Virtual Council Meeting Agenda
September 14, 2020
6:00 p.m.

1. Call to Order and Invocation ..... Mayor Ed Hooks
2. Public Comments ..... Mayor
3. BPAC Update ..... Rebecca Brouwer, BPAC member
   Andy Lynch, BPAC member
4. Public Hearings- All Public Hearings will be voted upon at the CONTINUED meeting to be held on Wednesday, September 16, 2020 at 6:00pm
   a. Economic Incentive Grant- Project Sort ..... David Cheek, City Manager
   b. Ordinance to Extend the Corporate Limits- ABB ..... Lawson Brown, City Attorney
   c. Quasi-Judicial BOA Special Use- Elementary/Secondary School-
      Bradford Academy Christian Academy..... Cy Stober, Development Director
   d. Conditional Zoning (B-2(CD) - R-6(CD))-
      The Artisan at Mebane ..... Mr. Stober
5. Consent Agenda ..... Mayor
   a. Approval of Minutes –
      i. August 3, 2020 – Virtual Regular Meeting
      ii. August 5, 2020- Continued Public Hearings and Listening Session
   b. Final Subdivision Plat - Mebane Oaks Lot 3, Hendon Properties
   c. Final Plat- Magnolia Glen Estates, Ph. 2B
   d. Final Plat- Villas on Fifth, Ph. 2B
   e. Final Plat- Havenstone, Ph. 1A
   f. Fee Schedule Amendment- Recreation
   g. City-Wide Facilities Assessment and Capital Plan
   h. Proclamation- Indigenous Peoples' Day
   i. Board of Adjustment Appointments
   j. Budget Ordinance Amendment –Carryforwards from 2019-20
6. Hazard Pay – Police and Fire ..... Mr. Cheek
7. New Street Naming and Signage related to the
   NC Hwy. 119 relocation project ..... Franz Holt, City Engineer
8. Post Listening Session Discussion..... Mayor
9. Adjournment ..... Mayor

Mebane City Council - Virtual Meeting

September 14, 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, September 14, 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.

AGENDA ITEM #4A

Economic Incentive Agreement for United Parcel Service, Inc.

Presenter

David Cheek, City Manager

Public Hearing

Yes☒ No☐

Summary

The City Council will consider a performance agreement with United Parcel Service, Inc. (UPS). The Alamance County Commissioners approved the four-party agreement at their September 8th regular meeting, and the Graham City Council approved it at their August 4th regular meeting. The company is considering land in the N.C. Commerce Park to construct a distribution hub. The N.C. Commerce Park is an economic development zone created through a partnership between Mebane, Graham, and Alamance County. The partnership agreement essentially shares tax revenue, and incentive costs three ways, while utility revenues and costs are shared between the cities.

Background

The economic development project has been a cooperative effort between the City of Mebane, the City of Graham, and Alamance County. UPS will be requesting annexation into the Mebane City Limits with an estimated investment of $262,214,000. UPS is planning to construct a new building ($115,320,000) and install machinery and equipment ($146,894,000). UPS plans for 451 full-time equivalent jobs with an average wage of $65,147. The Partnership is proposing incentive grants to UPS that amount to $3,933,210. The City of Mebane's 1/3-share of the proposed incentive grants is $1,311,070. Also, the NCCP will convey 7 (seven) acres of land and waive local impact, permit, and inspection fees. In total, incentives offered to attract UPS to our site amount to $4,573,215. The following schedule details the total incentive fees proposed by the NCCP partnership. Mebane's 1/3 share of these is $1,524,405.

Financial Impact

This economic development project is estimated to generate property taxes of more than $23 million over the next ten years. The City will also receive sales tax from construction along with the indirect benefits of 451 new jobs with an estimated annual full-time payroll of over $29 million. Mebane's 1/3-share of property taxes over ten years is estimated at $7.7 million with a maximum incentive payout including cash grants, land, and waived fees of $1.5 million.

Recommendation

This item will be voted on at the CONTINUED meeting to be held on Wednesday, September 16, 2020 at 6pm. Staff recommends approval of the agreement.

Suggested Motion

I move for approval of the incentives agreement based upon findings that the company will be annexed, add $262,214,000 to the tax base, create 451 new jobs, and generally benefit the taxpayers of the City.

Attachments

1. Economic Incentive Agreement

STATE OF NORTH CAROLINA

COUNTY OF ALAMANCE

AGREEMENT

This AGREEMENT, made and entered into this ____day of September, 2020, by and between UNITED PARCEL SERVICE, INC. (Ohio), an Ohio corporation authorized to do business in North Carolina, (hereinafter sometimes referred to as the "Company"), and the CITY OF MEBANE, a North Carolina municipal corporation (hereinafter sometimes referred to as "Mebane"), the CITY OF GRAHAM, a North Carolina municipal corporation (hereinafter sometimes referred to as "Graham") and ALAMANCE COUNTY, a North Carolina County (hereinafter sometimes referred to as "County"). (Mebane, Graham and County are sometimes referred to collectively as the "Units").

RECITALS:

A. The Company which is presently located worldwide, is considering locating a new distribution center, not regional headquarters and distribution facility (hereinafter "Facility") in the North Carolina Commerce Park (hereinafter sometimes referred to as "NCCP"), which is an economic development zone under an extended agreement between Graham, Mebane and the County, and will construct a new building and install machinery and equipment with said Facility to be in service no later than December 31, 2024 ("Completion Date"), and to be located within the corporate limits of Mebane, Alamance County, North Carolina.

B. The Facility will involve new capital investment (including, building, machinery and equipment) of approximately Two Hundred Sixty-Two Million Two Hundred Fourteen Thousand Dollars ($262,214,000).

C. The Facility will create Four Hundred Fifty (451) full-time employment positions with average salaries of Sixty-Five Thousand One Hundred Forty-Seven Dollars ($65,147).

D. Some elements of said job creation and investment may be made by an affiliated entity or successors to the Company, but for the purposes of this Agreement, shall be deemed to have been made by the Company.

E. It is contemplated that the Facility will be located upon property upon which or through which the Units may need to construct, install, maintain and operate water and sewer utilities and transportation routes to serve other properties.

F. The County, Graham, and Mebane find that in order to aid and encourage the construction of the Facility and installation of the machinery and equipment in the NCCP, it is necessary and desirable to assist and reimburse the Company for a portion of its land purchase, construction costs and new equipment costs.

G. Pursuant to G.S. Section 160A-20.1, 158-7.1, and 158-7.2, as construed by the North Carolina Supreme Court in its opinion in Maready v. The City of Winston-Salem, et al, 342 N.C. 708 (1996), the Units may enter into an agreement with the Company in connection therewith.

H. The Units find that conveyance of real property and reimbursing the Company for a portion of its construction and equipment costs serves a public purpose and will increase the taxable property base for the County and Cities and help create not less than Four Hundred Fifty (451) new jobs in the County by the Completion Date, all of which will result in an added and valued benefit to the taxpayers of the County and Cities.

NOW, THEREFORE, in consideration of the mutual provisions and covenants herein, and other good and valuable consideration which the parties hereby acknowledge, The Company, The County, Mebane and Graham agree as follows:

1. To assist the Company in its site acquisition, Facility construction, and machinery and equipment installations, and subject to the requirements hereinafter set forth, each Unit agrees to award an Incentive Grant to the Company for a portion of said construction and installation costs in the amount of One Million Three Hundred Eleven Thousand Seventy Dollars ($1,311,070), for a total of Three Million Nine Hundred Thirty-Three Thousand Two Hundred Ten Dollars ($3,933,210) the ("Incentive Funds"). In performance of all activies involved in this site acquisition and Facility construction, as well as in the machinery installation, the Company shall have full discretion to make all decisions regarding such improvements and contracting and purchasing without the joinder or approval of the Units except for the requirements set forth in Paragraph 8 below. These payments of cash grants from Alamance, Graham and Mebane to the Company shall be made as follows:

    a. A payment of Seven Hundred Eighty-Six Thousand Six Hundred Forty-Two Dollars ($786,642) shall be paid by the Units in equal sums of Two Hundred Sixty-Two Thousand Two Hundred Fourteen Dollars ($262,214) from each Unit, to the Company one year after the Facility has received its final certificate of occupancy, and the Company has certified to the Units that Four Hundred Fifty (451) full-time positions have been filled at the Facility, provided, however, that all property tax liabilities on the above referenced Facility and machinery and equipment (in the above agreed amount) shall have been paid by the Company for the fiscal year in which the certificate of occupancy has been issued. In the event that there are any outstanding property tax liabilities on the above referenced Facility and machinery and equipment at the time such payment contemplated herein is due, such payment shall be delayed until the date that is ten (10) days after such outstanding property tax liabilities have been paid.

    b. Four (4) additional payments of Seven Hundred Eighty-Six Thousand Six Hundred Forty-Two Dollars ($786,642) shall be paid by the Units in equal sums of Two

Hundred Sixty-Two Thousand Two Hundred Fourteen Dollars ($262,214) from each Unit, annually to the Company on the anniversary date of the first payment in (a) above provided that there are no outstanding property tax liabilities on the above referenced Facility and machinery and equipment. In the event that there are any outstanding property tax liabilities on the above referenced Facility and machinery and equipment at the time such payment contemplated herein is due, such payment shall be delayed until the date that is thirty (30) days after such outstanding property tax liabilities have been paid.

c. All payments provided for in subparagraphs (a) and (b) shall be made no later than Thirty (30) calendar days after satisfaction of the requirements described in the subparagraphs. Any payment due hereunder shall be adjusted so that the total payments to the Company shall not exceed one half of one percent (0.5%) times the annual taxable value of the property (excluding land, but expressly including all improvements located thereon) maintained by the Company for ad valorem tax purposes during the year period beginning at the issuance of Certificate of Occupancy. All payments are subject to the requirement that not less than Four Hundred Fifty-One (451) full-time jobs shall be maintained by the Company at the Facility.

d. In the event of the Company's failure to create Four Hundred Fifty-One (451) jobs and/or invest $262,214,000 by the Completion Date, the Units shall grant a reasonable extension of time to the Company to meet the job and investment criteria in this Agreement or otherwise agree to such other performance criteria that equate to a similar economic and fiscal return to the Units. In such case, the cash grant payments shall be pro-rated, using the actual number of jobs as the numerator and the Four Hundred Fifty-One (451) jobs as the denominator. Provided however, no inventive grant payments will be made if the jobs do not equal at least Three Hundred Forty (340), the “minimum number of jobs.”

e. In the event that the Company fails to make the full investment of $262,214,000 by the Completion Date, as it may be extended, the cash grant payments will be pro-rated using the $262,214,000 as the denominator and the taxable value as the numerator, which in turn shall be multiplied times that cash grant for the applicable fiscal year of the Units, however, the denominator may be modified pursuant to the terms of this Agreement.

f. In the case of the facts in “d” or “e” above, necessitating a prorating, the jobs required and the capital investment shall each count for Fifty percent (50%) of the incentive grant amounts. By way of example, assume the following:

Actual Jobs	360
Projected Jobs	451
Percentage of Total	79%

Times Fifty Percent	39.5%
Actual Investment	$220,000,000
Projected Investment	$262,214,000
Percentage of Total	83%
Times Fifty Percent	41.5%

Addition of jobs percentage and investment percentage equals Eighty-One Percent (81%) times the Incentive Grants provided for herein.

g. Mebane agrees to waive local impact and inspection fees, up to the amount of One Hundred Fifty Thousand Dollars ($150,000).

h. At Company's purchase of the real property upon which the Facility will be built, Mebane and Graham agree to convey to Company marketable fee simple title to the real property detailed in the attached Exhibit A (the "Real Property") which is incorporated herein by reference, which property has a determined fair market value of Four Hundred Ninety Thousand Dollars ($490,000).

2. Notwithstanding anything contained herein to the contrary, the parties hereto covenant and agree that the real estate conveyance and Incentive Funds (collectively, "Incentives") are a material consideration in the Company's decision to locate the Facility in Mebane, Alamance County, North Carolina, that the Company would not have located its Facility in Mebane, Alamance County, North Carolina without the Incentives and that the Company will be substantially harmed in the event that the Units obligations are not satisfied as provided herein.

3. During the performance of the Agreement, the Company agrees to allow representatives of the Units to enter upon its property during normal business hours upon forty-eight hours prior notice for the purpose of confirming the new construction and the purchase of new equipment has occurred. To the extent allowed by applicable law, the Units covenant and agree to protect, and not use or disclose, any of the Company's confidential or proprietary information.

4. If prior to the Units expending monies, for any reason whatsoever the Company chooses not to make the above referenced investments and to cancel this Agreement, it may do so by providing written notice. Upon such notification, this Agreement shall be cancelled and all of its terms and conditions shall become void. If, however, the Company chooses not to make the above referenced investment and any one of the Units has expended funds or if the Real Property has been conveyed, the Company shall be liable for a return or pay-back of the government funds expended and shall re-convey the Real Property to Mebane and Graham by general warranty deed free and clear of al liens and encumbrances as hereinafter stated.

5. The Company agrees, upon request of the Units, to make full and accurate accounting to the Units of all expenditures and construction and acquisition of equipment referenced above as required by this Agreement upon completion of total investment and the granting of the Final Certificate of Occupancy. The Company shall make such accounting as is necessary to verify construction and purchase of equipment and after such construction and purchase of equipment has been verified, the Company shall have no further obligations to account to the City for any other expenses incurred. The parties understand that the Incentive Grant amounts are based upon the taxable value of the invested amounts as determined by law.

6. The Company shall observe all federal, state and local laws, rules and regulations governing labor and employment and shall not discriminate against any person on the grounds of race, color, national origin, sex, age, or disability in the administration of this Agreement nor shall any person be excluded from participation in, or be denied the benefits of, any project constructed under this Agreement on the grounds of race, color, national origin, sex, age, or disability.

7. The Units respectively bind themselves, their successors, assigns, and legal representatives to other parties hereto and those parties' successors, assigns, and legal representatives, in respect to covenants, agreements, and obligations contained herein. No party to this Agreement shall assign the Agreement or any of the obligations or rights described herein without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Agreement. The Company may assign this Agreement to a subsidiary, parent or affiliated company, with the written consent of the Units which shall not be unreasonably conditioned, delayed or withheld.

8. This Agreement may be modified only by a written agreement executed which must be approved by the Units by all parties hereto. The contractual commitments provided for herein and made by the parties hereto shall be deemed to continue into the future, survive and remain binding upon future elected and appointed officials to the full extent permitted under applicable law. This Agreement may be executed in counterparts separately with the resultant executed counterparts forming a single Agreement.

9. In the event of such cancellation of the Agreement described above, the Units shall have no further obligations to make any further payments as called for in this Agreement.

10. The parties and each person executing this Agreement on behalf thereof represent and warrant that they have the full right and authority to enter into this Agreement, which is binding, and to sign on behalf of the party indicated, and are acting on behalf of themselves, the constituent members and the successors and assigns of each of them. The parties agree to reasonably assist one another and cooperate in the defense (should any defense ever be necessary) of this Agreement and/or the incentives granted hereunder, so as to support and in no way undercut the same. In the event that any of the incentives

or other assignments of the Units are determined to be invalid, the Units agree that they will, to the fullest extent permitted by law, provide the Company with any permitted incentives of substantial equal value pursuant to one more or more replacement incentive grant programs.

11. No provision of this Agreement may be invalidated, except by the Superior Court of Alamance County which shall have sole jurisdiction over any disputes which arise under this Agreement or otherwise regarding the parties hereto, and further, venue shall be proper and shall lie exclusively in the Superior Court of Alamance County, North Carolina.

    If any such court holds any provision of this Agreement, invalid or unenforceable, then:
    a. Such holdings shall not invalidate or render unenforceable any other provision of this Agreement;
    b. Such provision shall be construed as closely as possible to the Party's Original intent in order to render such provision valid or enforceable, as applicable; and
    c. The remaining terms here, together with such reconstructive provision, shall constitute the parties' entire agreement hereof.

12. This Agreement sets forth the entire agreement between Units and the Company and supersedes any and all other agreements on this subject between parties.

13. In the event that, prior to completion of the Facility, the Units expend funds for any of the incentives provided for in this Agreement or convey real property to Company, whether for road infrastructure or cash grants, and the Company elects to cancel the Agreement or does not comply with its obligations to construct the Facility, the Company agrees to fully reimburse the Units for any amounts expended by them through the date of such cancellation and to re-convey any real property conveyed to Company pursuant to this Agreement. The Company shall reimburse the Units within thirty (30) days of written demand. In the event that Company fails to re-pay such amounts, the Units may recover the funds advanced under this Agreement plus all the costs of collection, including without limitation reasonable attorney fees.

14. Company acknowledges that the Units are governmental entities, and validity of this Agreement is based upon the availability of public funding under the authority of its statutory mandate. Subject to the provisions of Section 10, in the event that public funds are unavailable for the performance of a Unit's obligations under this Agreement, then this Agreement shall remain in full effect, provided, however, that the payment obligations of such Unit shall be temporarily suspended, without penalty to the Unit, immediately upon written notice to Company of the unavailability of public funds. At such time as such public funds are again available, the payment obligations of the Unit hereunder shall be deemed reinstated without necessity of further written agreement. It is expressly agreed that the Units shall not activate this "unavailability" provision for their convenience or to circumvent the requirements of this Agreement, but only as an emergency fiscal measure during a substantial financial crisis. In either event, the public parties agree that they will

use best efforts to replace, through other sources available to them under law, funds due to the Company, as soon as practical. In the event of a change in a Unit's statutory authority, mandate and/or mandated functions by State and/or Federal legislative or regulatory action, which adversely affects such Unit's authority to continue its obligations under this Agreement, then this Agreement shall be suspended without penalty to such Unit upon written notice to Company of such limitations or change in the Unit's legal authority.

15. Company agrees that upon written request of the Units that company will grant to the requesting Unit(s), free of charge, easements that are, in the Company's sole discretion, reasonable and necessary for water and/or sewer utilities and for transportation services (including without limitation temporary construction and/or drainage easements) that serve the Facility and its property. The easements shall be in mutually agreeable form and substance consistent with the Units' standard form agreements. Any such easements shall be located in areas of Company's property which will not unreasonably interfere with Company's intended use of Company's Facility. The Company commits that it will favorably consider, on a case by case basis, any requests from such Units for similar easements to serve adjoining properties provided that such requested easements will not have a detrimental impact upon the Company's property or Facility operations.

16. At or prior to the execution of this agreement, Company shall provide to the Units a current certificate of incumbency, a resolution of the Company evidencing the Company's authority to execute this Agreement, the Certificates of Good Standing from the appropriate government offices and such other documents as Units may reasonably request.

17. As required by G.S. Section 158-7.1 (d2) (2), if the Company elects to assign its rights in whole or in part, to a third party purchaser of the real or personal property which is the basis of this Agreement, the third party shall be bound by this Agreement and shall execute an assignment confirming that it is a bound by the terms of this Agreement, including without limitation, the obligations if a default occurs. No such assignment shall relieve Company of any of its obligations hereunder.

18. Company agrees to maintain the Agreed Minimum Number of Employees at the Facility for the duration of this Agreement after the Completion Date, being the term of the Units' payments of Incentive Grant Funds. Failure of the Company to do so, is a default and breach of this Agreement, requiring the Company to return the Incentive Grant Funds paid and relieving the Units of making any additional Incentive Grant Fund payments.

19. Notwithstanding anything to the contrary stated herein, 1) the Units shall have no obligation to make any payments until the Property is annexed into the City of Mebane, for which Company agrees to submit a petition for annexation with the submission of an application for a building permit; and 2) the obligations of the Units shall cease and

terminate at the seven year anniversary of this Agreement, June ___, 2027, regardless of the status of the Company's investment or employment.

20. Any notices required by this Agreement shall be mailed to the following persons:

If to the County:

Alamance County
Attn: Bryan Hagood, Manager
124 West Elm Street
Graham, NC 27253

With a copy to:

Clyde B. Albright
Alamance County Attorney
124 West Elm Street
Graham, NC 27253

If to Mebane:

City of Mebane
Attn: David Cheek, Manager
106 E. Washington Street
Mebane, 27302

With Copy to:

The Vernon Law Firm
Attn: E. Lawson Brown, Jr.
P.O. Drawer 2958
Burlington, NC 27216-2958

If to Graham:

City Manager
City of Graham
Attn: Frankie Maness
P.O. Drawer 357
Graham, NC 27253

With a copy to:

Robert Ward
City of Graham Attorney

344 Maple Avenue
Burlington, NC 27215

If to Company:

Aadarsha Basavarajurs
Us East Region Tax Director &
Global Tax Credits & Incentives Coordinator
UPS East Region
55 Glenlake Parkway NE
Atlanta, GA 30328

[Signatures Appear on Next Page]

IN WITNESS WHEREOF, the parties hereto have made and executed this agreement as of the day and year first above written.

"MEBANE"
CITY OF MEBANE
A municipal corporation of the State of North Carolina

By: _____
Ed Hooks,
Mayor, City of Mebane

This instrument has been preaudited in the manner required by the Local Government Budget and Fiscal Control Act.

_____ _____
Jeanne Tate, Mebane Finance Officer *Date*

Approved as to Legal Form and Sufficiency

_____
E. Lawson Brown, Jr., Mebane City Attorney

[Signatures Appear on Next Page]

IN WITNESS WHEREOF, the parties hereto have made and executed this agreement as of the day and year first above written.

"GRAHAM"
CITY OF GRAHAM
A municipal corporation of the State of North Carolina

By: _____
Jerry Peterman,
Mayor, City of Graham

This instrument has been preaudited in the manner required by the Local Government Budget and Fiscal Control Act.

_____ _____
Julianne Cordon, Graham Finance Officer *Date*

Approved as to Legal Form and Sufficiency

_____
Robert Ward, Graham City Attorney

[Signatures Appear on Next Page]

IN WITNESS WHEREOF, the parties hereto have made and executed this agreement as of the day and year first above written.

ALAMANCE COUNTY
A political subdivision of the State of North Carolina

By: _____
Amy Scott Galey,
Chairman, Alamance County Board of Commissioners

This instrument has been preaudited in the manner required by the Local Government Budget and Fiscal Control Act.

_____ _____
Susan Roberts, Alamance County Finance Officer *Date*

Approved as to Legal Form and Sufficiency

_____
Clyde B. Albright, Alamance County Attorney

IN WITNESS WHEREOF, the parties hereto have made and executed this agreement as of the day and year first above written.

UNITED PARCEL SERVICE, INC.

By: _____ (SEAL)
Name: Don Lancaster
Title: Vice President

EXHIBIT “A”

A certain tract or parcel of land lying and being in Melville Township, Alamance County, North Carolina, adjoining Public Road Easement (now known as Senator Ralph Scott Parkway), Interstate Investments, and Betty Kimrey Vernon, and being more particularly described as follows: Being all of Lot 6B, as shown on a plat recorded in the Alamance County Registry in Plat Book 76, page 101, consisting of 7.784 acres, more or less, said plat being Sheet 6 of 9, entitled “Final Plat Showing Land and Road Easements to Be Acquired by the City of Graham and City of Mebane For Proposed Road and Economic Development Site Across Allen S. Rowland,” prepared by Alley, Williams, Carmen & King, Inc., dated November 15, 2013. The Plat was recorded on December 12, 2013, and is incorporated herein by reference.

AGENDA ITEM #4B

Ordinance to Extend the Corporate Limits – ABB

Presenter
Lawson Brown, City Attorney

Public Hearing
Yes ☒ No ☐

Summary

The Council will consider the approval of an Ordinance to Extend the Corporate Limits as the next step in the annexation process. This is a non-contiguous satellite annexation containing approximately 101.19 acres.

Background

At the August 3, 2020 Council Meeting, Council accepted the petition for annexation and the Clerk's certificate of sufficiency and adopted a Resolution setting a date of Public Hearing for September 14, 2020 to consider approval of extending Mebane's corporate limits. The Public Hearing Notice was properly advertised.

Financial Impact

The property and improvements will be added to the ad valorem tax base for the City once the property is annexed as determined by the state statute.

Recommendation

Staff recommends adoption of an Ordinance to Extend the Corporate Limits of the City of Mebane, North Carolina.

Suggested Motion

This item will be voted on at the CONTINUED meeting to be held on Wednesday, September 16, 2020 at 6pm. I make a motion to adopt of an Ordinance to Extend the Corporate Limits of the City of Mebane, North Carolina to include the 0.069 acres.

Attachments

1. Ordinance
2. Map

AN ORDINANCE TO EXTEND THE CORPORATE LIMITS
OF THE CITY OF MEBANE, NORTH CAROLINA

Ordinance No. 138

WHEREAS, the City Council has been petitioned under G.S. 160A-58.1 to annex the area described below; and

WHEREAS, the City Council has by resolution directed the City Clerk to investigate the sufficiency of the petition; and

WHEREAS, the City Clerk has certified the sufficiency of the petition and a public hearing on the question of this annexation was held at the Mebane Municipal Building at 6:00 p.m. on September 14, 2020 with the vote of the Council occurring on September 16, 2020 after due notice by the Mebane Enterprise on September 2, 2020; and

WHEREAS, the City Council finds that the area described therein meets the standards of G.S. 160A-58.1 (b), to wit:

a. The nearest point on the proposed satellite corporate limits is not more than three (3) miles from the corporate limits of the City;

b. No point on the proposed satellite corporate limits is closer to another municipality than to the City;

c. The area described is so situated that the City will be able to provide the same services within the proposed satellite corporate limits that it provides within the primary corporate limits;

d. No subdivision, as defined in G.S. 160A-376, will be fragmented by this proposed annexation;

WHEREAS, the City Council further finds that the petition has been signed by all the owners of real property in the area who are required by law to sign; and

WHEREAS, the City Council further finds that the petition is otherwise valid, and that the public health, safety and welfare of the City and of the area proposed for annexation will be best served by annexing the area described;

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

Section 1. By virtue of the authority granted by G.S. 160A-58.2, the following described non-contiguous territory is hereby annexed and made part of the City of Mebane, as of September 16, 2020:

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 2. Upon and after September 16, 2020 the above described territory and its citizens and property shall be subject to all debts, laws, ordinances and regulations in force in the City of Mebane and shall be entitled to the same privileges and benefits as other parts of the City of Mebane. Said territory shall be subject to municipal taxes according to G.S. 160A-58.10.

