborough Road and Site Access

*Based on the scoping meeting on June 4th, 2020, these intersections were only required to be analyzed for the City. NCDOT only required analysis at the intersection of Old Hillsborough Road and Site Access.

Recommendations

Based on the findings of this study, specific geometric and traffic control improvements have been identified at study intersections. The improvements are summarized below and are illustrated in Figure 10. Refer to the Traffic Management Plan (TMP) included in Appendix I for a description of on-site school operations and additional mitigation measures that may be considered.

Committed Improvements by Adjacent Developments

Old Hillsborough Road [NB] / Trollingwood Hawfields Road [SB] and NC 119 [EB/WB]

- Signal timing adjustments.
- Extend the westbound left-turn lane on NC 119 to approximately 225 feet of storage.

Old Hillsborough Road and Mebane Oaks Road

- Provide signalization once warranted and approved by NCDOT and the City.
- Construct an exclusive northbound left-turn lane with 150 feet of storage.
- Construct an exclusive southbound left-turn lane with 150 feet of storage.

Recommended Improvements by Developer

Old Hillsborough Road and Jones Drive

- Restripe the northbound approach to include a share through-left and an exclusive right turn lane with approximately 25 feet of storage and appropriate deceleration and taper length. It should be noted that the northbound approach has the pavement for an exclusive northbound right-turn lane.

It was determined that a northbound right-turn lane at the intersection of Old Hillsborough Road and Jones Drive would provide improved operations the intersection. Additional improvements at the remaining study intersections were considered, but were deemed not feasible due to the short term opening of the site.

Old Hillsborough Road [NB] / Trollingwood Hawfields Road [SB] and NC 119 [EB/WB]

- Extend the northbound left-turn lane on Old Hillsborough Road to include a total of approximately 550 feet of full width storage and appropriate deceleration and taper length.

Both alternatives for the drop off/pick-up patterns are expected to provide an adequate amount of storage; however, Alternative 2 would require the ingress and egress traffic to cross in order to allow vehicles to exit the site. It is recommended that Alternative 1 be implemented. It should be noted that this would result in the students potentially walking between cars due to the school being on the driver side of the car during drop off. Refer to the TMP for more information.

If you should have any questions, please feel free to contact me.

Sincerely,

07/08/2020

Josh Reinke, PE
State Traffic Engineering Lead
Ramey Kemp & Associates, Inc.

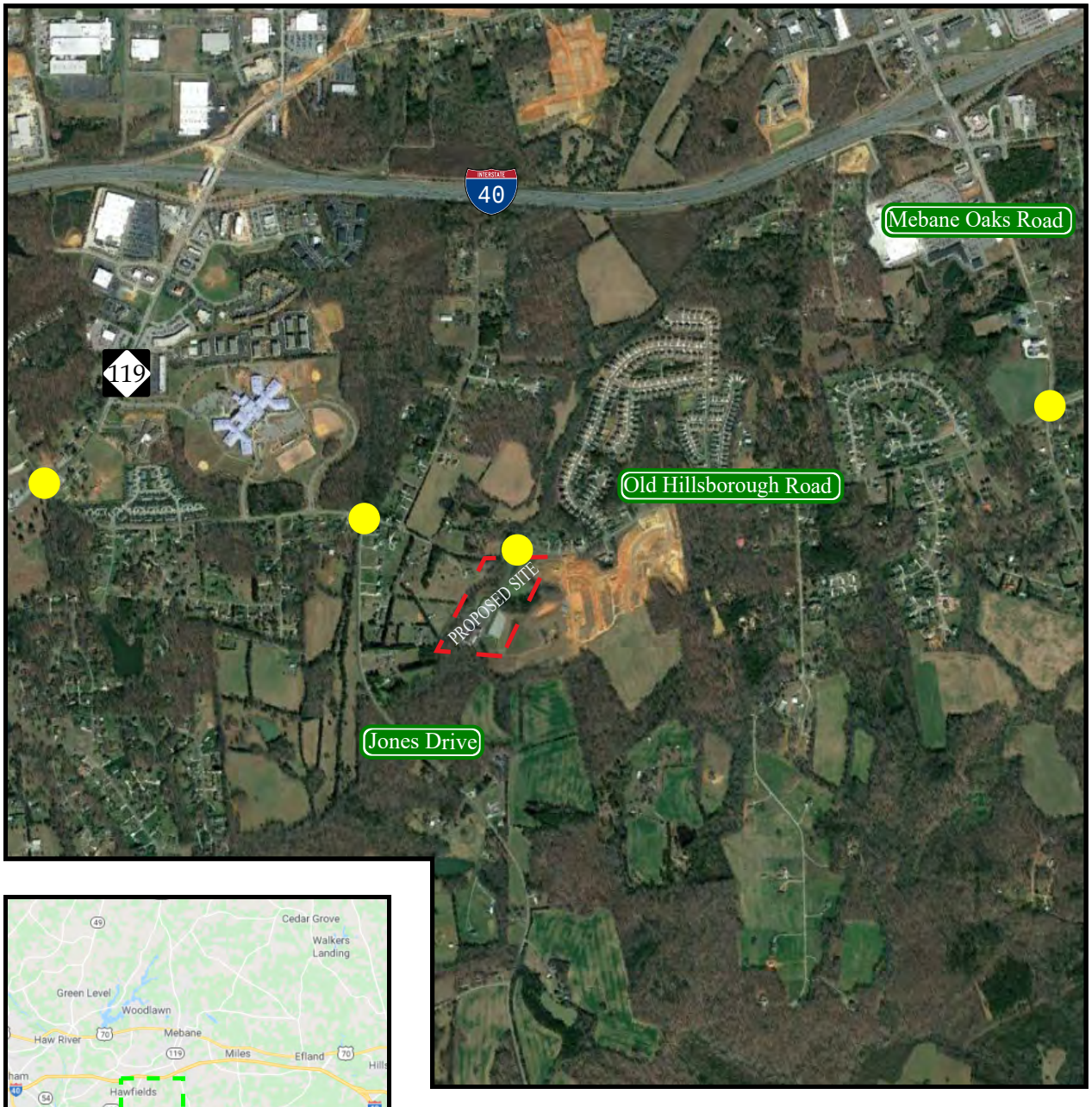
NC Corporate License # C-0910

Attachments: Appendix A – Figures
Appendix B – MSTA Calculations
Appendix C – Scoping Documentation
Appendix D – Capacity Analysis Results: Old Hillsborough Road / Trollingwood Hawfields Road and NC 119
Appendix E – Capacity Analysis Results: Old Hillsborough Road and Jones Drive
Appendix F – Capacity Analysis Results: Old Hillsborough Road and Mebane Oaks Road
Appendix G – Capacity Analysis Results: Old Hillsborough Road and Site Access
Appendix H – SimTraffic Reports
Appendix I – Traffic Management Plan

TECHNICAL APPENDIX

APPENDIX A

FIGURES



N

LEGEND

- Proposed Site Location
- Study Intersection
- Study Area

Moving forward.

RKA

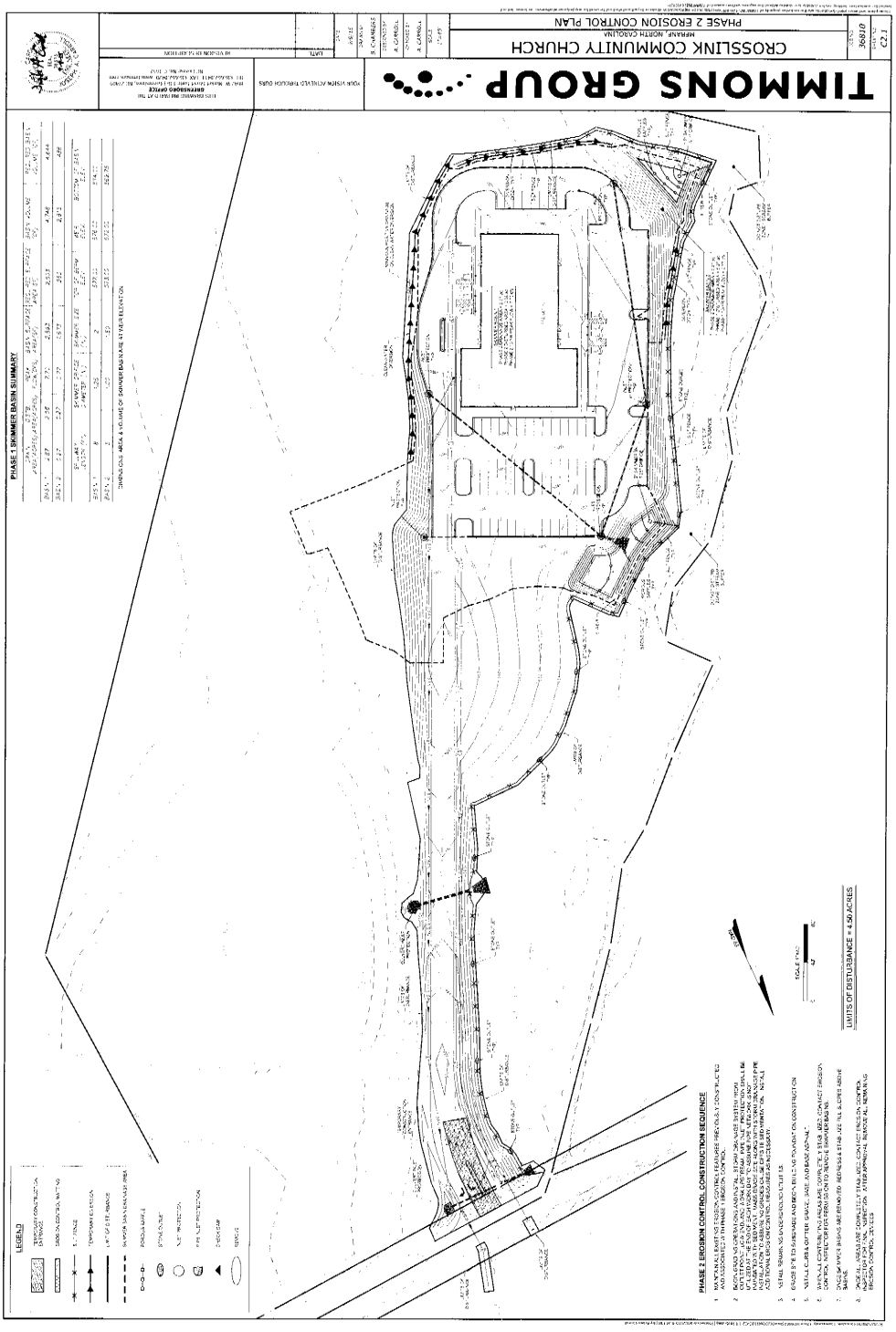
RAMEY KEMP ASSOCIATES

Alamance Community Charter Temporary Site
Mebane, NC

Site Location Map

Scale: Not to Scale

Figure 1



Moving forward.

RKA

RAMEY KEMP ASSOCIATES

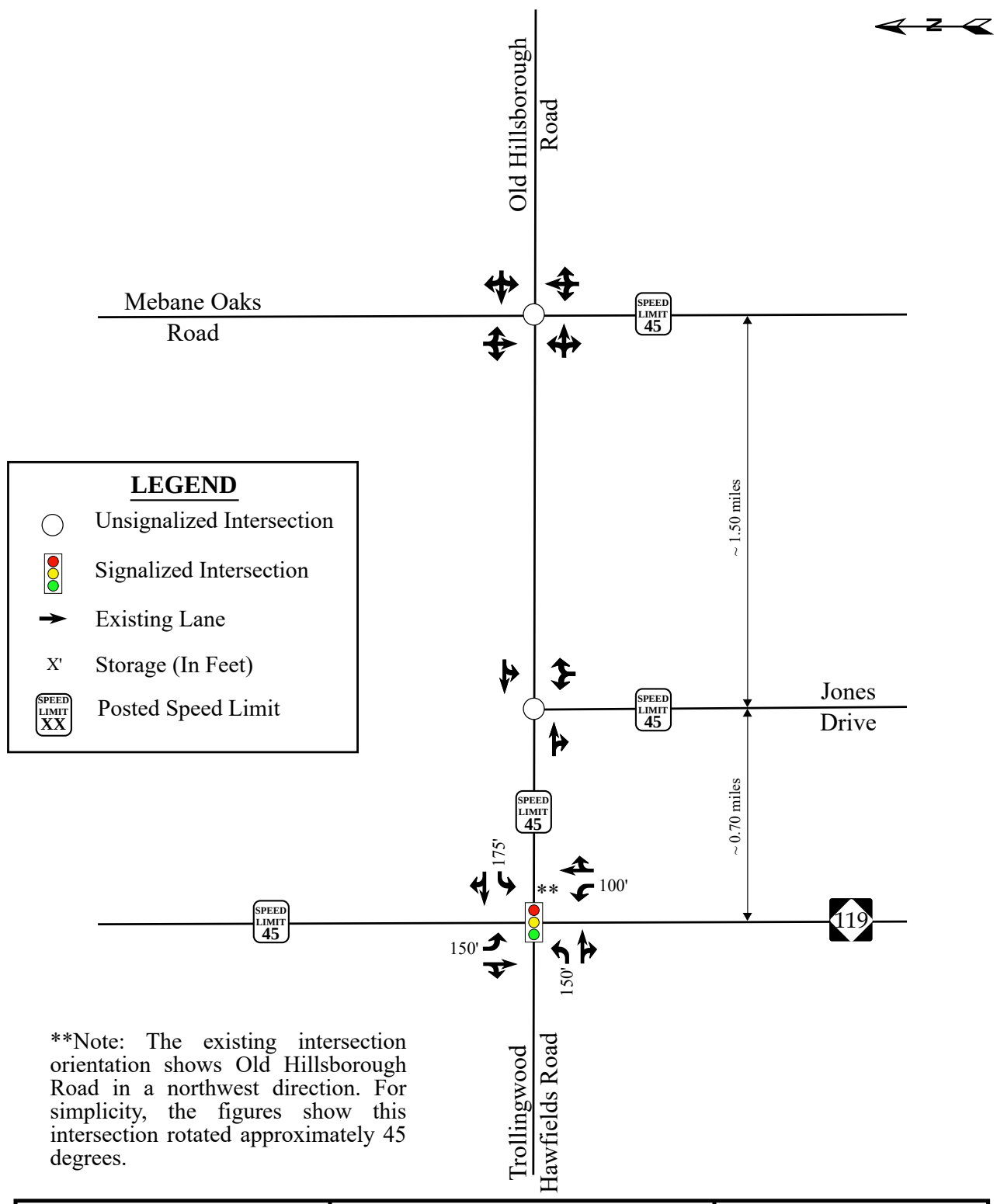
Alamance Community Charter Temporary Site

Mebane, NC

Preliminary Site Plan

Scale: Not to Scale

Figure 2



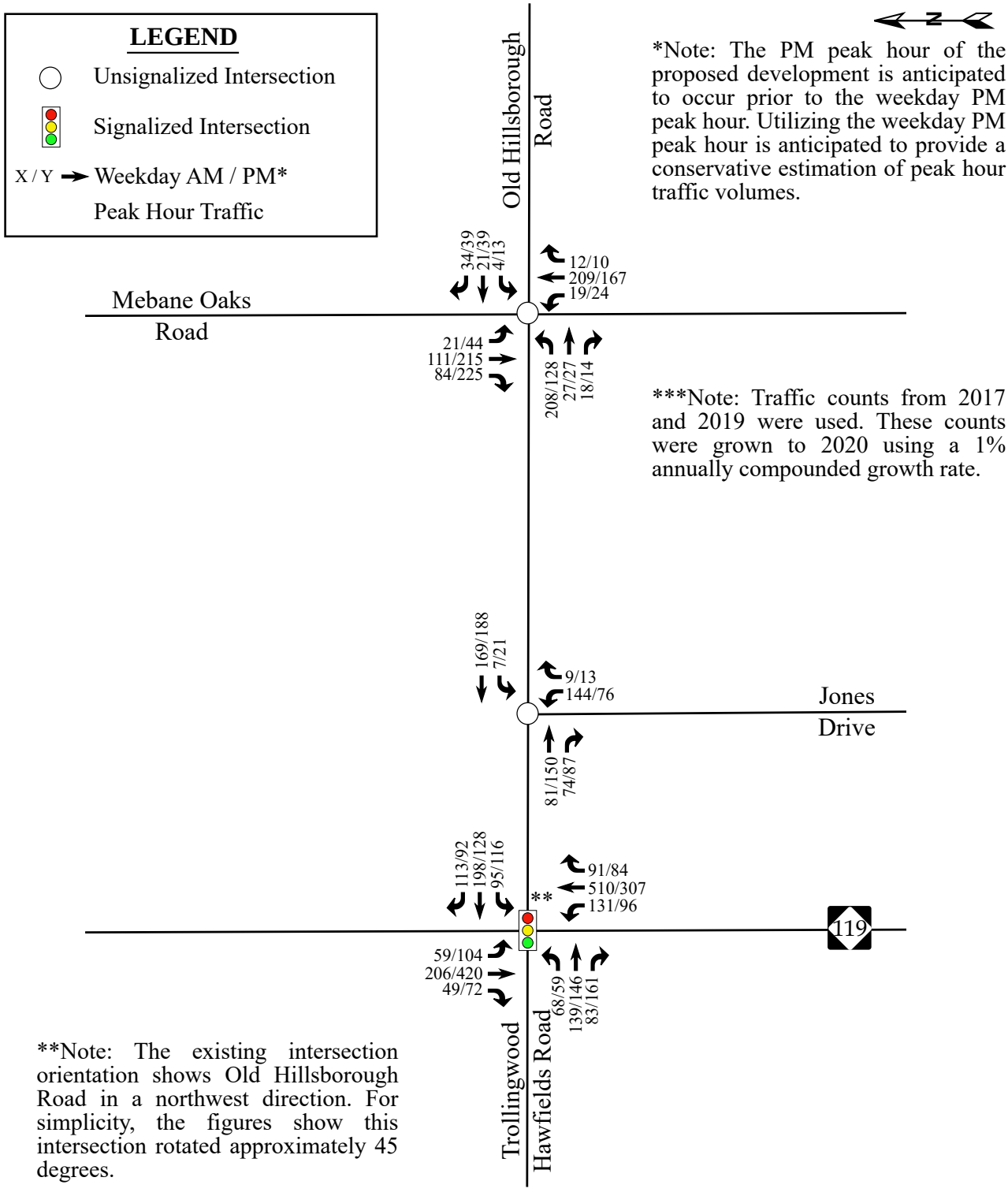
**Note: The existing intersection orientation shows Old Hillsborough Road in a northwest direction. For simplicity, the figures show this intersection rotated approximately 45 degrees.