Section 3. The Mayor of the City of Mebane shall cause to be recorded in the office of the Register of Deeds of Orange County, and in the office of the Secretary of State at Raleigh, North Carolina, an accurate map of the annexed territory, described in Section 1 above, together with a duly certified copy of this ordinance. Such a map shall also be delivered to the Orange County Board of Elections, as required by G.S. 163-288.1.

Adopted this 16th day of September, 2020.

_____
Ed Hooks, Mayor

ATTEST:

_____
Stephanie W. Shaw, City Clerk

APPROVED AS TO FORM:

_____
Lawson Brown, City Attorney

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

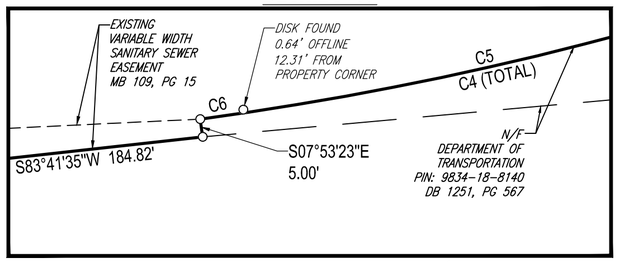
PLANNING DIRECTOR CERTIFICATION

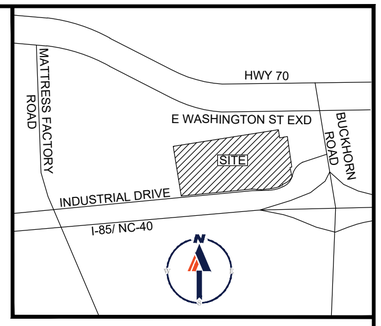
THIS TRACT OF LAND IS WITHIN THE CITY OF MEBANE'S JURISDICTION. NO APPROVAL IS REQUIRED OF THE PLANNING BOARD OR CITY COUNCIL.

_____, AUTHORIZED CITY OFFICIAL

_____, DATE

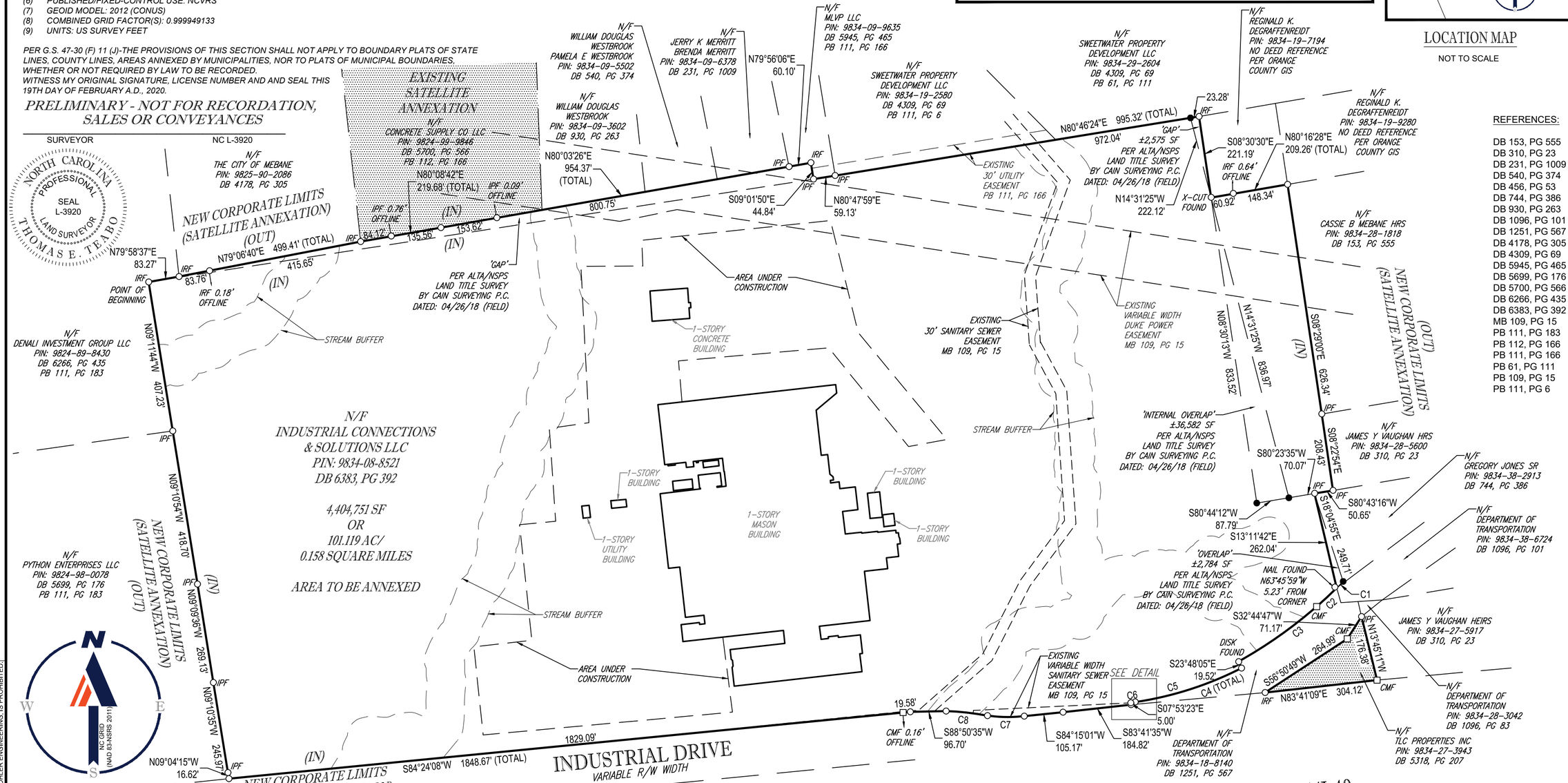
DETAIL 1"=30'





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

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AGENDA ITEM #4C

SUP 20-03

Special Use Permit – Elementary/Secondary School for Bradford Academy

Presenter

Cy Stober, Development Director

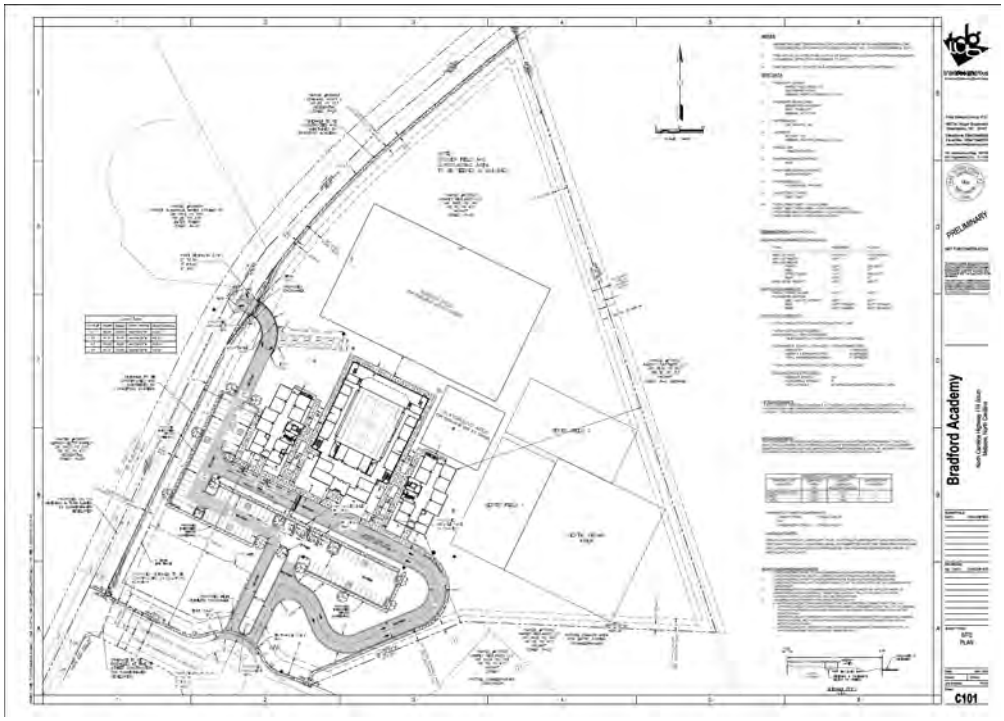
Applicant

Bradford Academy
c/o Tony Fairchild
939 South Third Street
Mebane, NC 27302

Public Hearing

Yes ☒ No ☐ Quasi-Judicial, Board of Adjustment

Site Plan



Property
NC Hwy 119 South, Nereus Drive, Alamance County
GPIN #9803578217

Proposed Zoning
N/A

Current Zoning
R-20

Size
+/-14.02 acres of +/-54.12-ac parcel

Surrounding Zoning
R-20, M-2, B-2, MHP

Surrounding Land Uses
Residential, Business

Utilities
To be extended at developer's expense

Floodplain
No

Watershed
No

City Limits
No

Summary

Bradford Academy, c/o Tony Fairchild, is requesting approval of a special use request for an elementary/secondary school for a 450-student private school campus on a +/-14.02-ac portion of a +/-54.12-acre property off NC Highway 119 at Nereus Drive, a private unpaved road. The applicant is not seeking annexation into the City and will be providing on-site septic treatment for wastewater needs and using Orange Alamance Water System, Inc., services for water service needs.

The project was reviewed by the City's Technical Review Committee (TRC) and the submitted site plan reflects revision from staff feedback. The applicant is requesting one waiver from the architectural requirements of Article 6-1, which prohibit the use of metal as an exterior building material. Further details on this request are available in the project packet.

The applicant was responsible for a Traffic Impact Analysis by NC General Statute, and reviewed by the NC Department of Transportation (NCDOT) Municipal School Transportation Assistance staff. The findings of satisfaction by both the NCDOT staff as well as the City's transportation engineering consultant are in the project packet. The applicant will be using Orange-Alamance Water, Inc., for water service, and an onsite septic system for wastewater treatment. The adequacy of these utility services is addressed in the agenda packet, including a technical memorandum and letter from the Mebane City Engineer Franz Holt.

Bradford Academy has the property under contract to purchase, contingent upon approval of the rezoning.

Financial Impact

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

Recommendation

This item will be voted on at the CONTINUED meeting to be held on Wednesday, September 16, 2020 at 6pm. The Planning staff has reviewed the request for satisfaction with the development and subdivision standard of the Mebane Unified Development Ordinance, 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 be consistent with the objectives and goals in the City's adopted plans, including its Comprehensive Land Development Plan *Mebane Bu Design*. Specifically, the request meets:

- ☐ 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. Waiver Request – Exterior Building Materials
5. Planning Project Report
6. Traffic Impact Analysis
7. NC Department of Transportation TIA findings letter
8. Memorandum from Ramey, Kemp, and Associates, TIA findings letter on behalf of the City
9. Letter from Orange-Alamance Water, Inc., regarding water service to site
10. Improvement Permit, Alamance County Department of Environmental Health RE: onsite septic
11. Water and Sewer Letter of Approval
12. Technical Memorandum – City Engineering Review

APPLICATION FOR A SPECIAL USE PERMIT

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

Name of Applicant: Tony Fairchild/ Chairman of the Board, Bradford Academy

Address of Applicant: 939 South Third Street, Mebane, NC 27320

Address and brief description of property: NC 119, just south of the NC 119/Kimrey Road intersection. 14.02 acres portion of Tax Parcel No. 172462

Applicant's interest in property: (Owned, leased or otherwise) Buyer, plan to purchase property upon approval of Special Use Permit

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

Yes ___ Explain: _____ No X

Type of request: Construct an Elementary and Secondary School in the R-20 Zoning District

Sketch attached: Yes X No _____

Reason for the request: Special Use Permit approval is required in order to develop the property for the proposed use of Elementary and Secondary School.

Signed: Tony Fairchild

Date: 9/19/2020

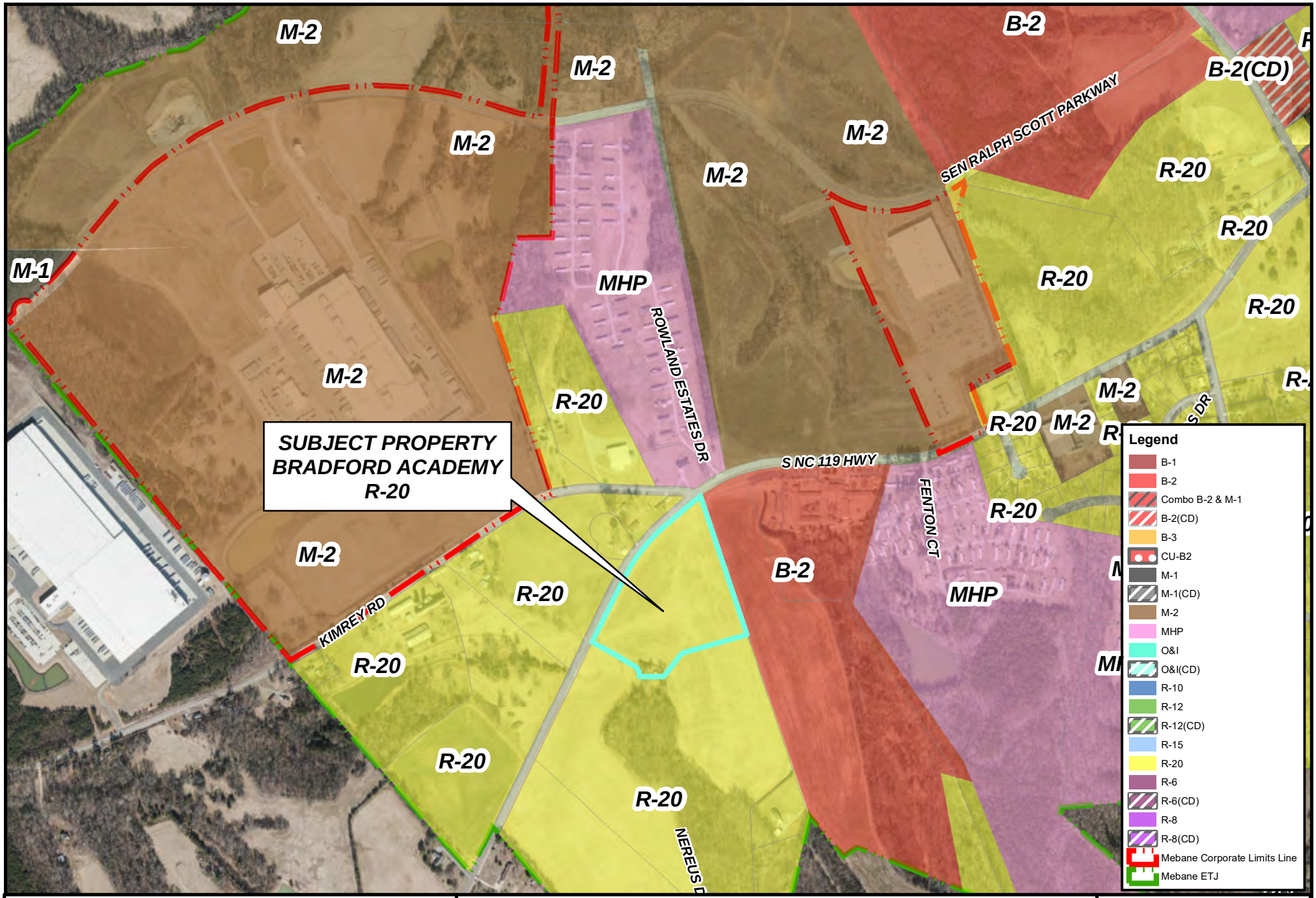
Action by Planning Board: _____

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.



CITY OF MEBANE
ZONING MAP

SUBJECT PROPERTY
BRADFORD ACADEMY

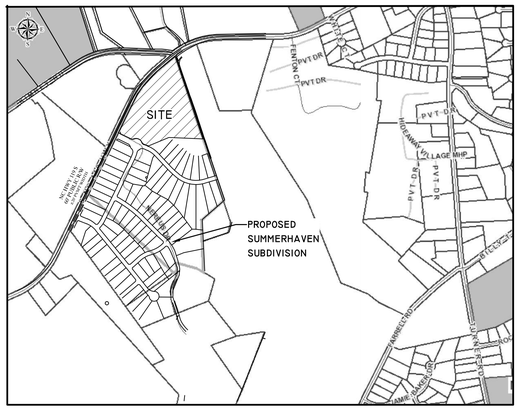
1 inch = 800 feet

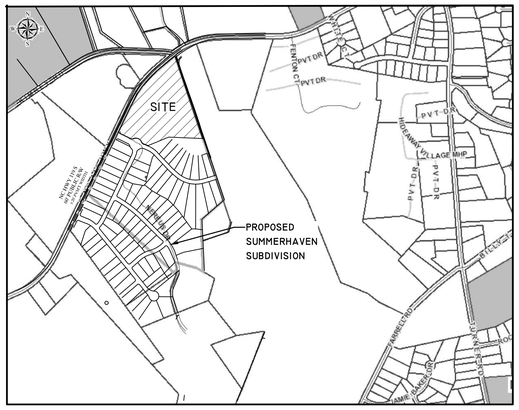
DATE:9/8/2020

DRAWN BY: SKS

BRADFORD ACADEMY

NORTH CAROLINA HIGHWAY 119 SOUTH
MEBANE, NORTH CAROLINA


SITE
PROPOSED
SUMMERHAVEN
SUBDIVISION
PVT DR
PVT DR
PVT DR


SITE
PROPOSED
SUMMERHAVEN
SUBDIVISION
PVT DR
VILLAGE SHOP
PVT DR
PVT DR
PVT DR
SUMMERHAVEN
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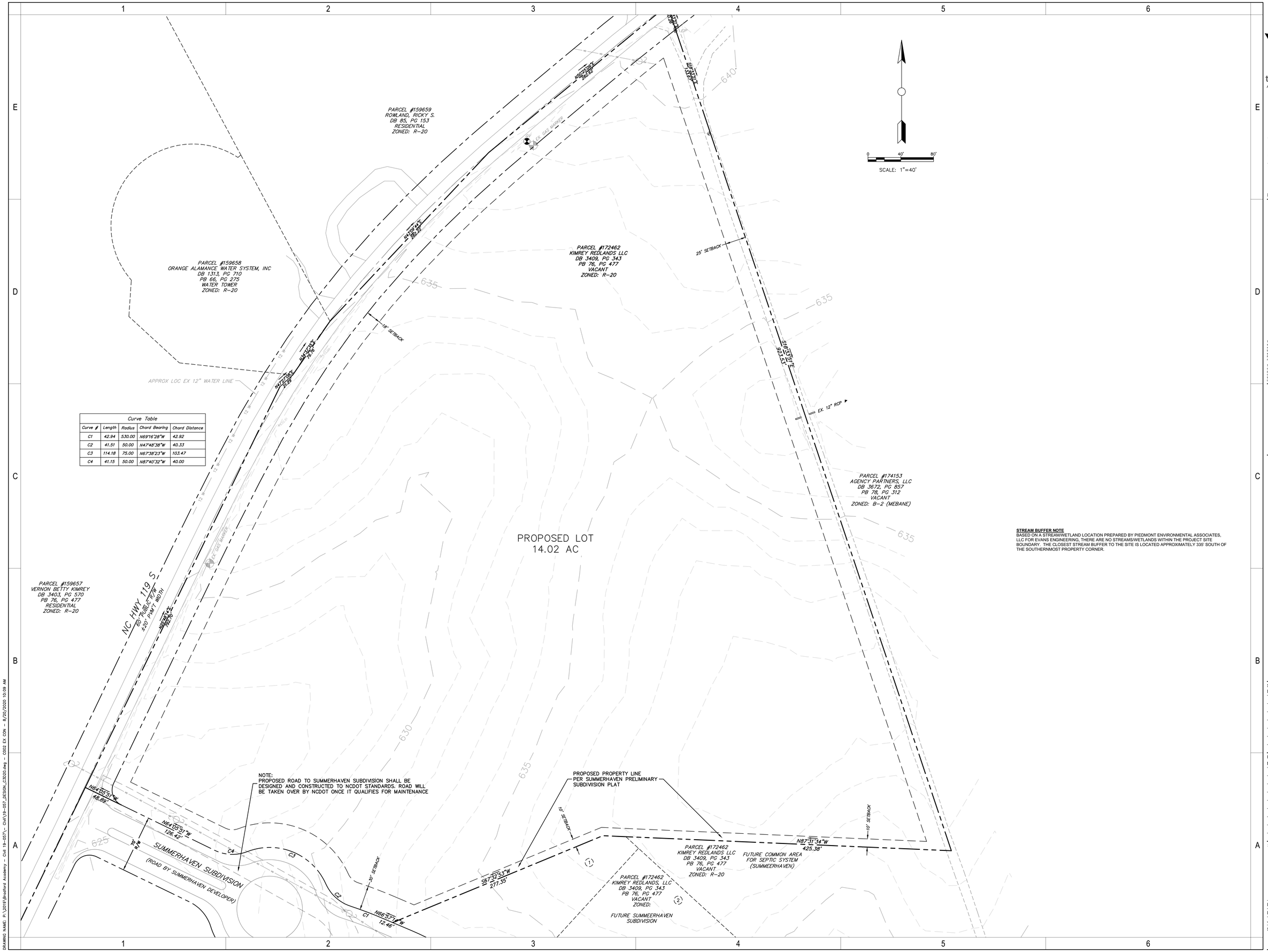

Curve Table				
Curve #	Length	Radius	Chord Bearing	Chord Distance
C1	42.94	530.00	N69°16'28"W	42.92
C2	41.51	50.00	N47°48'38"W	40.33
C3	114.18	75.00	N67°38'23"W	103.47
C4	41.15	50.00	N87°40'32"W	40.00

STREAM BUFFER NOTE
BASED ON A STREAM/WETLAND LOCATION PREPARED BY PIEDMONT ENVIRONMENTAL ASSOCIATES, LLC FOR EVANS ENGINEERING, THERE ARE NO STREAMS/WETLANDS WITHIN THE PROJECT SITE BOUNDARY. THE CLOSEST STREAM BUFFER TO THE SITE IS LOCATED APPROXIMATELY 335' SOUTH OF THE SOUTHERNMOST PROPERTY CORNER.

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Architecture | Engineering | Interior Design

Triad Design Group, P.C.
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Greensboro, NC 27407
Telephone 336-218-8282
Facsimile 336-218-8010
www.triad-designgroup.com

NC Architecture Reg. 50709
NC Engineering Lic. C-1108

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PRELIMINARY

NOT FOR CONSTRUCTION

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Bradford Academy

North Carolina Highway 119 South
Mebane, North Carolina

SUBMITTALS:

DATE	DESCRIPTION

REVISIONS:

NO	DATE	DESCRIPTION

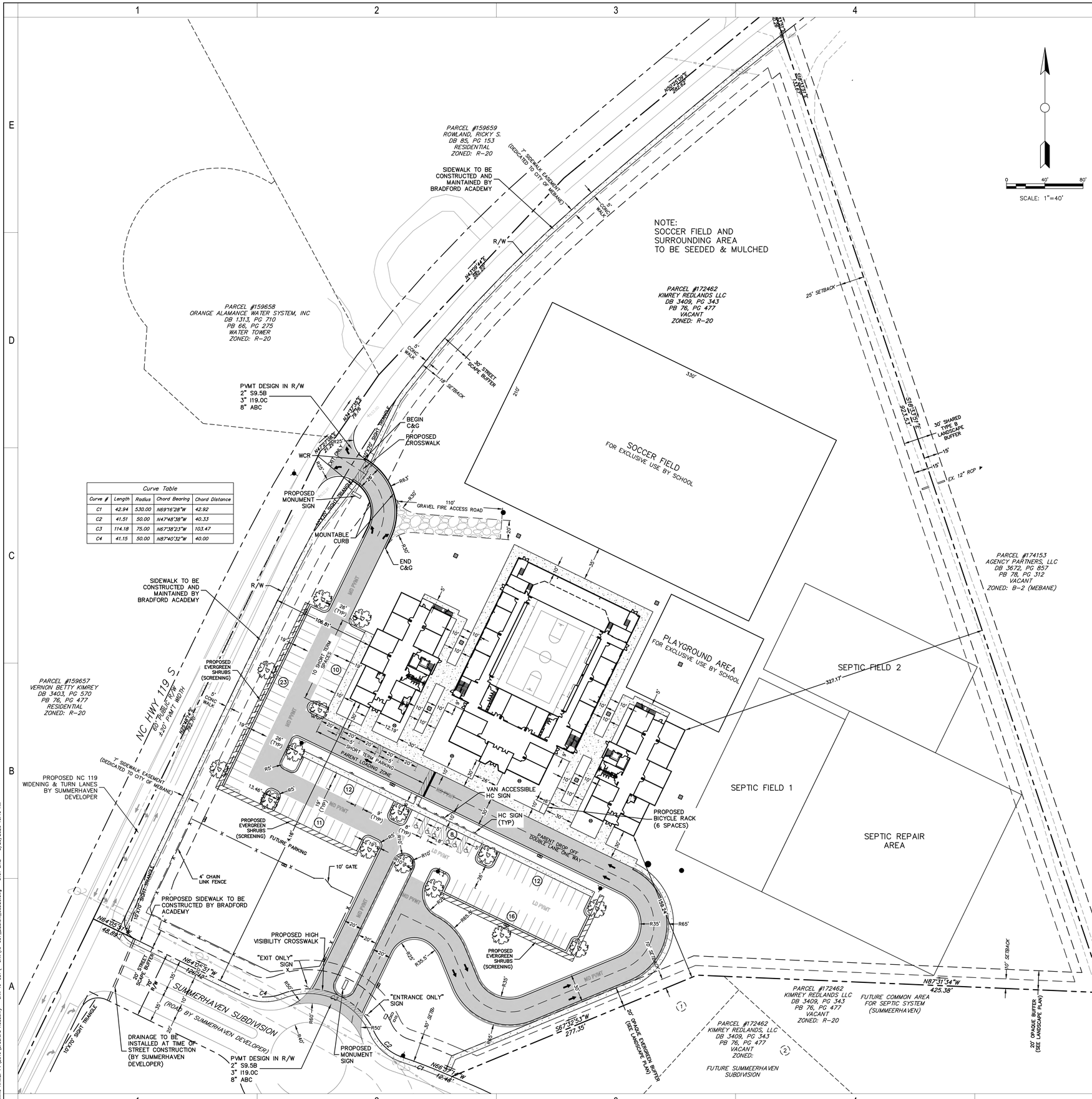
SHEET TITLE:

EXISTING TOPOGRAPHIC SURVEY

Date:	MAY 2020
Drawn:	Check:
Job Number:	19-057
Sheet:	C002

DRAWING NAME: P:\2019\Bradford Academy - Civil 19-057_DESIGN_C3D20.dwg - C002 EX CON - 8/20/2020 10:09 AM

Curve Table				
Curve #	Length	Radius	Chord Bearing	Chord Distance
C1	42.94	530.00	N69°16'28"W	42.92
C2	41.51	50.00	N47°48'38"W	40.33
C3	114.18	75.00	N67°38'23"W	103.47
C4	41.15	50.00	N87°40'32"W	40.00



NOTES

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2. THIS SITE IS LOCATED ZONE X, AREA OF MINIMAL FLOOD RISK PER FIRM MAP NUMBER 3710980300K, EFFECTIVE NOVEMBER 17, 2017.
3. THIS SITE IS NOT LOCATED IN A DESIGNATED WATER SUPPLY WATERSHED.

SITE DATA

1. PROPERTY OWNER
   KIMREY REDLANDS, LLC
   2425 KIMREY ROAD
   MEBANE, NORTH CAROLINA 27302
2. PROPERTY DEVELOPER
   BRADFORD ACADEMY
   939 S. THIRD ST
   MEBANE, NC 27302
3. REFERENCES
   D.B. 3409 PG. 343
4. ADDRESS
   NC HWY 119
   MEBANE, NORTH CAROLINA 27302
5. PARCEL ID#
   172462 (PORTION)
6. EXISTING ZONING DISTRICT
   R-20
7. PROPOSED ZONING DISTRICT
   R-20 (WITH SUP)
8. PROPOSED USE
   K-12 SCHOOL, PRIVATE
9. ON-SITE SOIL TYPES
   CnB2, CnC2
10. TOTAL TRACT SIZE = 14.02 ACRES
    EXIST. BUILT UPON AREA = 0.00 ACRES (0.00%)
    PROPOSED BUILT UPON AREA = 3.224 ACRES (23.00%)
    DISTURBED AREA = 9.05 ACRES (64.55%)

ZONING DATA (EXISTING R-20)

SETBACK REQUIREMENTS (TABLE 4-2-1):

ITEM	REQUIRED	ACTUAL
MIN. LOT SIZE	3 ACRES	14.02 ACRES
MIN. LOT WIDTH	50 FT	127 FT
MIN. SETBACKS		
FRONT	30 FT	324.16 FT
SIDE	10 FT	FT
STREET SIDE	18 FT	106.81 FT
REAR	25 FT	FT
MAX. BLDG. HEIGHT.	40 FT	≤40 FT

BUFFER REQUIREMENTS

FRONT STREETSCAPE	30 FT	30 FT
PERIMETER BUFFER		
SIDE – ADJ TO STREET	30 FT	30 FT
SIDE	20 FT OPAQUE	20 FT OPAQUE
REAR	30 FT SHARED	30 FT SHARED

PARKING REQUIREMENTS

TOTAL PROJECTED STUDENT POPULATION = 450

PARKING SPACES REQUIRED
HIGH SCHOOL (1 SP/4 STUDENTS)
128 STUDENTS x 1 SPA/4 STUDENTS = 32 SPACES

ELEM/MIDDLE SCHOOL (5 SPACES + 1 SPACE/EMPLOYEE)
5 SPACES = 5 SPACES
40 EMP x 1 SPA/EMPLOYEE 40 SPACES
TOTAL PARKING REQUIRED = 77 SPACES

TOTAL PARKING SPACES ALLOWED (120%) = 92 SPACES

PARKING SPACES PROVIDED
REGULAR SPACES 86
ACCESSIBLE SPACES 6
TOTAL SPACES 92 SPACES(REQUIRED SPACES x 120%)

SITE LIGHTING NOTE
A SITE LIGHTING PLAN IS NOT AVAILABLE AT THIS TIME. SITE LIGHTING SHALL COMPLY WITH THE OUTDOOR LIGHTING STANDARDS OF THE UNIFIED DEVELOPMENT ORDINANCE ARTICLE 6-5, OUTDOOR LIGHTING. THE SITE LIGHTING PLAN SHALL BE SUBMITTED WITH THE CONSTRUCTION PLANS.

SITE LIGHTING NOTE
THE LOCATION OF OUTDOOR MECHANICAL EQUIPMENT HAS NOT BEEN DETERMINED AT THIS TIME. ONCE THE LOCATIONS ARE DETERMINED, ADEQUATE SCREENING COMPLYING WITH THE EQUIPMENT SCREENING STANDARDS OF THE UNIFIED DEVELOPMENT ORDINANCE SHALL BE PROVIDED. OUTDOOR EQUIPMENT SCREENING SHALL BE SUBMITTED WITH THE CONSTRUCTION PLANS.

PARKING LOT LANDSCAPE TABLE

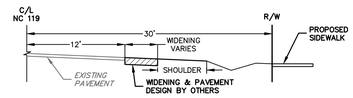
PARKING LOT LOCATION	SURFACE AREA (SF)	CANOPY (1/2500 SF) REQ'D/PROVIDED	UNDERSTORY (1/1400 SF)
SOUTH (MAIN LOT)	19,840	8/10	---
WEST	12,032	5/5	---
TOTAL	31,872	13/15	---

PARKING LOT TREE REQUIREMENTS
CANOPY TREE – 1 TREE/2,500 SF
OR
UNDERSTORY TREE - 1 TREE/1,400 SF

LANDSCAPE NOTES

THIS IS A CONCEPTUAL LANDSCAPE PLAN. A DETAILED LANDSCAPE PLAN (WHICH DEPICTS THE PLANT TYPES AND LOCATIONS) SHALL BE SUBMITTED WITH THE CONSTRUCTION PLANS. THE LANDSCAPE PLAN MUST BE APPROVED BY THE PLANNING DEPARTMENT PRIOR TO INSTALLING THE PLANTS.

NCDOT ROAD IMPROVEMENTS NOTES
1. ROAD WIDENING ON NC 119 AND SUMMERHAVEN SUBDIVISION ROAD DESIGN AND CONSTRUCTION SHALL BE TO CURRENT NCDOT STANDARDS AND SPECIFICATIONS.
2. ROAD WIDENING ON NC 119 AND SUMMERHAVEN SUBDIVISION ROAD DESIGN AND CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER OF THE SUMMERHAVEN SUBDIVISION.
3. IMPROVEMENTS BY THE SUMMERHAVEN DEVELOPMENT ARE TO BE IN PLACE PRIOR TO BRADFORD ACADEMY OPENING. BRADFORD ACADEMY WILL COORDINATE WITH THE SUMMERHAVEN DEVELOPER TO ENSURE THIS HAPPENS.
4. REQUIRED NCDOT PERMITS FOR BRADFORD ACADEMY:
   a. APPROVED NCDOT DRIVEWAY PERMIT FOR THE PROPOSED CONNECTION TO NC 119.
   b. APPROVED NCDOT THREE-PARTY ENCROACHMENT AGREEMENT WITH THE CITY OF MEBANE FOR ANY PROPOSED/STIPULATED SIDEWALK AND SEWER CONNECTIONS WITHIN NCDOT RIGHT-OF-WAY.
   c. APPROVED NCDOT THREE-PARTY ENCROACHMENT AGREEMENT WITH ORANGE-ALAMANCE WATER SYSTEM, INC. FOR ANY PROPOSED/STIPULATED WATER CONNECTIONS WITHIN NCDOT RIGHT-OF-WAY.
   d. APPROVED NCDOT TWO-PARTY NON-UTILITY ENCROACHMENT AGREEMENT FOR THE 15" PIPE DISCHARGING INTO THE NCDOT RIGHT-OF-WAY.



SIDEWALK (TYP)
N.T.S.

triaddesigngroup
Architecture | Engineering | Interior Design

Triad Design Group, P.C.
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Greensboro, NC 27407
Telephone 336-218-8282
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www.triad-designgroup.com

NC Architecture Reg. 50709
NC Engineering Lic. C-1108

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PRELIMINARY

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Bradford Academy

North Carolina Highway 119 South
Mebane, North Carolina

SUBMITTALS:

DATE	DESCRIPTION

REVISIONS:

NO	DATE	DESCRIPTION

SHEET TITLE:
SITE PLAN

Date: MAY 2020
Drawn: Check:
Job Number: 19-057
Sheet:

C101

DRAWING NAME: P:\2019\Bradford Academy – Civil 19-057\– Civil\19-057_DESIGN_C3D20.dwg – C101 SITE – 8/20/2020 10:10 AM

SCALE: 1"=40'

PARCEL #159659
ROWLAND, RICKY S.
DB 85, PG 153
RESIDENTIAL
ZONED: R-20

PARCEL #159658
ORANGE ALAMANCE WATER SYSTEM, INC
DB 1313, PG 710
PB 66, PG 275
WATER TOWER
ZONED: R-20

PARCEL #159657
VERNON BETY KIMREY
DB 3403, PG 570
PB 76, PG 477
RESIDENTIAL
ZONED: R-20

PARCEL #172462
KIMREY REDLANDS LLC
DB 3409, PG 343
PB 76, PG 477
VACANT
ZONED: R-20

PARCEL #174153
AGENCY PARTNERS, LLC
DB 3672, PG 857
PB 78, PG 312
VACANT
ZONED: B-2 (MEBANE)

PARCEL #172462
KIMREY REDLANDS, LLC
DB 3409, PG 343
PB 76, PG 477
VACANT
ZONED:
FUTURE SUMMEERHAVEN SUBDIVISION

NOTE:
SOCCER FIELD AND SURROUNDING AREA TO BE SEEDED & MULCHED

SOCCER FIELD
FOR EXCLUSIVE USE BY SCHOOL

PLAYGROUND AREA
FOR EXCLUSIVE USE BY SCHOOL

SEPTIC FIELD 1

SEPTIC FIELD 2

SEPTIC REPAIR AREA

NOTE:
NO GRADING ALLOWED IN SEPTIC FIELD OR REPAIR AREA

SEPTIC TANK AREA

PROPOSED BLDG
FFE 636.50

PROPOSED BLDG
FFE 636.50

PROPOSED BLDG
FFE 636.50

MH 1
RIM = 637.10
INV IN = 627.52

MH 2
RIM = 632.70
INV IN = 628.95

PROPOSED NC 119
WIDENING & TURN LANES
BY SUMMERHAVEN
DEVELOPER

NC HWY 119 S
60' PUBLIC R/W
±20' PVMT WIDTH

SUMMERHAVEN SUBDIVISION
(ROAD BY SUMMERHAVEN DEVELOPER)

DRAINAGE TO BE
INSTALLED AT TIME OF
STREET CONSTRUCTION
(BY SUMMERHAVEN
DEVELOPER)

7' SIDEWALK EASEMENT
(DEDICATED TO CITY OF MEBANE)

APPROX LOC EX 12" WATER LINE

12"X6" TAPPING SLEEVE
6" GATE VALVE IN VALVE BOX
FIRE HYDRANT

EX. 12" RCP

EX. GAS MARKER

25' SETBACK

30' SHARED
TYPE B
LANDSCAPE
BUFFER

30' STREET
SCAPE BUFFER

15' SETBACK

10' SETBACK

10' GATE

4' CHAIN
LINK FENCE

FUTURE PARKING

20' OPAQUE BUFFER
(SEE LANDSCAPE PLAN)

20' OPAQUE EVERGREEN BUFFER
(SEE LANDSCAPE PLAN)

Curve Table				
Curve #	Length	Radius	Chord Bearing	Chord Distance
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PARKING SPACES PROVIDED
REGULAR SPACES 86
ACCESSIBLE SPACES 6
TOTAL SPACES 92 SPACES(REQUIRED SPACES x 120%)

	DESIGN DATA (10- YEAR STORM FREQUENCY)								
STRUCT NUMBER	STRUCT TYPE	STRUCT. AREA (AC.)	BASIN AREA (AC)	C	INTENSITY (IN/HR)	INFLOW (CFS)	TOTAL FLOW (CFS)	PIPE SIZE (IN)	PIPE SLOPE	CAPACITY (CFS)
8	YI	0.41		0.80	7.04	2.31				
			0.41				2.31	15 RCP	0.005	4.55
7	YI	0.36		0.80	7.04	2.04				
			0.77				4.35	18 RCP	0.0124	11.97
6	DI (840.15)	SEE	BELOW			SEE	BELOW			
9	YI	0.41		0.80	7.04	2.31				
			0.41				2.31	15 RCP	0.0073	5.65
6	DI (840.15)	0.26		0.80	7.04	1.45				
			1.44				8.11	18 RCP	0.005	7.39
5	DI (840.15)	0.27		0.80	7.04	1.52				
			1.71				9.63	18 RCP	0.0095	10.50
4	CI (840.02)	0.21		0.80	7.04	1.18				
			1.92				10.81	24 RCP	0.005	16.03
2	CI (840.02)	SEE	BELOW			SEE	BELOW			
3	CI (840.02)	0.26		0.80	7.04	1.45				
			0.26				1.45	15 RCP	0.0077	5.66
2	CI (840.02)	SEE	BELOW			SEE	BELOW			
17	YI	0.59		0.80	7.04	3.32				
			0.59				3.32	15 RCP	0.005	4.55
16	DI (840.15)	0.27		0.80	7.04	1.52				
			0.86				4.84	15 RCP	0.005	4.60
15	DI (840.15)	0.27		0.80	7.04	1.52				
			1.13				6.36	18 RCP	0.005	7.47
14	CI (840.02)	SEE	BELOW			SEE	BELOW			
19	YI	0.76		0.80	7.04	4.28				
			0.76				4.28	15 RCP	0.0054	4.57
18	MH	0.06		0.80	7.04	0.34				
			0.82				4.62	15 RCP	0.005	5.00
14	CI (840.02)	0.56		0.80	7.04	3.15				
			2.51				14.13	24 RCP	0.0075	20.23
13	CI (840.02)	0.54		0.80	7.04	3.04				
			3.05				17.17	24 RCP	0.0086	21.16
2	CI (840.02)	0.42		0.80	7.04	2.37				
			5.65				31.80	30 RCP	0.0139	38.31
1	PIPE OUTLET									
12	CI (840.02)	0.36		0.80	7.04	2.03				
			0.36				2.03	15 RCP	0.005	4.57
11	CI (840.02)	0.14		0.80	7.04	0.79				
			0.50				2.82	15 RCP	0.0054	4.57
10	PIPE OUTLET									
21	CI (840.02)	0.41		0.80	7.04	2.31				
			0.41				2.31	15 RCP	0.0126	7.96
20	PIPE OUTLET									

Storm Pipe Table					
Line Segment	Size	Length	Slope	Up Inv	Dn Inv
STM 2 to STM 1	30"	22.34	1.79%	625.90	625.50
STM 3 to STM 2	15"	94.61	0.77%	627.90	627.17
STM 4 to STM 2	24"	140.89	0.50%	627.18	626.48
STM 5 to STM 4	18"	86.96	0.95%	628.51	627.68
STM 6 to STM 5	18"	76.71	0.50%	629.09	628.71
STM 7 to STM 6	18"	126.43	1.24%	630.86	629.29
STM 8 to STM 7	15"	160.65	0.50%	631.91	631.11
STM 9 to STM 6	15"	90.92	0.73%	630.00	629.34
STM 11 to STM 10	15"	22.27	0.54%	626.00	625.88
STM 12 to STM 11	15"	60.00	0.50%	626.50	626.20
STM 13 to STM 2	24"	240.42	0.86%	628.51	626.44
STM 14 to STM 13	24"	80.00	0.75%	629.31	628.71
STM 15 to STM 14	18"	86.99	0.49%	630.24	629.81
STM 16 to STM 15	15"	76.70	0.50%	630.87	630.49
STM 17 to STM 16	15"	91.28	0.50%	631.53	631.07
STM 18 to STM 14	15"	112.87	0.50%	630.74	630.18
STM 19 to STM 18	15"	78.00	0.54%	631.36	630.94
STM 21 to STM 20	15"	80.00	1.26%	630.31	629.30
STM 23 to STM 22	15"	98.35	0.85%	632.84	632.00
STM 24 to STM 25	18"	36.00	0.50%	625.50	625.32

Storm Structure Table				
Structure	Type	Elev at Flowline	Inv(s) In	Inv(s) Out
STM 1	PIPE END	629.96	(STM 2) 625.50	
STM 2	NCDOT CI	631.26	(STM 4) 626.48 (STM 3) 627.17 (STM 13) 626.44	(STM 1) 625.90
STM 3	NCDOT CI	631.44		(STM 2) 627.90
STM 4	NCDOT CI	633.40	(STM 5) 627.68	(STM 2) 627.18
STM 5	DI	636.03	(STM 6) 628.71	(STM 4) 628.51
STM 6	DI	636.30	(STM 7) 629.29 (STM 9) 629.34	(STM 5) 629.09
STM 7	YI	634.90	(STM 8) 631.11	(STM 6) 630.86
STM 8	YI	634.90		(STM 7) 631.91
STM 9	YI	633.00		(STM 6) 630.00
STM 10	PIPE END	628.82	(STM 11) 625.88	
STM 11	NCDOT CI	629.55	(STM 12) 626.20	(STM 10) 626.00
STM 12	NCDOT CI	629.60		(STM 11) 626.50
STM 13	NCDOT CI	632.46	(STM 14) 628.71	(STM 2) 628.51
STM 14	NCDOT CI	633.42	(STM 15) 629.81 (STM 18) 630.18	(STM 13) 629.31
STM 15	DI	636.03	(STM 16) 630.49	(STM 14) 630.24
STM 16	DI	636.30	(STM 17) 631.07	(STM 15) 630.87
STM 17	YI	634.53		(STM 16) 631.53
STM 18	MH	636.05	(STM 19) 630.94	(STM 14) 630.74
STM 19	YI	634.30		(STM 18) 631.36
STM 20	PIPE END	632.41	(STM 21) 629.30	
STM 21	NCDOT CI	633.81		(STM 20) 630.31
STM 22	PIPE END	634.34	(STM 23) 632.00	
STM 23	PIPE END	634.43		(STM 22) 632.84
STM 24	PIPE END	630.04		(STM 25) 625.50
STM 25	PIPE END	629.86	(STM 24) 625.32	

WATER UTILITY NOTE
ALL WATER IMPROVEMENTS ARE TO MEET NC PUBLIC WATER SUPPLY, NC PLUMBING CODES, SWEPSONVILLE FIRE DEPARTMENT, AND ORANGE-ALAMANCE WATER SYSTEM, INC. REQUIREMENTS.

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TRIAD DESIGN GROUP, P.C. CORPORATE SEAL NORTH CAROLINA 1994

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Bradford Academy

North Carolina Highway 119 South
Mebane, North Carolina

SUBMITTALS:
DATE DESCRIPTION

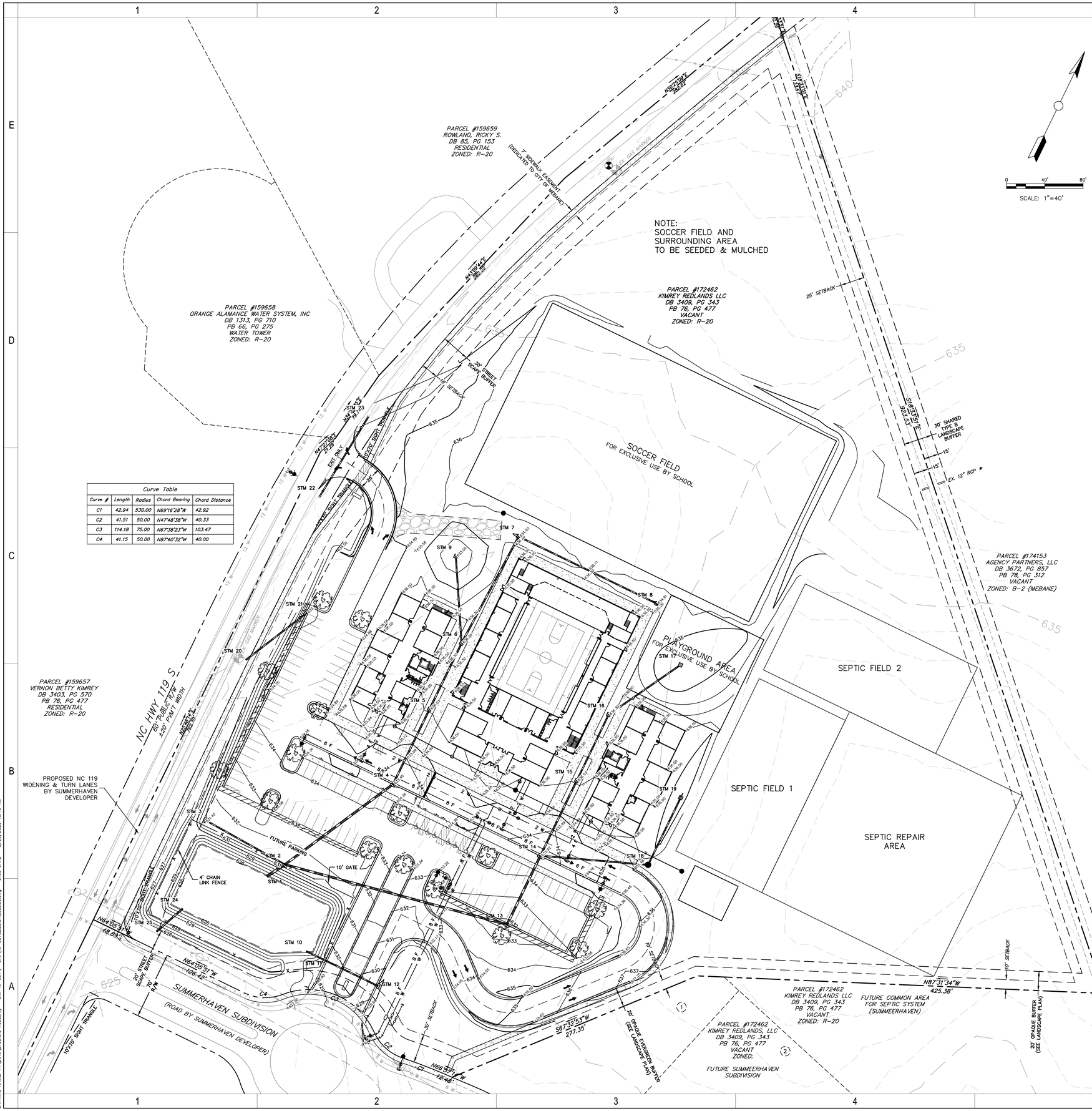
REVISIONS:
NO DATE DESCRIPTION

SHEET TITLE:
UTILITY PLAN

Date: MAY 2020
Drawn: Check:
Job Number: 19-057
Sheet:

C102

DRAWING NAME: P:\2019\Bradford Academy - Civil\19-057_Civil\19-057_DESIGN_C3D20.dwg - C102 UTILITY - 8/20/2020 10:10 AM



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SIDE – ADJ TO STREET	30 FT	30 FT
SIDE	20 FT OPAQUE	20 FT OPAQUE
REAR	30 FT SHARED	30 FT SHARED

PARKING REQUIREMENTS

TOTAL PROJECTED STUDENT POPULATION = 450

PARKING SPACES REQUIRED
HIGH SCHOOL (1 SP/4 STUDENTS)
128 STUDENTS x 1 SPA/4 STUDENTS = 32 SPACES

ELEM/MIDDLE SCHOOL (5 SPACES + 1 SPACE/EMPLOYEE)

5 SPACES =	5 SPACES
40 EMP x 1 SPA/EMPLOYEE	40 SPACES
TOTAL PARKING REQUIRED =	77 SPACES

TOTAL PARKING SPACES ALLOWED (120%) = 92 SPACES

PARKING SPACES PROVIDED

REGULAR SPACES	86
ACCESSIBLE SPACES	6
TOTAL SPACES	92 SPACES(REQUIRED SPACES x 120%)

Storm Pipe Table

Line Segment	Size	Length	Slope	Up Inv	Dn Inv
STM 2 to STM 1	30"	22.34	1.79%	625.90	625.50
STM 3 to STM 2	15"	94.61	0.77%	627.90	627.17
STM 4 to STM 2	24"	140.89	0.50%	627.18	626.48
STM 5 to STM 4	18"	86.96	0.95%	628.51	627.68
STM 6 to STM 5	18"	76.71	0.50%	629.09	628.71
STM 7 to STM 6	18"	126.43	1.24%	630.86	629.29
STM 8 to STM 7	15"	160.65	0.50%	631.91	631.11
STM 9 to STM 6	15"	90.92	0.73%	630.00	629.34
STM 11 to STM 10	15"	22.27	0.54%	626.00	625.88
STM 12 to STM 11	15"	60.00	0.50%	626.50	626.20
STM 13 to STM 2	24"	240.42	0.86%	628.51	626.44
STM 14 to STM 13	24"	80.00	0.75%	629.31	628.71
STM 15 to STM 14	18"	86.99	0.49%	630.24	629.81
STM 16 to STM 15	15"	76.70	0.50%	630.87	630.49
STM 17 to STM 16	15"	91.28	0.50%	631.53	631.07
STM 18 to STM 14	15"	112.87	0.50%	630.74	630.18
STM 19 to STM 18	15"	78.00	0.54%	631.36	630.94
STM 21 to STM 20	15"	80.00	1.26%	630.31	629.30
STM 23 to STM 22	15"	98.35	0.85%	632.84	632.00
STM 24 to STM 25	18"	36.00	0.50%	625.50	625.32