Moving forward.
RKA
RAMEY KEMP ASSOCIATES

Alamance Community Charter Temporary Site
Mebane, NC

Existing Lane Configurations

Scale: Not to Scale | Figure 3



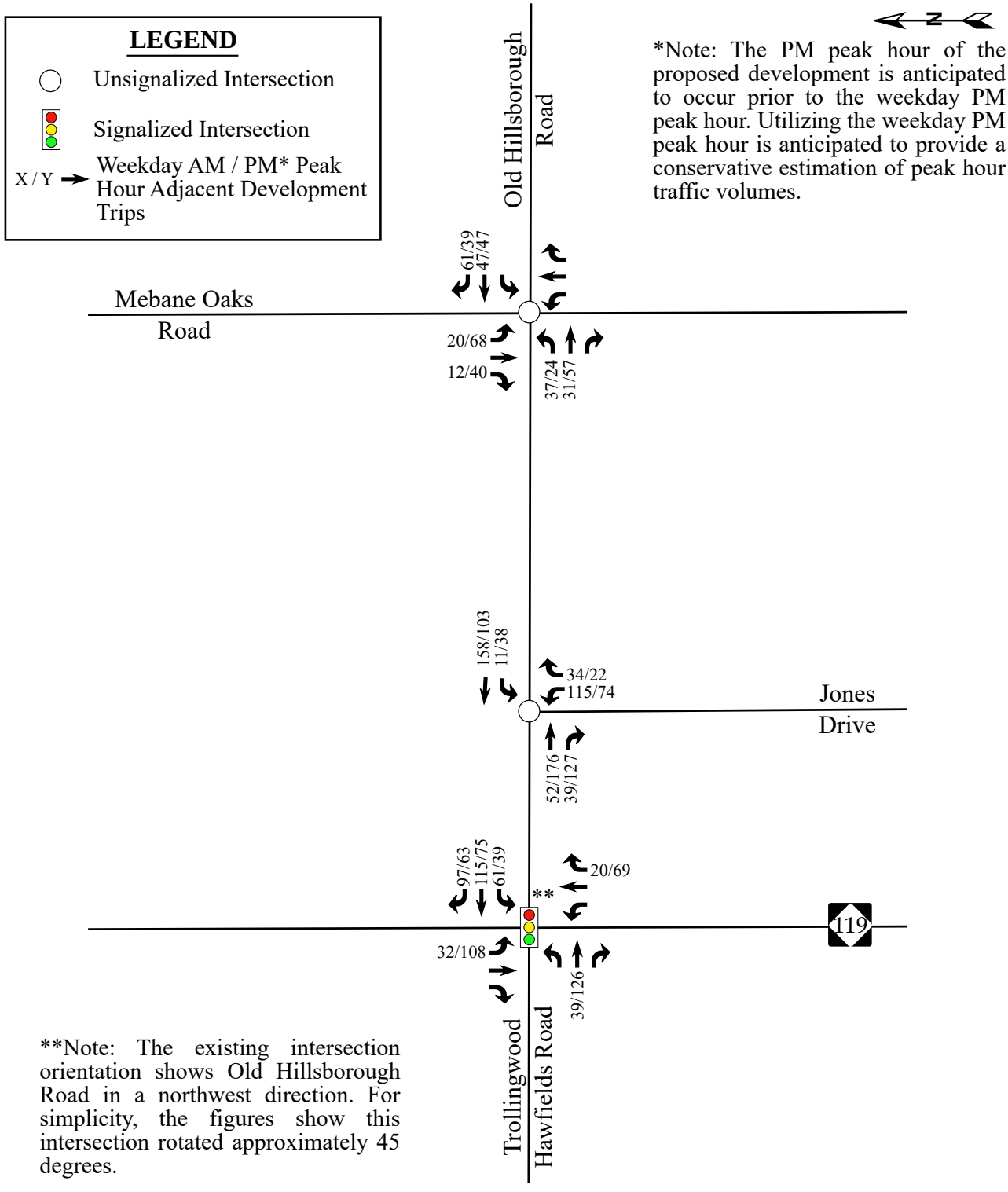
Moving forward.
RKA
RAMEY KEMP ASSOCIATES

Alamance Community Charter Temporary Site
Mebane, NC

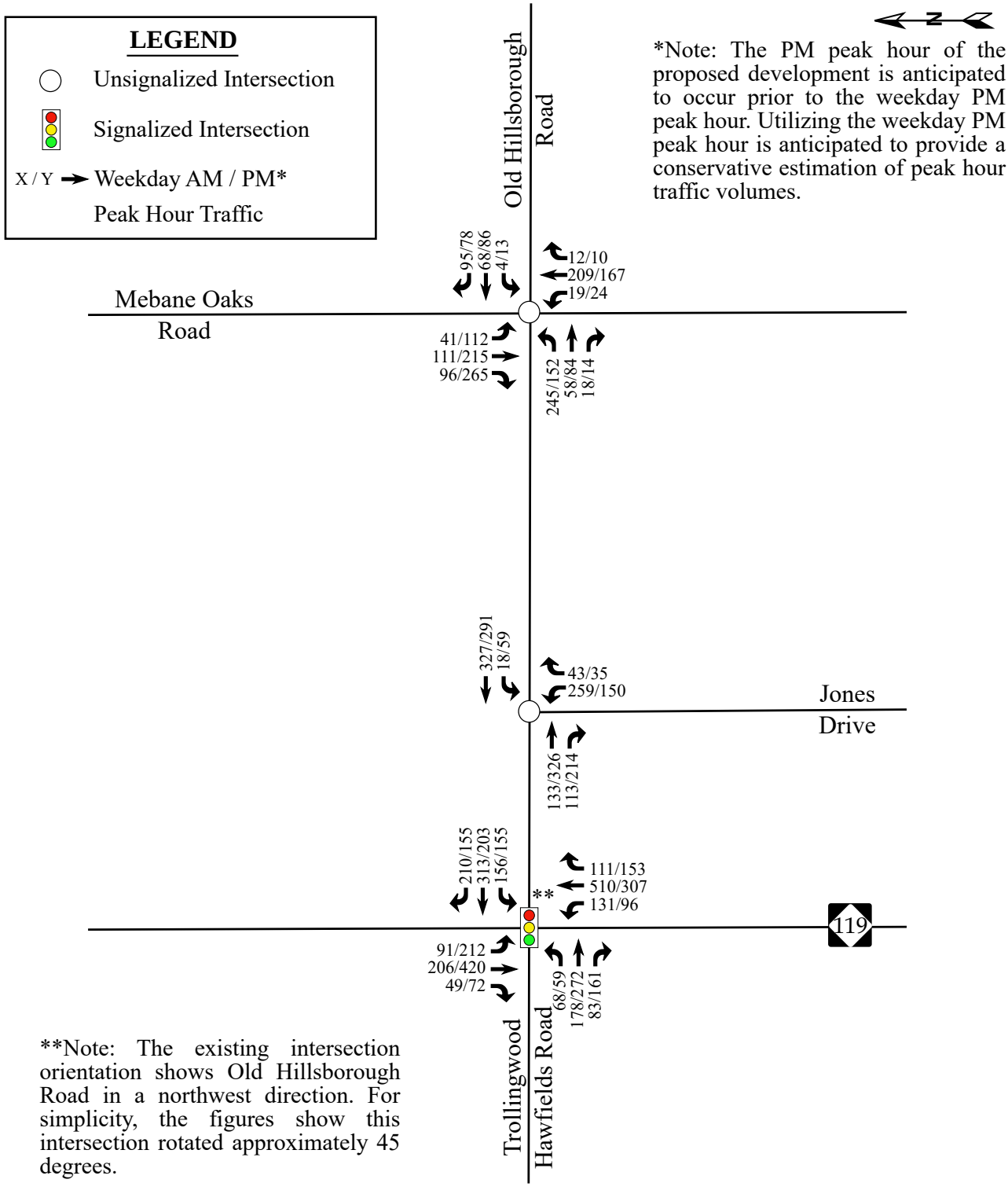
Projected (2020) Peak Hour Traffic

Scale: Not to Scale

Figure 4



Moving forward. RKA RAMEY KEMP ASSOCIATES	Alamance Community Charter Temporary Site Mebane, NC	Weekday Peak Hour Adjacent Development Trips Scale: Not to Scale | Figure 5



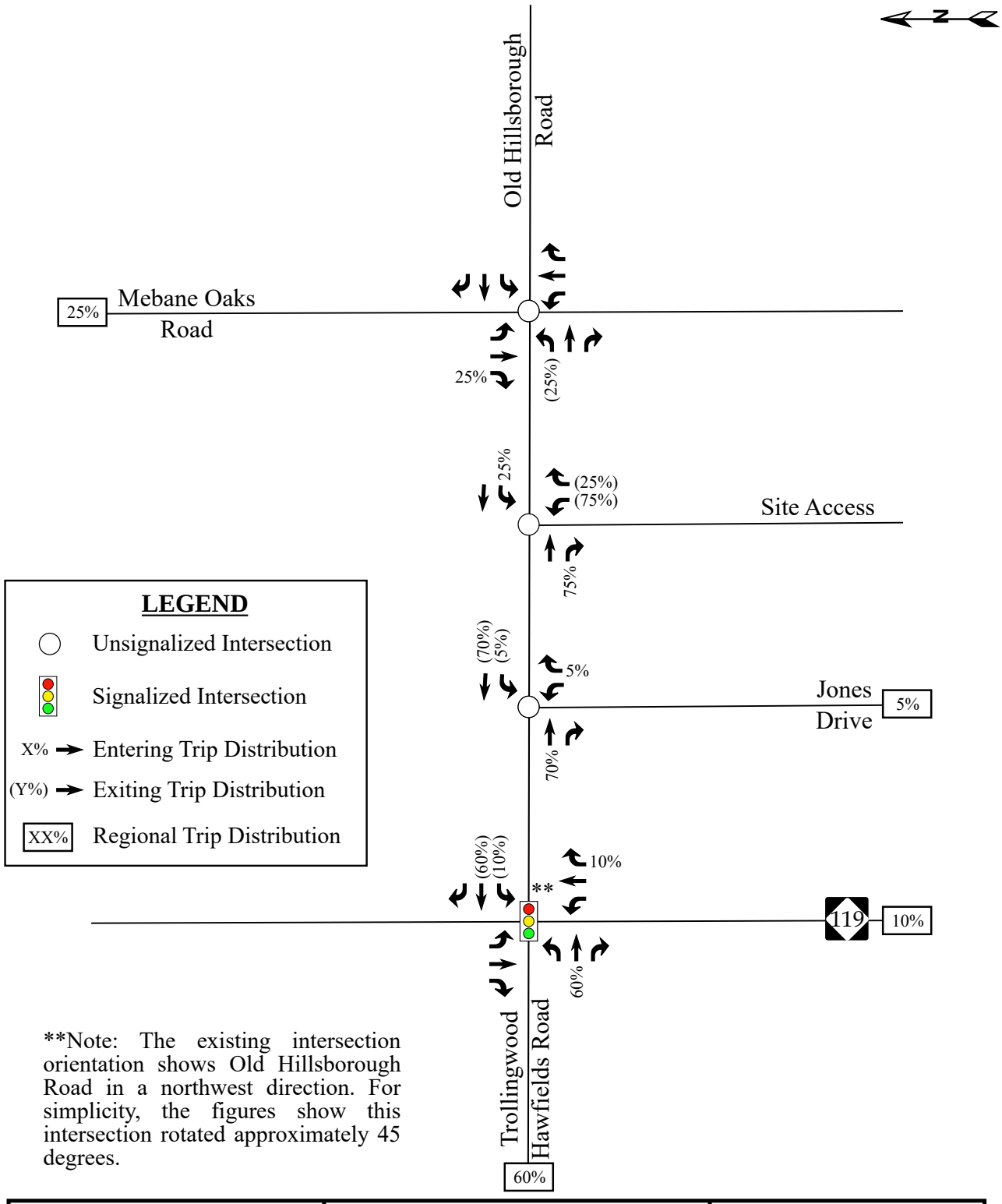
Moving forward.
RKA
RAMEY KEMP ASSOCIATES

Alamance Community Charter Temporary Site
Mebane, NC

No-Build (2020) Peak Hour Traffic

Scale: Not to Scale

Figure 6



**Note: The existing intersection orientation shows Old Hillsborough Road in a northwest direction. For simplicity, the figures show this intersection rotated approximately 45 degrees.

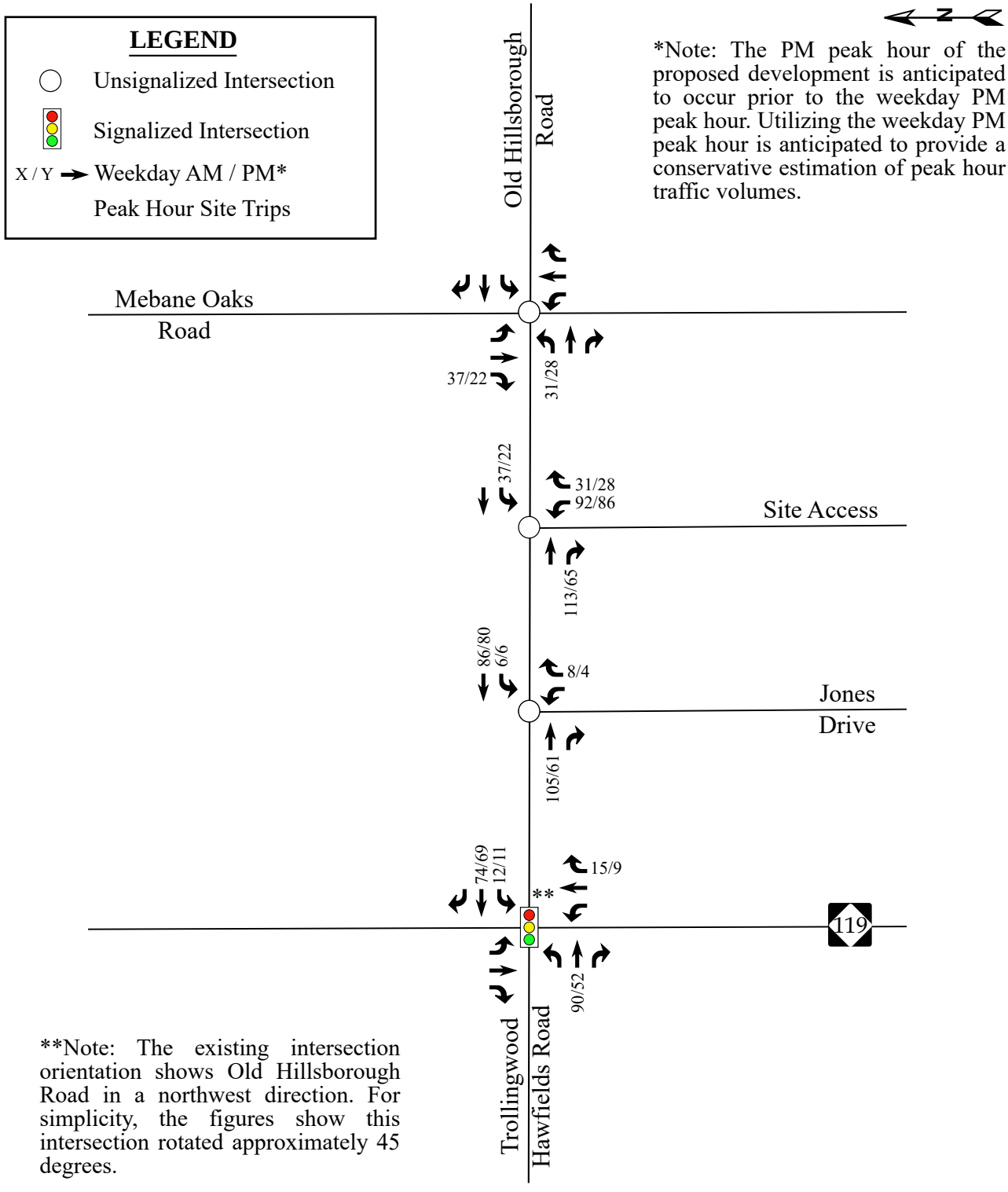
Moving forward.
RKA
RAMEY KEMP ASSOCIATES

Alamance Community Charter Temporary Site
Mebane, NC

Site Trip Distribution

Scale: Not to Scale

Figure 7

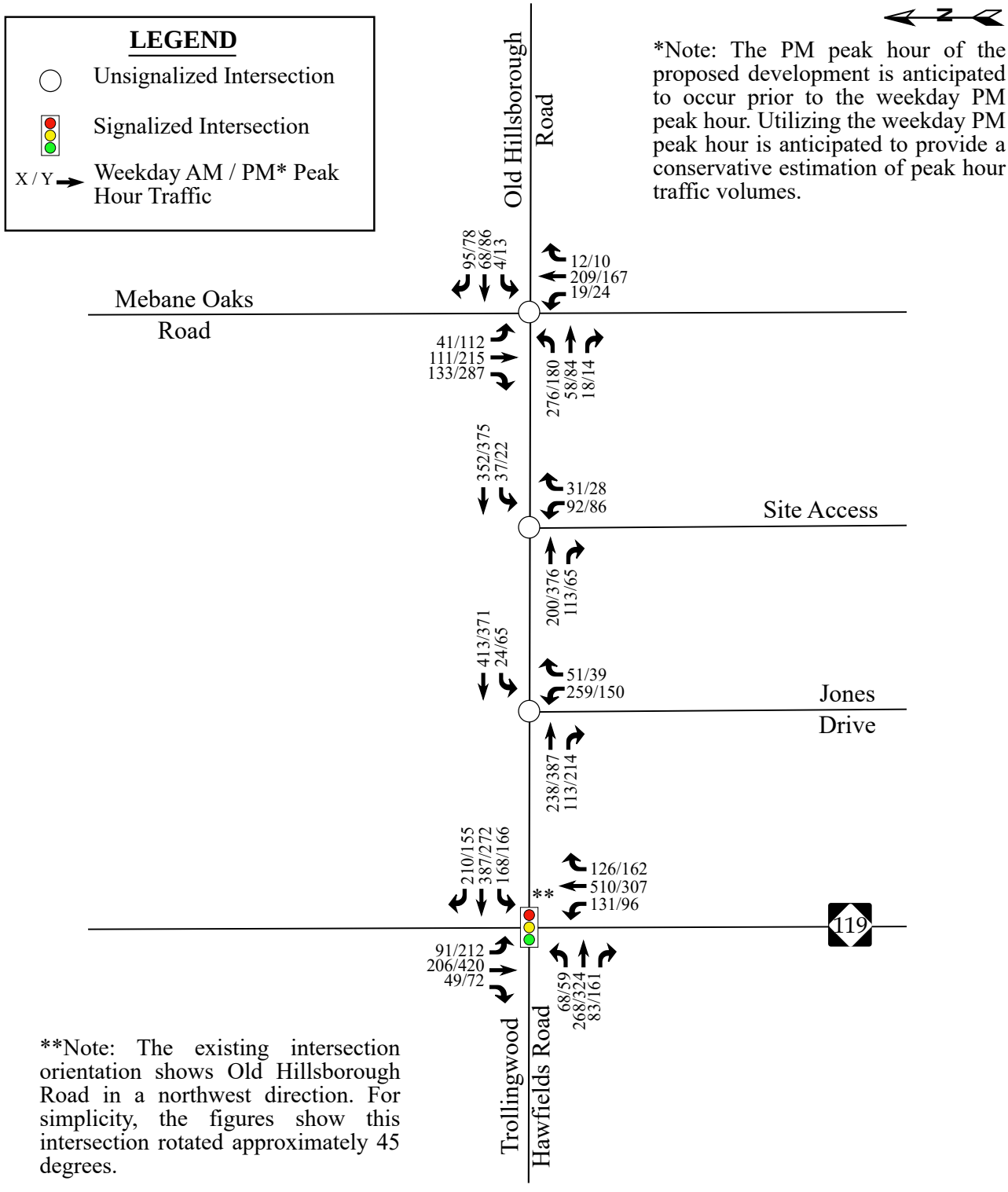


Moving forward.
RKA
RAMEY KEMP ASSOCIATES

Alamance Community Charter Temporary Site
Mebane, NC

Site Trip Assignment

Scale: Not to Scale | Figure 8



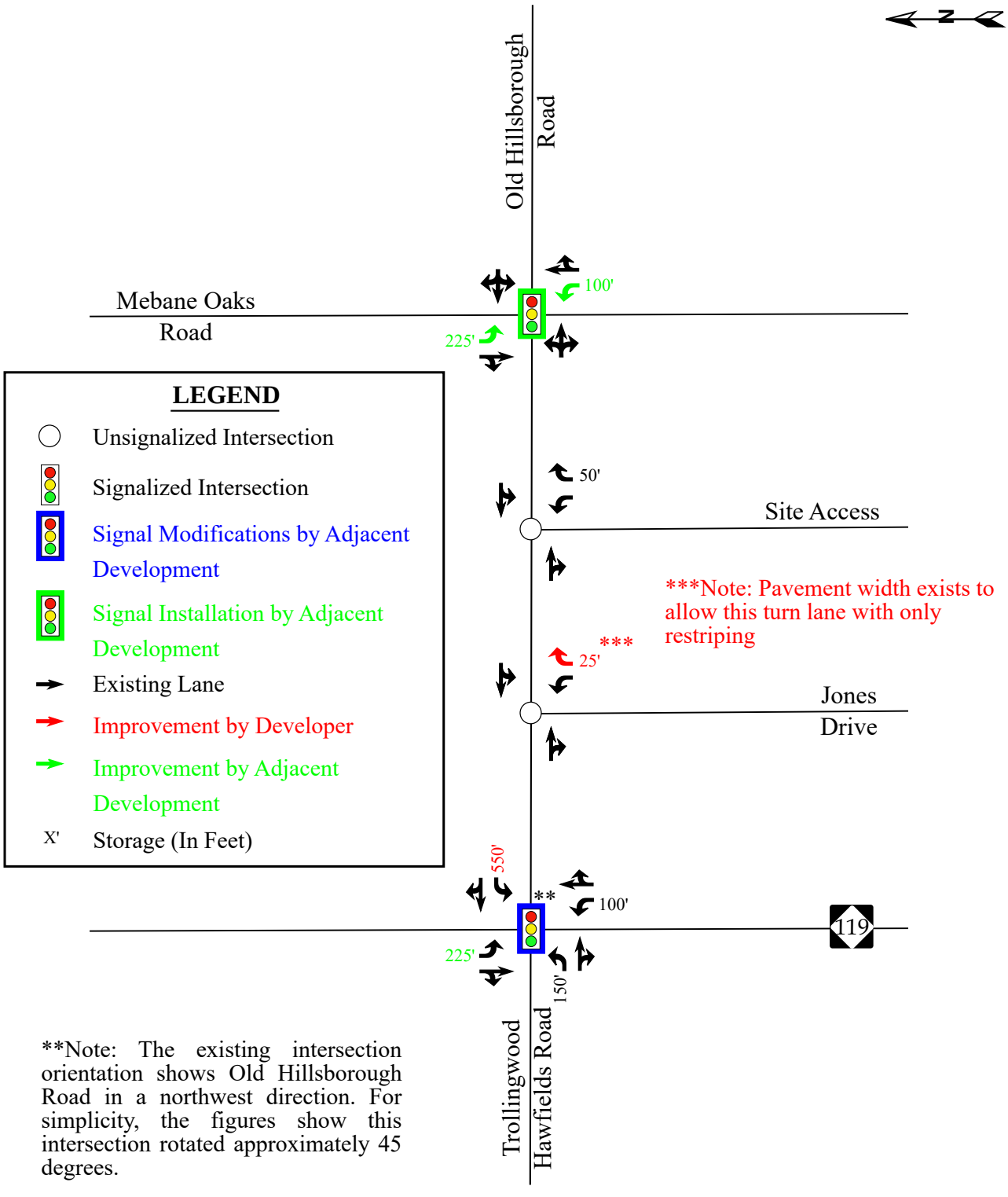
Moving forward.
RKA
RAMEY KEMP ASSOCIATES

Alamance Community Charter Temporary Site
Mebane, NC

Build (2020) Peak Hour Traffic

Scale: Not to Scale

Figure 9



**Note: The existing intersection orientation shows Old Hillsborough Road in a northwest direction. For simplicity, the figures show this intersection rotated approximately 45 degrees.