Storm Structure Table

Structure	Type	Elev at Flowline	Inv(s) In	Inv(s) Out
STM 1	PIPE END	629.96	(STM 2) 625.50	
STM 2	NCDOT CI	631.26	(STM 4) 626.48 (STM 3) 627.17 (STM 13) 626.44	(STM 1) 625.90
STM 3	NCDOT CI	631.44		(STM 2) 627.90
STM 4	NCDOT CI	633.40	(STM 5) 627.68	(STM 2) 627.18
STM 5	DI	636.03	(STM 6) 628.71	(STM 4) 628.51
STM 6	DI	636.30	(STM 7) 629.29 (STM 9) 629.34	(STM 5) 629.09
STM 7	YI	634.90	(STM 8) 631.11	(STM 6) 630.86
STM 8	YI	634.90		(STM 7) 631.91
STM 9	YI	633.00		(STM 6) 630.00
STM 10	PIPE END	628.82	(STM 11) 625.88	
STM 11	NCDOT CI	629.55	(STM 12) 626.20	(STM 10) 626.00
STM 12	NCDOT CI	629.60		(STM 11) 626.50
STM 13	NCDOT CI	632.46	(STM 14) 628.71	(STM 2) 628.51
STM 14	NCDOT CI	633.42	(STM 15) 629.81 (STM 18) 630.18	(STM 13) 629.31
STM 15	DI	636.03	(STM 16) 630.49	(STM 14) 630.24
STM 16	DI	636.30	(STM 17) 631.07	(STM 15) 630.87
STM 17	YI	634.53		(STM 16) 631.53
STM 18	MH	636.05	(STM 19) 630.94	(STM 14) 630.74
STM 19	YI	634.30		(STM 18) 631.36
STM 20	PIPE END	632.41	(STM 21) 629.30	
STM 21	NCDOT CI	633.81		(STM 20) 630.31
STM 22	PIPE END	634.34	(STM 23) 632.00	
STM 23	PIPE END	634.43		(STM 22) 632.84
STM 24	PIPE END	630.04		(STM 25) 625.50
STM 25	PIPE END	629.86	(STM 24) 625.32	

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Bradford Academy

North Carolina Highway 119 South
Mebane, North Carolina

SUBMITTALS:

DATE	DESCRIPTION

REVISIONS:

NO	DATE	DESCRIPTION

SHEET TITLE:
GRADING PLAN

Date: MAY 2020
Drawn: Check:
Job Number: 19-057
Sheet:

C103

DRAWING NAME: P:\2019\Bradford Academy – Civil 19-057\– Civil\19-057_DESIGN_C3D20.dwg – C103_GRAD – 8/20/2020 10:10 AM

PARCEL #159659
ROWLAND, RICKY S.
DB 85, PG 153
RESIDENTIAL
ZONED: R-20

PARCEL #159658
ORANGE ALAMANCE WATER SYSTEM, INC
DB 1313, PG 710
PB 66, PG 275
WATER TOWER
ZONED: R-20

PARCEL #172462
KIMREY REDLANDS LLC
DB 3409, PG 343
PB 76, PG 477
VACANT
ZONED: R-20

PARCEL #174153
AGENCY PARTNERS, LLC
DB 3672, PG 857
PB 76, PG 312
VACANT
ZONED: B-2 (MEBANE)

PARCEL #159657
VERNON, BETTY KIMREY
DB 3403, PG 570
PB 76, PG 477
RESIDENTIAL
ZONED: R-20

7' SIDEWALK EASEMENT (DEDICATED TO CITY OF MEBANE)

NOTE:
SOCCER FIELD AND SURROUNDING AREA TO BE SEEDED & MULCHED

SOCCER FIELD
FOR EXCLUSIVE USE BY SCHOOL

PLAYGROUND AREA
FOR EXCLUSIVE USE BY SCHOOL

SEPTIC FIELD 2

SEPTIC FIELD 1

SEPTIC REPAIR AREA

FUTURE SUMMEERHAVEN SUBDIVISION

FUTURE COMMON AREA FOR SEPTIC SYSTEM (SUMMEERHAVEN)

SUMMERHAVEN SUBDIVISION
(ROAD BY SUMMERHAVEN DEVELOPER)

NC HWY 119 S
PUBLIC R/W
±20' R/W WIDTH

PROPOSED NC 119 WIDENING & TURN LANES BY SUMMERHAVEN DEVELOPER

PROPOSED MONUMENT SIGN

PROPOSED MONUMENT SIGN

EXIT ONLY

100' MIN STORAGE EACH LANE

"EXIT ONLY" SIGN

"ENTRANCE ONLY" SIGN

"PRE-K & K LOADING" SIGN

"PARENT LOADING" SIGN

"PRE-K & K LOADING" SIGN

VAN ACCESSIBLE HC SIGN

HC SIGN (TYP)

24" STOP BAR

SHORT TERM PARKING
PARENT LOADING ZONE

10 SHORT TERM SPACES

FUTURE PARKING

PARENT DROP OFF
DOUBLE LANE ONE WAY

QUEUING LENGTH =131.18 FT

QUEUING LENGTH =613.72 FT

QUEUING LENGTH =660.85 FT

30' STREET SCAPE BUFFER

15' SETBACK

25' SETBACK

30' SHARED TYPE B LANDSCAPE BUFFER

EX. 12" RCP

20' OPAQUE EVERGREEN BUFFER (SEE LANDSCAPE PLAN)

20' OPAQUE BUFFER (SEE LANDSCAPE PLAN)

10' SETBACK

10'X70' SIGHT TRIANGLE

Curve Table				
Curve #	Length	Radius	Chord Bearing	Chord Distance
C1	42.94	530.00	N69°16'28"W	42.92
C2	41.51	50.00	N47°48'38"W	40.33
C3	114.18	75.00	N67°38'23"W	103.47
C4	41.15	50.00	N87°40'32"W	40.00

INTERNAL TRAFFIC MANAGEMENT TABLE		
ELEMENT	REQUIRED	PROVIDED
INTERNAL STORAGE(QUEING)	1,296 LF	1,404 LF
PARENT LOADING ZONE	5 BAYS	5 BAYS
SHORT TERM PARKING SPACES	10	10
PRE-K AND K LOADING	13	13

0 40' 80'
SCALE: 1"=40'

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Mebane, North Carolina

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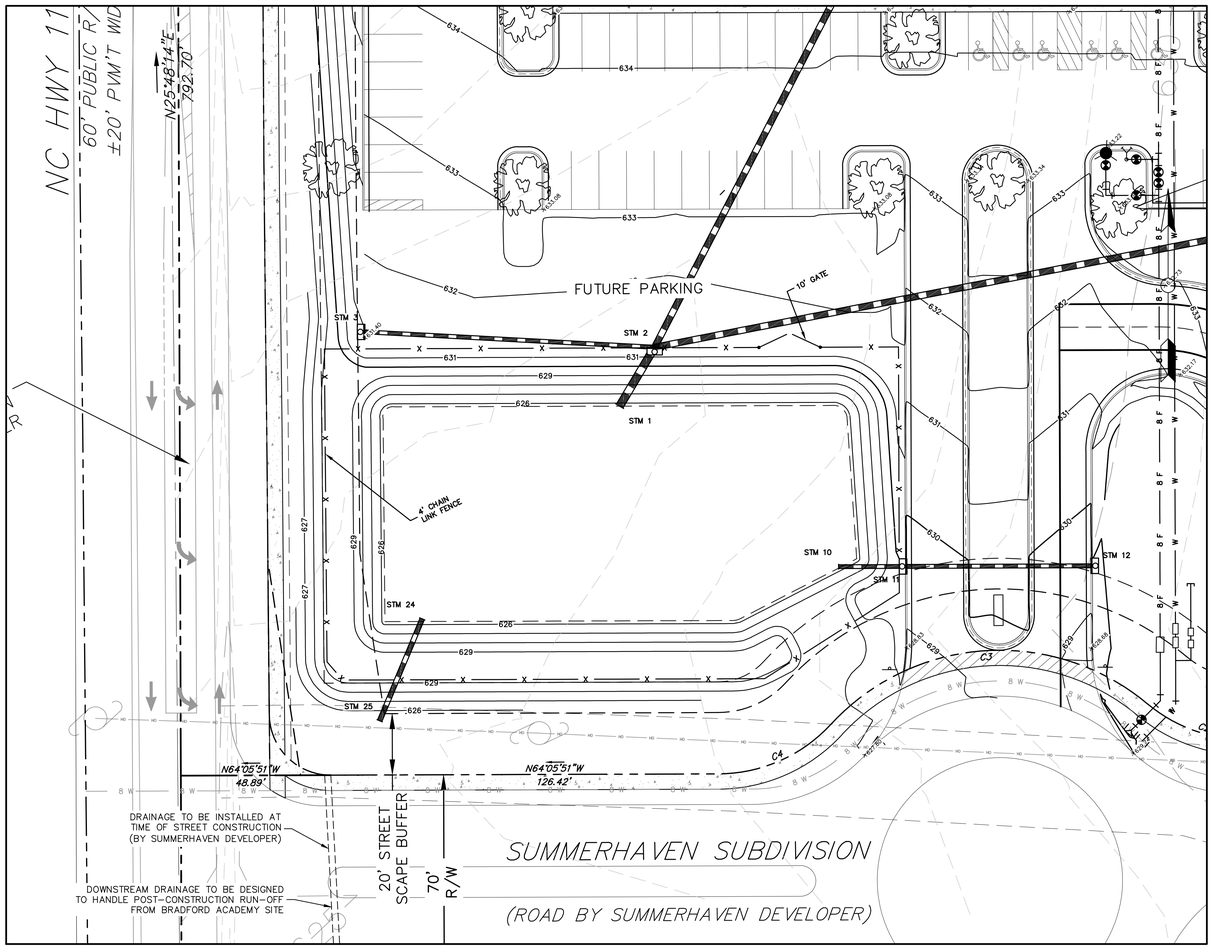
DATE DESCRIPTION

REVISIONS:
NO DATE DESCRIPTION

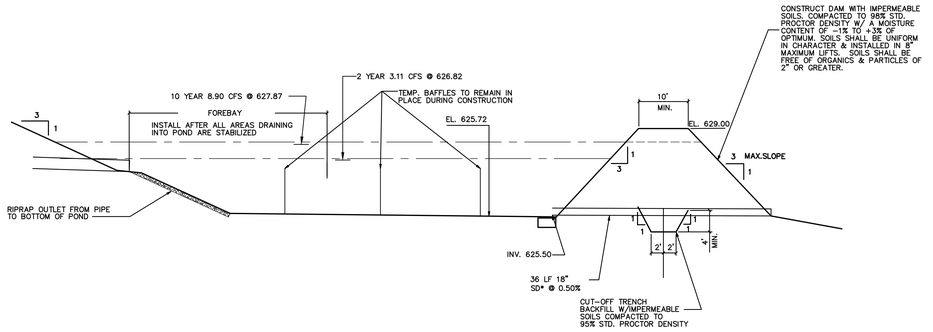
SHEET TITLE:
CIRCULATION / STUDENT DROP OFF PLAN

Date: MAY 2020
Drawn: Check:
Job Number: 19-057
Sheet:

C104



DRY POND A
SCALE: 1"=20'



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REVISIONS:

NO	DATE	DESCRIPTION

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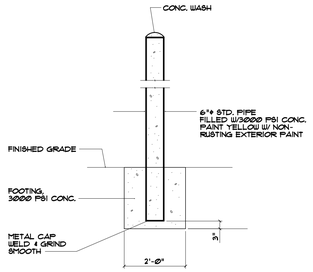
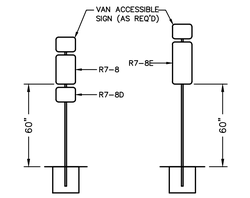
DRY POND DETAILS

Date:	MAY 2020
Drawn:	Check:
Job Number:	19-057
Sheet:	C105

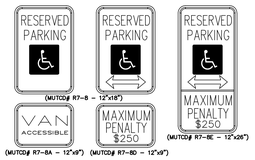
DRAWING NAME: P:\2019\Bradford Academy - Civil 19-057_ Civil\19-057_DESIGN_C3030.dwg - C105 POND - 8/20/2020 10:11 AM



BOLLARD
NO SCALE

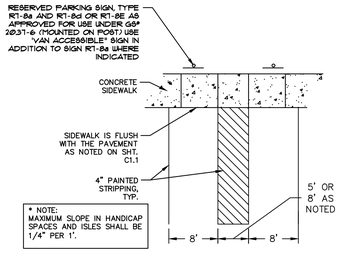


SIGN MOUNTING HEIGHTS

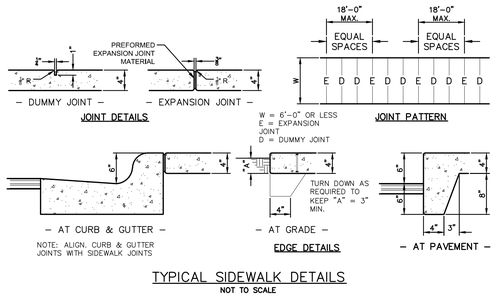


COLORS
LETTERING AND BORDER–GREEN
ARROW–GREEN WHITE SYMBOL ON BLUE BACKGROUND
BACKGROUND–WHITE

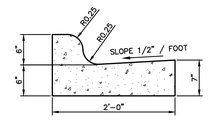
HANDICAP SIGNAGE DETAIL
NO SCALE



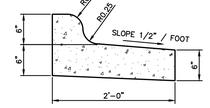
HANDICAP PARKING DETAIL
N.T.S.



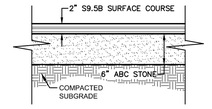
TYPICAL SIDEWALK DETAILS
NOT TO SCALE



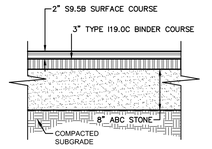
STANDARD 2'–0" CONCRETE CURB & GUTTER



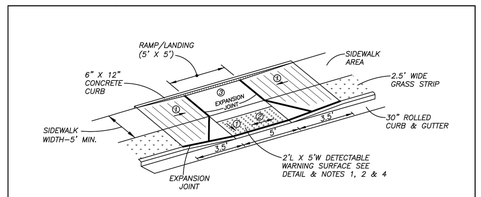
SPILLOUT 2'–0" CONCRETE CURB & GUTTER



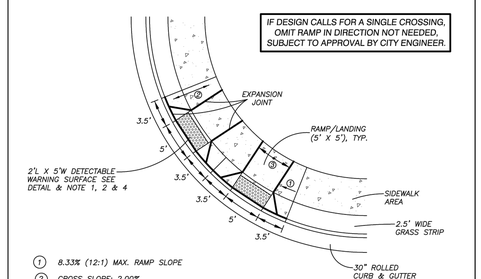
LIGHT DUTY PAVEMENT



HEAVY DUTY PAVEMENT



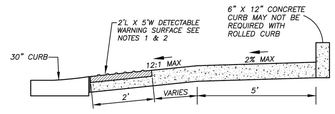
IF DESIGN CALLS FOR A SINGLE CROSSING, OMIT RAMP IN DIRECTION NOT NEEDED, SUBJECT TO APPROVAL BY CITY ENGINEER.



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 CROSS 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.

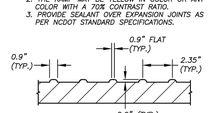
ST–11

CITY OF MEBANE STANDARD	CURB RAMP			
	SCALE: N.T.S.	DATE: 2/3/2020	DRAWN BY: WDF	

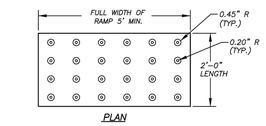


SECTION

NOTES:
1. DETECTABLE WARNING DOMES SHALL COVER 2'–0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
2. THE RAMP MAY BE YELLOW IN COLOR OR ANY COLOR WITH A 70% CONTRAST RATIO.
3. PROVIDE SEALANT OVER EXPANSION JOINTS AS PER NCDOT STANDARD SPECIFICATIONS.



SECTION

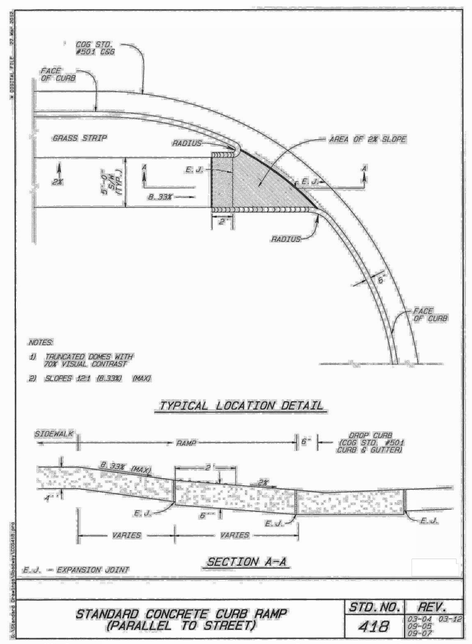


PLAN

DETECTABLE WARNING DOMES DETAIL

ST–12

CITY OF MEBANE STANDARD	CURB RAMP			
	SCALE: N.T.S.	DATE: 2/3/2020	DRAWN BY: WDF	



STANDARD CONCRETE CURB RAMP (PARALLEL TO STREET)	STD. NO.	REV.
	418	03–04 03–12 09–05 09–07

NOTES:
1. DETECTABLE WARNING SURFACES ARE REQUIRED AT THE BOTTOM OF CURB RAMPS, BORDERS OF MEDIANS AND ISLANDS AND AT RAILROAD CROSSINGS FOR THE FULL WIDTH OF THE RAMP OR SIDEWALK. THE DETECTABLE WARNING SURFACE WILL PROVIDE A 70% CONTRAST TO THE SURROUNDING SURFACE. THE DETECTABLE WARNING SURFACE WILL BE A VITRIFIED POLYMER COMPOSITE (VPC) INSERT WITH TRUNCATED DOMES AS PER THIS STANDARD FOR SIZE AND SPACING REQUIREMENTS. MASONRY INSERTS MAY BE SUBSTITUTED FOR VPC DETECTABLE SURFACES PROVIDED CONSTRUCTION PROVISIONS ARE DETAILED AND APPROVED IN THE CONSTRUCTION PLAN REVIEW. SUBSTITUTE INSERTS SHALL CONFORM TO THE SAME SPACING AND DIMENSIONING REQUIREMENTS.

   A MINIMUM 48" X 48" LANDING IS REQUIRED AT THE TOP OF EACH CURB RAMP. THE MAXIMUM CROSS SLOPE ON THIS LANDING IS 2% IN EACH DIRECTION. WARNING SURFACES SHALL MEET OR EXCEED ASTM D 695-02a FOR COMPRESSIVE STRENGTH, ASTM D 638-03 FOR TENSILE STRENGTH, AND ASTM D 790-03 FOR FLEXURAL STRENGTH. WEATHERING OF SURFACE SHALL MEET ASTM D 5894 WITH NO FADING OR CHALKING.
2. CURB RAMPS SHALL BE PROVIDED AT LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. CURB RAMPS SHALL BE LOCATED AS DIRECTED BY THE ENGINEER WHERE EXISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS, ETC. DO NOT AFFECT PLACEMENT. WHERE TWO RAMPS ARE INSTALLED ADJOINING, NOT LESS THAN 4 FEET OF FULL HEIGHT CURB SHALL BE PLACED BETWEEN THE RAMPS.
3. NO SLOPE ON THE CURB RAMP SHALL EXCEED 1"/1" (12:1) IN RELATIONSHIP TO THE GRADE OF THE STREET.
4. IN NO CASE SHALL THE WIDTH OF THE CURB RAMP BE LESS THAN 48" (4'–0") HOWEVER, WIDTH MAY EXCEED 48".
5. USE CLASS "B" CONCRETE WITH A SIDEWALK FINISH IN ORDER TO OBTAIN A ROUGH NON-SKID TYPE SURFACE.
6. A 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE CONCRETE CURB RAMP JOINS THE CURB AND AS SHOWN ON THIS STANDARD.
7. THE MINIMUM WIDTH OF THE PEDESTRIAN CROSSWALK SHALL BE 10 FEET.
8. STOP LINES, NORMALLY PERPENDICULAR TO THE LANE LINES, SHALL BE USED WHERE IT IS IMPORTANT TO INDICATE THE POINT BEHIND WHICH VEHICLES ARE REQUIRED TO STOP IN COMPLIANCE WITH A TRAFFIC SIGNAL, STOP SIGN OR OTHER LEGAL REQUIREMENT. AN UNUSUAL APPROACH SKEW MAY REQUIRE THE PLACEMENT OF THE STOP LINE PARALLEL TO THE INTERSECTING ROADWAY.
9. PARKING SHALL BE ELIMINATED A MINIMUM OF 20 FEET BACK OF PEDESTRIAN CROSSWALK.
10. ALL PAVEMENT MARKINGS SHALL BE DESIGNED IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION AND THE NORTH CAROLINA SUPPLEMENT TO THE MUTCD.
11. LOCATIONS FOR CURB DROPS OF PROPOSED AND FUTURE CURB RAMPS WILL BE DIMENSIONED ON ALL INTERSECTION IMPROVEMENT PLANS.
12. GAPS DUE TO JOINTS, ETC., SHALL NOT EXCEED 1/2".

STANDARD CONCRETE CURB RAMP	STD. NO.	REV.
	418	03–04 03–12 09–05 09–07

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C201

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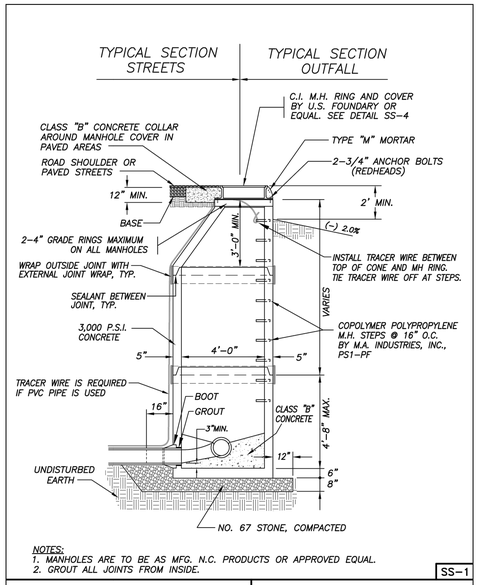
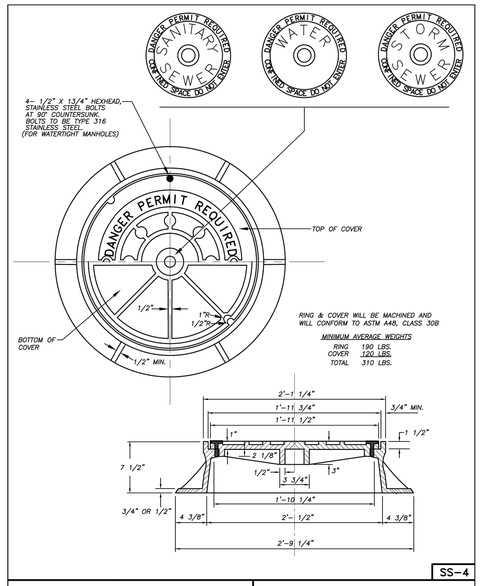


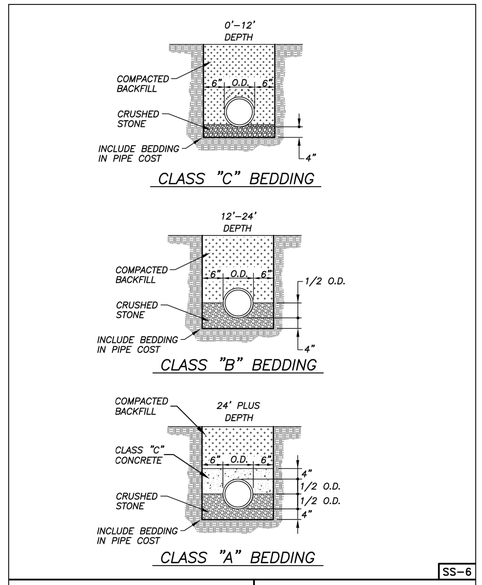
STD. PRECAST MANHOLE

SCALE: N.T.S. DATE: 2/3/2020 DRAWN BY:



MANHOLE RING AND COVER

SCALE: N.T.S. DATE: 2/3/2020 DRAWN BY:



SANITARY SEWER BEDDING

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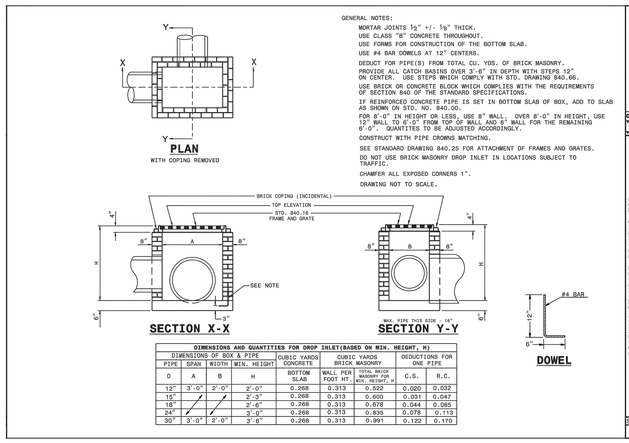


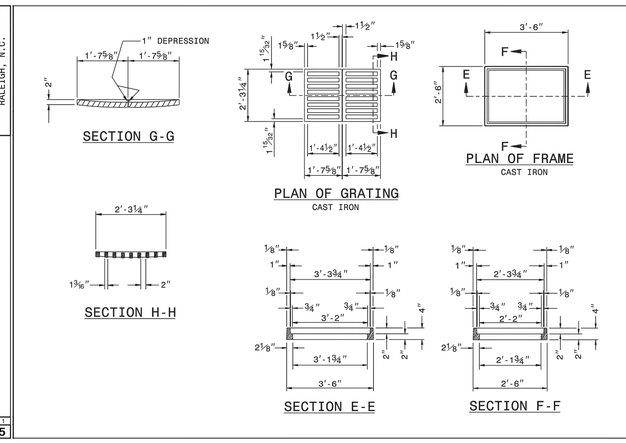
DIMENSIONS OF BOX & PIPE				CUBIC YARDS	CUBIC YARDS	DEDUCTIONS FOR ONE PIPE	
PIPE	SPAN	WIDTH	MIN. HEIGHT	CONCRETE	BRICK MASONRY		
D	A	B	H	BOTTOM SLAB	WALL PER FOOT HT.	TOTAL BRICK MASONRY FOR MIN. HEIGHT, H	C.S.	R.C.
12"	3'-0"	2'-0"	2'-0"	0.268	0.313	0.522	0.020	0.032
15"	/	/	2'-3"	0.268	0.313	0.600	0.031	0.047
18"	/	/	2'-6"	0.268	0.313	0.678	0.044	0.065
24"	/	/	3'-0"	0.268	0.313	0.835	0.078	0.113
30"	3'-0"	2'-0"	3'-6"	0.268	0.313	0.991	0.122	0.170

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-18

ROADWAY STANDARD DRAWING FOR
BRICK DROP INLET
12" THRU 30" PIPE

SHEET 1 OF 1
840.15



STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-18

ROADWAY STANDARD DRAWING FOR
DROP INLET FRAME AND GRATES
FOR USE WITH STD. DWG.S 840.14 AND 840.15

SHEET 1 OF 1
840.16

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North Carolina Highway 119 South
Mebane, North Carolina

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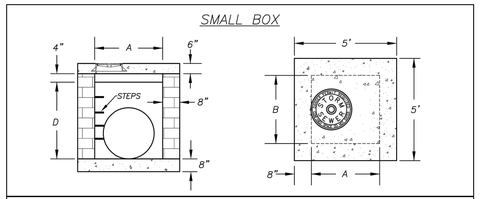
NO	DATE	DESCRIPTION

SHEET TITLE:
UTILITY DETAILS

Date: MAY 2020
Drawn: Check:
Job Number: 19-057
Sheet:

C202

DRAWING NAME: P:\2019\Bradford Academy - Civil 19-057\ - Civil\19-057_DESIGN_C3D20.dwg - C202, USET - 8/20/2020 10:12 AM



MINIMUM DIMENSIONS FOR BRICK YARD INLET						
PIPE (IN)	A	B	SMALL BOX D	C	E	LARGE BOX D
12	3'-8"	3'-8"	3'-1"			
15	3'-8"	3'-8"	3'-3"			
18	3'-8"	3'-8"	3'-6"			
24	3'-8"	3'-8"	4'-0"			
30				5'-0"	5'-0"	4'-6"
36				5'-0"	5'-0"	5'-0"
42				6'-0"	6'-0"	5'-6"
48				6'-0"	6'-0"	6'-0"

ST-14

STANDARD BRICK YARD INLET 12" THRU 48" PIPE

SCALE: N.T.S. DATE: 2/3/2020 DRAWN BY:

RELATION OF WATER MAINS TO SEWERS

(a) Lateral Separation of Sewer and Water Mains. Water Mains shall be laid at least 10 feet laterally from existing or proposed sewer, unless local conditions or barriers prevent a 10 foot lateral separation in which case:

1. The water main is laid in a separate trench, with the elevation of the bottom of the water main at least 18 inches above the top of the sewer; or
2. The water main is laid in the same trench as the sewer with the water main located at one side of a bench of undisturbed earth, and with the elevation of the bottom of the water main at least 18 inches above the top of the sewer.