Moving forward.
RKA
RAMEY KEMP ASSOCIATES

Alamance Community Charter Temporary Site
Mebane, NC

Recommended Lane Configurations

Scale: Not to Scale | Figure 10

APPENDIX B

MSTA CALCULATIONS

MSTA School Traffic Calculations

AM and PM Peak Traffic Estimates

(These numbers do not reflect peak hour traffic volumes)

AM Cars / Student	PM Cars / Student	Avg. Car Length	PM At one Time
55.94%	39.15%	22.19	48.67%
52.91%	47.50%	22.19	46.12%
50.08%	47.58%	22.83	55.71%

School Name: Alamance Community Charter Temporary Site

Type: **Urban Charter**

Version: 102816

MSTA School Queue Input

Grade Level	Student Population	Number of Buses	Staff Members	Student Drivers
K - 10	220	3	27	
11th				
12th				
Sum >>	220		27	

Calculations

PM Total Vehicles	PM Peak Vehicles	Average Queue Length	Total AM Trips	Total PM Trips	High Demand Length
					30%
87	43	954	273	201	1241
87	43	954	273	201	1241
					286

Grade K-10

Direction	AM Trips Generated: Parents	Buses	Staff	Trips	PM Trips Generated: Parents	Buses	Staff	Trips
IN	123		27	150	87			87
OUT	123			123	87		27	114
		AM K-10 Trips		**273**		PM K-10 Trips		**201**

ADT
474

Direction	AM Trips Generated: Parents	Buses	Staff		Trips	PM Trips Generated: Parents	Buses	Staff		Trips
IN										
OUT										
			AM 11th Trips					PM 11th Trips		

Direction	AM Trips Generated: Parents	Buses	Staff		Trips	PM Trips Generated: Parents	Buses	Staff		Trips
IN										
OUT										
			AM 12th Trips					PM 12th Trips		

All AM TRIPS	In	150	**All PM TRIPS**	In	87
	Out	123		Out	114
	Total	273		Total	201

474

NOTES

- **Average Queue Length does not** include an alternative traffic pattern required for high traffic demand days which is usually 30% additional length.
- **Average Queue Length does not** include the Student Loading Zone.
- Peak traffic volumes at schools normally occur within a 30-minute time period. (justifying a PHF of 0.5)

Calculated 7/8/2020 By:_____

APPENDIX C

SCOPING DOCUMENTATION

Mary Lynn Smith

From: Jim Way <Jim@schooldev.us>
Sent: Friday, June 05, 2020 3:48 PM
To: Edwards, Charles N; Mary Lynn Smith; Hinton, Kimberly D; Hayes, Jamie; Cy Stober
Cc: Joshua Reinke; Cliff Ayscue
Subject: Re: [External] Alamance Community Charter Temporary Site - Meeting Minutes

Importance: High

ALL,

I have been corrected by the Alamance Community School Director for student counts at the temporary facility. Due to CDC, Covid-19 guidelines and this being a temporary space, the school will only have a maximum of 220 students at the Church site at any given time serving K-3 only. The proposed start times will be 8:25 am at the temporary facility and the afternoon bell will be 3:25 pm.

Please amend the MOU to show this new data.

Let me know if you have any questions or need to speak with the Director.

Jim Way

SchoolDev|EAST LLC

Cell: 702-528-1514 - jim@schooldev.us

Main Office: 3115 E. Lion Lane - Suite 300 - Salt Lake City, UT 84121 - P: 801-278-0800
Raleigh Office: 2144 Page Rd. - Suite 204 - Durham, NC 27703

From: "Edwards, Charles N" <cnedwards@ncdot.gov>
Date: Thursday, June 4, 2020 at 5:19 PM
To: Mary Lynn Smith <msmith@rameykemp.com>, "Hinton, Kimberly D" <kdhinton@ncdot.gov>, "Hayes, Jamie" <jhayes7@ncdot.gov>, Cy Stober <cstober@cityofmebane.com>, Jim Way <Jim@schooldev.us>
Cc: 'Joshua Reinke' <jreinke@rameykemp.com>
Subject: RE: [External] Alamance Community Charter Temporary Site - Meeting Minutes

Kimberly and I have conferred and we find the proposed scope and methodology acceptable.

C. N. Edwards Jr., PE (Chuck)
District Engineer
North Carolina Department of Transportation
Division of Highways
Division 7, District 1

336 570 6833
cnedwards@ncdot.gov

115 East Crescent Square Drive
P. O. Box 766
Graham, NC 27253

From: Mary Lynn Smith <msmith@rameykemp.com>
Sent: Thursday, June 4, 2020 2:25 PM
To: Hinton, Kimberly D <kdhinton@ncdot.gov>; Edwards, Charles N <cnedwards@ncdot.gov>; Hayes, Jamie <jhayes7@ncdot.gov>; Cy Stober <cstober@cityofmebane.com>; Jim Way <Jim@schooldev.us>
Cc: Joshua Reinke <jreinke@rameykemp.com>
Subject: [External] Alamance Community Charter Temporary Site - Meeting Minutes

Good afternoon all –

Thank you all for taking the time to meet this morning on the proposed Alamance Community Charter temporary site. Please see below for a summary of the meeting minutes/scope. Feel free to let us know if you have any additional thoughts or questions and feel free to distribute these notes.

Attendees: Cy Stober (City of Mebane), Chuck Edwards (NCDOT), Kimberly Hinton (NCDOT), Jim Way (SchoolDev), Joshua Reinke (RKA), Mary Lynn Smith (RKA)

Required per NCDOT:

- TMP with internal analysis and capacity analysis at site driveway only

Required per City:

- Traffic assessment letter with capacity analysis at site driveway and 3 adjacent intersections listed below
- TMP

Overview:

- Approximately 400 total students in grades K-3
- Located at Crosslink Community Church (3445 Old Hillsborough Road) In Mebane
- Build-out year: 2020
- TMP and traffic assessment letter, including internal analysis, will be provided to both the City and NCDOT, although requirements may differ and may be considered for courtesy review
- Local school bell schedules will be considered when determining the proposed school's operational hours
- MSTA School Calculator will be utilized to determine the trip generation and anticipated stacking needs

Analysis Scenarios:

- Existing (2020) conditions
- Build (2020) conditions

Study Intersections:

- Mebane Oaks Road and Old Hillsborough Road
- Old Hillsborough Road and Jones Drive
- Old Hillsborough Road and NC 119
- Old Hillsborough Road and Site Drive

Existing Conditions:

- Counts will be utilized from the Cambridge Park and Mebane Oaks Residential TIAs during typical weekday AM (7:00 – 9:00 AM) and PM (4:00 – 6:00 PM) peak hours, while schools were in session
    - Expected to provide a conservative analysis, because the proposed school may operate outside of the peak hours of the adjacent roadway
    - Counts will be grown to 2020 via a proposed 1% annually compounded growth rate, per the Cambridge Park TIA
    - Additionally, counts will be grown with the following adjacent developments:
        - Phase 1 and Phase 2 of Cambridge Park
            - Phase 1: 122 single family homes
            - Phase 2: 160 additional single family homes
        - Adjacent developments identified in Cambridge Park
            - The Meadows
            - Magnolia Glen
    - Roadway improvements were identified for the above adjacent developments; however, due to the proximity of the temporary site's buildout, they are proposed to not be included in future analysis. These improvements will be identified in the report as committed by other developments, but will only be shown under improved files, if the improvements are necessary. The following roadway improvements are committed by the above assumed adjacent developments:
        - <u>Mebane Oaks Road and Old Hillsborough Road</u>
            - Provide signalization once warranted and approved by NCDOT and the City
            - Construct an exclusive northbound left-turn lane with 150 feet of storage
            - Construct an exclusive southbound left-turn lane with 150 feet of storage
        - <u>NC 119 and Old Hillsborough Road</u>
            - Signal timing adjustments
            - Extend the westbound left-turn lane on NC 119 to approximately 225 feet of storage
    - No other adjacent developments based on build-out years of surrounding development, including Mebane Oaks Residential (2023)
    - Traffic volumes will be balanced due to the differences in count dates
- Through volumes will be balanced at the intersection of Old Hillsborough Road and Site Drive based on adjacent intersection traffic volumes
    - No trips are assumed entering or exiting Crosslink Community Church during the school peak hours; therefore, turning movements will have a volume of 0 vph under existing conditions
- NCDOT TIP Project U-6013 will not be included in the existing or build analysis

Additional Notes:

- If an officer is identified to be needed based on the assessment and TMP, this may be outside of Mebane limits and will need to be communicated to all impacted jurisdictions
- City will waive bike/ped evaluation

MOU:
We know this one has a quick turnaround, so we would like for this email summary to serve as the MOU, if at all possible. Please see below for the proposed regional distribution based on the TIA assumptions included in the proposed Alamance Community Charter permanent site:

- 60% to/from the west via Old Hillsborough Road
- 25% to/from the north via Mebane Oaks Road
- 10% to/from the south via NC 119
- 5% to/from the south via Jones Drive

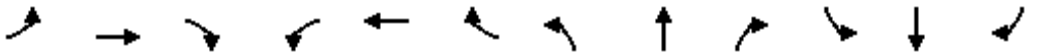
Please let us know if you have any questions or if you find all to be acceptable for the purpose of the assessment letter and TMP. Thank you!

Mary Lynn Smith, EI
Traffic Engineering Associate
T 919 872 5115 | D 919 872 0642

Moving forward.
RKA
RAMEY KEMP ASSOCIATES
OWNERSHIP > OUR CULTURE > YOUR SUCCESS

APPENDIX D

CAPACITY ANALYSIS RESULTS
OLD HILLSBOROUGH ROAD / TROLLINGWOOD HAWFIELDS ROAD AND NC 119



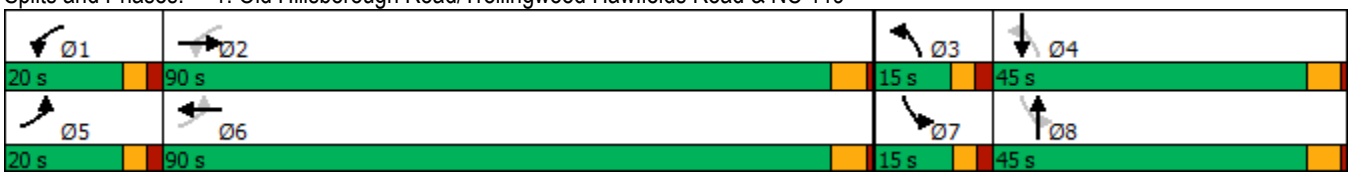
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	131	510	111	91	206	49	156	313	210	68	178	83
Future Volume (vph)	131	510	111	91	206	49	156	313	210	68	178	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	100		0	150		0	175		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. 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
Frt		0.973			0.971			0.940			0.952	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1812	0	1770	1809	0	1770	1751	0	1770	1773	0
Flt Permitted	0.480			0.094			0.379			0.097		
Satd. Flow (perm)	894	1812	0	175	1809	0	706	1751	0	181	1773	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1154			3001			1757			2247	
Travel Time (s)		17.5			45.5			26.6			34.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	146	567	123	101	229	54	173	348	233	76	198	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	146	690	0	101	283	0	173	581	0	76	290	0
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	6			2			4			8		
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	12.1	17.6		12.1	17.6		12.4	12.4		12.1	12.4	
Total Split (s)	20.0	90.0		20.0	90.0		15.0	45.0		15.0	45.0	
Total Split (%)	11.8%	52.9%		11.8%	52.9%		8.8%	26.5%		8.8%	26.5%	
Maximum Green (s)	14.9	84.4		14.9	84.4		9.6	39.6		9.9	39.6	
Yellow Time (s)	3.0	4.6		3.0	4.6		3.0	4.4		3.0	4.4	
All-Red Time (s)	2.1	1.0		2.1	1.0		2.4	1.0		2.1	1.0	
Lost Time Adjust (s)	-0.1	-0.6		-0.1	-0.6		-0.4	-0.4		-1.0	-0.4	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		4.1	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	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	
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	0.0		0.0	0.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Act Effct Green (s)	67.4	58.0		67.4	56.2		49.5	40.7		51.3	39.4	
Actuated g/C Ratio	0.49	0.42		0.49	0.41		0.36	0.30		0.37	0.29	
v/c Ratio	0.29	0.90		0.52	0.38		0.52	1.12		0.42	0.57	
Control Delay	17.4	52.5		25.3	29.4		39.2	121.2		37.6	50.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.4	52.5		25.3	29.4		39.2	121.2		37.6	50.3	

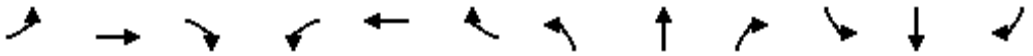
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	B	D		C	C		D	F		D	D	
Approach Delay		46.4			28.3			102.4			47.6	
Approach LOS		D			C			F			D	
Queue Length 50th (ft)	64	562		43	174		101	~594		41	219	
Queue Length 95th (ft)	100	761		72	255		206	#1063		99	397	
Internal Link Dist (ft)		1074			2921			1677			2167	
Turn Bay Length (ft)	150			100			150			175		
Base Capacity (vph)	559	1140		269	1139		333	519		197	525	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.26	0.61		0.38	0.25		0.52	1.12		0.39	0.55	

Intersection Summary

Area Type: Other
Cycle Length: 170
Actuated Cycle Length: 137.3
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 61.6 Intersection LOS: E
Intersection Capacity Utilization 90.5% 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.

Splits and Phases: 1: Old Hillsborough Road/Trollingwood Hawfields Road & NC 119





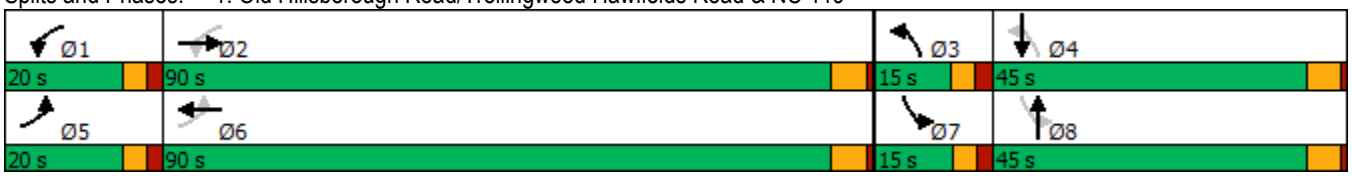
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	131	510	126	91	206	49	168	387	210	68	268	83
Future Volume (vph)	131	510	126	91	206	49	168	387	210	68	268	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	100		0	150		0	175		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. 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
Frt		0.969			0.971			0.950			0.969	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1805	0	1770	1809	0	1770	1770	0	1770	1805	0
Flt Permitted	0.484			0.087			0.160			0.094		
Satd. Flow (perm)	902	1805	0	162	1809	0	298	1770	0	175	1805	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1154			3001			1757			2247	
Travel Time (s)		17.5			45.5			26.6			34.0	
Peak Hour Factor	0.90	0.90	0.85	0.90	0.90	0.90	0.87	0.82	0.90	0.90	0.77	0.90
Adj. Flow (vph)	146	567	148	101	229	54	193	472	233	76	348	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	146	715	0	101	283	0	193	705	0	76	440	0
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	6			2			4			8		
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	12.1	17.6		12.1	17.6		12.4	12.4		12.1	12.4	
Total Split (s)	20.0	90.0		20.0	90.0		15.0	45.0		15.0	45.0	
Total Split (%)	11.8%	52.9%		11.8%	52.9%		8.8%	26.5%		8.8%	26.5%	
Maximum Green (s)	14.9	84.4		14.9	84.4		9.6	39.6		9.9	39.6	
Yellow Time (s)	3.0	4.6		3.0	4.6		3.0	4.4		3.0	4.4	
All-Red Time (s)	2.1	1.0		2.1	1.0		2.4	1.0		2.1	1.0	
Lost Time Adjust (s)	-0.1	-0.6		-0.1	-0.6		-0.4	-0.4		-1.0	-0.4	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		4.1	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	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	
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	0.0		0.0	0.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Act Effct Green (s)	71.4	61.9		71.4	60.0		50.7	41.8		52.5	40.5	
Actuated g/C Ratio	0.50	0.43		0.50	0.42		0.36	0.29		0.37	0.28	
v/c Ratio	0.28	0.91		0.54	0.37		0.91	1.36		0.44	0.86	
Control Delay	17.3	53.8		27.5	29.0		80.2	211.7		39.6	66.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.3	53.8		27.5	29.0		80.2	211.7		39.6	66.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	B	D		C	C		F	F		D	E	
Approach Delay		47.6			28.6			183.5			62.7	
Approach LOS		D			C			F			E	
Queue Length 50th (ft)	65	605		44	176		120	~854		43	383	
Queue Length 95th (ft)	100	806		77	254		#304	#1207		102	#557	
Internal Link Dist (ft)		1074			2921			1677			2167	
Turn Bay Length (ft)	150			100			150			175		
Base Capacity (vph)	566	1092		258	1095		211	519		189	514	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.26	0.65		0.39	0.26		0.91	1.36		0.40	0.86	

Intersection Summary

Area Type: Other
Cycle Length: 170
Actuated Cycle Length: 142.3
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.36
Intersection Signal Delay: 93.7 Intersection LOS: F
Intersection Capacity Utilization 95.3% 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.

Splits and Phases: 1: Old Hillsborough Road/Trollingwood Hawfields Road & NC 119



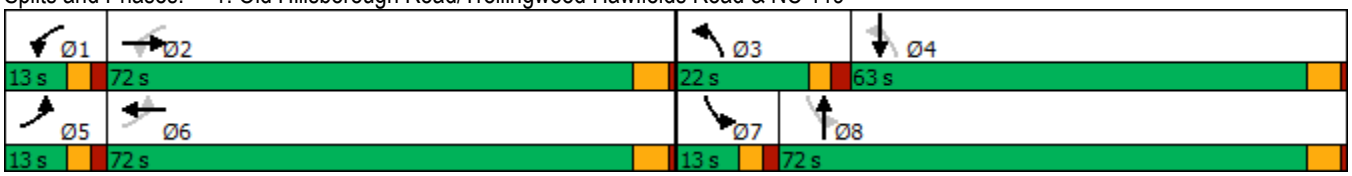
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	131	510	126	91	206	49	168	387	210	68	268	83
Future Volume (vph)	131	510	126	91	206	49	168	387	210	68	268	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	225		0	550		0	175		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. 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
Frt		0.969			0.971			0.950			0.969	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1805	0	1770	1809	0	1770	1770	0	1770	1805	0
Flt Permitted	0.461			0.060			0.244			0.059		
Satd. Flow (perm)	859	1805	0	112	1809	0	455	1770	0	110	1805	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			45			45			45	
Link Distance (ft)		1154			3001			1757			2247	
Travel Time (s)		19.7			45.5			26.6			34.0	
Peak Hour Factor	0.90	0.90	0.85	0.90	0.90	0.90	0.87	0.82	0.90	0.90	0.77	0.90
Adj. Flow (vph)	146	567	148	101	229	54	193	472	233	76	348	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	146	715	0	101	283	0	193	705	0	76	440	0
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	6			2			4			8		
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	12.1	17.6		12.1	17.6		12.4	12.4		12.1	12.4	
Total Split (s)	13.0	72.0		13.0	72.0		22.0	72.0		13.0	63.0	
Total Split (%)	7.6%	42.4%		7.6%	42.4%		12.9%	42.4%		7.6%	37.1%	
Maximum Green (s)	7.9	66.4		7.9	66.4		16.6	66.6		7.9	57.6	
Yellow Time (s)	3.0	4.6		3.0	4.6		3.0	4.4		3.0	4.4	
All-Red Time (s)	2.1	1.0		2.1	1.0		2.4	1.0		2.1	1.0	
Lost Time Adjust (s)	-0.1	-0.6		-0.1	-0.6		-0.4	-0.4		-1.0	-0.4	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		4.1	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	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	
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	0.0		0.0	0.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Act Effct Green (s)	75.0	67.0		75.0	67.0		74.8	67.0		76.6	59.3	
Actuated g/C Ratio	0.44	0.39		0.44	0.39		0.44	0.39		0.45	0.35	
v/c Ratio	0.35	1.00		0.80	0.40		0.60	1.01		0.57	0.70	
Control Delay	29.3	85.1		71.6	39.0		35.4	86.7		44.6	55.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	29.3	85.1		71.6	39.0		35.4	86.7		44.6	55.0	

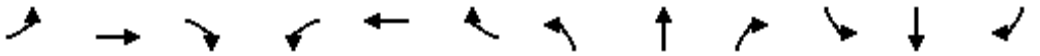
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	C	F		E	D		D	F		D	D	
Approach Delay		75.6			47.6			75.6			53.5	
Approach LOS		E			D			E			D	
Queue Length 50th (ft)	93	~805		62	226		126	~804		46	428	
Queue Length 95th (ft)	141	#1082		#169	312		177	#909		93	456	
Internal Link Dist (ft)		1074			2921			1677			2167	
Turn Bay Length (ft)	150			225			550			175		
Base Capacity (vph)	422	712		127	713		336	698		136	630	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.35	1.00		0.80	0.40		0.57	1.01		0.56	0.70	

Intersection Summary

Area Type: Other
Cycle Length: 170
Actuated Cycle Length: 169.8
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 67.3 — Intersection LOS: E
Intersection Capacity Utilization 95.3% — 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.

Splits and Phases: 1: Old Hillsborough Road/Trollingwood Hawfields Road & NC 119





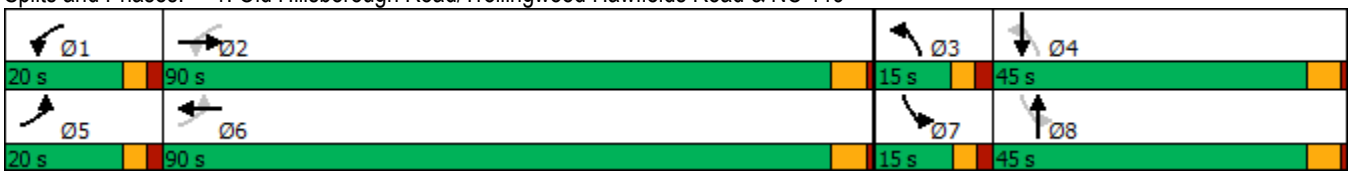
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	307	153	212	420	72	155	203	155	59	272	161
Future Volume (vph)	96	307	153	212	420	72	155	203	155	59	272	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	100		0	150		0	175		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. 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
Frt		0.950			0.978			0.935			0.944	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1770	0	1770	1822	0	1770	1742	0	1770	1758	0
Flt Permitted	0.155			0.145			0.177			0.312		
Satd. Flow (perm)	289	1770	0	270	1822	0	330	1742	0	581	1758	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1154			3001			1757			2247	
Travel Time (s)		17.5			45.5			26.6			34.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	107	341	170	236	467	80	172	226	172	66	302	179
Shared Lane Traffic (%)												
Lane Group Flow (vph)	107	511	0	236	547	0	172	398	0	66	481	0
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	6			2			4			8		
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	12.1	17.6		12.1	17.6		12.4	12.4		12.1	12.4	
Total Split (s)	20.0	90.0		20.0	90.0		15.0	45.0		15.0	45.0	
Total Split (%)	11.8%	52.9%		11.8%	52.9%		8.8%	26.5%		8.8%	26.5%	
Maximum Green (s)	14.9	84.4		14.9	84.4		9.6	39.6		9.9	39.6	
Yellow Time (s)	3.0	4.6		3.0	4.6		3.0	4.4		3.0	4.4	
All-Red Time (s)	2.1	1.0		2.1	1.0		2.4	1.0		2.1	1.0	
Lost Time Adjust (s)	-0.1	-0.6		-0.1	-0.6		-0.4	-0.4		-1.0	-0.4	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		4.1	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	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	
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	0.0		0.0	0.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Act Effct Green (s)	56.1	42.0		56.1	46.4		50.4	44.7		53.1	40.3	
Actuated g/C Ratio	0.44	0.33		0.44	0.37		0.40	0.35		0.42	0.32	
v/c Ratio	0.44	0.87		0.83	0.82		0.70	0.65		0.20	0.86	
Control Delay	23.4	55.7		47.4	47.2		42.6	44.0		25.1	58.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	23.4	55.7		47.4	47.2		42.6	44.0		25.1	58.5	

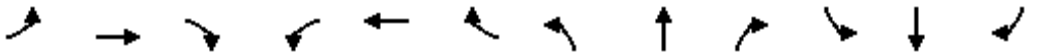
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	C	E		D	D		D	D		C	E	
Approach Delay		50.1			47.3			43.6			54.4	
Approach LOS		D			D			D			D	
Queue Length 50th (ft)	47	394		112	400		87	283		31	372	
Queue Length 95th (ft)	79	534		#238	557		#184	#504		72	#671	
Internal Link Dist (ft)		1074			2921			1677			2167	
Turn Bay Length (ft)	150			100			150			175		
Base Capacity (vph)	315	1197		300	1232		245	615		351	559	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.34	0.43		0.79	0.44		0.70	0.65		0.19	0.86	

Intersection Summary

Area Type: Other
Cycle Length: 170
Actuated Cycle Length: 126.6
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 48.7 Intersection LOS: D
Intersection Capacity Utilization 86.6% 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.

Splits and Phases: 1: Old Hillsborough Road/Trollingwood Hawfields Road & NC 119





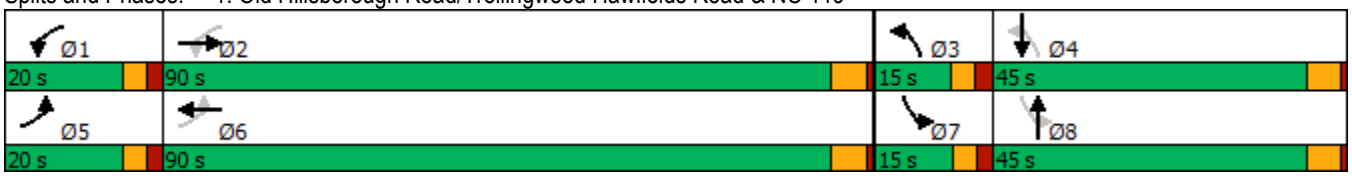
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	307	162	212	420	72	166	272	155	59	324	161
Future Volume (vph)	96	307	162	212	420	72	166	272	155	59	324	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	100		0	150		0	175		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. 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
Frt		0.947			0.978			0.950			0.952	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1764	0	1770	1822	0	1770	1770	0	1770	1773	0
Flt Permitted	0.165			0.141			0.097			0.175		
Satd. Flow (perm)	307	1764	0	263	1822	0	181	1770	0	326	1773	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1154			3001			1757			2247	
Travel Time (s)		17.5			45.5			26.6			34.0	
Peak Hour Factor	0.90	0.90	0.88	0.90	0.90	0.90	0.87	0.80	0.90	0.90	0.84	0.90
Adj. Flow (vph)	107	341	184	236	467	80	191	340	172	66	386	179
Shared Lane Traffic (%)												
Lane Group Flow (vph)	107	525	0	236	547	0	191	512	0	66	565	0
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	6			2			4			8		
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	12.1	17.6		12.1	17.6		12.4	12.4		12.1	12.4	
Total Split (s)	20.0	90.0		20.0	90.0		15.0	45.0		15.0	45.0	
Total Split (%)	11.8%	52.9%		11.8%	52.9%		8.8%	26.5%		8.8%	26.5%	
Maximum Green (s)	14.9	84.4		14.9	84.4		9.6	39.6		9.9	39.6	
Yellow Time (s)	3.0	4.6		3.0	4.6		3.0	4.4		3.0	4.4	
All-Red Time (s)	2.1	1.0		2.1	1.0		2.4	1.0		2.1	1.0	
Lost Time Adjust (s)	-0.1	-0.6		-0.1	-0.6		-0.4	-0.4		-1.0	-0.4	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		4.1	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	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	
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	0.0		0.0	0.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Act Effct Green (s)	57.6	43.6		57.6	47.9		50.4	44.7		53.2	40.3	
Actuated g/C Ratio	0.45	0.34		0.45	0.37		0.39	0.35		0.41	0.31	
v/c Ratio	0.43	0.88		0.83	0.80		0.97	0.83		0.28	1.01	
Control Delay	22.7	55.9		48.8	45.6		91.5	54.0		27.4	86.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	22.7	55.9		48.8	45.6		91.5	54.0		27.4	86.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	C	E		D	D		F	D		C	F	
Approach Delay		50.3			46.6			64.2			79.9	
Approach LOS		D			D			E			E	
Queue Length 50th (ft)	47	410		112	400		111	404		32	~499	
Queue Length 95th (ft)	79	554		#244	556		#300	#613		74	#768	
Internal Link Dist (ft)		1074			2921			1677			2167	
Turn Bay Length (ft)	150			100			150			175		
Base Capacity (vph)	321	1178		298	1217		196	617		261	557	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.33	0.45		0.79	0.45		0.97	0.83		0.25	1.01	

Intersection Summary

Area Type: Other
Cycle Length: 170
Actuated Cycle Length: 128.2
Natural Cycle: 110
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 59.6 Intersection LOS: E
Intersection Capacity Utilization 90.5% 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.

Splits and Phases: 1: Old Hillsborough Road/Trollingwood Hawfields Road & NC 119



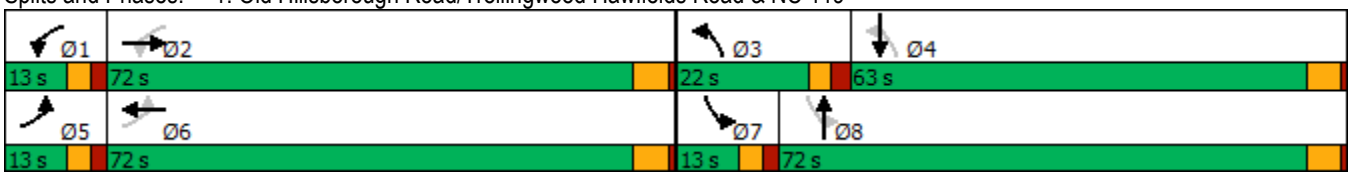
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	307	162	212	420	72	166	272	155	59	324	161
Future Volume (vph)	96	307	162	212	420	72	166	272	155	59	324	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	225		0	550		0	175		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. 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
Frt		0.947			0.978			0.950			0.952	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1764	0	1770	1822	0	1770	1770	0	1770	1773	0
Flt Permitted	0.119			0.143			0.130			0.259		
Satd. Flow (perm)	222	1764	0	266	1822	0	242	1770	0	482	1773	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			45			45			45	
Link Distance (ft)		1154			3001			1757			2247	
Travel Time (s)		19.7			45.5			26.6			34.0	
Peak Hour Factor	0.90	0.90	0.88	0.90	0.90	0.90	0.87	0.80	0.90	0.90	0.84	0.90
Adj. Flow (vph)	107	341	184	236	467	80	191	340	172	66	386	179
Shared Lane Traffic (%)												
Lane Group Flow (vph)	107	525	0	236	547	0	191	512	0	66	565	0
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	6			2			4			8		
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	12.1	17.6		12.1	17.6		12.4	12.4		12.1	12.4	
Total Split (s)	13.0	72.0		13.0	72.0		22.0	72.0		13.0	63.0	
Total Split (%)	7.6%	42.4%		7.6%	42.4%		12.9%	42.4%		7.6%	37.1%	
Maximum Green (s)	7.9	66.4		7.9	66.4		16.6	66.6		7.9	57.6	
Yellow Time (s)	3.0	4.6		3.0	4.6		3.0	4.4		3.0	4.4	
All-Red Time (s)	2.1	1.0		2.1	1.0		2.4	1.0		2.1	1.0	
Lost Time Adjust (s)	-0.1	-0.6		-0.1	-0.6		-0.4	-0.4		-1.0	-0.4	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		4.1	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	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	
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	0.0		0.0	0.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Act Effct Green (s)	58.4	50.1		58.4	50.3		66.5	62.0		69.5	51.5	
Actuated g/C Ratio	0.40	0.34		0.40	0.35		0.46	0.43		0.48	0.35	
v/c Ratio	0.61	0.86		1.23	0.87		0.71	0.68		0.21	0.90	
Control Delay	42.1	60.5		171.6	60.6		40.8	41.9		23.0	64.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	42.1	60.5		171.6	60.6		40.8	41.9		23.0	64.5	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	E		F	E		D	D		C	E	
Approach Delay		57.4			94.0			41.6			60.2	
Approach LOS		E			F			D			E	
Queue Length 50th (ft)	66	504		~209	527		102	408		32	522	
Queue Length 95th (ft)	108	657		#398	684		194	532		70	#746	
Internal Link Dist (ft)		1074			2921			1677			2167	
Turn Bay Length (ft)	150			225			550			175		
Base Capacity (vph)	176	837		192	864		298	839		311	728	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.61	0.63		1.23	0.63		0.64	0.61		0.21	0.78	

Intersection Summary

Area Type: Other
Cycle Length: 170
Actuated Cycle Length: 145.5
Natural Cycle: 110
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.23
Intersection Signal Delay: 64.4 Intersection LOS: E
Intersection Capacity Utilization 90.5% 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.

Splits and Phases: 1: Old Hillsborough Road/Trollingwood Hawfields Road & NC 119



APPENDIX E

CAPACITY ANALYSIS RESULTS
OLD HILLSBOROUGH ROAD AND
JONES DRIVE

Intersection	
Int Delay, s/veh	9.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	133	113	18	327	259	43
Future Vol, veh/h	133	113	18	327	259	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	148	126	20	363	288	48

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	274	0	614	211
Stage 1	-	-	-	-	211	-
Stage 2	-	-	-	-	403	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1289	-	455	829
Stage 1	-	-	-	-	824	-
Stage 2	-	-	-	-	675	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1289	-	446	829
Mov Cap-2 Maneuver	-	-	-	-	446	-
Stage 1	-	-	-	-	824	-
Stage 2	-	-	-	-	662	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	28.5
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	477	-	-	1289	-
HCM Lane V/C Ratio	0.703	-	-	0.016	-
HCM Control Delay (s)	28.5	-	-	7.8	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	5.4	-	-	0	-

Intersection	
Int Delay, s/veh	34.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	238	113	24	413	259	51
Future Vol, veh/h	238	113	24	413	259	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	90	80	82	90	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	331	126	30	504	288	61

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	457	0	958	394
Stage 1	-	-	-	-	394	-
Stage 2	-	-	-	-	564	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1104	-	~ 285	655
Stage 1	-	-	-	-	681	-
Stage 2	-	-	-	-	569	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1104	-	~ 274	655
Mov Cap-2 Maneuver	-	-	-	-	~ 274	-
Stage 1	-	-	-	-	681	-
Stage 2	-	-	-	-	547	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	133.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	305	-	-	1104	-
HCM Lane V/C Ratio	1.143	-	-	0.027	-
HCM Control Delay (s)	133.1	-	-	8.4	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	14.5	-	-	0.1	-

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

Intersection	
Int Delay, s/veh	24.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	238	113	24	413	259	51
Future Vol, veh/h	238	113	24	413	259	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	25
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	90	80	82	90	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	331	126	30	504	288	61

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	457	0	958	394
Stage 1	-	-	-	-	394	-
Stage 2	-	-	-	-	564	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1104	-	~ 285	655
Stage 1	-	-	-	-	681	-
Stage 2	-	-	-	-	569	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1104	-	~ 274	655
Mov Cap-2 Maneuver	-	-	-	-	~ 274	-
Stage 1	-	-	-	-	681	-
Stage 2	-	-	-	-	547	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	92
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	274	655	-	-	1104	-
HCM Lane V/C Ratio	1.05	0.093	-	-	0.027	-
HCM Control Delay (s)	109.1	11.1	-	-	8.4	0
HCM Lane LOS	F	B	-	-	A	A
HCM 95th %tile Q(veh)	11.3	0.3	-	-	0.1	-

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

Intersection	
Int Delay, s/veh	7.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	326	214	59	291	150	35
Future Vol, veh/h	326	214	59	291	150	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	362	238	66	323	167	39

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	600	0	936	481
Stage 1	-	-	-	-	481	-
Stage 2	-	-	-	-	455	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	977	-	294	585
Stage 1	-	-	-	-	622	-
Stage 2	-	-	-	-	639	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	977	-	270	585
Mov Cap-2 Maneuver	-	-	-	-	270	-
Stage 1	-	-	-	-	622	-
Stage 2	-	-	-	-	587	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	39.2
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	301	-	-	977	-
HCM Lane V/C Ratio	0.683	-	-	0.067	-
HCM Control Delay (s)	39.2	-	-	8.9	0
HCM Lane LOS	E	-	-	A	A
HCM 95th %tile Q(veh)	4.6	-	-	0.2	-

Intersection	
Int Delay, s/veh	16.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	387	214	65	371	150	39
Future Vol, veh/h	387	214	65	371	150	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	90	86	81	90	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	461	238	76	458	167	45

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	699	0	1190	580
Stage 1	-	-	-	-	580	-
Stage 2	-	-	-	-	610	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	898	-	207	514
Stage 1	-	-	-	-	560	-
Stage 2	-	-	-	-	542	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	898	-	183	514
Mov Cap-2 Maneuver	-	-	-	-	183	-
Stage 1	-	-	-	-	560	-
Stage 2	-	-	-	-	480	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	109.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	212	-	-	898	-
HCM Lane V/C Ratio	1	-	-	0.084	-
HCM Control Delay (s)	109.4	-	-	9.4	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	8.9	-	-	0.3	-

Intersection	
Int Delay, s/veh	12

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	387	214	65	371	150	39
Future Vol, veh/h	387	214	65	371	150	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	25
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	90	86	81	90	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	461	238	76	458	167	45

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	699	0	1190	580
Stage 1	-	-	-	-	580	-
Stage 2	-	-	-	-	610	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	898	-	207	514
Stage 1	-	-	-	-	560	-
Stage 2	-	-	-	-	542	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	898	-	183	514
Mov Cap-2 Maneuver	-	-	-	-	183	-
Stage 1	-	-	-	-	560	-
Stage 2	-	-	-	-	480	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	78.7
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	183	514	-	-	898	-
HCM Lane V/C Ratio	0.911	0.088	-	-	0.084	-
HCM Control Delay (s)	96.6	12.7	-	-	9.4	0
HCM Lane LOS	F	B	-	-	A	A
HCM 95th %tile Q(veh)	7	0.3	-	-	0.3	-

APPENDIX F

CAPACITY ANALYSIS RESULTS
OLD HILLSBOROUGH ROAD AND
MEBANE OAKS ROAD

Intersection	
Intersection Delay, s/veh	15.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	245	58	18	4	68	95	19	209	12	41	111	96
Future Vol, veh/h	245	58	18	4	68	95	19	209	12	41	111	96
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	272	64	20	4	76	106	21	232	13	46	123	107
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	18.2	11.9	14.4	14.1
HCM LOS	C	B	B	B

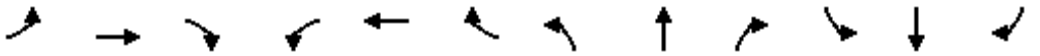
Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	76%	2%	17%
Vol Thru, %	87%	18%	41%	45%
Vol Right, %	5%	6%	57%	39%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	240	321	167	248
LT Vol	19	245	4	41
Through Vol	209	58	68	111
RT Vol	12	18	95	96
Lane Flow Rate	267	357	186	276
Geometry Grp	1	1	1	1
Degree of Util (X)	0.459	0.606	0.313	0.46
Departure Headway (Hd)	6.194	6.116	6.063	6.004
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	581	589	592	598
Service Time	4.242	4.161	4.116	4.051
HCM Lane V/C Ratio	0.46	0.606	0.314	0.462
HCM Control Delay	14.4	18.2	11.9	14.1
HCM Lane LOS	B	C	B	B
HCM 95th-tile Q	2.4	4	1.3	2.4

Intersection	
Intersection Delay, s/veh	19.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	276	58	18	4	68	95	19	209	12	41	111	133
Future Vol, veh/h	276	58	18	4	68	95	19	209	12	41	111	133
Peak Hour Factor	0.86	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	321	64	20	4	76	106	21	232	13	46	123	168
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	24.9	13	16.1	18
HCM LOS	C	B	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	78%	2%	14%
Vol Thru, %	87%	16%	41%	39%
Vol Right, %	5%	5%	57%	47%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	240	352	167	285
LT Vol	19	276	4	41
Through Vol	209	58	68	111
RT Vol	12	18	95	133
Lane Flow Rate	267	405	186	337
Geometry Grp	1	1	1	1
Degree of Util (X)	0.493	0.726	0.338	0.588
Departure Headway (Hd)	6.655	6.446	6.564	6.273
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	539	559	544	573
Service Time	4.737	4.517	4.656	4.349
HCM Lane V/C Ratio	0.495	0.725	0.342	0.588
HCM Control Delay	16.1	24.9	13	18
HCM Lane LOS	C	C	B	C
HCM 95th-tile Q	2.7	6	1.5	3.8