(b) Crossing a Water Main over a Sewer. Whenever it is necessary for a water main to cross over a sewer, the water main shall be laid at such an elevation that the bottom of the water main is at least 18 inches above the top of the sewer, unless local conditions or barriers prevent an 18inch vertical separation — — in which case both the water main and sewer shall be constructed of ferrous materials and with joints that are equivalent to water main standards for a distance of 10 feet on each side of the point of crossing.

(c) Crossing a Water Main Under a Sewer. Whenever it is necessary for a water main to cross under a sewer, both the water main and the sewer shall be constructed of ferrous materials and with joints equivalent to water main standards for a distance of 10 feet on each side of the point of crossing. A section of water main pipe shall be centered at the point of crossing.

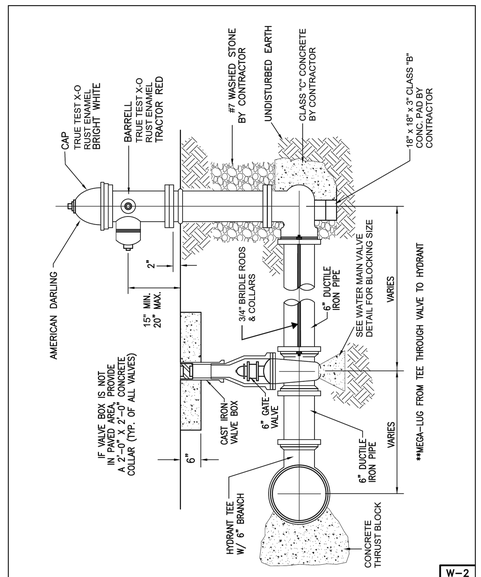
History Note: Statutory Authority G.S. 130–157 to 1611; Eff. January 1, 1977

W-1

ORANGE-ALAMANCE WATER SYSTEM. INC.

RELATION OF WATER MAINS TO SEWERS

SCALE: N.T.S. DATE: 3/13/02 DRAWN BY: MHW

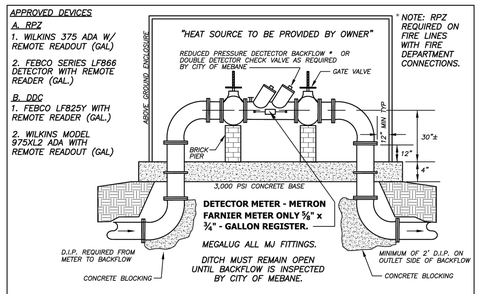


W-2

ORANGE-ALAMANCE WATER SYSTEM. INC.

FIRE HYDRANT INSTALLATION

SCALE: N.T.S. DATE: 3/13/02 DRAWN BY: MHW



NOTES

1. THE BACKFLOW DEVICE SHALL BE WITHIN 10' OF AND ON THE PROPERTY SIDE OF THE METER. ENCLOSURE SHALL NOT OBSTRUCT SITE DISTANCE AT ROAD CROSSINGS.
2. ALL BACKFLOW DEVICES SHALL BE INSTALLED ABOVE GROUND IN A HORIZONTAL POSITION UNLESS OTHERWISE PREAPPROVED BY ORANGE - ALAMANCE WATER SYSTEM, INC.
3. SHUT OFF VALVES SHALL BE RESILIENT SEAT WITH FLANGED END AND O.S.&Y HAND WHEELS.
4. ALL INTERIOR AND EXTERIOR IRON SURFACES SHALL HAVE EPOXY COATINGS TO CONFORM TO ANSI/AWWA C550 OR MANUFACTURED OF STAINLESS STEEL.
5. APPROVED ABOVE GROUND ENCLOSURES: "HOT BOX", HYDROCOWL, SMI MODEL # b68-EHPZD, B80-EHPZD, B110-EHPZD) OR BFP (#640-1PD, 800-1PD, 950-APD OR 1150-APD. ENCLOSURE MUST HAVE A DRAIN
6. CONTRACTOR SHALL PROVIDE AND INSTALL ON EXTERIOR OF ABOVE GROUND ENCLOSURE AN EXTERIOR ANTENNA FOR DETECTOR METER.
7. TANDEM BACKFLOWS REQUIRED IF SERVING MULTIPLE USERS OR SERVICE CANNOT BE INTERRUPTED
8. DETECTOR METER AND BACKFLOW ASSEMBLY SHALL BE INSTALLED IN ENCLOSURE.
9. PIPE & FITTINGS BELOW GRADE TO BE M.J. WITH RETAINER GLANDS, 150 PSI MIN. WORKING PRESSURE.
10. INSTALL BACKFLOW DEVICE NEAR MAIN WATERLINE CONNECTION AT STREET RIGHT OF WAY.
11. ALL BACKFLOW DEVICES SHALL BE TESTED, INSPECTED, AND MAINTAINED BY THE OWNER. PROVIDE ANNUAL REPORTS TO CITY.

W-5

ABOVE GRADE BACKFLOW PREVENTER, 3" AND GREATER

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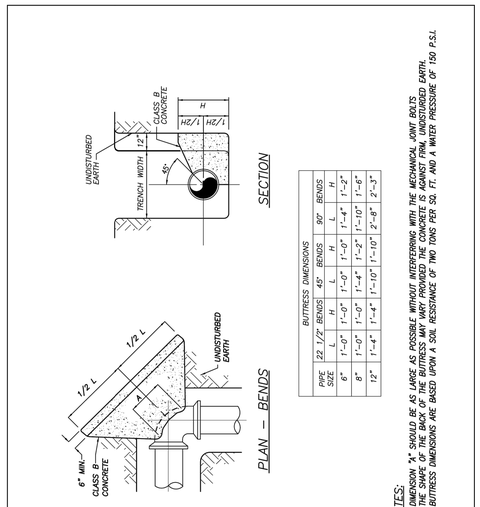


BUTTRESS DIMENSIONS					
	22 1/2° BENDS		45° BENDS		90° BENDS	
PIPE SIZE	L	H	L	H	L	H
6"	1'-0"	1'-0"	1'-0"	1'-0"	1'-4"	1'-2"
8"	1'-0"	1'-0"	1'-4"	1'-2"	1'-10"	1'-6"
12"	1'-4"	1'-4"	1'-10"	1'-10"	2'-8"	2'-3"

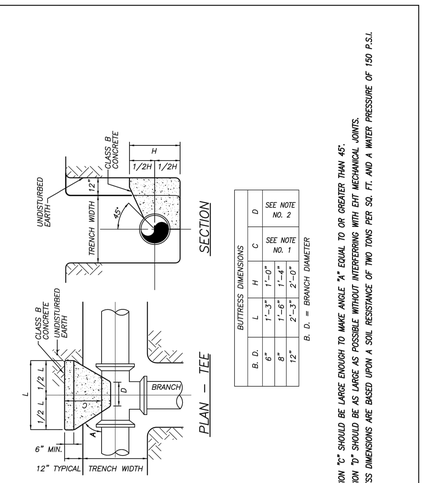
NOTES:
1. DIMENSION "A" SHOULD BE AS LARGE AS POSSIBLE WITHOUT INTERFERING WITH THE MECHANICAL JOINT BOLTS
2. THE SHAPE OF THE BACK OF THE BUTTRESS MAY VARY PROVIDED THE CONCRETE IS AGAINST FIRM, UNDISTURBED EARTH
3. BUTTRESS DIMENSIONS ARE BASED UPON A SOIL RESISTANCE OF TWO TONS PER SQ. FT. AND A WATER PRESSURE OF 150 P.S.I.

W-6

ORANGE-ALAMANCE WATER SYSTEM. INC.

THRUST BLOCK — BENDS

SCALE: N.T.S. DATE: 3/13/02 DRAWN BY: MHW



BUTTRESS DIMENSIONS				
B. D.	L	H	C	D
6"	1'-3"	1'-0"	SEE NOTE NO. 1	SEE NOTE NO. 2
8"	1'-6"	1'-4"		
12"	2'-3"	2'-0"		

B. D. = BRANCH DIAMETER

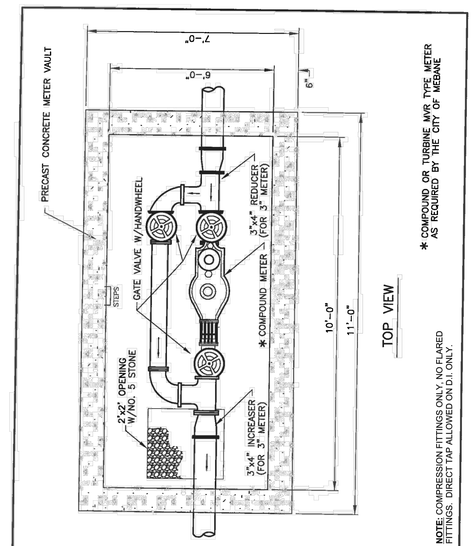
NOTES:
1. DIMENSION "C" SHOULD BE LARGE ENOUGH TO MAKE ANGLE "X" EQUAL TO OR GREATER THAN 45°.
2. DIMENSION "D" SHOULD BE AS LARGE AS POSSIBLE WITHOUT INTERFERRING WITH EHT MECHANICAL JOINTS.
3. BUTTRESS DIMENSIONS ARE BASED UPON A SOIL RESISTANCE OF TWO TONS PER SQ. FT. AND A WATER PRESSURE OF 150 P.S.I.

W-7

ORANGE-ALAMANCE WATER SYSTEM. INC.

THRUST BLOCK — TEES

SCALE: N.T.S. DATE: 3/13/02 DRAWN BY: MHW



W-16

ORANGE-ALAMANCE WATER SYSTEM. INC.

3" & 4" WATER CONNECTION

SCALE: N.T.S. DATE: 3/13/02 DRAWN BY: MHW

* WATER SYSTEM IMPROVEMENTS SHALL BE CONSTRUCTED AND INSTALLED TO ORANGE-ALAMANCE WATER SYSTEM, INC REQUIREMENTS INCLUDING STANDARD DETAILS AND SPECIFICATIONS. CITY OF MEBANE DETAILS MAY BE USED IF ACCEPTABLE WITH THE WATER SUPPLYING ENTITY.

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NO	DATE	DESCRIPTION

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Date: MAY 2020
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Job Number: 19-057
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C203

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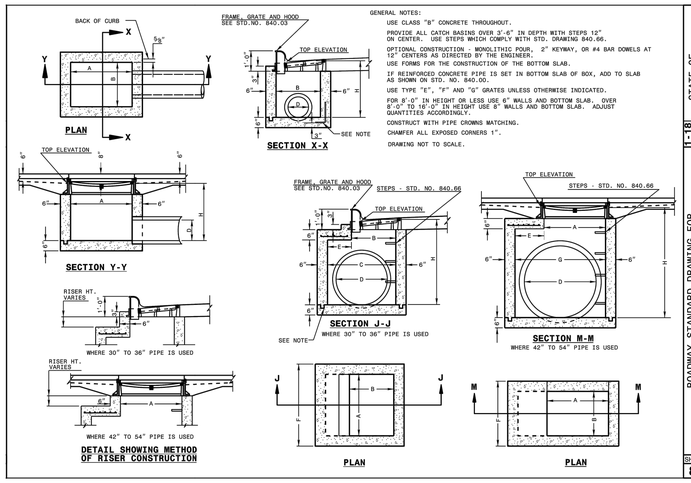


GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.

USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.

FOR 8'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 8'-0" TO 16'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.

CONSTRUCT WITH PIPE CROWNS MATCHING.

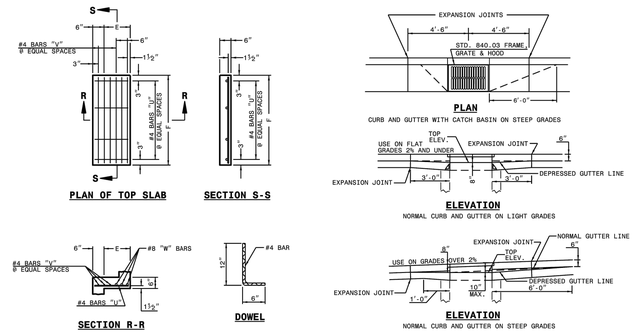
CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

1-18 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
CONCRETE CATCH BASIN
12" THRU 54" PIPE

SHEET 1 OF 2
840.02



MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN(BASED ON MIN. HEIGHT, H, WITH NO RISER) *

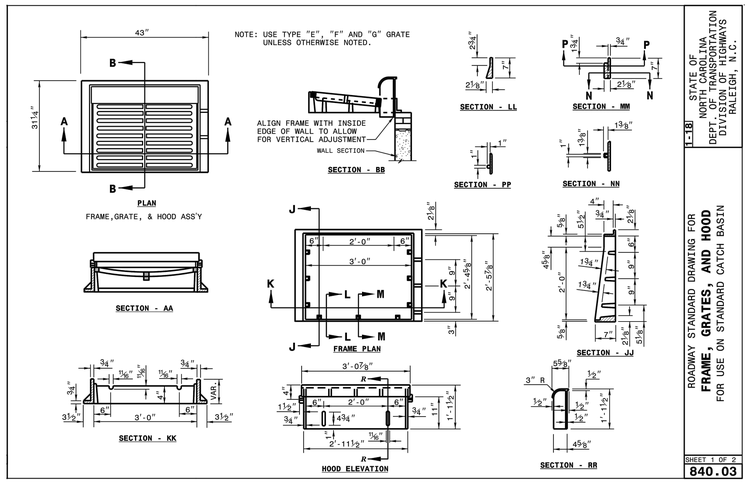
DIMENSIONS OF BOX AND PIPE						COVER DIMENSION		BARS-U		BARS-V		BARS-W		TOTAL LBS.	CU.YDS. CONC. IN BOX		DEDUCTIONS ONE PIPE	
PIPE	SPAN A	WIDTH B	WIDTH C	SPAN G	MIN. HEIGHT H	E	F	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH		TOP SLAB	BOTTOM SLAB	TOT. CONC. PER RISER HEIGHT H	C.M.	R.C.
12"	3'-0"	2'-2"	---	---	2'-9"	---	---	---	---	---	---	---	---	---	---	0.235	0.772	0.015	0.026
15"	3'-0"	2'-2"	---	---	3'-0"	---	---	---	---	---	---	---	---	---	---	0.235	0.829	0.023	0.036
18"	3'-0"	2'-2"	---	---	3'-3"	---	---	---	---	---	---	---	---	---	---	0.235	0.887	0.033	0.049
24"	3'-0"	2'-2"	---	---	3'-9"	---	---	---	---	---	---	---	---	---	---	0.235	1.001	0.059	0.085
30"	3'-0"	2'-3"	3'-4"	---	4'-3"	1'-3"	4'-0"	4	1'-5"	2	3'-9"	3	3'-9"	39	0.129	0.301	1.433	0.092	0.127
36"	3'-0"	2'-2"	3'-10"	---	4'-9"	1'-8"	4'-0"	4	1'-11"	3	3'-9"	3	3'-9"	43	0.161	0.358	1.714	0.132	0.178
42"	3'-0"	2'-2"	---	4'-5"	5'-3"	1'-5"	3'-2"	4	1'-8"	2	2'-11"	3	2'-11"	32	0.112	0.318	1.738	0.180	0.243
48"	3'-0"	2'-2"	---	5'-0"	5'-9"	2'-0"	3'-2"	4	2'-3"	3	2'-11"	3	2'-11"	35	0.145	0.352	2.052	0.235	0.317
54"	3'-0"	2'-2"	---	5'-7"	6'-3"	2'-7"	3'-2"	4	2'-10"	5	2'-11"	3	2'-11"	41	0.180	0.386	2.387	0.297	0.401

* RISER HAS .228 CUBIC YARDS OF CONCRETE PER FOOT HEIGHT

1-18 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
CONCRETE CATCH BASIN
12" THRU 54" PIPE

SHEET 2 OF 2
840.02



1-18 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
FRAME, GRATES, AND HOOD
FOR USE ON STANDARD CATCH BASIN

SHEET 1 OF 2
840.03

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Mebane, North Carolina

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DATE	DESCRIPTION

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NO	DATE	DESCRIPTION

SHEET TITLE:
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Date:	MAY 2020
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Job Number:	19-057
Sheet:	C204

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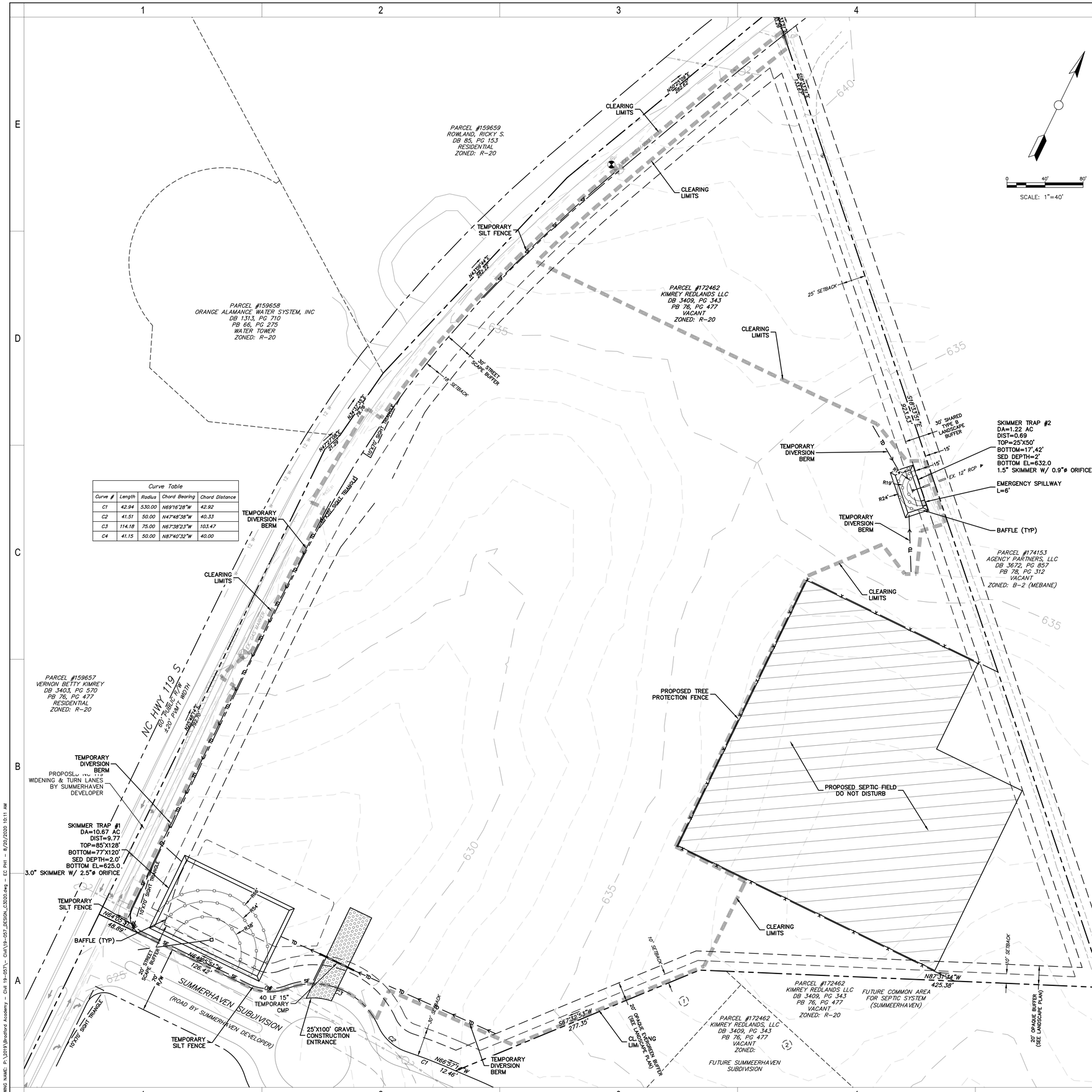

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DATE DESCRIPTION

REVISIONS:
NO DATE DESCRIPTION

SHEET TITLE:
EROSION CONTROL PHASE 1 PLAN

Date: MAY 2020
Drawn: Check:
Job Number: 19-057
Sheet:

EC101

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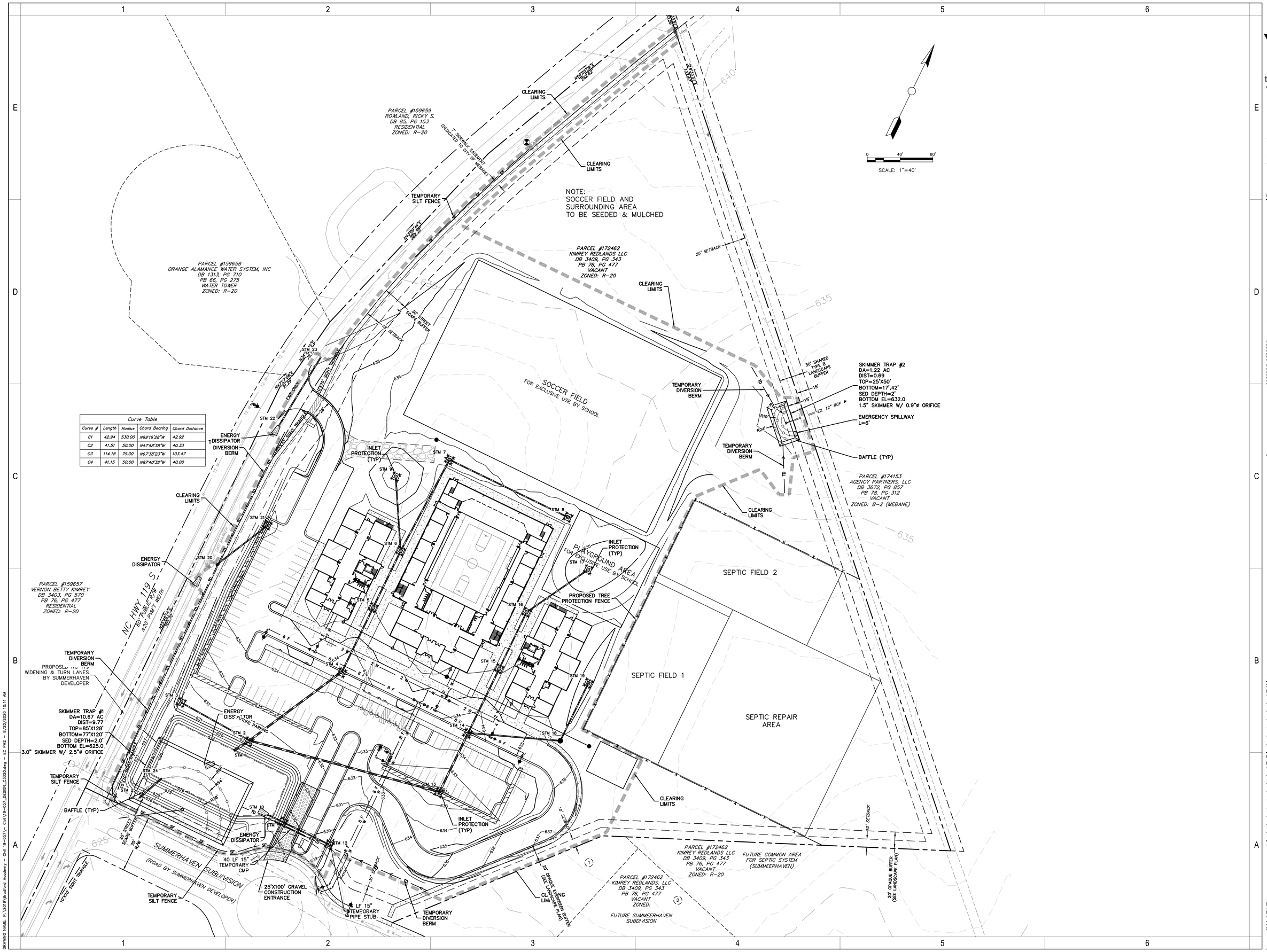