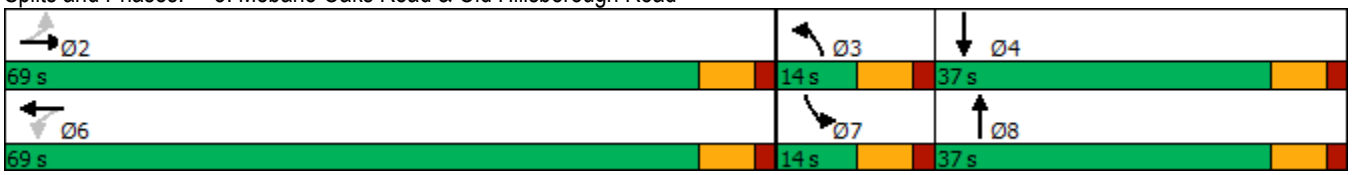


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	276	58	18	4	68	95	19	209	12	41	111	133
Future Volume (vph)	276	58	18	4	68	95	19	209	12	41	111	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	150		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. 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
Frt		0.993			0.923			0.992			0.913	
Flt Protected		0.962			0.999		0.950			0.950		
Satd. Flow (prot)	0	1779	0	0	1718	0	1770	1848	0	1770	1701	0
Flt Permitted		0.667			0.992		0.950			0.950		
Satd. Flow (perm)	0	1234	0	0	1706	0	1770	1848	0	1770	1701	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			85			2			56	
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2370			1258			1812			1946	
Travel Time (s)		35.9			19.1			27.5			29.5	
Peak Hour Factor	0.86	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.79
Adj. Flow (vph)	321	64	20	4	76	106	21	232	13	46	123	168
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	405	0	0	186	0	21	245	0	46	291	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		2			6		3	8		7	4	
Permitted Phases	2			6								
Detector Phase	2	2		6	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	19.0	19.0		19.0	19.0		14.0	17.0		14.0	17.0	
Total Split (s)	69.0	69.0		69.0	69.0		14.0	37.0		14.0	37.0	
Total Split (%)	57.5%	57.5%		57.5%	57.5%		11.7%	30.8%		11.7%	30.8%	
Maximum Green (s)	62.0	62.0		62.0	62.0		7.0	30.0		7.0	30.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Act Effct Green (s)		34.4			34.4		10.5	20.1		10.5	22.8	
Actuated g/C Ratio		0.47			0.47		0.14	0.28		0.14	0.31	
v/c Ratio		0.69			0.22		0.08	0.48		0.18	0.51	
Control Delay		24.1			8.3		41.8	30.4		41.4	24.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		24.1			8.3		41.8	30.4		41.4	24.1	
LOS		C			A		D	C		D	C	
Approach Delay		24.1			8.3			31.3			26.4	
Approach LOS		C			A			C			C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		148			26		9	99		19	70	
Queue Length 95th (ft)		319			76		41	227		71	237	
Internal Link Dist (ft)		2290			1178			1732			1866	
Turn Bay Length (ft)							150			150		
Base Capacity (vph)		1024			1430		253	943		253	895	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.40			0.13		0.08	0.26		0.18	0.33	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 73			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 23.9		Intersection LOS: C	
Intersection Capacity Utilization 65.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Mebane Oaks Road & Old Hillsborough Road



Intersection	
Intersection Delay, s/veh	51
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	152	84	14	13	86	78	24	167	10	112	215	265
Future Vol, veh/h	152	84	14	13	86	78	24	167	10	112	215	265
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	169	93	16	14	96	87	27	186	11	124	239	294
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	19.1	15	15.5	87.2
HCM LOS	C	B	C	F

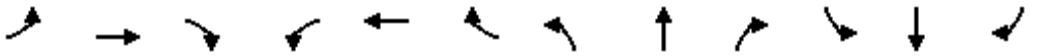
Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	61%	7%	19%
Vol Thru, %	83%	34%	49%	36%
Vol Right, %	5%	6%	44%	45%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	201	250	177	592
LT Vol	24	152	13	112
Through Vol	167	84	86	215
RT Vol	10	14	78	265
Lane Flow Rate	223	278	197	658
Geometry Grp	1	1	1	1
Degree of Util (X)	0.429	0.55	0.386	1.09
Departure Headway (Hd)	7.191	7.43	7.4	5.967
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	505	489	490	612
Service Time	5.191	5.43	5.4	4.007
HCM Lane V/C Ratio	0.442	0.569	0.402	1.075
HCM Control Delay	15.5	19.1	15	87.2
HCM Lane LOS	C	C	B	F
HCM 95th-tile Q	2.1	3.3	1.8	19.4

Intersection	
Intersection Delay, s/veh	70
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	180	84	14	13	86	78	24	167	10	112	215	287
Future Vol, veh/h	180	84	14	13	86	78	24	167	10	112	215	287
Peak Hour Factor	0.84	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	214	93	16	14	96	87	27	186	11	124	239	330
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	23.2	15.9	16.5	124.5
HCM LOS	C	C	C	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	65%	7%	18%
Vol Thru, %	83%	30%	49%	35%
Vol Right, %	5%	5%	44%	47%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	201	278	177	614
LT Vol	24	180	13	112
Through Vol	167	84	86	215
RT Vol	10	14	78	287
Lane Flow Rate	223	323	197	693
Geometry Grp	1	1	1	1
Degree of Util (X)	0.445	0.636	0.397	1.192
Departure Headway (Hd)	7.598	7.696	7.826	6.192
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	478	472	462	589
Service Time	5.598	5.696	5.826	4.214
HCM Lane V/C Ratio	0.467	0.684	0.426	1.177
HCM Control Delay	16.5	23.2	15.9	124.5
HCM Lane LOS	C	C	C	F
HCM 95th-tile Q	2.3	4.4	1.9	24.5

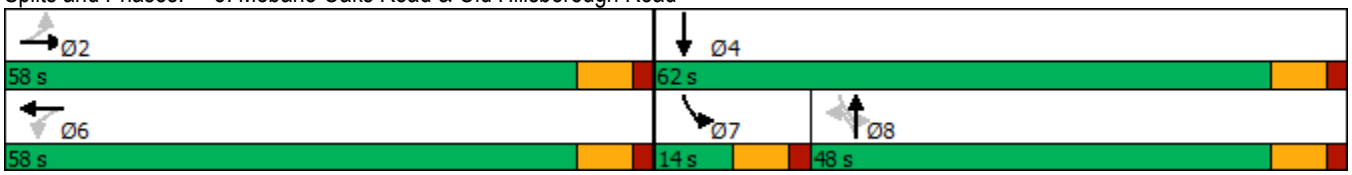


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	84	14	13	86	78	24	167	10	112	215	287
Future Volume (vph)	180	84	14	13	86	78	24	167	10	112	215	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	150		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. 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
Frt		0.993			0.940			0.992			0.913	
Flt Protected		0.968			0.996		0.950			0.950		
Satd. Flow (prot)	0	1791	0	0	1744	0	1770	1848	0	1770	1701	0
Flt Permitted		0.691			0.966		0.450			0.598		
Satd. Flow (perm)	0	1278	0	0	1691	0	838	1848	0	1114	1701	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			42			3			79	
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2370			1258			1812			1946	
Travel Time (s)		35.9			19.1			27.5			29.5	
Peak Hour Factor	0.84	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.87
Adj. Flow (vph)	214	93	16	14	96	87	27	186	11	124	239	330
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	323	0	0	197	0	27	197	0	124	569	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		D.P+P	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6			8			8		
Detector Phase	2	2		6	6		8	8		7	4	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		10.0	10.0		7.0	10.0	
Minimum Split (s)	19.0	19.0		19.0	19.0		17.0	17.0		14.0	17.0	
Total Split (s)	58.0	58.0		58.0	58.0		48.0	48.0		14.0	62.0	
Total Split (%)	48.3%	48.3%		48.3%	48.3%		40.0%	40.0%		11.7%	51.7%	
Maximum Green (s)	51.0	51.0		51.0	51.0		41.0	41.0		7.0	55.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Act Effct Green (s)		27.9			27.9		20.8	20.8		27.7	31.5	
Actuated g/C Ratio		0.40			0.40		0.30	0.30		0.39	0.45	
v/c Ratio		0.64			0.28		0.11	0.36		0.23	0.71	
Control Delay		25.2			13.9		23.8	24.8		14.6	20.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		25.2			13.9		23.8	24.8		14.6	20.1	
LOS		C			B		C	C		B	C	
Approach Delay		25.2			13.9			24.7			19.1	
Approach LOS		C			B			C			B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		98			39		9	66		28	149	
Queue Length 95th (ft)		261			117		34	159		83	387	
Internal Link Dist (ft)		2290			1178			1732			1866	
Turn Bay Length (ft)							150			150		
Base Capacity (vph)		995			1325		560	1237		530	1412	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.32			0.15		0.05	0.16		0.23	0.40	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 70.5			
Natural Cycle: 55			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 20.6		Intersection LOS: C	
Intersection Capacity Utilization 79.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Mebane Oaks Road & Old Hillsborough Road



APPENDIX G

CAPACITY ANALYSIS ROAD
OLD HILLSBOROUGH ROAD AND
SITE ACCESS

Intersection	
Int Delay, s/veh	6.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	176	113	37	345	92	31
Future Vol, veh/h	176	113	37	345	92	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	50	50	90	50	50
Heavy Vehicles, %	0	2	0	2	0	0
Mvmt Flow	196	226	74	383	184	62

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	422	0	840	309
Stage 1	-	-	-	-	309	-
Stage 2	-	-	-	-	531	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1148	-	338	736
Stage 1	-	-	-	-	749	-
Stage 2	-	-	-	-	594	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1148	-	310	736
Mov Cap-2 Maneuver	-	-	-	-	310	-
Stage 1	-	-	-	-	749	-
Stage 2	-	-	-	-	545	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	26.7
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	310	736	-	-	1148	-
HCM Lane V/C Ratio	0.594	0.084	-	-	0.064	-
HCM Control Delay (s)	32.2	10.3	-	-	8.4	0
HCM Lane LOS	D	B	-	-	A	A
HCM 95th %tile Q(veh)	3.6	0.3	-	-	0.2	-

Intersection	
Int Delay, s/veh	6.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	176	113	37	345	92	31
Future Vol, veh/h	176	113	37	345	92	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	50	50	90	50	50
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	196	226	74	383	184	62

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	422	0	840	309
Stage 1	-	-	-	-	309	-
Stage 2	-	-	-	-	531	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1148	-	338	736
Stage 1	-	-	-	-	749	-
Stage 2	-	-	-	-	594	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1148	-	310	736
Mov Cap-2 Maneuver	-	-	-	-	310	-
Stage 1	-	-	-	-	749	-
Stage 2	-	-	-	-	545	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	26.7
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	310	736	-	-	1148	-
HCM Lane V/C Ratio	0.594	0.084	-	-	0.064	-
HCM Control Delay (s)	32.2	10.3	-	-	8.4	0
HCM Lane LOS	D	B	-	-	A	A
HCM 95th %tile Q(veh)	3.6	0.3	-	-	0.2	-

Intersection	
Int Delay, s/veh	6.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	361	65	22	350	86	28
Future Vol, veh/h	361	65	22	350	86	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	50	50	90	50	50
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	401	130	44	389	172	56

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	531	0	943	466
Stage 1	-	-	-	-	466	-
Stage 2	-	-	-	-	477	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1047	-	294	601
Stage 1	-	-	-	-	636	-
Stage 2	-	-	-	-	629	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1047	-	278	601
Mov Cap-2 Maneuver	-	-	-	-	278	-
Stage 1	-	-	-	-	636	-
Stage 2	-	-	-	-	595	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	30.7
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	278	601	-	-	1047	-
HCM Lane V/C Ratio	0.619	0.093	-	-	0.042	-
HCM Control Delay (s)	36.9	11.6	-	-	8.6	0
HCM Lane LOS	E	B	-	-	A	A
HCM 95th %tile Q(veh)	3.8	0.3	-	-	0.1	-

Intersection	
Int Delay, s/veh	6.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	361	65	22	350	86	28
Future Vol, veh/h	361	65	22	350	86	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	50	50	90	50	50
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	401	130	44	389	172	56

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	531	0	943	466
Stage 1	-	-	-	-	466	-
Stage 2	-	-	-	-	477	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1047	-	294	601
Stage 1	-	-	-	-	636	-
Stage 2	-	-	-	-	629	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1047	-	278	601
Mov Cap-2 Maneuver	-	-	-	-	278	-
Stage 1	-	-	-	-	636	-
Stage 2	-	-	-	-	595	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	30.7
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	278	601	-	-	1047	-
HCM Lane V/C Ratio	0.619	0.093	-	-	0.042	-
HCM Control Delay (s)	36.9	11.6	-	-	8.6	0
HCM Lane LOS	E	B	-	-	A	A
HCM 95th %tile Q(veh)	3.8	0.3	-	-	0.1	-

APPENDIX H

SIMTRAFFIC REPORTS

Intersection: 1: Old Hillsborough Road/Trollingwood Hawfields Road & NC 119

Movement	EB	EB	WB	WB	NB	NB	B7	SB	SB
Directions Served	L	TR	L	TR	L	TR	T	L	TR
Maximum Queue (ft)	249	727	173	226	250	1750	548	238	422
Average Queue (ft)	117	471	71	123	170	1465	245	74	240
95th Queue (ft)	271	709	145	223	321	2029	812	198	405
Link Distance (ft)		1094		2949		1676	1720		2213
Upstream Blk Time (%)						35			
Queuing Penalty (veh)						226			
Storage Bay Dist (ft)	150		100		150			175	
Storage Blk Time (%)	0	37	5	14	12	73			23
Queuing Penalty (veh)	1	53	14	14	70	126			18

Intersection: 2: Jones Drive & Old Hillsborough Road

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	8	37	158
Average Queue (ft)	1	6	81
95th Queue (ft)	8	29	143
Link Distance (ft)	1720	1598	1357
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Mebane Oaks Road & Old Hillsborough Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	200	92	129	104
Average Queue (ft)	95	52	56	50
95th Queue (ft)	177	89	119	93
Link Distance (ft)	2286	1209	1757	1897
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 521

Intersection: 1: Old Hillsborough Road/Trollingwood Hawfields Road & NC 119

Movement	EB	EB	WB	WB	NB	NB	B7	SB	SB
Directions Served	L	TR	L	TR	L	TR	T	L	TR
Maximum Queue (ft)	250	819	132	228	250	1776	1613	274	874
Average Queue (ft)	132	527	57	112	178	1672	769	149	583
95th Queue (ft)	291	808	112	218	318	1968	1852	325	937
Link Distance (ft)		1094		2949		1676	1720		2213
Upstream Blk Time (%)						65	1		
Queuing Penalty (veh)						518	6		
Storage Bay Dist (ft)	150		100		150			175	
Storage Blk Time (%)	1	39	2	13	19	72		0	66
Queuing Penalty (veh)	5	57	6	13	135	139		1	50

Intersection: 2: Jones Drive & Old Hillsborough Road

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	4	123	444
Average Queue (ft)	0	20	214
95th Queue (ft)	4	95	503
Link Distance (ft)	1720	1592	1357
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Mebane Oaks Road & Old Hillsborough Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	225	94	130	111
Average Queue (ft)	114	54	55	56
95th Queue (ft)	217	95	115	102
Link Distance (ft)	2286	1209	1757	1897
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Site Access & Old Hillsborough Road

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	14	119	172	145
Average Queue (ft)	2	37	88	49
95th Queue (ft)	13	97	166	118
Link Distance (ft)	1592	1719	684	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				50
Storage Blk Time (%)			29	1
Queuing Penalty (veh)			18	2

Intersection: 17: Site Access

Movement	NB	SB
Directions Served	T	R
Maximum Queue (ft)	36	12
Average Queue (ft)	8	2
95th Queue (ft)	31	13
Link Distance (ft)	177	684
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 19:

Movement	NB
Directions Served	T
Maximum Queue (ft)	120
Average Queue (ft)	79
95th Queue (ft)	124
Link Distance (ft)	110
Upstream Blk Time (%)	3
Queuing Penalty (veh)	7
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 20:

Movement	EB
Directions Served	L
Maximum Queue (ft)	142
Average Queue (ft)	77
95th Queue (ft)	127
Link Distance (ft)	127
Upstream Blk Time (%)	0
Queuing Penalty (veh)	1
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 958

Intersection: 1: Old Hillsborough Road/Trollingwood Hawfields Road & NC 119

Movement	EB	EB	B10	WB	WB	NB	NB	B7	SB	SB
Directions Served	L	TR	T	L	TR	L	TR	T	L	TR
Maximum Queue (ft)	249	1187	1531	237	296	650	1481	261	274	474
Average Queue (ft)	129	1141	805	111	159	377	1150	83	132	313
95th Queue (ft)	284	1278	1925	235	294	825	1822	477	289	447
Link Distance (ft)		1094	1885		2949		1676	1720		2213
Upstream Blk Time (%)		54	9				11			
Queuing Penalty (veh)		0	0				89			
Storage Bay Dist (ft)	150			225		550			175	
Storage Blk Time (%)	2	60		7	3		53		13	33
Queuing Penalty (veh)	13	87		19	3		103		58	25

Intersection: 2: Jones Drive & Old Hillsborough Road

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	13	78	336	125
Average Queue (ft)	1	17	212	69
95th Queue (ft)	8	63	435	156
Link Distance (ft)	1720	1580	1357	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				25
Storage Blk Time (%)			84	5
Queuing Penalty (veh)			51	14

Intersection: 3: Mebane Oaks Road & Old Hillsborough Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	318	147	52	194	98	155
Average Queue (ft)	170	59	10	83	24	76
95th Queue (ft)	301	120	36	166	77	160
Link Distance (ft)	2279	1202		1754		1895
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150		150	
Storage Blk Time (%)				2		1
Queuing Penalty (veh)				0		1

Intersection: 4: Site Access & Old Hillsborough Road

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	27	101	197	138
Average Queue (ft)	3	37	94	44
95th Queue (ft)	18	96	181	112
Link Distance (ft)	1580	1719	684	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				50
Storage Blk Time (%)			32	1
Queuing Penalty (veh)			20	2

Intersection: 17: Site Access

Movement	NB	SB
Directions Served	T	R
Maximum Queue (ft)	45	23
Average Queue (ft)	13	3
95th Queue (ft)	42	19
Link Distance (ft)	177	684
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 19:

Movement	NB
Directions Served	T
Maximum Queue (ft)	120
Average Queue (ft)	83
95th Queue (ft)	132
Link Distance (ft)	110
Upstream Blk Time (%)	4
Queuing Penalty (veh)	10
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 20:

Movement	EB	B21
Directions Served	L	T
Maximum Queue (ft)	150	4
Average Queue (ft)	80	0
95th Queue (ft)	137	4
Link Distance (ft)	127	318
Upstream Blk Time (%)	1	
Queuing Penalty (veh)	2	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 497

Intersection: 1: Old Hillsborough Road/Trollingwood Hawfields Road & NC 119

Movement	EB	EB	B10	WB	WB	NB	NB	B7	SB	SB
Directions Served	L	TR	T	L	TR	L	TR	T	L	TR
Maximum Queue (ft)	250	874	15	172	245	250	1782	1627	274	1399
Average Queue (ft)	144	579	2	81	125	192	1677	884	128	873
95th Queue (ft)	299	913	21	157	232	322	2008	1993	309	1678
Link Distance (ft)		1094	1885		2949		1676	1720		2213
Upstream Blk Time (%)		1					70	5		
Queuing Penalty (veh)		0					557	36		
Storage Bay Dist (ft)	150			100		150			175	
Storage Blk Time (%)	1	41		10	15	24	70		0	66
Queuing Penalty (veh)	4	60		30	15	170	136		0	50

Intersection: 2: Jones Drive & Old Hillsborough Road

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	9	250	966
Average Queue (ft)	1	69	414
95th Queue (ft)	6	297	989
Link Distance (ft)	1720	1592	1357
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Mebane Oaks Road & Old Hillsborough Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	223	122	131	113
Average Queue (ft)	118	54	58	58
95th Queue (ft)	220	104	120	100
Link Distance (ft)	2286	1209	1757	1897
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Site Access & Old Hillsborough Road

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	13	91	156	118
Average Queue (ft)	1	29	86	46
95th Queue (ft)	9	77	171	106
Link Distance (ft)	1592	1719	679	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				50
Storage Blk Time (%)			27	1
Queuing Penalty (veh)			16	2

Intersection: 17: Site Access

Movement	EB	SB
Directions Served	L	TR
Maximum Queue (ft)	108	65
Average Queue (ft)	84	17
95th Queue (ft)	120	54
Link Distance (ft)	98	679
Upstream Blk Time (%)	3	
Queuing Penalty (veh)	8	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 18:

Movement	NE
Directions Served	R
Maximum Queue (ft)	74
Average Queue (ft)	20
95th Queue (ft)	60
Link Distance (ft)	138
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 19:

Movement	NB
Directions Served	T
Maximum Queue (ft)	119
Average Queue (ft)	77
95th Queue (ft)	126
Link Distance (ft)	102
Upstream Blk Time (%)	4
Queuing Penalty (veh)	9
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 21:

Movement	WB	B20
Directions Served	R	T
Maximum Queue (ft)	122	6
Average Queue (ft)	70	0
95th Queue (ft)	114	6
Link Distance (ft)	103	305
Upstream Blk Time (%)	1	
Queuing Penalty (veh)	2	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 1095