Curve Table

Curve #	Length	Radius	Chord Bearing	Chord Distance
C1	42.94	530.00	N69°16'28"W	42.92
C2	41.51	50.00	N47°48'38"W	40.33
C3	114.18	75.00	N67°38'23"W	103.47
C4	41.15	50.00	N87°40'32"W	40.00

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Bradford Academy

North Carolina Highway 119 South
Mebane, North Carolina

SUBMITTALS:

DATE	DESCRIPTION

REVISIONS:

NO	DATE	DESCRIPTION

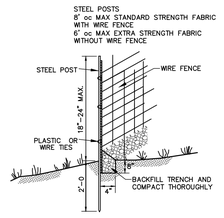
SHEET TITLE:
EROSION CONTROL PHASE 2 PLAN

Date: MAY 2020
Drawn: Check:
Job Number: 19-057
Sheet:
EC102

DRAWING NAME: P:\2019\Bradford Academy - Civil 19-057\- Civil\19-057_DESIGN_C3020.dwg - EC PH2 - 8/20/2020 10:11 AM

CONSTRUCTION SPECIFICATIONS

1. CONSTRUCT THE SEDIMENT BARRIER OF STANDARD STRENGTH OR EXTRA STRENGTH SYNETIC FILTER FABRICS.
2. ENSURE THAT THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 24" ABOVE THE GROUND SURFACE. (HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.)
3. CONSTRUCT THE FILTER FABRIC FROM A CONTINUOUS ROLL CUT TO LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESSARY, SECURELY FASTEN THE FILTER CLOTH ONLY AT A SUPPORT POST WITH 4 FEET MINIMUM OVERLAP TO THE NEXT POST.
4. SUPPORT STANDARD STRENGTH FILTER FABRIC BY WIRE MESH FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS. EXTEND THE WIRE MESH SUPPORT TO THE BOTTOM OF THE TRENCH. FASTEN THE WIRE REINFORCEMENT, THEN FABRIC ON THE UPSLOPE SIDE OF THE FENCE POST. WIRE OR PLASTIC ZIP TIES SHOULD HAVE A MINIMUM 50 LB TENSILE STRENGTH.
5. WHEN A WIRE MESH SUPPORT FENCE IS USED, SPACE POSTS A MAXIMUM OF 8' APART. SUPPORT POSTS SHOULD BE DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24'.
6. EXTRA STRENGTH FILTER FABRIC WITH 6' POST SPACING DOES NOT REQUIRE WIRE MESH SUPPORT FENCE. SECURELY FASTEN THE FILTER FABRIC DIRECTLY TO POSTS. WIRE OR PLASTIC ZIP TIES SHOULD HAVE MINIMUM 50 LB TENSILE STRENGTH.
7. EXCAVATE A TRENCH APPROXIMATELY 4" WIDE AND 8" DEEP ALONG THE PROPOSED LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
8. PLACE 12" OF THE FABRIC ALONG THE BOTTOM AND THE SIDE OF THE TRENCH.
9. BACKFILL THE TRENCH WITH SOIL PLACED OVER THE FILTER FABRIC AND COMPACT. THOROUGH COMPACTION OF THE BACKFILL IS CRITICAL TO SILT FENCE PERFORMANCE.
10. DO NOT ATTACH FILTER FABRIC TO EXISTING TREES.

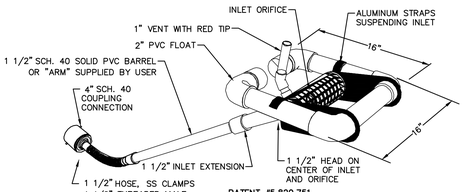


MAINTENANCE

1. INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
2. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
3. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.
4.REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

TEMPORARY SILT FENCE

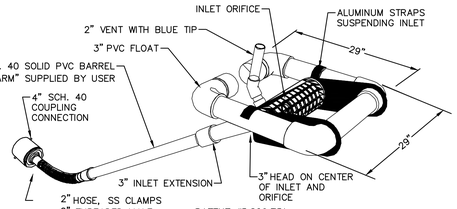
N.T.S.



PATENT #5,820,751

1 1/2" FAIRCLOTH SKIMMER DETAIL

NOT TO SCALE



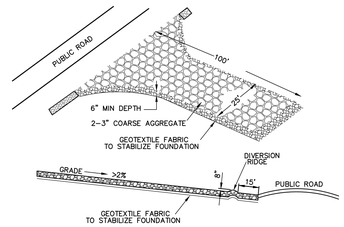
PATENT #5,820,751

3" FAIRCLOTH SKIMMER DETAIL

NOT TO SCALE

MAINTENANCE REQUIREMENTS:

1. INSPECT SKIMMER SEDIMENT BASINS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (ONE-HALF INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT ACCUMULATES TO ONE-HALF THE HEIGHT OF THE FIRST BAFFLE. PULL THE SKIMMER TO ONE SIDE SO THAT THE SEDIMENT UNDERNEATH IT CAN BE EXCAVATED. EXCAVATE THE SEDIMENT FROM THE ENTIRE BASIN, NOT JUST AROUND THE SKIMMER OR THE FIRST CELL. MAKE SURE VEGETATION GROWING IN THE BOTTOM OF THE BASIN DOES NOT HOLD DOWN THE SKIMMER.
2. REPAIR THE BAFFLES IF THEY ARE DAMAGED. RE-ANCHOR THE BAFFLES IF WATER IS FLOWING UNDERNEATH OR AROUND THEM.
3. IF THE SKIMMER IS CLOGGED WITH TRASH AND THERE IS WATER IN THE BASIN, USUALLY JERKING ON THE ROPE WILL MAKE THE SKIMMER BOB UP AND DOWN AND DISLODGE THE DEBRIS AND RESTORE FLOW. IF THIS DOES NOT WORK, PULL THE SKIMMER OVER TO THE SIDE OF THE BASIN AND REMOVE THE DEBRIS. ALSO CHECK THE ORIFICE INSIDE THE SKIMMER TO SEE IF IT IS CLOGGED. IF SO, REMOVE THE DEBRIS.
4. IF THE SKIMMER ARM AND BARREL PIPE IS CLOGGED, THE ORIFICE CAN BE REMOVED AND THE OBSTRUCTION CLEARED WITH A PLUMBER'S SNAKE OR BY FLUSHING WITH WATER. BE SURE TO REPLACE THE ORIFICE BEFORE REPOSITIONING THE SKIMMER.
5. CHECK THE FABRIC LINED SPILLWAY FOR DAMAGE AND MAKE ANY REQUIRED REPAIRS WITH FABRIC THAT SPANS THE FULL WIDTH OF THE SPILLWAY. CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE SKIMMER AND POOL AREAS.
6. FREEZING WEATHER CAN RESULT IN ICE FORMING IN THE BASIN. SOME SPECIAL PRECAUTIONS SHOULD BE TAKEN IN THE WINTER TO PREVENT THE SKIMMER FROM PLUGGING WITH ICE.



INSTALLATION:

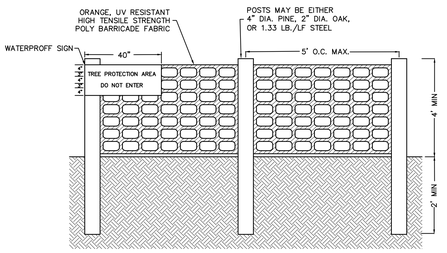
1. REMOVE ALL VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA. GRADE AND CROWN FOUNDATION FOR POSITIVE DRAINAGE.
2. IF THE SLOPE TOWARDS THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE, 6-8" HIGH WITH 3:1 SIDE SLOPES, ACROSS THE FOUNADTION APPROXIMATELY 15 FT FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD.
3. PLACE GEOTEXTILE FABRIC ON GRADED FOUNDATION TO IMPROVE STABILITY, ESPECIALLY WHERE WET CONDITIONS ARE ANTICIPATED.
4. PLACE STONE TO DIMENSIONS AND GRADE SHOWN ON PLANS. LEAVE SURFACE SMOOTH AND SLOPED FOR DRAINAGE.
5. DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE STONE PAD TO A SEDIMENT TRAP OR BASIN.
6. INSTALL PIPE UNDER PAD IF NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.

MAINTENANCE:

1. INSPECT ENTRANCE/EXIT PAD AND SEDIMENT DISPOSAL AREA AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2" OR GREATER) RAIN EVENT OR HEAVY USE.
2. IF STONE PAD FAILS TO PREVENT MUD OR SEDIMENT FROM LEAVING THE SITE, RESHAPE TO ORIGINAL PLAN DIMENSIONS FOR DRAINAGE AND RUNOFF CONTROL.
3. TOPDRESS WITH CLEAN STONE IF STONE HAS BECOME CONTAMINATED..
4. IMMEDIATELY REMOVE MUD AND SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROAD.
5. REPAIR ANY BROKEN ROAD PAVEMENT IMMEDIATELY.

TEMPORARY CONSTRUCTION ENTRANCE

N.T.S.



NOTES:

- WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL.
- LETTERS TO BE 3" HT. MIN., CLEARLY LEGIBLE AND SPACED AS DETAILED.
- SIGNS TO BE PLACED 200' O.C. MAX.
- SIGNS TO BE PLACED AT EACH END OF LINEAR TREE PROTECTION AREA AND 200' O.C. THEREAFTER.
- FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA.
- ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC.
- MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT.
- ADDITIONAL SIGNS MAY BE REQUIRED BY INSPECTIONS DEPARTMENT BASED ON ACTUAL FIELD CONDITIONS.

TREE PROTECTION FENCING

N.T.S.

SPECIFICATIONS

A.Earthwork
1. Satisfactory soils — unified soil classifications GW, GP, GM, GC, SW, SM, ML, CL
2. Compaction — Compact soils to the following percentages of Maximum Dry Density as determined by ASTM D698.
   Subgrade at Buildings & Pavement 100%
   Fill at Buildings & Pavements 98%
   Fill at Lawns 95%
3. Perform 1 compaction test in subgrade or lift of fill or backfill for each 5000 sf of building or pavement area or 10000 sf of lawn area.

B.Pavements
1. All work shall conform to NCDOT standards.

C.Concrete
1. All work shall conform to ACI standards.
2. Concrete for Curb & Gutter, Walks, Wier Wall, etc. shall be f'c=3500 psi @ 28 days, air-entrained.
3. Concrete for pavements shall have min. flexural strength of 550 psi
4. All reinforcing shall be held securely in position with standard accessories in conformance with CRSI Manual of Standard Practice and ACI 315 during the placing of concrete.
5. All hooks in reinforcing bars shall be ACI standard hooks, U.O.N.
6. Ready mixed concrete shall conform to ASTM C-94.
7. If bottom footing elevations shown occur in a disturbed, unstable or unsuitable soil, the engineer shall be notified.
8. All reinforcing steel ASTM A615 grade 60.

D.Storm Drainage
1. All work shall conform to NCDOT standards.
2. Concrete Pipe — ASTM C76 Class 3 with Butylmastic joints PER ASTM C-990
3. Aluminum Pipe — AASHTO M-196 and M-197 with Gasketed joints
4. Filter Fabric — NCDOT Section 1056 - Type 2
5. Rip Rap — NCDOT Section 868

TEMPORARY SEEDING NOTES

Definition — seeding disturbed areas with annual grasses or legumes to provide temporary ground cover to lessen soil erosion.

Purpose — to temporarily stabilize graded cut and fill slopes that cannot be seeded with permanent vegetation within thirty days after completion. To temporarily stabilize graded areas of base soil where permanent vegetative cover is not needed or where grading has not been completed and permanent seeding will be done later.

Conditions where practice applies — where bare soil has been exposed by grading, and vegetative cover is needed for one year or less. May include such areas as temporary sediment pond, diversions, soil stockpiles, building pads, rough-graded road banks, etc.

Preparation — prepare seedbed by ripping, chiseling, harrowing, or plowing to depth of at least six inches so as to produce a loose, friable surface. Incorporate 750-1,000 pounds 10-10-10 fertilizer and up to two tons of dolomitic lime per acre. (note: lime may not be needed if a soil test indicates a ph of 6.5 or higher) mulching is required according to the same specifications as for permanent seeding unless waiver by soil scientist. Select seeding mixture and best planting dates from table below.

TEMPORARY SEEDING TABLE

SEEDING MIXTURE	SEEDING RATE (LBS/ACRE)	PLANTING DATES
RYE GRAIN	120 LBS	Jan 1 – May 1
KOBE LESPEDEZA	50 LBS	Jan 1 – May 1
GERMAN MILLET	40 LBS	May 1 – Aug 15
RYE (GRAIN)	120 LBS	Aug 15 – Dec 30

PERMANENT SEEDING NOTES

Definition — seeding disturbed areas with perennial grasses and (or) legumes to provide a permanent vegetative cover to lessen runoff and soil erosion

Purpose — to lessen soil erosion and permanently stabilize disturbed areas created by grading of construction sites.

Conditions Where Practice Applies — all bare soil areas on construction sites which are not covered by structures or other erosion control devices.

Preparation — prepare seedbed by ripping, chiseling, harrowing, or plowing to depth of six inches so as to produce a loose, friable surface. Remove all stones, boulders, stumps or debris from the surface which would prohibit germination or plant growth.

Incorporate 800-1,000 pounds 10-10-10 fertilizer plus 500 pounds of 20% superphosphate per acre and two tons of dolomitic lime per acre unless soil tests indicate that a lower rate of lime can be used.

Mulch after seeding with 2 tons of grain straw per acre and tack with liquid asphalt at 400 gallons per acre or emulsified asphalt at 300 gallons per acre.

Select seeding mixture and best planting dates from table below.

PERMANENT SEEDING TABLE

SEEDING MIXTURE	SEEDING RATE (LBS/ACRE)	PLANTING DATES
TALL FESCUE WATERWAYS AND LAWNS (HIGH MAINTENANCE)	200 – 250 LBS	AUG 15 – OCT 15 FEB 15 – MAY 1
BLEND OF TWO TURF-TYPE TALL FESCUES (90%) AND TWO OR MORE IMPROVED KENTUCKY BLUE GRASS VARIETIES (10%) (HIGH MAINTENANCE)	200 – 250 LBS	AUG 15 – OCT 15 FEB 15 – MAY 1
COMMON BERMUDA – GRASS (UNHULLED)	8 LBS 15 – 20 (HULLED LBS	APR 15 – JUN 30 FEB 1 – MAR 30

* For spring seedlings, use scarified lespedeza seed. For late fall and winter seedings, use unscarified seed.
** Annuals such as Millet, Sudangrass and Ryegrain must be kept at 10" – 12" maximum height.

CONSTRUCTION SPECIFICATIONS

1. UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET.
2. DRIVE 5-FOOT STEEL POSTS 2 FEET INTO THE GROUND SURROUNDING THE INLET. SPACE POSTS EVENLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM OF 4 FEET APART.
3. SURROUND THE POSTS WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POSTS AT THE TOP, MIDDLE, AND BOTTOM. PLACING A 2-FOOT FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.
4. PLACE CLEAN GRAVEL (NCDOT #5 OR #57 STONE) ON A 2:1 SLOPE WITH A HEIGHT OF 1 INCHES AROUND THE WIRE, AND SMOOTH TO AN EVEN GRADE.
5. ONCE THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE ACCUMULATED SEDIMENT, AND ESTABLISH FINAL GRADING ELEVATIONS.
6. COMPACT THE ARE PROPERLY AND STABILIZE IT WITH GROUNDCOVER.

MAINTENANCE

INSPECT INLETS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (½ INCH OR GREATER) RAINFALL EVENT. CLEAR THE MESH WIRE OF ANY DEBRIS OR OTHER OBJECTS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS. TAKE CARE NOT TO DAMAGE OR UNDERCUT THE WIRE MESH DURING REMOVAL. REPLACE STONE AS NEEDED.

STANDARD CATCH BASIN / YARD INLET WIRE AND STONE INLET PROTECTION

N.T.S.

PIPE OUTLET CONTROL DEVICE SCHEDULE										
Structure	Type	Width W_U	Width W_D	Length	d Max.	d 50	d Min.	Thickness (t)	'Q' (cfs)	Velocity (fps)
STM 3	2	4'	8'	7.5'	12"	8"	5"	18"	2.69	2.19
FLUME 1	1	3'	7'	6'	12"	8"	5"	18"	0.57	9.40
SKIMMER BASIN #1	1	3'	7'	6'	12"	8"	5"	18"	4.81	6.13
FLUME 2	1	3'	7'	6'	12"	8"	5"	18"	1.08	11.87
FLUME 3	1	6'	14'	12'	12"	8"	5"	18"	2.55	11.98

ENERGY DISSIPATOR

CONSTRUCTION SPECIFICATIONS

1. ENSURE THAT THE SUB-GRADE FOR THE FILTER AND RIP-RAP FOLLOWS THE REQUIRED LINES AND GRADES SHOWN ON THE PLAN. COMPACT ANY FILL REQUIRED IN THE SUB-GRADE TO THE DENSITY OF THE SURROUNDING UNDISTURBED MATERIAL. LOW AREAS IN THE SUB-GRADE ON UNDISTURBED SOIL MAY ALSO BE FILLED BY INCREASING THE RIP-RAP THICKNESS.
2. THE RIP-RAP AND GRAVEL FILTER MUST CONFORM TO THE SPECIFIED GRADING LIMITS SHOWN ON THE PLAN.
3. FILTER CLOTH, WHEN USED, MUST MEET DESIGN REQUIREMENTS AND BE PROPERLY PROTECTED FROM PINCHING OR TEARING DURING INSTALLATION. REPAIR ANY DAMAGE BY REMOVING THE RIP-RAP AND PLACING ANOTHER PIECE OF FILTER CLOTH OVER THE DAMAGED AREA. ALL CONNECTING JOINTS SHOULD OVERLAP SO THE TOP LAYER IS ABOVE THE DOWNSTREAM LAYER A MINIMUM OF 1 FOOT. IF THE DAMAGE IS EXTENSIVE, REPLACE THE ENTIRE FILTER CLOTH.
4. RIP-RAP MAY BE PLACED BY EQUIPMENT, BUT TAKE CARE TO AVOID DAMAGING THE FILTER.
5. THE MINIMUM THICKNESS OF THE RIP-RAP SHOULD BE 1.5 TIMES THE MAXIMUM STONE DIAMETER.
6. RIP-RAP MAY BE FIELD STONE OR ROUGH QUARRY STONE. IT SHOULD BE HARD, ANGULAR, HIGHLY WEATER-RESISTANT AND WELL GRADED.
7. CONSTRUCT THE APRON ON A ZERO GRADE WITH NO OVERFILL AT THE END. MAKE THE TOP OF THE RIP-RAP AT THE DOWNSTREAM END LEVEL WITH THE RECEIVING AREA OR SLIGHTLY BELOW IT.
8. ENSURE THAT THE APRON IS PROPERLY ALIGNED WITH THE RECEIVING STREAM AND PREFERABLY STRAIGHT THROUGHOUT ITS LENGTH. IF A CURVE IS NEEDED TO FIT SITE CONDITIONS, PLACE IT IN THE UPPER SECTION OF THE APRON.
9. IMMEDIATELY AFTER CONSTRUCTION, STABILIZE ALL DISTURBED AREAS WITH VEGETATION (PRACTICES 6.10 'TEMPORARY SEEDING', AND 6.11, 'PERMANENT SEEDING').

NOTES:

1. La IS THE LENGTH OF RIP-RAP APRON
2. d=1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6".
3. IN A WELL-DEFINED CHANNEL EXTEND THE APRON UP ON THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUMTAILWATER DEPTH OR TOP OF THE BANK, WHICHEVER IS LESS.
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIP-RAP AND SOIL FOUNDATION.

MAINTENANCE

INSPECT RIPRAP OUTLET STRUCTURES WEEKLY AND AFTER SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENTS TO SEE IF ANY EROSION AROUND OR BELOW THE RIPRAP HAS TAKEN PLACE, OR IF STONES HAVE BEEN DISLODGED. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.

MODIFIED TYPE 1 PIPE OUTLET EROSION CONTROL DEVICE (SPREADER)

N.T.S.

SKIMMER SEDIMENT TRAP (10 YR. STORM, C= 0.45, I= 7.08 IN./HR.)														
TRAP	DRAINAGE AREA		DISTURBED AREA DESIGN		SED. STORAGE REQ'D (CF) (1800 CF/AC)	SED. STORAGE PROVIDED (CF)	SURFACE AREA REQ'D (SF) (0.01 x 2X10)	SURFACE AREA PROVIDED (SF)	SED. DEPTH (FT)	BOTTOM DIM (Wxl.) (FT)	TOP DIM (Wxl.) (FT)	'W' WEIR LENGTH	WEIR TYPE	SKIMMER	DEWATERING TIME (TARGET 3-5 DAYS)	BOTTOM ELEVATION
1	8.44	AC.	7.13	AC.	12834	15300	8739	8757	2.0	SEE PLAN	SEE PLAN			2.5" w/ 2.3" ORIFICE	3 DAYS	725.5
2	5.03	AC.	4.35	AC.	7830	9408	5208	5304	2.0	44 X 94	52 X 102	12 FT.		2.0" W/ 1.9" ORIFICE	3 DAYS	732.0

SKIMMER SEDIMENT TRAP DETAIL

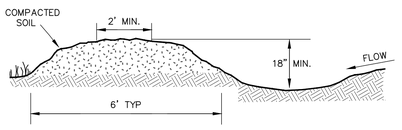
N.T.S.

SECTION

PLAN

BAFFLES

N.T.S.



CONSTRUCTION SPECIFICATIONS

1. REMOVE AND PROPERLY DISPOSE OF ALL TREES, BRUSH, STUMPS, AND OTHER OBJECTIONAL MATERIAL.
2. ENSURE THAT THE MINIMUM CONSTRUCTED CROSS SECTION MEETS ALL DESIGN REQUIREMENTS.
3. ENSURE THAT THE TOP OF THE DIKE IS NOT LOWER AT ANY POINT THAN THE DESIGN ELEVATION PLUS THE SPECIFIED SETTLEMENT.
4. PROVIDE SUFFICIENT ROOM AROUND DIVERSIONS TO PERMIT MACHINE REGRADING AND CLEANOUT.
5. VEGETATE THE RIDGE IMMEDIATELY AFTER CONSTRUCTION, UNLESS IT WILL REMAIN IN PLACE LESS THAN 30 WORKING DAYS.

MAINTENANCE

INSPECT TEMPORARY DIVERSION ONCE A WEEK AND AFTER EVERY RAINFALL. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE. CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED. WHEN THE AREA PROTECTED IS PERMANENTLY STABILIZED, REMOVE THE RIDGE AND THE CHANNEL TO BLEND WITH THE NATURAL GROUND LEVEL END APPROPRIATELY STABILIZE IT.

TEMPORARY DIVERSION BERM

N.T.S.

Ground Stabilization*		
Site Area Description	Stabilization Time Frame	Stabilization Time Frame Exceptions
Perimeter Dikes, Swales, Ditches and Slopes	7 Days	None
High Quality Water (HQW) Zones	7 Days	None
Slopes Steeper than 3:1	7 Days	If Slopes are 10' or Less in Length and are Not Steeper than 2:1, 14 Days are Allowed
Slopes 3:1 or Flatter	14 Days	7 Days for Slopes Greater than 50 Feet in Length
All Other Areas with Slopes Flatter than 4:1	14 Days	None (Except for Perimeter and HQW Zones)
*Extensions of time may be approved by the permitting authority based on weather or other site specific conditions that make compliance impractible" (Section 11.B(2)(b))		

Self Inspection report for Land Disturbing Activity as Required by NCGS 113A-54.1		
Phase of Approved Erosion & Sedimentation Control Plan	Date	Signature (Landowner, Financially Responsible Party or Agent)
Installation of Erosion Control Devices and Seeding		
Fill and Slopes Completed (Fine Grades Established)		
Stabilization of Building Pad and Parking Areas		
Final Grades Achieved, Obtained Building c/o		
Vegetation Established; Removal of Erosion Control Measures		
Closing of Permit; Final Inspection		

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NC Architecture Reg. 50709
NC Engineering Lic. C-1108

TRIAD DESIGN GROUP, P.C. CORPORATE SEAL NORTH CAROLINA 1994

PRELIMINARY

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North Carolina Highway 119 South
Mebane, North Carolina

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SHEET TITLE:

EROSION CONTROL DETAILS

Date: MAY 2020
Drawn: Check:
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Sheet:

EC201

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PARCEL #159659
ROWLAND, RICKY S.
DB 85, PG 153
RESIDENTIAL
ZONED: R-20

PARCEL #159658
ORANGE ALAMANCE WATER SYSTEM, INC
DB 1313, PG 710
PB 66, PG 275
WATER TOWER
ZONED: R-20

PARCEL #172462
KIMREY REDLANDS LLC
DB 3409, PG 343
PB 76, PG 477
VACANT
ZONED: R-20

PARCEL #174153
AGENCY PARTNERS, LLC
DB 3672, PG 857
PB 78, PG 312
VACANT
ZONED: B-2 (MEBANE)

PARCEL #159657
VERNON BETTY KIMREY
DB 3403, PG 570
PB 76, PG 477
RESIDENTIAL
ZONED: R-20

PARCEL #172462
KIMREY REDLANDS, LLC
DB 3409, PG 343
PB 76, PG 477
VACANT
ZONED:
FUTURE SUMMERHAVEN SUBDIVISION

PARCEL #172462
KIMREY REDLANDS LLC
DB 3409, PG 343
PB 76, PG 477
VACANT
ZONED: R-20
FUTURE COMMON AREA FOR SEPTIC SYSTEM (SUMMERHAVEN)

PROPOSED LOT
14.02 AC

DA 1
AREA = 11.52 AC
Q_{10} = 32.29 CFS

DA 2
AREA = 2.50 AC
Q_{10} = 6.79 CFS

NC HWY 119 S
80' PUBLIC R/W
3200' PMT. WIDTH

SUMMERHAVEN SUBDIVISION
(ROAD BY SUMMERHAVEN DEVELOPER)

APPROX LOC EX 12" WATER LINE

EX. 6" GAS MARKER

EX. 12" RCP

25' SETBACK
10' SETBACK
30' SETBACK

NOTE:
PROPOSED ROAD TO SUMMERHAVEN SUBDIVISION SHALL BE DESIGNED AND CONSTRUCTED TO NCDOT STANDARDS. ROAD WILL BE TAKEN OVER BY NCDOT ONCE IT QUALIFIES FOR MAINTENANCE

PROPOSED PROPERTY LINE
PER SUMMERHAVEN PRELIMINARY
SUBDIVISION PLAT

Curve Table				
Curve #	Length	Radius	Chord Bearing	Chord Distance
C1	42.94	530.00	N89°16'28"W	42.92
C2	41.51	50.00	N47°48'38"W	40.33
C3	114.18	75.00	N67°38'23"W	103.47
C4	41.15	50.00	N87°40'32"W	40.00

N64°38'54"W 48.96'
N64°38'54"W 126.42'
S87°35'41"W 277.35'
N87°31'44"W 425.38'
N87°31'44"W 12.48'

640
635
630
625

SCALE: 1"=40'

STREAM BUFFER NOTE
BASED ON A STREAM/WETLAND LOCATION PREPARED BY PIEDMONT ENVIRONMENTAL ASSOCIATES, LLC FOR EVANS ENGINEERING, THERE ARE NO STREAMS/WETLANDS WITHIN THE PROJECT SITE BOUNDARY. THE CLOSEST STREAM BUFFER TO THE SITE IS LOCATED APPROXIMATELY 335' SOUTH OF THE SOUTHERNMOST PROPERTY CORNER.

PRE - DEVELOPMENT
DRAINAGE AREAS

DRAWING NAME: P:\2019\Bradford Academy - Civil\19-057_DESIGN_C3D\20.dwg - C002 EX CON - 8/18/2020 1:42 PM

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Architecture | Engineering | Interior Design

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PRELIMINARY

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Bradford Academy

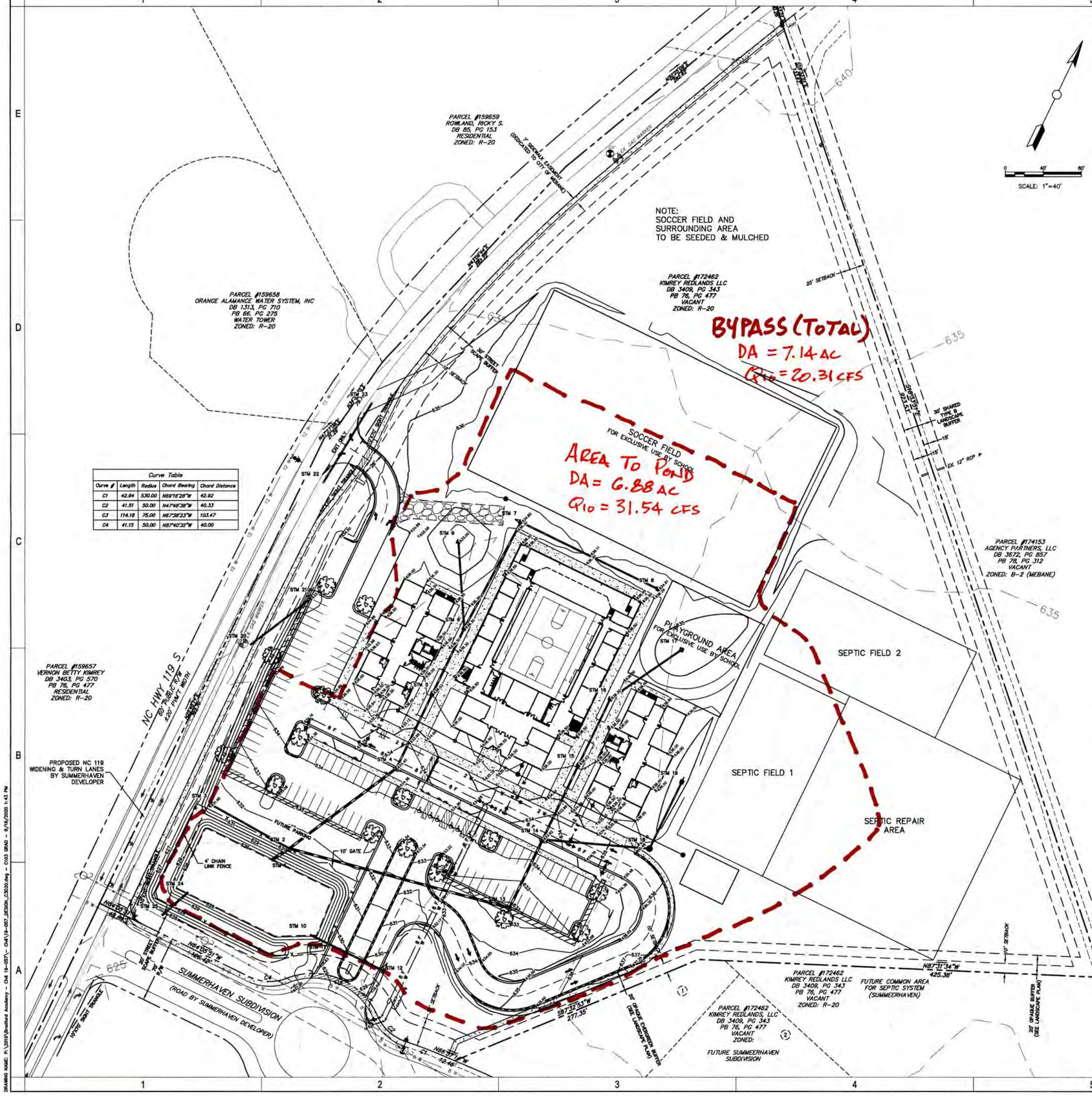
North Carolina Highway 119 South
Mebane, North Carolina

SUBMITTALS:
DATE DESCRIPTION

REVISIONS:
NO DATE DESCRIPTION

SHEET TITLE:
EXISTING TOPOGRAPHIC SURVEY

Date: MAY 2020
Drawn: Check:
Job Number: 19-057
Sheet:
C002


PARCEL #159659
ROWLAND, RICKY S.
DB 85, PG 153
RESIDENTIAL
ZONED: R-20
PARCEL #159658
ORANGE ALAMANCE WATER SYSTEM, INC
DB 1313, PG 710
PB 66, PG 275
WATER TOWER
ZONED: R-20
PARCEL #172462
KIMREY REDLANDS LLC
DB 3409, PG 343
PB 76, PG 477
VACANT
ZONED: R-20
PARCEL #174153
AGENCY PARTNERS, LLC
DB 3672, PG 857
PB 76, PG 312
VACANT
ZONED: B-2 (MEBANE)
PARCEL #159657
VERNON BETTY KIMREY
DB 3403, PG 570
PB 76, PG 477
RESIDENTIAL
ZONED: R-20
NOTE:
SOCCER FIELD AND
SURROUNDING AREA
TO BE SEEDED & MULCHED
BYPASS (TOTAL)
DA = 7.14 AC
Q10 = 20.31 CFS
AREA TO POND
DA = 6.88 AC
Q10 = 31.54 CFS
SOCCER FIELD
FOR EXCLUSIVE USE BY SCHOOL
PLAYGROUND AREA
FOR EXCLUSIVE USE BY SCHOOL
SEPTIC FIELD 1
SEPTIC FIELD 2
SEPTIC REPAIR AREA
NC HWY 119 S
(80' PUBLIC R/W
22' PVMT WIDTH)
SUMMERHAVEN SUBDIVISION
(ROAD BY SUMMERHAVEN DEVELOPER)
PROPOSED NC 119
WIDENING & TURN LANES
BY SUMMERHAVEN
DEVELOPER
FUTURE PARKING
10' GATE
4' CHAIN
LINK FENCE
FUTURE COMMON AREA
FOR SEPTIC SYSTEM
(SUMMEERHAVEN)
FUTURE SUMMEERHAVEN
SUBDIVISION
25' SETBACK
30' SHARED
TYPE B
LANDSCAPE
BUFFER
30' SCALE STREET BUFFER
20' OPAQUE EVERGREEN BUFFER
(SEE LANDSCAPE PLAN)
EX. 12" RCP
EX. 24" RCP
EX. 18" RCP
EX. 15" RCP
EX. 8" W
EX. 8" S
EX. 2" GAS
EX. OHP
EX. 24" MARKER
EX. 6" MARKER
EX. 8" MARKER
EX. 12" MARKER
EX. 2" MARKER
EX. 4

RECEIVED
08/21/2020

BRADFORD ACADEMY – SPECIAL USE PERMIT

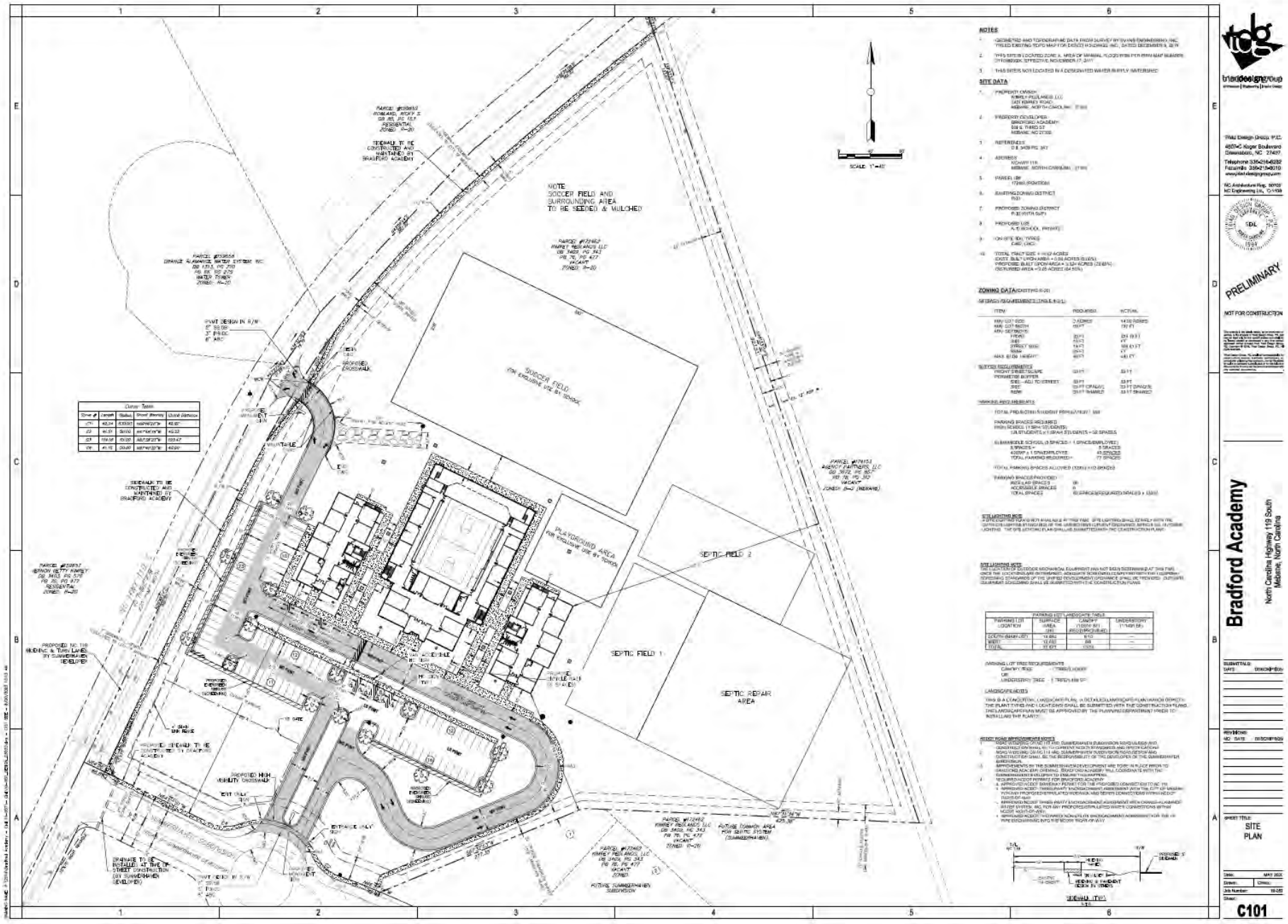
Waiver Request from the required external building materials identified in Article 6-1 of the Mebane UDO to allow prefabricated metal, as shown on the attached exhibit.

PLANNING PROJECT REPORT

DATE	09/08/20
PROJECT NAME	Bradford Academy Campus
PROJECT NUMBER	SUP 20-03
APPLICANT	Bradford Academy c/o Tony Fairchild 939 South Third Street Mebane, NC 27302

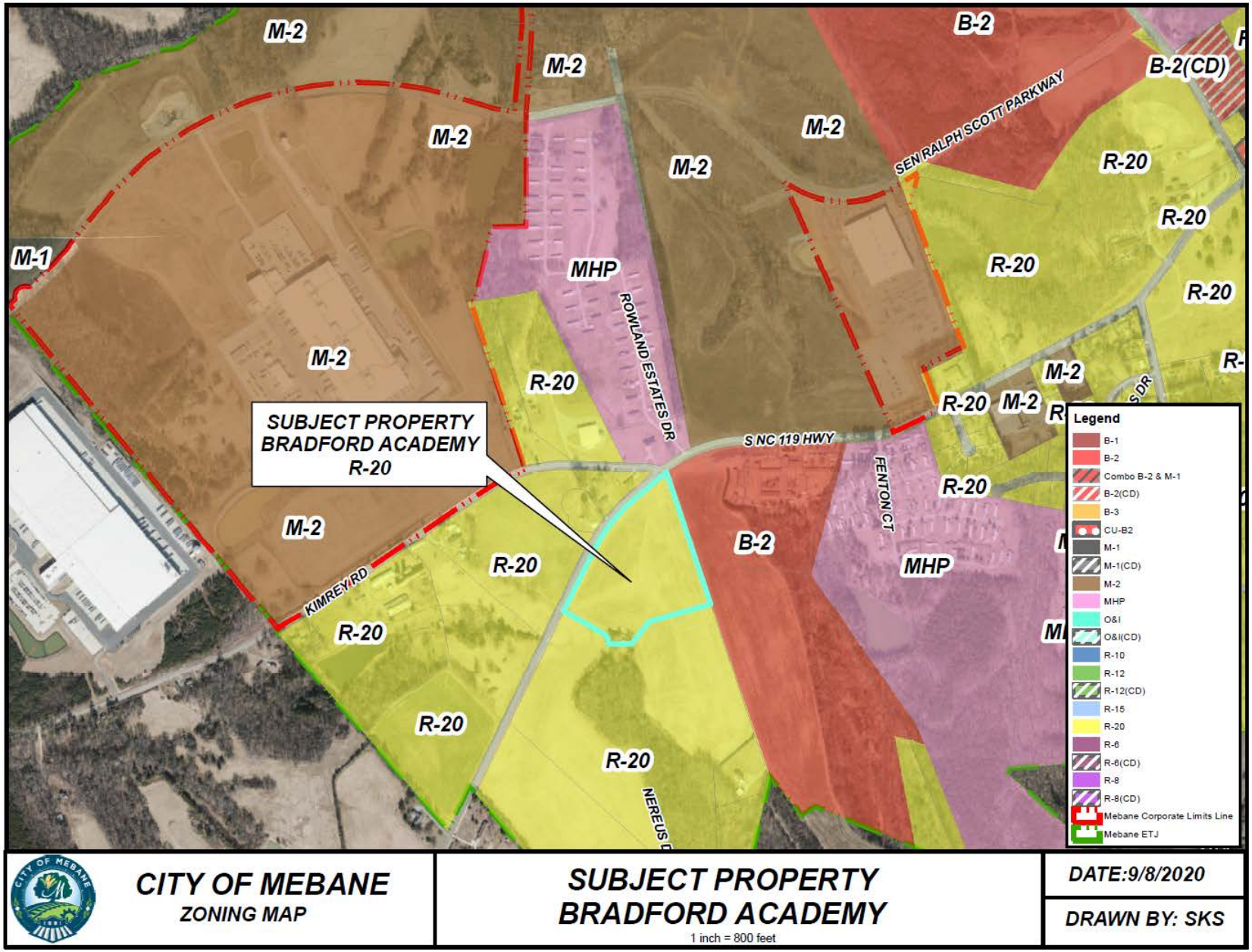
CONTENTS

PROJECT NAME & APPLICANT ..... PAGE 1
ZONING REPORT ..... PAGE 3
LAND USE REPORT..... PAGE 5
UTILITIES REPORT..... PAGE 7
STAFF SPECIAL USE PERMIT CONSISTENCY FINDINGS ..... PAGE 9


NOTE
SOCCER FIELD AND
SURROUNDING AREA
TO BE SEEDED & MULCHED
SOCCER FIELD
PLAYGROUND AREA
SEPTIC FIELD 2
SEPTIC FIELD 1
SEPTIC REPAIR AREA
SIDEWALK TO BE CONSTRUCTED AND MAINTAINED BY BRADFORD ACADEMY
PROPOSED HIGH VISIBILITY CROSSWALK
PROPOSED NC 119 WIDENING & TURN LANES BY SUMMERHAVEN DEVELOPER
DRAINAGE TO BE INSTALLED AT TIME OF STREET CONSTRUCTION BY SUMMERHAVEN DEVELOPER
FUTURE SUMMERHAVEN SUBDIVISION
FUTURE COMMON AREA FOR SEPTIC SYSTEM (SUMMERHAVEN)
SCALE: 1"=40'
NOTES
SITE DATA
ZONING DATA (EXISTING R-20)
SIDEWALK (TYP.)
Bradford Academy
North Carolina Highway 119 South
Mebane, North Carolina
PRELIMINARY
NOT FOR CONSTRUCTION
C101

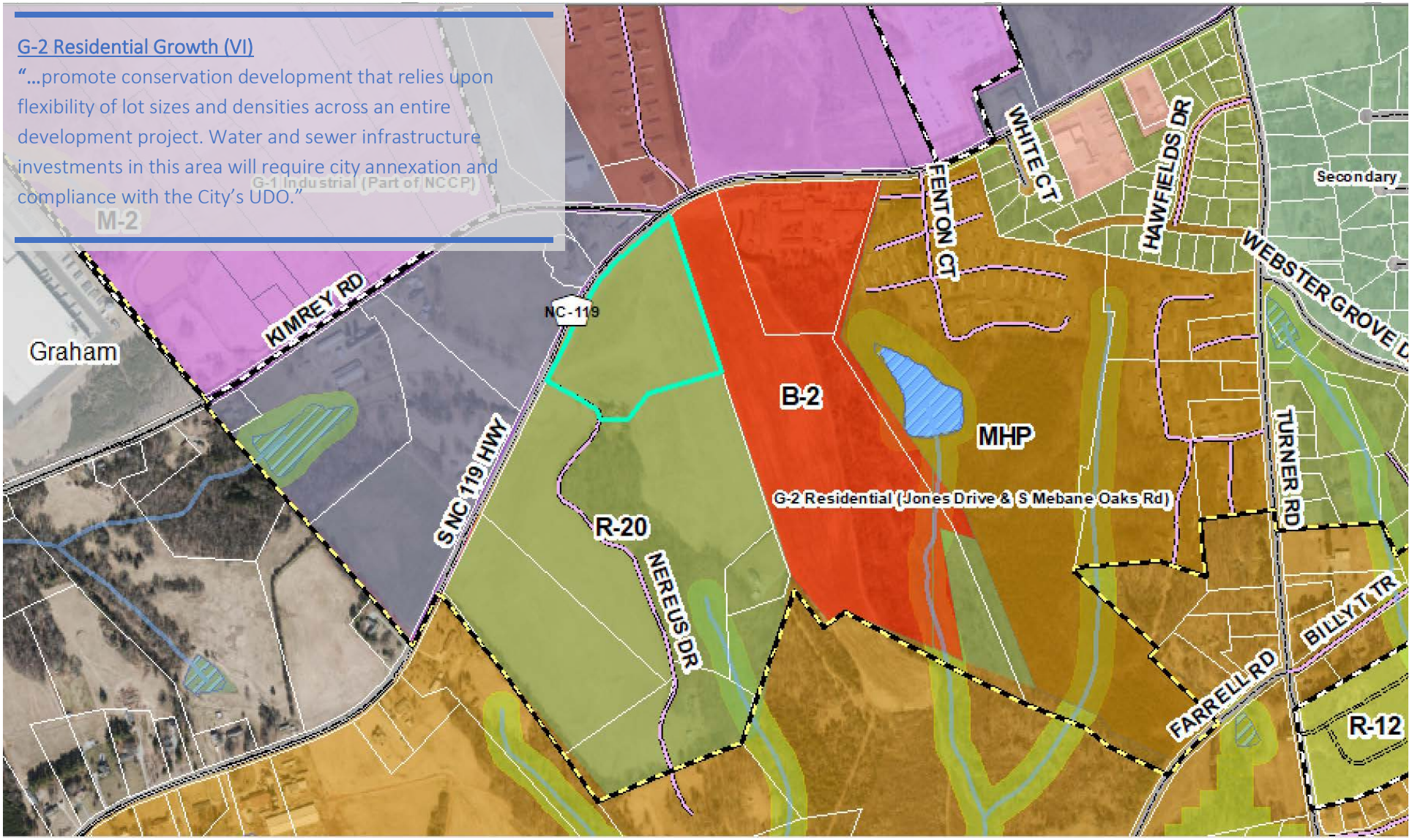
ZONING REPORT

EXISTING ZONE	R-20
REQUESTED ACTION	Special Use Permit to allow an Elementary/Secondary School
CONDITIONAL ZONE?	☐YES ☒NO
CURRENT LAND USE	Agriculture (General Farm)
PARCEL SIZE	+/-76.14 acres.
PROPERTY OWNERS	Kimrey Redlands, LLC 2425 Kimrey Road Mebane, NC 27302 GPINs 9803578217
LEGAL DESCRIPTION	A +/-14.02-ac portion of a +/-54.12-acre property on NC Highway 119 and Nereus Drive, a private unpaved road, is proposed for a K-12 private school that, at completion, will serve 450 students and their educational staff.
AREA ZONING & DISTRICTS	The properties to the west of the project site are all outside the City of Mebane extraterritorial jurisdiction (ETJ) and are not zoned, as are the properties immediately to the southeast. The properties immediately south of the project site, including the parent parcel, are within the ETJ and zoned R-20. They are proposed to host a 78-home subdivision Summerhaven. They are all presently used for rural residential purposes. The properties north across NC 119 are zoned R-20 with the exception of the mobile home park on Rowland Estates Drive. The property immediately to the east is zoned B-2 and has historically supported a nursing and convalescent home and an agricultural lot. The proposed project lies within the City's G-2 Residential Primary Growth Area (Jones Drive & Mebane Oaks Road).
SITE HISTORY	The property us a "General Farm Use" parcel that has historically been farmed.
	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	N/A – Use permitted as a special use in this zoning district


M-2
M-2
M-2
M-2
M-2
B-2
B-2(CD)
SEN RALPH SCOTT PARKWAY
R-20
R-20
R-20
R-20
M-1
MHP
ROWLAND ESTATES DR
M-2
R-20
SUBJECT PROPERTY
BRADFORD ACADEMY
R-20
M-2
M-2
R-20
M-2
S NC 119 HWY
FENTON CT
R-20
B-2
MHP
M-2
KIMREY RD
R-20
R-20
R-20
R-20
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
BRADFORD ACADEMY
1 inch = 800 feet
DATE:9/8/2020
DRAWN BY: SKS