Intersection: 1: Old Hillsborough Road/Trollingwood Hawfields Road & NC 119

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	250	455	200	692	250	623	274	1034
Average Queue (ft)	92	289	165	387	211	416	121	715
95th Queue (ft)	225	441	239	727	319	801	313	1246
Link Distance (ft)		1094		2949		1676		2213
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	150		100		150		175	
Storage Blk Time (%)	0	31	37	38	51	36		70
Queuing Penalty (veh)	2	33	202	89	203	63		46

Intersection: 2: Jones Drive & Old Hillsborough Road

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	9	104	148
Average Queue (ft)	1	43	73
95th Queue (ft)	8	98	136
Link Distance (ft)	1720	1598	1357
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Mebane Oaks Road & Old Hillsborough Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	137	96	108	873
Average Queue (ft)	70	50	47	600
95th Queue (ft)	125	88	98	1230
Link Distance (ft)	2286	1209	1757	1897
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 638

Intersection: 1: Old Hillsborough Road/Trollingwood Hawfields Road & NC 119

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	249	558	200	1250	250	1229	275	2143
Average Queue (ft)	114	327	178	653	222	797	133	1540
95th Queue (ft)	255	514	246	1403	314	1410	332	2497
Link Distance (ft)		1094		2949		1676		2213
Upstream Blk Time (%)						0		18
Queuing Penalty (veh)						0		0
Storage Bay Dist (ft)	150		100		150		175	
Storage Blk Time (%)	0	33	52	35	53	46		75
Queuing Penalty (veh)	0	35	284	82	272	89		49

Intersection: 2: Jones Drive & Old Hillsborough Road

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	17	152	196
Average Queue (ft)	1	43	91
95th Queue (ft)	12	120	164
Link Distance (ft)	1720	1592	1357
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Mebane Oaks Road & Old Hillsborough Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	150	91	96	1335
Average Queue (ft)	80	48	44	821
95th Queue (ft)	138	82	84	1483
Link Distance (ft)	2286	1209	1757	1897
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Site Access & Old Hillsborough Road

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	9	75	128	103
Average Queue (ft)	1	21	74	31
95th Queue (ft)	6	65	127	82
Link Distance (ft)	1592	1719	684	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				50
Storage Blk Time (%)			21	1
Queuing Penalty (veh)			12	1

Intersection: 17: Site Access

Movement	NB	SB
Directions Served	T	R
Maximum Queue (ft)	25	6
Average Queue (ft)	2	0
95th Queue (ft)	16	6
Link Distance (ft)	177	684
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 19:

Movement	NB
Directions Served	T
Maximum Queue (ft)	105
Average Queue (ft)	55
95th Queue (ft)	98
Link Distance (ft)	110
Upstream Blk Time (%)	1
Queuing Penalty (veh)	1
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 20:

Movement	EB
Directions Served	L
Maximum Queue (ft)	106
Average Queue (ft)	53
95th Queue (ft)	93
Link Distance (ft)	127
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 825

Intersection: 1: Old Hillsborough Road/Trollingwood Hawfields Road & NC 119

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	250	718	325	2595	327	463	275	892
Average Queue (ft)	137	448	311	1735	213	299	109	610
95th Queue (ft)	287	739	376	3376	433	447	293	978
Link Distance (ft)		1094		2949		1676		2213
Upstream Blk Time (%)				24				
Queuing Penalty (veh)				0				
Storage Bay Dist (ft)	150		225		550		175	
Storage Blk Time (%)	0	43	83	18				56
Queuing Penalty (veh)	1	46	452	42				37

Intersection: 2: Jones Drive & Old Hillsborough Road

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	36	170	306	125
Average Queue (ft)	4	58	103	44
95th Queue (ft)	24	138	264	114
Link Distance (ft)	1720	1580	1357	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				25
Storage Blk Time (%)			64	5
Queuing Penalty (veh)			29	8

Intersection: 3: Mebane Oaks Road & Old Hillsborough Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	240	163	56	146	153	302
Average Queue (ft)	139	78	14	64	45	141
95th Queue (ft)	227	148	45	134	114	269
Link Distance (ft)	2279	1202		1754		1895
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150		150	
Storage Blk Time (%)				1	0	7
Queuing Penalty (veh)				0	1	9

Intersection: 4: Site Access & Old Hillsborough Road

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	4	102	145	91
Average Queue (ft)	0	27	70	33
95th Queue (ft)	4	81	123	79
Link Distance (ft)	1580	1719	684	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				50
Storage Blk Time (%)			20	1
Queuing Penalty (veh)			11	1

Intersection: 17: Site Access

Movement	NB
Directions Served	T
Maximum Queue (ft)	23
Average Queue (ft)	2
95th Queue (ft)	17
Link Distance (ft)	177
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 19:

Movement	NB
Directions Served	T
Maximum Queue (ft)	109
Average Queue (ft)	62
95th Queue (ft)	108
Link Distance (ft)	110
Upstream Blk Time (%)	1
Queuing Penalty (veh)	3
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 20:

Movement	EB
Directions Served	L
Maximum Queue (ft)	105
Average Queue (ft)	58
95th Queue (ft)	95
Link Distance (ft)	127
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 641

Intersection: 1: Old Hillsborough Road/Trollingwood Hawfields Road & NC 119

Movement	EB	EB	WB	WB	NB	NB	B7	SB	SB
Directions Served	L	TR	L	TR	L	TR	T	L	TR
Maximum Queue (ft)	250	538	200	961	250	1331	46	275	2062
Average Queue (ft)	126	310	173	506	199	927	4	105	1536
95th Queue (ft)	271	496	247	972	319	1686	39	282	2423
Link Distance (ft)		1094		2949		1676	1720		2213
Upstream Blk Time (%)						4			19
Queuing Penalty (veh)						27			0
Storage Bay Dist (ft)	150		100		150			175	
Storage Blk Time (%)	1	34	54	36	38	54		0	74
Queuing Penalty (veh)	7	36	296	85	193	103		0	49

Intersection: 2: Jones Drive & Old Hillsborough Road

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	17	134	203
Average Queue (ft)	1	50	103
95th Queue (ft)	9	114	197
Link Distance (ft)	1720	1592	1357
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Mebane Oaks Road & Old Hillsborough Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	141	79	97	1326
Average Queue (ft)	75	46	42	970
95th Queue (ft)	128	76	83	1608
Link Distance (ft)	2286	1209	1757	1897
Upstream Blk Time (%)				2
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Site Access & Old Hillsborough Road

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	8	91	188	111
Average Queue (ft)	1	25	88	37
95th Queue (ft)	6	77	182	93
Link Distance (ft)	1592	1719	679	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				50
Storage Blk Time (%)			29	1
Queuing Penalty (veh)			16	1

Intersection: 17: Site Access

Movement	EB	SB
Directions Served	L	TR
Maximum Queue (ft)	107	50
Average Queue (ft)	74	10
95th Queue (ft)	109	39
Link Distance (ft)	98	679
Upstream Blk Time (%)	1	
Queuing Penalty (veh)	2	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 18:

Movement	NE
Directions Served	R
Maximum Queue (ft)	39
Average Queue (ft)	6
95th Queue (ft)	28
Link Distance (ft)	138
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 19:

Movement	NB
Directions Served	T
Maximum Queue (ft)	117
Average Queue (ft)	65
95th Queue (ft)	107
Link Distance (ft)	102
Upstream Blk Time (%)	1
Queuing Penalty (veh)	2
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 21:

Movement	WB
Directions Served	R
Maximum Queue (ft)	100
Average Queue (ft)	56
95th Queue (ft)	92
Link Distance (ft)	103
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 818

APPENDIX I

TRAFFIC MANAGEMENT PLAN

RAMEY KEMP ASSOCIATES
Moving forward.

T 919 872 5115
5808 Faringdon Place
Raleigh, NC 27609

July 8, 2020

C. N. Edwards Jr., PE (Chuck)
Division 7, District 1, District Engineer
North Carolina Department of Transportation
115 East Crescent Square Drive
P. O. Box 766
Graham, NC 27253
Phone: 336 570 6833
Email: cnedwards@ncdot.gov

Subject: **Alamance Community Charter School Temporary Site – Traffic Management Plan**
Alamance, North Carolina

Dear Mr. Edwards,

This letter provides a Traffic Management Plan (TMP) for the proposed Alamance Community Charter Temporary School to be located at Crosslink Community Church (3457 Old Hillsborough Road) in Mebane, North Carolina. This TMP was prepared in accordance with the North Carolina Department of Transportation (NCDOT) Municipal and School Transportation Assistance (MSTA) guidelines and the City of Mebane's (City) Unified Development Ordinance (UDO) requirements. Based on discussion with the project team, the temporary school will consist of 220 students at any given time in grades K-3. The temporary school is anticipated to be operational for a maximum of 45 days and no buses are anticipated to be provided during that time.

Introduction

The temporary school is expected to have up to 400 total students enrolled; however, **due to the COVID-19 pandemic and because it will be in a temporary space, the temporary school is expected to only have a maximum of 220 students at any given time**. Based on discussion with the project team, all students will be in grades K-3. Access to the temporary school campus for all parent trips will be provided via the Crosslink Community Church driveway (Site Access, as denoted in the Traffic Analysis letter) along Old Hillsborough Road. Based on the most recent NCDOT AADT data (2017), Old Hillsborough Road has an annual average daily traffic (AADT) volume of approximately 6,300 vehicles per day (vpd) within the study area.

One of the concerns of the MSTA and the City was the impact of the proposed temporary school during the operation of other local schools. Audrey W Garrett Elementary and Hawfields Middle School are located in the eastern quadrant at the intersection of NC 119 and Old Hillsborough Road. The existing schools' bell schedules and the proposed temporary school's bell schedule are as follows:

- Audrey W Garrett Elementary: 8:00 AM – 3:25 PM

- Hawfields Middle School: 7:50 AM – 2:40 PM
- Proposed Alamance Community Charter Temporary School: 8:25 AM – 3:25 PM

Based on the above bell schedules, the proposed temporary school is sufficiently staggered from local schools during the weekday AM peak hour. During the school PM peak hour, the temporary school is sufficiently staggered from Hawfields Middle School.

Trip Generation

Average weekday daily and peak hour trips for the proposed temporary school were generated by utilizing the MSTA School Calculator, which is based on traffic count data that has been collected at school sites statewide. The calculator provides a conservative estimate of the anticipated traffic generated by the proposed school on an average school day.

The proposed temporary school is anticipated to have a maximum of 400 total students enrolled at the school; however, **due to the COVID-19 pandemic and because it will be a temporary space, the school is expected to only have a maximum of 220 students at any given time on campus**. Additionally, the temporary site is not anticipated to offer any buses. For a charter school (grades K-3) with 220 students and no buses, the Traffic Calculator estimates 27 staff members, 123 parent drivers during the weekday AM peak hour, and 87 parent drivers during the school PM peak hour. Refer to Table 1, below, for a summary of the trip generation.

Table 1: Trip Generation Summary

LAND USE	TRIP GENERATOR	DAILY TRIPS	AM PEAK HOUR (VPH)		PM PEAK HOUR (VPH)	
			Entering	Exiting	Entering	Exiting
Alamance Community Charter Temporary School (220 Students)	27 Staff	54	27	0	0	27
	Parents	420	123	123	87	87
Total Site Trips		**474**	**150**	**123**	**87**	**114**

It is estimated that the proposed development would generate approximately 474 total site trips (237 entering and 237 exiting) on the roadway network during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that approximately 273 site trips (150 entering and 123 exiting) will occur during the weekday AM peak hour and 201 site trips (87 entering and 114 exiting) will occur during the school PM peak hour of the school. Based on the MSTA School Calculator, these parent trips are expected to generate approximately 954 feet of queuing during an average day and 1,241 feet of queuing during a stacking high demand day, which accounts for 30% additional stacking length. Table 2 summarizes the stacking based on a maximum of 220 students being dropped-off or picked-up by parents at any given time.

Table 1 – Stacking Summary

LAND USE	STACKING CALCULATIONS (FEET)	
	AVERAGE	HIGH DEMAND
Alamance Community Charter Temporary School (220 Students)	954	1,241

Two alternatives were considered for the circulation pattern of the site, as follows:

- Alternative 1 – entering vehicles navigate through the site in a counterclockwise direction around the building and drop students off at the east entrance
    - Students that sit in the passenger side of the vehicle may need to walk between cars due to the school being on the driver side of the car during (un)loading operations
        - It should be noted that it is recommended that children be seated in the back seat in vehicles until the age of 12 in North Carolina and all at the proposed temporary school are anticipated to be less than 12 years old (grades K-3)
- Alternative 2 – entering vehicles navigate through the site in a clockwise direction around the building and drop students off at the west entrance
    - Ingress and egress traffic would need to cross in order to allow vehicles to exit the site

Alternative 1 has an internal stacking length of 1,570 feet (single stacked). Alternative 2 is expected to have approximately 1,409 feet (single stacked) of internal stacking. Both alternatives are expected to meet the high demand stacking length as estimated by the MSTA School Calculator; however, Alternative 2 would require the ingress and egress traffic to cross in order to allow vehicles to exit the site. Alternative 1 is recommended due to the additional provided internal stacking length and to prevent ingress and egress traffic conflicts on-site. Refer to the Morning Drop-Off Operations and Afternoon Pick-Up Operations sections of this TMP for more information.

On-Site School Operations

All before and after school activities should be coordinated with a representative(s) of the proposed temporary school to determine if there is any conflict with conventional drop-off/pick-up times and operations. NCDOT's MSTA group requires all roadways internally within the development be analyzed with a speed limit of 10 miles per hour (mph); therefore, the maximum safe speed on the campus is recommended to be 10 mph.

On-Site Parking

Staff shall park in the designated staff parking lot located on the north side of the temporary school. School visitors and parents requiring additional time to unload shall park in the visitor parking area located on the west side of the temporary school.

Morning Drop-Off Operations

The following are recommendations for operations of staff, visitor/parents, and carpool users during the morning unloading operations. Table 2, below, summarizes the morning schedule. The queuing lanes, designated parking areas, and loading area are illustrated in the site plan.

Table 2 – Morning Schedule

Time	Event
7:10-7:40 AM	Staff arrive
7:55-8:25 AM	Morning bell drop-off
8:25 AM	Morning bell rings

In the event of a delayed school opening the same schedule will be followed, but the start times for each event will be shifted the same amount of time. Carpool vehicles should not be allowed on-site prior to the unloading operation schedule.

Staff:

- Staff should arrive a minimum of 15 minutes before the first unloading operations to avoid conflicts with carpool traffic.
- A staff member(s) shall rope and/or cone off the second row of parking spaces within the designated staff parking lot (nearest the temporary school building) a minimum of 15 minutes before unloading operations begin, encouraging parent vehicles to utilize the outer loop.
- A staff member(s) shall remove the rope and/or cones at the parking spaces within the designated staff parking lot a minimum of 15 minutes after unloading operations end.

Visitors/Parents:

- School Visitors/Parents needing additional time to unload during morning unloading operations shall park on the west side of the temporary school. It should be noted that these carpool vehicles will have to traverse through the majority of the designated vehicle stacking lane prior to utilizing the designated visitor parking area. Visitors/Parents are encouraged to continue to traverse in a counter-clockwise direction once leaving the campus. Visitors/Parents walking students should park on the left-hand side, closest to the temporary school building, so that students will not need to cross the vehicle stacking lane. Sidewalks should be utilized, where appropriate.

Carpool Vehicles:

- Student(s) shall unload when the vehicle comes to a complete stop within the designated drop-off/pick-up loading area and then proceed to the temporary school. It is recommended that students proceed to the temporary school by navigating in front of their respective vehicle, if necessary. Representative(s) of the temporary school shall assist in directing the student(s) as needed. Five (5) vehicles shall be unloading at any given time during the morning unloading operations, per NCDOT MSTA guidelines. Parents should not proceed to exit the site until representative(s) indicate that it is safe to go.
- Carpool vehicles shall leave the designated drop-off/pick-up loading area when the proceeding vehicles have unloaded and started to exit, as directed by a representative(s) of the temporary school. It is recommended that no vehicle be allowed to pass another vehicle unless directed by a representative(s) of the temporary school.

- Students are encouraged to carpool. It is recommended that the temporary school present carpooling options to parents during open house each year.

Afternoon Pick-Up Operations

The following are recommendations for operations of staff, visitor/parents, and carpool users during the afternoon loading operations. Table 3, below, summarizes the afternoon schedule. The queuing lanes, designated parking areas, and loading area are illustrated in the site plan.

Table 3 – Afternoon Schedule

Time	Event
3:25 PM	Afternoon bell rings
3:25-3:55 PM	Afternoon bell pick-up
4:00 PM	Staff leaves

In the event of an early dismissal the same schedule will be followed, but the start times for each event will be shifted the same amount of time.

Staff:

- Any staff member needing to leave early shall leave a minimum of 30 minutes before loading operations to avoid conflicts with carpool traffic.
- A staff member(s) shall rope and/or cone off the second row of parking spaces within the designated staff parking lot (nearest the temporary school building) a minimum of 15 minutes before loading operations begin, encouraging parent vehicles to utilize the outer loop.
- A staff member(s) shall remove the rope and/or cones at the parking spaces within the designated staff parking lot a minimum of 15 minutes after loading operations end.

Visitors/Parents:

- School Visitors/Parents needing additional time to load during afternoon loading operations shall park on the west side of the temporary school. It should be noted that these carpool vehicles will have to traverse through the majority of the designated vehicle stacking lane prior to utilizing the designated visitor parking area. Visitors/Parents are encouraged to continue to traverse in a counter-clockwise direction once leaving the campus. Visitors/Parents walking students should park on the left-hand side, closest to the temporary school building, so that students will not need to cross the vehicle stacking lane. Sidewalks should be utilized, where appropriate.

Carpool Vehicles:

- Student(s) shall load when the vehicle comes to a complete stop within the designated drop-off/pick-up loading area and then proceed from the temporary school. It is recommended that students proceed to their vehicle by navigating around the front of their respective vehicle, if necessary. Representative(s) of the temporary school shall assist in directing the student(s) as needed. Five (5) vehicles shall be loading at any given time during the afternoon loading operations, per NCDOT MSTA guidelines. Even once students are loaded, parents should not proceed to exit the site until representative(s) indicate that it is safe to go.
- Carpool vehicles shall leave the designated drop-off/pick-up loading area when the proceeding vehicles have loaded and started to exit, as directed by a representative(s) of the temporary school. It is

recommended that no vehicle be allowed to pass another vehicle unless directed by a representative(s) of the temporary school.

Staff Requirements for Traffic Control during Unloading/Loading Operations

It is recommended that a minimum of three (3) representatives of the proposed temporary school (or officers) are present during morning and afternoon unloading and loading operations, respectively. These staff members are as follows:

- One (1) staff member should be placed at the end of the designated temporary school vehicle stacking lane, just upstream of the designated drop-off/pick-up (un)loading area, directing vehicles to enter the loading area as the proceeding vehicles have exited the loading area. This staff member is responsible to oversee safety of the (un)loading area as well as maintaining efficiency of the unloading and loading process.
- One (1) staff member should be placed at the end of the designated drop-off/pick-up (un)loading area, directing vehicles to exit the site once all students within the (un)loading zone are safely on the sidewalk and navigating to the temporary school entrance. It is recommended that students proceed to/from their vehicle by navigating around the front of their respective vehicle, if necessary. This staff member should monitor the safety of students (un)loading from the passenger side of their vehicle, as necessary.
- One (1) staff member should be placed at the first row of parking spaces within the designated staff parking lot (furthest from the temporary school building). This staff member is responsible to monitor entering vehicles and to route the pick-up/drop-off line, as appropriate.

Additional staff members may be placed on the sidewalk adjacent to the designated loading area to ensure students are safety unloaded/loaded out/into their vehicles. Additional staff may also be positioned at the adjacent side of the temporary school to ensure student walkers and visitors are able to safely navigate to their appropriate building entrance.

Please let us know if you have any questions regarding this information.

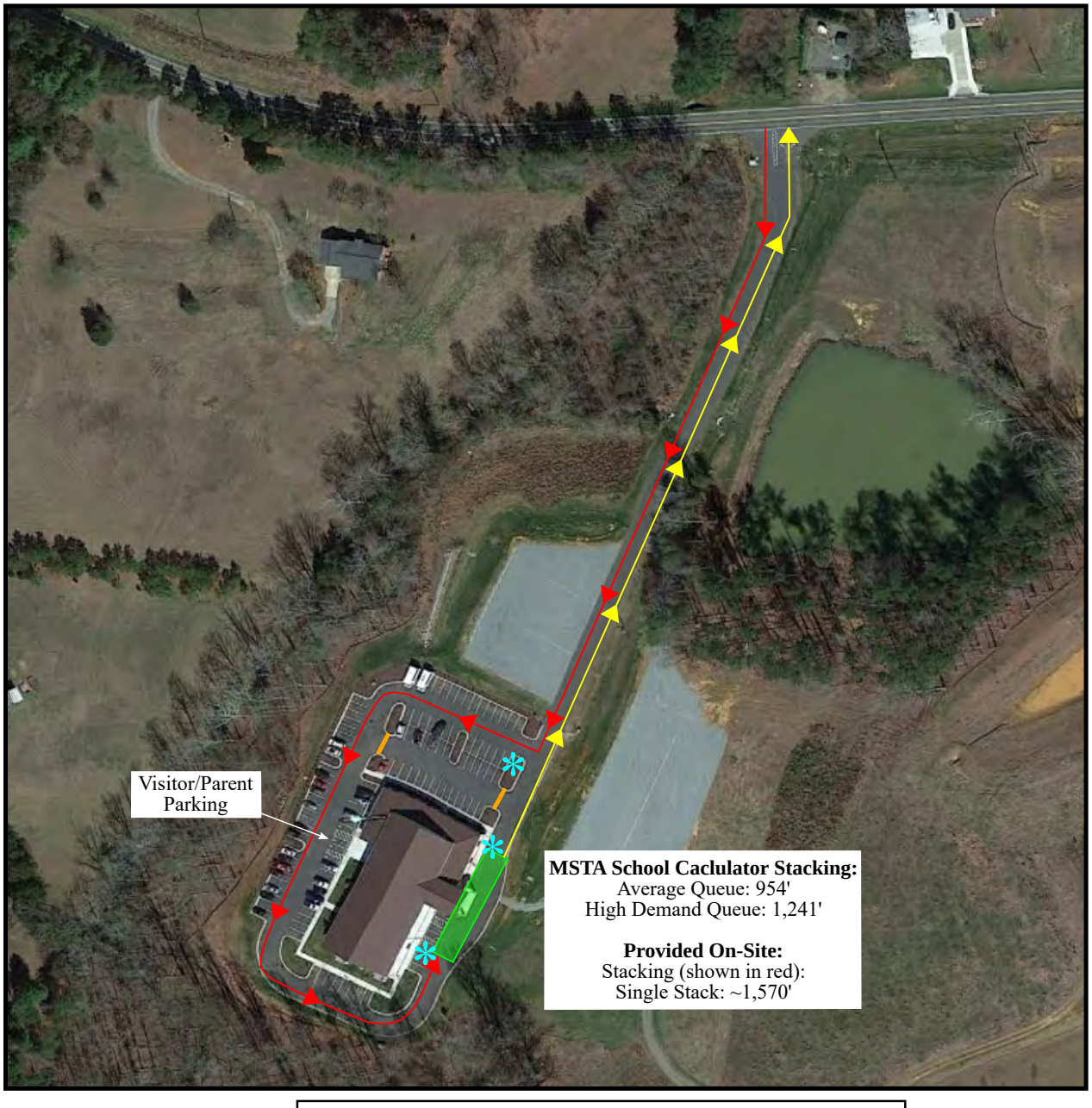
Sincerely,
RAMEY KEMP & ASSOCIATES, INC.

07/08/2020

Joshua Reinke, P.E.
State Traffic Engineering Lead

NC Corporate License # C-0910

Attachments: Stacking Plan



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LEGEND

- Proposed Student Loading/Unloading Zone
- Internal Circulation Queue (Entering)
- Internal Circulation Queue (Exiting)
- Traffic Control Personnel / Staff Member
- Traffic Cones

Moving forward.
RKA
RAMEY KEMP ASSOCIATES

Alamance Community Charter Temporary Site
Mebane, NC

Internal Circulation Map

Scale: Not to Scale

Figure

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

July 28, 2020

MEMORANDUM

In reply, refer to
File No. SCH-2020-007T

TO: Charles N. Edwards Jr., PE - District 2 Engineer
Dawn McPherson - Division Traffic Engineer
Brian Thomas, PE - Regional Traffic Engineer
David B. Phipps, PE – Central Regional Field Operations Engineer
Doumit Y. Ishak – Congestion Management Regional Engineer

FROM: Kimberly Hinton, Project Engineer kdh
Municipal & School Transportation Assistance

SUBJECT: Final MSTA Review of Alamance Community Charter – Temporary Site, Located at 3457 Old Hillsborough Road in Mebane, Alamance County

Municipal & School Transportation Assistance has performed a review of the sealed Traffic Analysis letter prepared by Ramey Kemp & Associates and site plan prepared by Timmons for the subject site.

The key dates regarding this development are as follows:

Received by MSTA	7/8/2020	Sealed Letter	7/8/2020
		Sealed Site Plan (in TIA)	7/8/2020

✓	The Traffic Analysis and Site Plan do meet our queue length criteria for high demand days. However, the Design Queue length of 1,500 feet for staking should be maintained. Reverse loading requires additional queue length.
✗	MSTA recommends a staggered bell schedule of a minimum of 30 minutes between grade groups and Elementary school staff. COVID-19 student maximum is 220 students at one time. Traffic Analysis does explain how this will be achieved.

This review is based on a maximum of 400 students in grades K-3rd grades in a Charter School understanding the COVID-19 pandemic maximum is 220 students at one time at the temporary site at Crosslink Community Church. If the school is projected to accommodate a higher number of students than shown, then further review will be required. The MSTA School Traffic Calculator indicates this campus should provide the maximum COVID-19 student population queue length of 954 feet for an average school day and 286 additional feet for high demand days (1,241 feet). The school's campus provides 1,500 linear feet of queue length.

Concerns and Recommendations

Municipal & School Transportation Assistance (MSTA) and Congestion Management section has performed a review of the sealed Traffic Analysis Letter. MSTA as part of the Final review has the following concerns and recommendations below and others as shown on ***Figure 1***.

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
TRANSPORTATION MOBILITY & SAFETY DIVISION
1561 MAIL SERVICE CENTER
RALEIGH, NC 27699-1561

Telephone: (919) 814-5000
Fax: (919) 771-2745
Customer Service: 1-877-368-4968

Location:
750 N. GREENFIELD PARKWAY
GARNER, NC 27529

Website: www.ncdot.gov

COVID-19 Logistics
Transportation Management Plan (TMP): The TMP should be shared with parents & staff prior to the students returning to school and should include the COVID-19 Logistics of how the maximum 220 student grouping will alternate with remaining180 student grouping. If the groupings will occur on the same day, this should be a minimum of 30 minutes before bell schedules.

Stagger Bell Schedules – Existing Schools near by
Alamance Community provides an AM period bell schedule with 25 minutes separation with schools near-by. There is no separation in the PM period. MSTA recommends a maximum 30-minute stagger.

Stagger Bell Schedules for Alamance Community Students
The AM drop-off and PM pick-up periods may need to be expanded and staggered using a method that works for the school if the school experiences congestion at the driveway. During this adjustment time of COVID-19 traffic patterns, it is understood 30-minute staggered may not be accomplished. Another staggering solution may be necessary, for example, assign parents with a 15-minute drop-off/pick-up window or assign grades/grade groupings with targeted time.

Reverse Student Loading
The Traffic Analysis identifies Alternative 1 as a one-way parent traffic patten that does not have conflicts with other moving vehicles. MSTA concurs.

Stacking Length
Reverse loading may take longer for students to load/unload and for staff to establish a safe zone clear of students before vehicles move out of the parent loading zone. Parents and staff should follow the guidance established in the TMP.

Assigned Parking
This Alternative 1 has vehicle to vehicle conflict and pedestrian to vehicle conflicts by traversing through the parking areas. To prevent parents, volunteers or visitors using the parking areas near AM/PM loading periods, assign staff parking. Install signage to identify assigned parking or signage to direct to gravel parking areas away from the parent traffic pattern. Assigned parking spaces should be assigned to staff. Staff that would come in late and leave early should park in the gravel lot southeast of the school.

East Parking Lot
Create a one-way traffic flow using some type of traffic barricade, not traffic cones, to a Kindergarten Park & Walk area

Kindergarten Park & Walk in
The Kindergarten students and handicap students should be designated thirteen (13) parking spaces beside the east. The Charter is approved for 90 Kindergarten students. Kindergarten students take longer to get in and out of the vehicle, which will increase the queue length needed.

Advanced Identification
Implement an “Advanced Identification” loading process during the PM student loading period to increase organization and efficiency of the student loading process.

Circumventing the Loading Zone
The TMP should advise the parents not to circumvent but follow established guidelines for a safe and organized transportation plan.

We appreciate the opportunity to serve “Alamance Community Charter School” System and hope you find our services helpful as together we continue to provide "Safe Roads to Safe Schools.”

Assigned Staff Parking

Assigned Staff Parking

Kindergarten Park & Walk

East Parking Lot

Church Staff Parking

Church Bus Parking

Old Hillsborough Road

1

3

Parent Loading Zone

Parent Traffic Pattern

5

4

No School Parking

2

School Staff Parking

5

NOTES

1. **Designate the Parent Loading Zone** with four to five loading bays the building's main entrance. The loading zone should be identified. Each bay should be a minimum of 8 feet wide and the lengths of 20 feet for the end bays and 28 feet for the middle bays.
2. **Identify Short Term Parking Spaces** just past the Parent Loading Zone. At least 10 parking spaces should be identified by installing "Visitor Parking" signs and/or pavement markings at the spaces to be assigned. These spaces are for parents requiring extended periods of time to load. If a parent stops in the loading zone, to wait to load their student, a loading assistant should direct that parent to the Visitor Parking.
3. **Implement an "Advanced Identification" loading process** during the PM student loading period to increase organization and efficiency of the student loading process.
4. **Install Pedestrian sidewalk, crosswalk, and curb cuts per ADA standards.**
5. **Create One-Way Traffic flow in West Parking lot with some type of traffic barricade (not traffic cones) and signage** to enforce one-way traffic pattern in the West Parking lot. This access should be for only Kindergarten students, Handicap students and Assigned Staff Parking during loading operations. Students in grades 1st-3rd should not load in this area.

Alamance Community Charter
Temporary Site
Crosslink Community Church

440 Maximum Student Population
220 Student Population
(COVID-19 Maximum Allotment at one time)
954 Feet Average Queue
286 Feet 30% High Demand
1241 Feet Total Desired Queue

This Design Provides
1500 Feet Total Single Queue*

Reverse Loading – Design queue should be provided.

100 0 100

CONCEPT PLAN
NOT FOR CONSTRUCTION

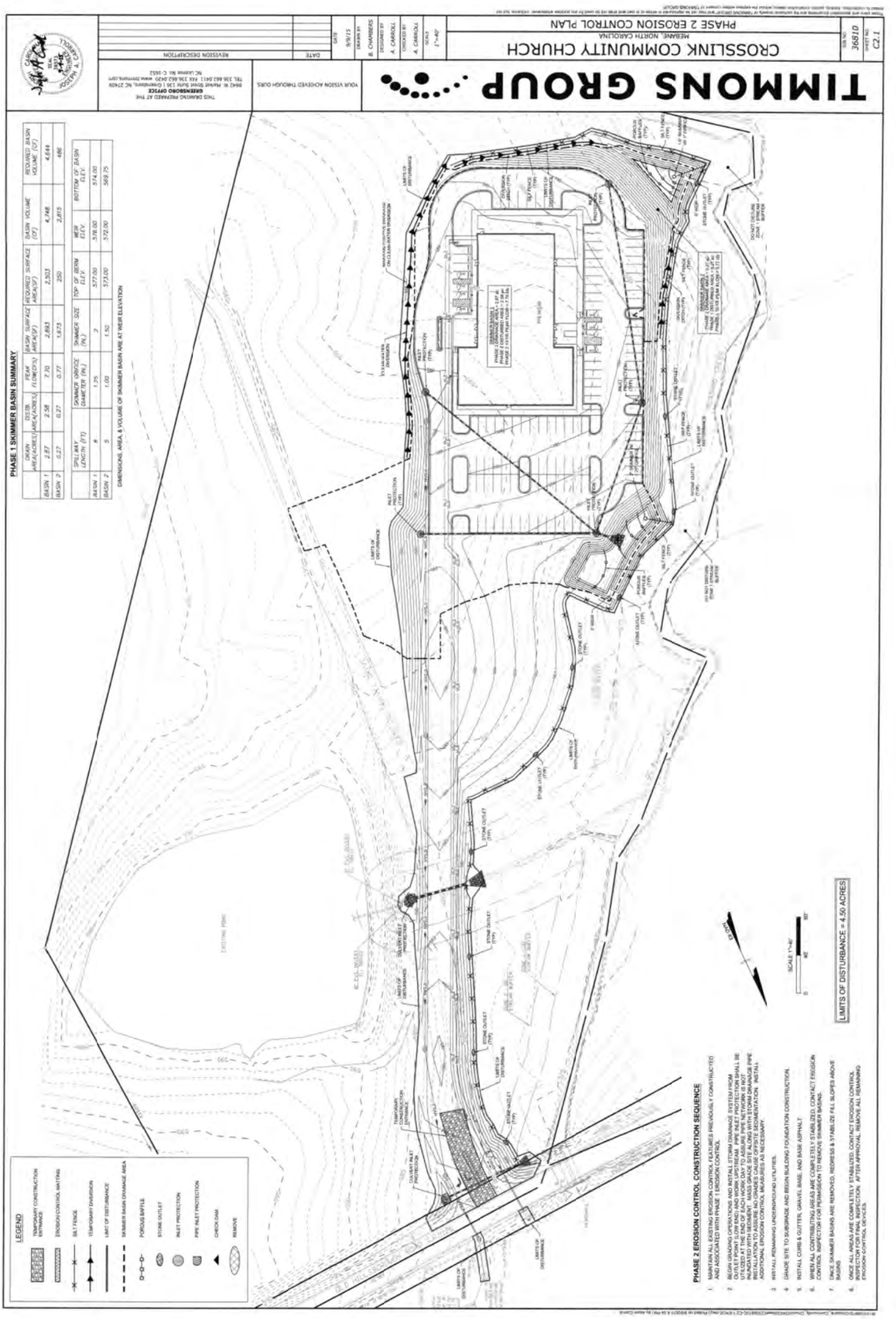
LEGEND

- TIA Recommendations
- MSTA Recommendations
- Entering Parent Traffic
- Exit Parent Traffic
- One-Way Traffic Pattern

Municipal & School Transportation Assistance

Figure 1
Alamance Community Charter - Temporary
Proposed Traffic Pattern

Division 7	Alamance County	Mebane
SCALE: NONE	N. C. DEPARTMENT OF TRANSPORTATION	REVIEWED BY:
DATE: 7/23/2020	TRANSPORTATION MOBILITY AND SAFETY DIVISION	REVISIONS:
PREPARED BY: KDH		



Moving forward.

RKA

RAMEY KEMP ASSOCIATES

Alamance Community Charter Temporary Site

Mebane, NC

Preliminary Site Plan

Scale: Not to Scale

Figure 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

July 28, 2020

ALAMANCE COUNTY

Joshua Reinke, PE
Ramey Kemp & Associates, Inc.
5808 Faringdon Place, Suite 100
Raleigh, NC 27609

Subject: Proposed Alamance Charter School Temporary Site
Located on SR 2126, Old Hillsborough Road
Review of Traffic Analysis

Dear Mr. Reinke,

Pursuant to NCGS 136-18(29a), District and Municipal School and Transportation Assistance Unit (MSTA) staff have completed review of the traffic study for the above subject. Based on the information provided, I offer the following comments.

General:

The proposed site consists of a temporary charter school with a maximum student population of 220 students in grades K-3. The school will occupy the existing church and utilize the existing access and parking and internal circulation lanes. The site is expected to generate approximately 474 daily trips and require a minimum of 1241' of internal storage to accommodate anticipated parent vehicle queues. No buses will be provided. The temporary school is anticipated to be operational at this location for a maximum of 45 days pending completion of the permanent facility located on Jimmie Kerr Road in Graham.

Methodology:

Due to the current NCDOT moratorium on traffic volume data collection as a result of Covid-19 impacts, background traffic was determined utilizing data from recent studies for adjacent developments and adjusted accordingly. As noted in the study, the available data represents peak times that do not necessarily coincide with the peak operational periods of the subject site. Actual background traffic volumes during the site peak periods

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
DIVISION 7, DISTRICT 1
PO BOX 766
GRAHAM, NC 27253-0766

Telephone: (336) 570-6833
Fax: (336) 570-6873
Customer Service: 1-877-368-4968

Website: www.ncdot.gov

Location:
115 EAST CRESCENT SQUARE DRIVE
GRAHAM, NC 27253

would be expected to be lower than those reported and used. Also, all trips generated by these adjacent developments were included in the background traffic. As noted, this a conservative approach and may skew operational analysis outcomes to appear worse than what would be expected under actual conditions and this was considered by staff during review. The study identified and listed a number of future road improvements at the study intersections committed by NCDOT or by adjacent developments as previously stipulated by NCDOT and the City. Appropriately, these improvements were not considered in the analysis as they would not be in place during the operational life span of the temporary school.

Intersection Analysis Outcomes and Recommendations:

NC 119/Trollingwood/Hawfield Road/Old Hillsborough Road Intersection:

The study indicates a reduction of the intersection level of service and increase in delay in the 2020 build scenario and recommends extension of the northbound left turn lane. Based on assessment of this location, this improvement is not feasible within the project timeline due to anticipated cost, impacts to adjacent properties and utilities and anticipated marginal benefit. NCDOT will monitor operations at the intersection and adjust traffic signal timing as needed. No additional improvements are required of the school. The study noted that future improvements associated with the Cambridge Park development and NCDOT TIP project are planned to improve operation at this intersection.

Old Hillsborough Road/Jones Road Intersection:

The study indicates acceptable operation on Old Hillsborough Road and a typical increase in delay on the minor side street movements in the 2020 build scenario and recommends re-striping to provide a 25' right turn lane on northbound Jones Road. This improvement is not feasible within the project timeline due to cost and anticipated marginal benefit. No additional improvements are required of the school. Improvements at this intersection have previously been stipulated to be constructed by the developer in association with phase 2 of the Cambridge Park Subdivision.

Old Hillsborough Road and Mebane-Oaks Road Intersection:

The study indicates that this intersection is expected to operate acceptably in the 2020 Build scenario in the current configuration under all-way stop control. We concur. No additional improvements are required of the school. NCDOT has committed to construct turn lanes and a traffic signal at this intersection. The project is currently scheduled for construction in 2021.

Old Hillsborough Road and Site Access:

The study indicates that this intersection is expected to operate acceptably in the 2020 Build Scenario in the current configuration. We concur. No additional improvements are required of the school.

In summary, there are no external improvements which qualify for reimbursement by NCDOT associated with this school.

Internal Operations:

As a condition of the pending driveway permit the school shall implement the following:

- Do not exceed maximum student population of 220 K-3 on premise at any time
- Provide a minimum of 1500' of internal storage to accommodate anticipated queues at the parent pickup/drop-off with consideration of potential of additional delay due to reverse loading configuration.
- Provide 5 student loading bays 8'X20'
- Provide 10 short term parking spaces in the vicinity of the parent loading zone to accommodate parents with need for extended loading time.
- Provide adequate staff and visitor parking
- Ensure ADA accessibility and accommodation
- Implement the Traffic Management Plan included in the study with appropriate and sufficient staffing
- Stagger bell times at least 30 minutes relative to adjacent school schedules

All costs associated with internal modifications and implementation of the traffic management plan are the responsibility of the school and are not reimbursable by NCDOT.

Permitting:

It is necessary to obtain an approved driveway permit prior to commencement of school operations. As a condition of the permit, the permitee shall be responsible for design and construction of the above stipulated internal improvements in accordance with NCDOT requirements. An approved permit will be issued upon receipt of approved site plan.

Feel free to contact me if you have any questions.

Sincerely,

C. N. Edwards Jr., PE
District Engineer

Cc: J. M. Mills, PE, Division Engineer
Kimberly Hinton, NCDOT MSTA
Brian Thomas, PE, Regional Traffic Engineer
Dawn McPherson, Division Traffic Engineer

Kirkland Appraisals, LLC

Richard C. Kirkland, Jr., MAI
9408 Northfield Court
Raleigh, North Carolina 27603
Phone (919) 414-8142
rkirkland2@gmail.com
www.kirklandappraisals.com

July 3, 2020

Mr. Steve Hubrich
Hubrich Contracting, Inc.
4321 Medical Park Drive, Suite 100
Durham, NC 27704

Mr. Hubrich:

I have considered the likely impact of the proposed Alamance Community School temporary use at 3445 Old Hillsborough Road, Mebane, North Carolina.

The scope of this assignment is to address the likely impact this may have on nearby properties. To this end I have reviewed the site plan and considered the visual impacts on nearby properties.

This letter is a limited report of a real property appraisal consulting assignment. My client is Hubrich Contracting, Inc., represented to me by Mr. Steve Hubrich. The intended use is to assist in the Special Use Permit application. The effective date of this consultation is July 3, 2020.

Credentials/Experience

I have been a commercial appraiser for over 20 years and I regularly appraise agricultural properties, agricultural business properties, residential subdivisions, and commercial properties. I also regularly conduct impact analysis for a variety of adjoining and nearby uses such as waste water treatment plants, solid waste facilities, water towers, greenways, open space, water frontage, and solar projects. I have an MAI through the Appraisal Institute. The MAI membership designation is awarded after rigorous education requirements, a final comprehensive exam, specialized experience submittals that are peer reviewed, and must meet standards and ethics requirements. Typically, the time required to obtain an MAI after getting state certification ranges from 5 to 15 years. The MAI designation has long been recognized by courts of law, government agencies, and financial institutions for the additional experience and training it represents over and above state certification requirements.

I have provided research based on matched pairs, which is a methodology that has been accepted by the North Carolina Superior Court as well as Planning Boards, Boards of Adjustment, Town Councils, and other government bodies in numerous states for similar matters.

The data I have compiled strongly supports compatibility of schools with adjoining residential, agricultural and rural residential uses.

Methodology

I have utilized the Matched Pair or Paired Data Analysis in this impact analysis. Paired Data Analysis is outlined in **The Appraisal of Real Estate** Twelfth Edition published by The Appraisal Institute and described on Page 438 and 439 as a method for Quantitative Adjustments. This method is more greatly defined and broken out into multiple sub-methods in the **Real Estate Damages** Third Edition by Randall Bell, PhD, MAI, which is also published by The Appraisal Institute, starting on Page 33.

Paired Sales Analysis considers the sale of a property to a different property with only one difference in order to determine the impact that difference had on a sales price. In this instance, I have considered sales of properties next to a rural school to properties not next to a school in the same area in order to determine if the rural school had any impact on market transactions. I have considered groups of properties to one matched pair as a control group as suggested by Dr. Bell.

Determining what is an External Obsolescence

An external obsolescence is a use of property that, because of its characteristics, might have a negative impact on the value of adjacent or nearby properties because of identifiable impacts. Determining whether a use would be considered an external obsolescence requires a study that isolates that use, eliminates any other causing factors, and then studies the sales of nearby versus distant comparable properties. The presence of one or a combination of key factors does not mean the use will be an external obsolescence, but a combination of these factors tend to be present when market data reflects that a use is an external obsolescence.

External obsolescence is evaluated by appraisers based on several factors. These factors include but are not limited to:

1) Traffic. I have relied on evidence from the Traffic Impact Analysis on this regard, but I further note that homes near schools clearly show no impact on value, which necessarily includes no impact from similar traffic patterns.

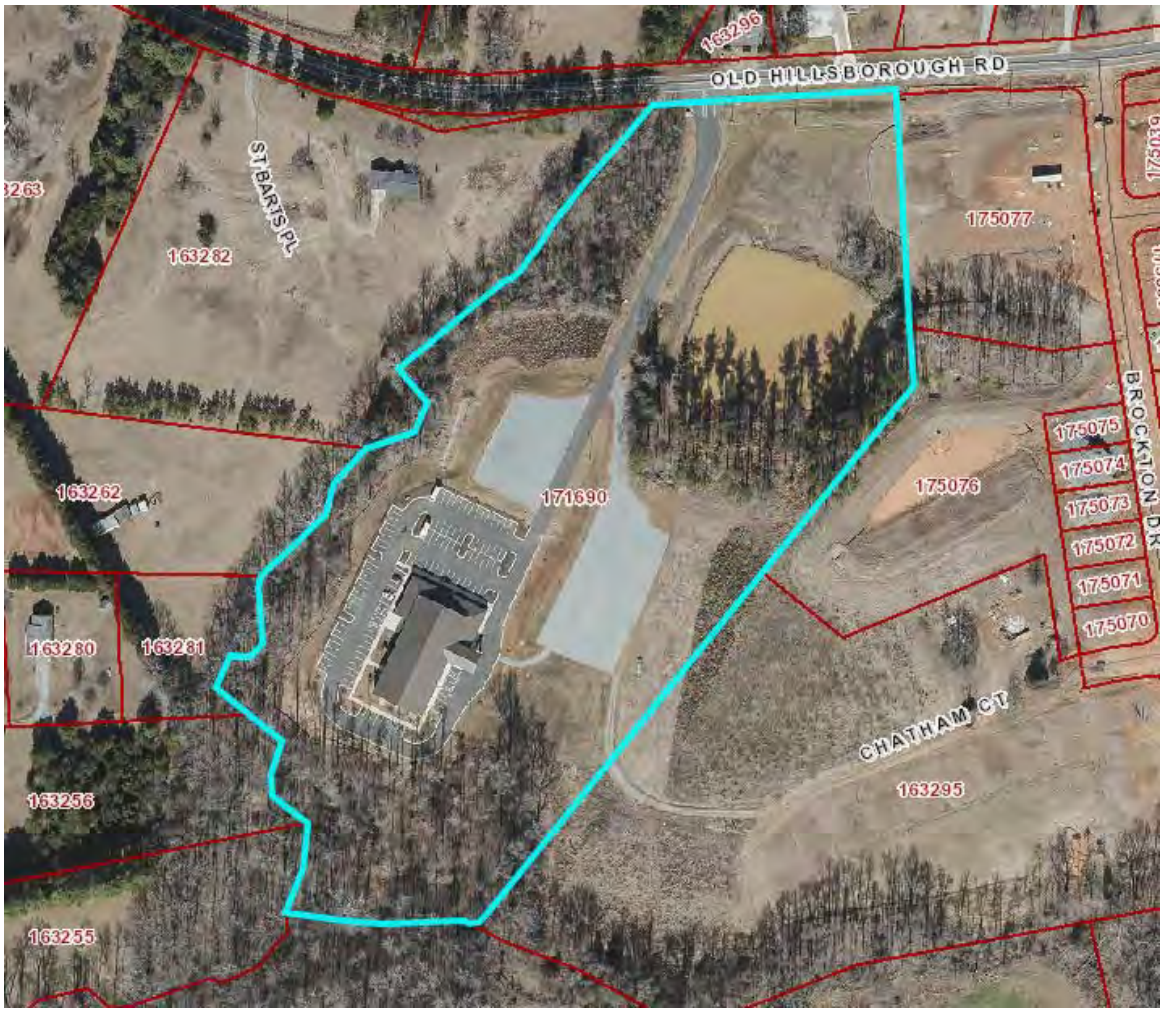
2) Odor. Schools are not known to be significant odor producers. This issue is more related to things such as waste water treatment plants and poultry facilities.

3) Noise. Schools are not significant noise generators and at night and weekends there would be no sound.

4) Environmental. Schools do not produce toxic or hazardous waste as part of operation.

Proposed Use Description

The proposed use will temporarily utilize the existing church building at 3445 Old Hillsborough Road, Mebane, NC. No changes to the existing building are planned for this temporary use and the temporary use is expected to be less than 90 days.



Discussion on Duration of Use

A temporary use of less than 90 days is not likely to have an impact on adjoining property values regardless of the use. This time frame is too short for any knowledgeable market participant to sell anything at a discount that will be cured in short order. So while this impact letter will address the nature of schools and adjoining property values not being negatively impacted by schools, I wish to reiterate that this temporary use is just too temporary to register in market values.

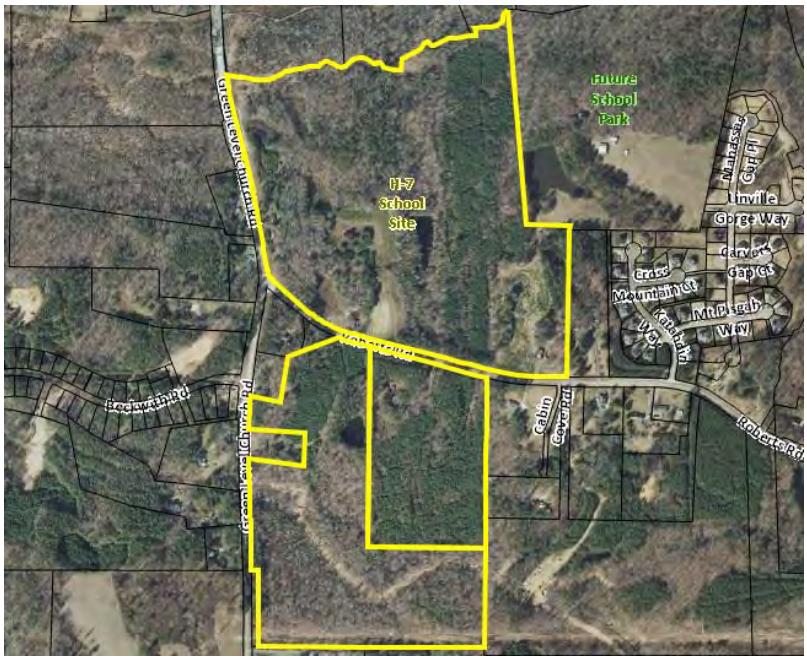
Discussion on School Use in General

I regularly appraise a wide variety of properties as part of my appraisal practice. Properties in close proximity to schools are generally considered to be enhanced by that proximity and developers often choose such sites over other similar sites for that reasons.

Marketing brochures for new homes frequently point out close proximity to schools as a positive feature for new homes. The marketing material for one of the matched pairs shown later in this analysis specifically mentioned the location across from the school as a positive feature and amenity to the home. I have never seen any evidence of any negative impact due to proximity to schools in my appraisal work.

Schools do typically have some setbacks and reasonable screening from nearby residential uses, though not from the primary thoroughfare for access.

A good example of this is in Cary at the corner of Roberts Road and Green Level Church Road, where Wake County just built a multistory high school building and directly across the street Standard Pacific simultaneously began developing a new subdivision.



As shown in the map above, the high school was being constructed on the north side of Roberts Road. The map above is an aerial from 2013 with 2018 lot lines overlaid. On the following page, I show this same location with the 2017 aerial overlay with 2020 lot lines overlaid. Multiple subdivisions have been constructed in the area with steadily increasing land and home values.

Market Data

I considered the following school sites in order to illustrate compatibility between schools and adjoining residential uses.

Comparable 1 - Lucas Middle School, 923 Snow Hill Road, Durham, NC

This school site is located just north of Snow Hill Road and west of Treyburn. The building is 425 feet from the nearest property lines. The school adjoins Snow Hill Road Park. The property includes a large single school building with three wings and a football field and surrounding asphalt paved track. This school was constructed in 2011 with the opening school year in 2012.

Adjoining Use Breakdown

	Acreage	Parcels
Residential	9.14%	85.71%
Agricultural	90.86%	14.29%
Total	**100.00%**	**100.00%**

I searched nearby home sales along Snow Hill Road after the school was completed to determine if any of the sales show any impact from the school construction.

The home at 920 Snow Hill Road sold on 4/25/14 which was two years after the Lucas Middle School opened. That home sold for $168,500 with a $3,500 financing concession for an effective sales price of $165,000 for a 1,524 square foot two-story dwelling built in 1985 with an attached two-car garage all located on a 0.572 acres. The indicated sales price works out to be $108.26 per square foot of GLA. This is a three bedroom dwelling with two and a half bathrooms. The property also includes a detached 1 car garage/workshop. MLS write up indicates the property "needs a little love."

I compared that sale to 605 Infinity Road that sold on 6/19/14 for $175,000 with a $5,000 financing concession for an effective sales price of $170,000 for a 1,662 s.f. two-story dwelling built in 1994 with an attached two-car carport on a 0.51 acre lot. The indicated sales price works out to be $102.29 per square foot. This is a three bedroom dwelling with two and a half bathrooms. The property includes a large deck and stone patio and is noted as "move in ready."

No adjustments applied to these sales shows no impact on the Snow Hill property, which in fact sold for more per square foot.

Adjusting this comparable upward by $5,000 for the inferior carport, downward by $7,875 for age, downward by $8,500 for superior upfit/condition, but upward by $5,000 for lack of a detached garage, the indicated adjusted comparable value is $163,625, or $98.45 per square foot as compared to the Snow Hill Comparable at $168,500, or $108.26 per square foot.

This matched pair shows no negative impact due to the proximity to Lucas Middle School.

I also looked at 1009 Snow Hill Road which sold on 12/19/2017 for $170,000 for a 1,539 s.f. one-story, brick dwelling built in 1972 on 0.84 acres. This brick ranch indicated new paint and flooring throughout as well as new kitchen counter tops, and new vanities in the bathroom. The MLS also notes the roof was replaced in 2009 along with new doors and windows in 2015. This is a three bedroom and two bathroom dwelling. This property sold in 33 days. This sale included a $4,000 sales concession for an indicated sales price of $166,000.

I compared this to 111 Barclay Road which sold on 6/9/17 for $160,000 for a 1,280 s.f. one-story dwelling built in 1963 on 0.50 acres. This brick ranch has a new kitchen and bathroom with new granite counters and breakfast bar, as well as new exterior and interior paint, new roof, and new heat pump. The property also includes an attached single car garage. The dwelling includes three bedrooms and two bathrooms, a fenced back yard and is located within a subdivision. This property sold in 39 days. This sale included the seller paying for the loan with no amount stated. I have used $4,000 for this estimated cost, for an adjusted indicated price of $156,000.

These ranches are similar in style and age, but there is a size difference that requires adjustment. Adjusting the comparable upward by $18,130 for the difference in size, as well as upward by $7,020 for an inferior age, but downward by $10,000 for the single car garage and downward by $5,000 for the location in a subdivision, I derive an adjusted indication of value of $166,150.

Based on this matched pair I discern no impact on property value attributable to the proximity to the school.


Snow Hill
Rd. Park
City of Durham
Durham County
Variform Rd

2 – Gravelly Hill Middle School, 4801 West Ten Road, Efland

This school site is located in Orange County south of I-40 on the north side of West Ten Road. The tract identified as 19 above was recently partly rezoned for an industrial use, but has historically been agricultural.

Adjoining Use Breakdown

	Acreage	**Parcels**
Residential	5.74%	63.16%
Agricultural	65.57%	31.58%
Industrial	28.68%	5.26%
Total	**100.00%**	**100.00%**

The homes across West Ten Road from the school are as close as 310 feet to the closest parking lot area for the school.

Parcel 10, with a street address of 4804 W Ten Road, sold on June 20, 2018 for $122,000 for a 1,848 square foot manufactured home built in 1997 on 1 acre. This is a three

bedroom, two-bathroom dwelling with a 96 s.f. covered back deck and a storage shed. This works out to be $66.02 per square foot. This home is

I have compared this home to 703 Dewey Road which is a 1,602 s.f. manufactured home built in 1994 with three bedrooms and two bathrooms on a 1.88 acre lot that sold for $125,000 on June 30, 2019. This works out to be $78.03 per square foot. This is a nearby similar manufactured home, but it also adjoins land owned by Orange County that is in close proximity to Seven Mile Creek Preserved open space. Furthermore, Dewey Road is an easement at this location with minimal traffic. Adjusting this price per square foot downward by 5% for the smaller size and 10% for the preserved adjoining land, I derive an adjusted price per square foot of $66.33 per square foot.

I have also compared the subject property to 915 Buckhorn Road in Mebane. That manufactured home includes 1,165 square feet with three bedrooms and two bathrooms that was built in 1994 on 2.21 acres. This home sold on June 1, 2018 for $95,000, or $81.55 per square foot. Adjusting this value per square foot downward by 15% for the significantly smaller size, I derive an indicated value of $69.31 per square foot.

Finally, I considered 6334 Olde Scarlett Court which is a 1,976 square foot manufactured home with four bedrooms and three bathrooms built in 1999 on a 1 acre lot that sold on June 22, 2018 for $132,500. This works out to $67.05 per square foot. This is a similar size, age, and lot size and requires no adjustment.

All three of those comparables show no impact on Parcel 10 due to the adjacent rural school site.

3 – Little River Elementary, 2315 Snow Hill Road, Durham

This school site is located on the east side of Snow Hill Road and has an adjoining elderly care center, fire department and Durham Technical Community College as well as residential single family uses.

Adjoining Use Breakdown

	Acreage	Parcels
Residential	12.41%	75.00%
Agricultural	67.35%	8.33%
Institutional (Fire Dept)	6.25%	8.33%
School	13.99%	8.33%
Total	**100.00%**	**100.00%**

Parcel 8 sold on March 19, 2018 for $188,000 for a dwelling built in 1978 with 1,292 square feet on 0.49 acres. This home is brick with three bedrooms and two bathrooms. The sales price works out to $145.51 per square foot. This home was advertised as having a custom designer kitchen with lots of upgrades including stainless steel appliances, bamboo flooring, and granite kitchen counters.

I have compared this to 1900 Torredge Road which is a dwelling that sold on July 2, 2018 for $185,000 for a 1,352 square foot brick dwelling built in 1976 with three bedrooms and two bathrooms. This is on a 0.49 acre lot. The indicated price works out to $136.83 per square foot. Adjusting this upward by 10% for inferior upgrades, the indicated price is $150.51 per square foot. This is within 3% of Parcel 8 and does not support an indication of a negative impact.

I have also compared Parcel 8 to 1607 Infinity Road which sold on September 20, 2018 for a 1,870 square foot brick dwelling built in 1974 on a 0.50-acre lot with three bedrooms, two bathrooms, a carport, and a detached two-car garage. This sold for $215,000, or $114.97 per square foot. Adjusting this upward by 15% for an inferior larger size, 10% for inferior upgrades, but downward by 10% for the superior parking, I derive an adjusted indication of value of $132.22 per square foot. This is 10% lower than the value of the home adjoining the school and actually suggests a slight premium for adjoining the school.

I also compared Parcel 8 to 1009 Snow Hill Road which is a one story brick dwelling built in 1972 with three bedrooms and two bathrooms on a 0.84-acre lot and a gross living area of 1,539 square feet. This sold on December 18, 2018 for $170,000, or $110.46 per square foot. Adjusting this upward by 10% for size, 10% for quality and 2% for time, I derive an adjusted indication of value of $134.76 per square foot. This is 8% less than the value of the home adjoining the school and actually suggests a slight premium for adjoining the school.

4 – Mangum Elementary, 9008 Quail Roost Road, Bahama

This school site is located on the west side of Quail Roost Road at Ball Road with a mix of adjoining residential and agricultural uses.

Adjoining Use Breakdown

	Acreage	**Parcels**
Residential	20.71%	88.24%
Agricultural	79.29%	11.76%
Total	**100.00%**	**100.00%**

I considered Parcel 11, with a street address of 8813 Quail Roost Road, that sold on January 11, 2018 for $141,500 for a 1,298 square foot dwelling built in 1941 with two bedrooms and one bathroom. This is on a 1.14-acre lot. The property is reported as having a 3-bedroom septic and has an unfinished 2nd level walk up, screened porch, basement garage, and detached two-car garage. I specifically note that the marketing for this property highlights the fact that this home is directly across the street from Mangum as a beneficial feature. This purchase works out to be $109.01 per square foot.

I have compared this to 8219 Cassam Road that sold on September 5, 2017 for $169,000 for a 1,102 square foot dwelling with three bedrooms and one bathroom built in 1959 on a 7.15-acre parcel. This has an attached carport. Adjusting this property downward for the excess land the indicated purchase price is $109,000. This adjustment is based on $9,000

per acre for the difference in acreage. The value of the site based on 1 acre and the home is $115,000, or $104.36 per square foot. Adjusting this downward by 5% for the smaller size, downward 5% for the superior year built, but upward for the lack of parking and potential second floor space, I derive an adjusted indication of value of $104.36 per square foot. This is 4% less than the value of the site adjoining the school.

I therefore conclude that this matched pair supports no impact on Parcel 11 due to the proximity to the school. The marketing highlighting the school proximity further supports this assertion.

Data Summary

Public and private schools are commonly located in residential and rural areas with no impact on adjoining property values as shown in the matched pair data.

I regularly appraise subdivision developments and proximity to schools is considered a positive in most marketing packages for subdivisions. This is further illustrated throughout the MLS where the school districts are a prominent searchable feature and access to good private schools is often noted in the comments section of the MLS.

The schools shown above are located in proximity to multiple residential and agricultural uses.

Matched pair analysis shows no impact on the adjoining residential property value.

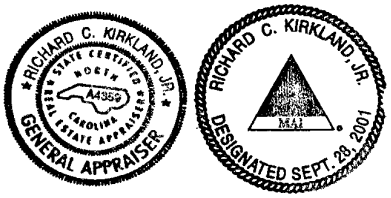
Conclusion

I conclude that the proposed temporary use is harmonious with the location and surrounding uses and further that it will have no negative impact on those adjoining or nearby properties. This is especially true given the highly temporary nature of the proposed use

Matched pairs show no impact on property value at the comparable schools identified.

If you have any further questions please call me any time.

Sincerely,



Richard C. Kirkland, Jr., MAI
State Certified General Appraiser

Mebane Fire Dept. Monthly Report

		June		Year to Date		% Change from 2019
Structural Response						
Totals		**27**		**114**		**-2%**
Average Personnel Per Response		**12**		**13**		
Average Volunteer Response		**4**		**4**		
Non Structural Responses						
Totals		**61**		**328**		**-2%**
Total Fire Response		**88**		**442**		**-2%**
Location (Year to Date)		**North**		**South**		
Total Number/Precentage		**236/53%**		**206/47%**		
		North		**South**		
Average Fire Response Time		**5:21**		**6:05**		
Precentage of Calls Inside City		**55%**		**51%**		
Precentage of Calls Outside City		**30%**		**34%**		
Precentage of Calls for Mutual Aid		**15%**		**15%**		
EMT Response		**140**		**823**		**-20%**
Location (Year to Date)		**North**		**South**		
Total Number/ Precentage		**457/56%**		**366/44%**		
CPS Seats Checked		**1**		**70**		
Seats Distributed		**0**		**0**		
Smoke Alarms Checked/Installed		**4**		**15**		
Station Tours/Programs		**0**		**4**		
# of Participants		**0**		**80**		
Events Conducted/Attended		**2**		**12**		