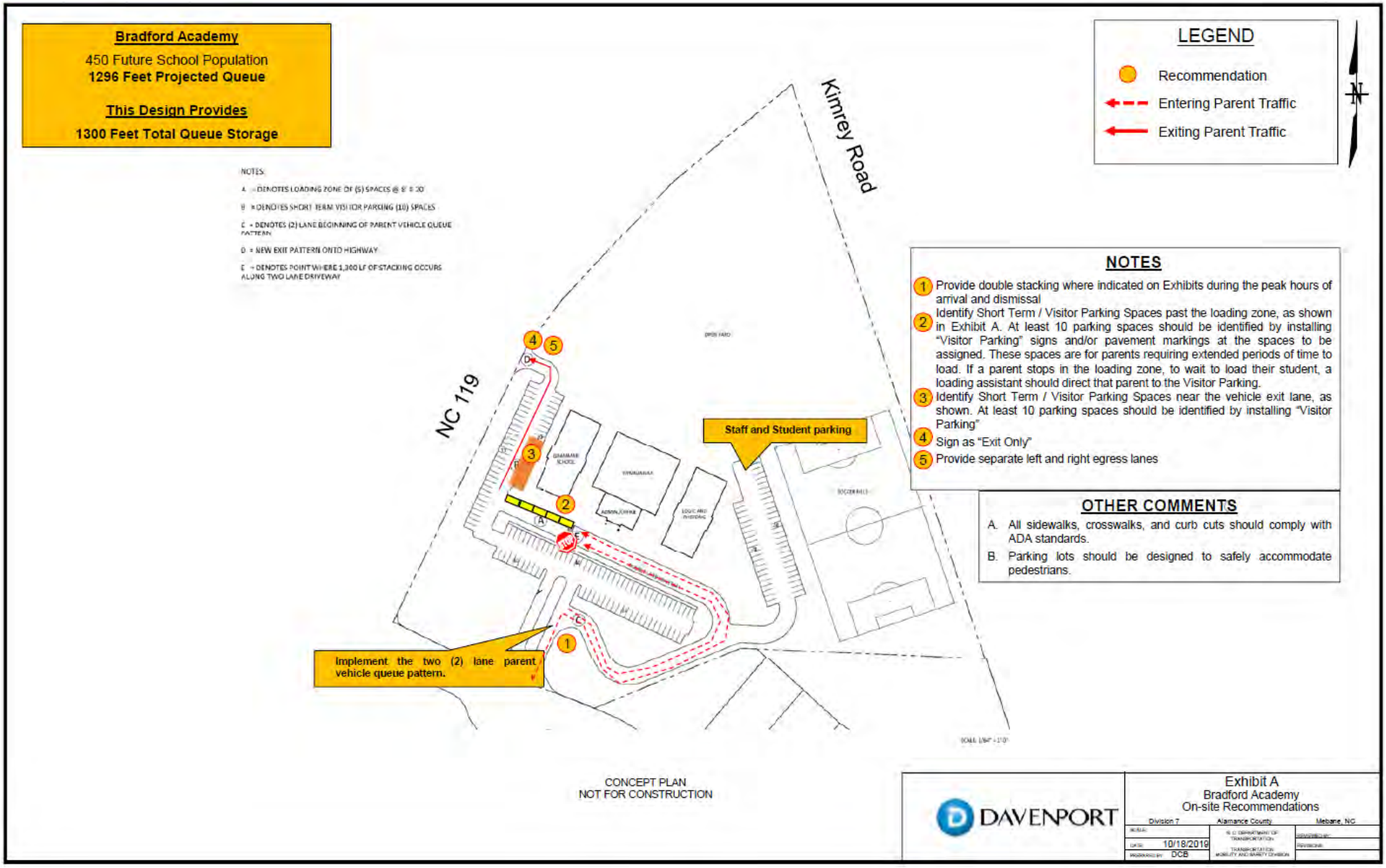
LAND USE REPORT

EXISTING LAND USE	Agriculture
PROPOSED LAND USE & REQUESTED ACTION	The applicant is requesting approval of a special use request for an elementary/secondary school for a 450-student private school campus on a +/-14.02-ac portion of a +/-54.12-acre property off NC Highway 119 at Nereus Drive, a private unpaved road.
PROPOSED ZONING	N/A
PARCEL SIZE	+/-14.02 ac, to be subdivided from a +/-54.12-ac parent parcel
AREA LAND USE	The project site is completely surrounded by large-lot rural residential and agricultural properties. The parent parcel and two adjacent R-20-zoned parcels were approved a 78-home subdivision "Summerhaven" at the March 2, 2020, City Council meeting. Caddy-corner to the northeast of the property is a mobile home park. Another mobile home park is close by to the east. Both the Lidl and Walmart Distribution Centers in the NC Commerce Park lie approximately 1,200 feet to the north, backing up to Kimrey Road.
ONSITE AMENITIES & DEDICATIONS	The applicant proposes to construct an internal driveway and parking area that will also realize high-visibility pedestrian crossings at all driveways. The 5' sidewalk within the NC 119 right of way will also be constructed by the applicant. The applicant will also be providing a 5' sidewalk meeting City standards that parallels its main entrance for pedestrians and cyclists. None of the onsite recreation facilities will be open to the public.
WAIVER REQUESTED	☒YES ☐NO
DESCRIPTION OF REQUESTED WAIVER(S)	Applicant is requesting a waiver to Article 6-1, which does not allow the use of metal as an exterior building material. Details on the material they will commit to with their waiver request are available in the architecture sheets in the packet.
CONSISTENCY WITH *MEBANE BY DESIGN* STRATEGY	
LAND USE GROWTH STRATEGY DESIGNATION(S)	G-2 Secondary Residential Growth Area VI (Jones Dr. & Mebane Oaks Rd.)
OTHER LAND USE CONSIDERATIONS	
MEBANE BY DESIGN GOALS & OBJECTIVES SUPPORTED	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.
MEBANE BY DESIGN GOALS & OBJECTIVES NOT SUPPORTED	N/A


G-2 Residential Growth (VI)
"…promote conservation development that relies upon flexibility of lot sizes and densities across an entire development project. Water and sewer infrastructure investments in this area will require city annexation and compliance with the City's UDO."
G-1 Industrial (Part of NCCP)
M-2
KIMREY RD
NC-119
Graham
S NC 119 HWY
B-2
MHP
G-2 Residential (Jones Drive & S Mebane Oaks Rd)
R-20
NEREUS DR
FENTON CT
WHITE CT
HAWFIELDS DR
Secondary
WEBSTER GROVE
TURNER RD
BILLY T TR
FARRELL RD
R-12

UTILITIES REPORT

AVAILABLE UTILITIES	☐YES ☒NO
PROPOSED UTILITY NEEDS	The project requires water and sewer service to support a school of 450 students and associated faculty and staff but will not be served by the City.
UTILITIES PROVIDED BY APPLICANT	Applicant has pledged to provide all on-site utilities. An Orange Alamance Water System Inc., 12" service line on NC 119 will serve 8" PVC water lines to provide adequate supply and pressure. On-site septic systems will treat the sewage needs. A preliminary evaluation of the soils made by a soil scientist shows soils appropriate for this purpose.
MUNICIPAL CAPACITY TO ABSORB PROJECT	N/A – the utilities will not be maintained or operated by the City.
CONSISTENCY WITH MEBANE LONG RANGE UTILITY PLAN?	☐YES ☐NO
ADEQUATE STORMWATER CONTROL?	☒YES ☐NO
INNOVATIVE STORMWATER MANAGEMENT?	☐YES ☒NO
TRANSPORTATION NETWORK STATUS	
CURRENT CONDITIONS	NC 119 is a NC DOT route with a 2015 average traffic volume of 6,700 trips per day and a Level Of Service (LOS) C. NC 119 north of its intersection with Trollingwood Hawfields Road is funded for widening by STIP project U-6013 which should improve local conditions.
TRAFFIC IMPACT ANALYSIS REQUIRED?	☒YES ☐NO
DESCRIPTION OR RECOMMENDED IMPROVEMENTS	The applicant conducted a TIA for a student population of 450 that will not use busses. The TIA had to be reviewed by the Municipal School Transportation Assistance division of NC DOT, per NC General Statute. The City also retained the service of Ramey, Kemp, and Associates, to evaluate the TIA. Both the NCDOT and the City determined that the on- and offsite transportation improvements provided by the applicant and the developer of the Summerhaven subdivision will address safety and congestion concerns and meet City and State standards.
CONSISTENCY WITH MEBANE'S TRANSPORTATION PLANS?	☒YES ☐NO
MULTIMODAL IMPROVEMENTS PROVIDED BY APPLICANT?	☒YES ☐NO
DESCRIPTION OF MULTIMODAL IMPROVEMENTS	Sidewalks will be provided along the NC 119 frontage of the project site and along the main driveway in such a way that pedestrians and cyclists may avoid the roundabout. The applicant will install bicycle racks on campus.


Bradford Academy
450 Future School Population
1296 Feet Projected Queue
This Design Provides
1300 Feet Total Queue Storage
NOTES:
A = DENOTES LOADING ZONE OF (5) SPACES @ 8' X 30'
B = DENOTES SHORT TERM VISITOR PARKING (10) SPACES
C = DENOTES (2) LANE BEGINNING OF PARENT VEHICLE QUEUE PATTERN
D = NEW EXIT PATTERN ONTO HIGHWAY
E = DENOTES POINT WHERE 1,300 LF OF STACKING OCCURS ALONG TWO LANE DRIVEWAY
LEGEND
Recommendation
Entering Parent Traffic
Exiting Parent Traffic
N
Kimrey Road
NC 119
Staff and Student parking
Implement the two (2) lane parent vehicle queue pattern.
NOTES
1 Provide double stacking where indicated on Exhibits during the peak hours of arrival and dismissal
2 Identify Short Term / Visitor Parking Spaces past the loading zone, as shown in Exhibit A. 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 Identify Short Term / Visitor Parking Spaces near the vehicle exit lane, as shown. At least 10 parking spaces should be identified by installing "Visitor Parking"
4 Sign as "Exit Only"
5 Provide separate left and right egress lanes
OTHER COMMENTS
A. All sidewalks, crosswalks, and curb cuts should comply with ADA standards.
B. Parking lots should be designed to safely accommodate pedestrians.
CONCEPT PLAN
NOT FOR CONSTRUCTION
DAVENPORT
Exhibit A
Bradford Academy
On-site Recommendations
Division 7
Alamance County
Mebane, NC
10/18/2019
DCB

STAFF RECOMMENDATION

STAFF ZONING RECOMMENDATION	☐ APPROVE ☐ DISAPPROVE
STAFF SPECIAL USE FINDING	☒ CONSISTENT ☐ NOT CONSISTENT……..WITH *MEBANE BY DESIGN*
RATIONALE	The proposed development "Bradford Academy" is consistent with the guidance provided within *Mebane By Design*, the Mebane Comprehensive Land Development Plan, is in harmony with the surrounding zoning of the area, and, excepting one waiver request, meets all development and subdivision standards for an Elementary/Secondary School in the Mebane UDO.
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.

DAVENPORT

October 18, 2019

TRANSPORTATION IMPACT ANALYSIS

Bradford Academy

Mebane, NC

Prepared for
Bradford Academy

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Project #: 190020

DAVENPORT

Transportation Impact Analysis

Bradford Academy
Mebane, NC

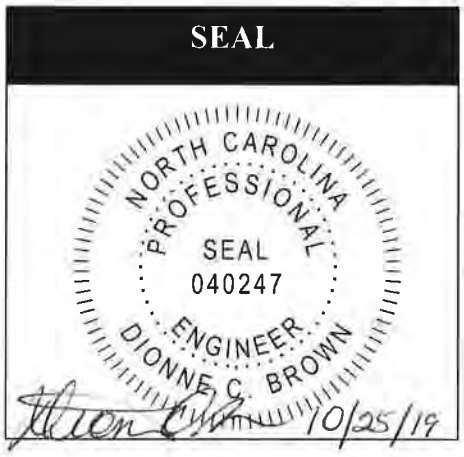
Prepared for Bradford Academy
October 18, 2019

Analysis by: Dionne C. Brown, P.E.

Drafting/Graphics by: Dionne C. Brown, P.E.

Reviewed by: Nick Liguori, P.E.
Frank Amenya, P.E, PTOE

Sealed by: Dionne Brown, P.E.



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Wilmington, NC 28403
Main: 910.251 8912; Fax: 336.458.9377

Serving the Southeast since 2002

Bradford Academy – Transportation Impact Analysis
Mebane, NC
Prepared for Bradford Academy
October 18, 2019

Executive Summary

Site Overview

The existing Bradford Academy is located at 919 South Third Street in Mebane, NC. It is proposed to relocate a location south of I-40, on to Highway NC 119 between Kimrey Road and Nereus Drive with approximately 450 students from grade levels Pre-K to 12th grade by 2023. The new school will be located along NC 119 in front of a proposed subdivision, Summerhaven, that was completed by DAVENPORT in November 2018. The two developments will share one (1) full site access located on NC 119 and the school will have an additional exit only access on NC 119. The site is expected to be built out by 2023.

The proposed school will be in close proximity to the Summerhaven subdivision; therefore, it is required by North Carolina Department of Transportation (NCDOT) and City of Mebane to study two scenarios: with and without the Summerhaven subdivision.

Since the submittal of the Transportation Impact Analysis (TIA) of Summerhaven, the intensity of units has decreased. The TIA analyzed 244 single family homes, while now it is proposed to have 81 single family homes. **Scenario 1** analyzes the proposed school only and describes any recommended improvements from this development only. **Scenario 2** analyzes the Summerhaven subdivision in the background traffic while incorporating the proposed school, then describing any improvements needed for both of the developments.

Trip Generation

The MSTA calculator estimated that there would be 449 trips in the AM peak and 326 trips in the Dismissal peak. This would include parents, staff and student drivers. This school will not have any buses. The calculator determined that the school would need to provide at least 1,297 feet of queue on campus to accommodate the school traffic. The site plan is expected to provide 1,300 feet of queue on campus which will satisfy the MSTA requirement. To achieve the queue, it is recommended to have double stacking on campus. Other recommendations can be found on Exhibit A.

Summary and Conclusion

Based on the analysis there is expected queueing and capacity issues along NC 119 in future no build conditions and build conditions. Some mitigations were recommended as background improvements but it should be noted that queuing is still an issue along NC 119.

Based on the analysis, Summerhaven Subdivision is proposed to construct a 100 foot northbound right turn lane and 100 foot southbound lane with appropriate tapers at Site Access 1. It is recommended that the proposed Bradford Academy provide a southbound left turn lane of 150 feet of storage and a northbound right turn lane of 100 feet of storage with appropriate tapers. It should be noted that the Bradford Academy's recommendation is 50 feet longer than the Summerhaven Subdivision. Though all school traffic will enter through the internal roundabout, the traffic will exit to the north from a separate access point onto NC 119. Therefore, the internal roundabout is not expected to be an operational issue. The subdivision also proposes to construct a southern access on NC 119 that can serve as a relief valve if deemed necessary. **The continuation of the subdivision's approval process should not be an issue as long as the auxiliary lanes at Site Access 1 are constructed to 100 feet of storage for northbound right turn lane and 100 feet of storage for southbound left turn lane on NC 119 prior to the school opening.**

Table A summarizes the recommended improvements.

In conclusion, this study has reviewed the impacts of both background traffic and this development traffic, and has determined that with the recommended improvements in place, there will be adequate capacity to accommodate future traffic. Please note that all accesses to the site are required to be constructed to NCDOT and City of Mebane standards.

Table A – Recommended Improvements	
INTERSECTION	**RECOMMENDATIONS**
NC 119 at Trollingwood Hawfields Road / Old Hillsborough Road	These improvements are suggested regardless of Bradford Academy: • Modify signal • Provide a northbound right turn lane of 150 feet storage with appropriate taper
NC 119 at Turner Road	No improvements recommended.
NC 119 at Kimrey Road	These improvements are suggested for the Hawfield Development: • Provide a northbound right turn lane of 100 feet storage with appropriate taper • Provide a southbound left turn lane of 100 feet storage with appropriate taper • Provide a westbound right turn lane of 100 feet storage with appropriate taper
NC 119 at Jim Minor Road	These improvements are suggested regardless of Bradford Academy: • Provide a signal
NC 54 at Jim Minor Road	No improvements recommended.
NC 119 at Site Access 1	• Provide a northbound right turn lane on NC 119 with 100 feet of storage and appropriate taper. • Provide a southbound left turn lane on NC 119 with 150 feet of storage and appropriate taper.
NC 119 at Site Access 2	• Provide a separate egress lane with left lane of 100 feet storage with appropriate taper.

Bradford Academy

450 Future School Population

1296 Feet Projected Queue

This Design Provides

1300 Feet Total Queue Storage

NOTES:

A = DENOTES LOADING ZONE OF (5) SPACES @ 8' X 20'

B = DENOTES SHORT TERM VISITOR PARKING (10) SPACES

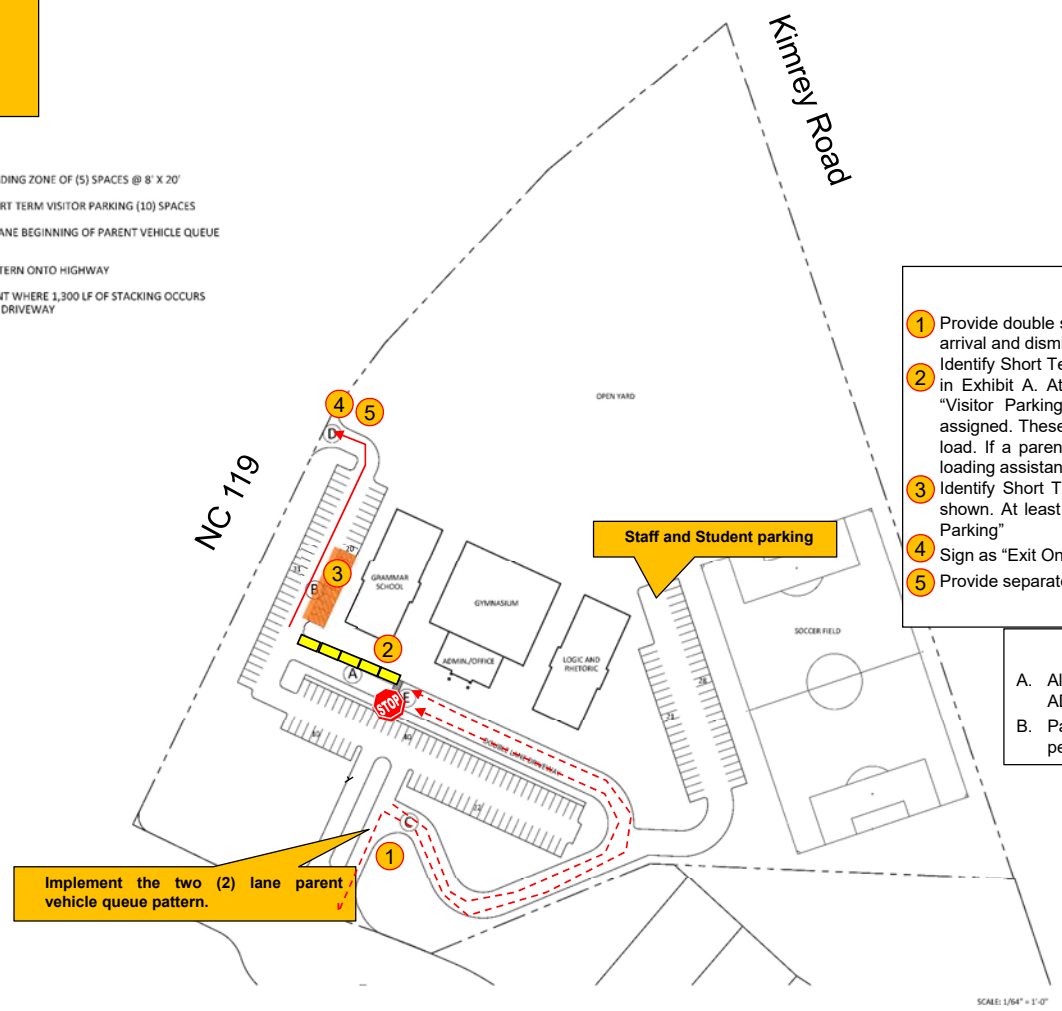
C = DENOTES (2) LANE BEGINNING OF PARENT VEHICLE QUEUE PATTERN

D = NEW EXIT PATTERN ONTO HIGHWAY

E = DENOTES POINT WHERE 1,300 LF OF STACKING OCCURS ALONG TWO LANE DRIVEWAY

LEGEND

- Recommendation
- Entering Parent Traffic
- Exiting Parent Traffic



NOTES

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2. Identify Short Term / Visitor Parking Spaces past the loading zone, as shown in Exhibit A. 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. Identify Short Term / Visitor Parking Spaces near the vehicle exit lane, as shown. At least 10 parking spaces should be identified by installing "Visitor Parking"
4. Sign as "Exit Only"
5. Provide separate left and right egress lanes

OTHER COMMENTS

A. All sidewalks, crosswalks, and curb cuts should comply with ADA standards.

B. Parking lots should be designed to safely accommodate pedestrians.

CONCEPT PLAN
NOT FOR CONSTRUCTION

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Exhibit A
Bradford Academy
On-site Recommendations

Division 7	Alamance County	Mebane, NC
SCALE:	N. C. DEPARTMENT OF TRANSPORTATION	REVIEWED BY:
DATE: 10/18/2019	TRANSPORTATION MOBILITY AND SAFETY DIVISION	REVISIONS:
PREPARED BY: DCB		

DAVENPORT

Bradford Academy – Transportation Impact Analysis
Mebane, NC
Prepared for Bradford Academy
October 18, 2019

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Bradford Academy – Transportation Impact Analysis
Mebane, NC
Prepared for Bradford Academy
October 18, 2019

1.0 Introduction

The existing Bradford Academy is located at 919 South Third Street in Mebane, NC. It is proposed to relocate a location south of I-40, on to Highway NC 119 between Kimrey Road and Nereus Drive with approximately 450 students from grade levels Pre-K to 12th grade by 2023. The new school will be located along NC 119 in front of a proposed subdivision, Summerhaven, that was completed by DAVENPORT in November 2018. The two developments will share one (1) full site access located on NC 119 and the school will have an additional exit only access on NC 119. The site is expected to be built out by 2023. Figure 1 shows the site plan. Figures 2A and 2B show the site location map and vicinity map, respectively.

The proposed school will be in close proximity to the Summerhaven subdivision; therefore, it is required by North Carolina Department of Transportation (NCDOT) and City of Mebane to study two scenarios: with and without the Summerhaven subdivision.

Since the submittal of the Transportation Impact Analysis (TIA) of Summerhaven, the intensity of units has decreased. The TIA analyzed 244 single family homes, while now it is proposed to have 81 single family homes. **Scenario 1** analyzes the proposed school only and describes any recommended improvements from this development only. **Scenario 2** analyzes the Summerhaven subdivision in the background traffic while incorporating the proposed school, then describing any improvements needed for both of the developments.

DAVENPORT was retained to determine the potential traffic impacts of this development and to identify transportation improvements that may be required to accommodate the impacts of both background traffic and new development traffic. The following intersections were included in the study:

- NC 119 at Trollingwood Hawfields Road / Old Hillsborough Road
- NC 119 at Turner Road
- NC 119 at Kimrey Road
- NC 119 at Jim Minor Road
- NC 54 at Jim Minor Road
- NC 119 at Shared Site Access
- Internal roundabout at School Site Access
- NC 119 at Exit Only Access

The study intersections were analyzed for Weekday Arrival (7-9 AM) and Dismissal (2-4 PM) peaks for the following conditions:

- Existing Conditions
- Scenario 1 (without Summerhaven): 2023 Future No Build Conditions
- Scenario 1 (without Summerhaven): 2023 Future Build Conditions
- Scenario 1 (without Summerhaven): 2023 Future Build with Improvements
- Scenario 2 (with Summerhaven): 2023 Future No Build Conditions
- Scenario 2 (with Summerhaven): 2023 Future Build Conditions
- Scenario 2 (with Summerhaven): 2023 Future Build with Improvements

The NCDOT and City of Mebane were contacted to obtain background information and to ascertain the elements to be covered in this TIA. The scope of the project was discussed and approved by NCDOT District Office, MSTA and City of Mebane, more information can be found in the appendix. Information regarding the property was provided by the architect, Plageman Architecture.

NOTES:

A = DENOTES LOADING ZONE OF (3) SPACES @ 8' X 20'

B = DENOTES SHORT TERM VISITOR PARKING (10) SPACES

C = DENOTES (2) LANE BEGINNING OF PARENT VEHICLE QUEUE PATTERN

D = NEW EXIT PATTERN ONTO HIGHWAY

E = DENOTES POINT WHERE 1,300 LF OF STACKING OCCURS ALONG TWO LANE DRIVEWAY



SCHEMATIC SITE PLAN FOR:

BRADFORD ACADEMY

MEBANE, NC

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Plageman Architecture
408 S. Spring St
Burlington, NC 27215
336-226-5830

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FIGURE 1
SITE PLAN

SITE ACCESS



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FIGURE 2A
SITE LOCATION MAP

SITE INDICATOR



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FIGURE 2B
VICINITY MAP

STUDY INTERSECTIONS
EXISTING
PROPOSED

2.0 Existing Conditions

2.1 Inventory

A field investigation was conducted by DAVENPORT staff to determine the existing roadway conditions in the study area. Table 2.1 contains the results of this effort. Figure 3 illustrates the existing lane geometry.

Table 2.1 - Street Inventory

Facility Name	Route #	Typical Cross Section	Pavement Width	Speed Limit	Maintained By
NC 119	NC 119	2-lane undivided	Approx. 21’	Varies between 35 and 45 MPH	NCDOT
NC 54 (East Hardin Street)	NC 54	5-lane with two-way center left turn lane	Approx. 60’	50 MPH	NCDOT
Trollingwood Hawfields Road	SR 1981	2-lane undivided	Approx. 23’	45 MPH	NCDOT
Old Hillsborough Road	SR 2126	2-lane undivided	Approx. 23’	45 MPH	NCDOT
Kimrey Road	SR 2125	2-lane undivided	Approx. 21’	Not Posted, but 55 MPH otherwise	NCDOT
Jim Minor Road	SR 2135	2-lane undivided	Approx. 22’	45 MPH	NCDOT
Turner Road	SR 2133	2-lane undivided	Approx. 20’	45 MPH	NCDOT

2.2 Existing Traffic Volumes

Existing traffic volumes for this project were collected by DAVENPORT staff. Table 2.2 on the following page contains the dates these counts were conducted. Existing traffic volumes were balanced between the study intersections by using the greater of adjacent volumes in order to provide a conservative analysis. School was in session at the time of traffic counts. Figure 4 shows existing AM and Dismissal peak hour volumes. More information can be found in the Traffic Volume Data section of the appendix.

Table 2.2 - Traffic Volume Data

Count Location:	Date Taken:	By:
NC 119 at Trollingwood Hawfields Road / Old Hillsborough Road	10/16/2018	DAVENPORT
NC 119 at Turner Road	5/7/2019	DAVENPORT
NC 119 at Kimrey Road	10/16/2018	DAVENPORT
NC 119 at Jim Minor Road	10/16/2018	DAVENPORT
NC 54 at Jim Minor Road	10/16/2018	DAVENPORT

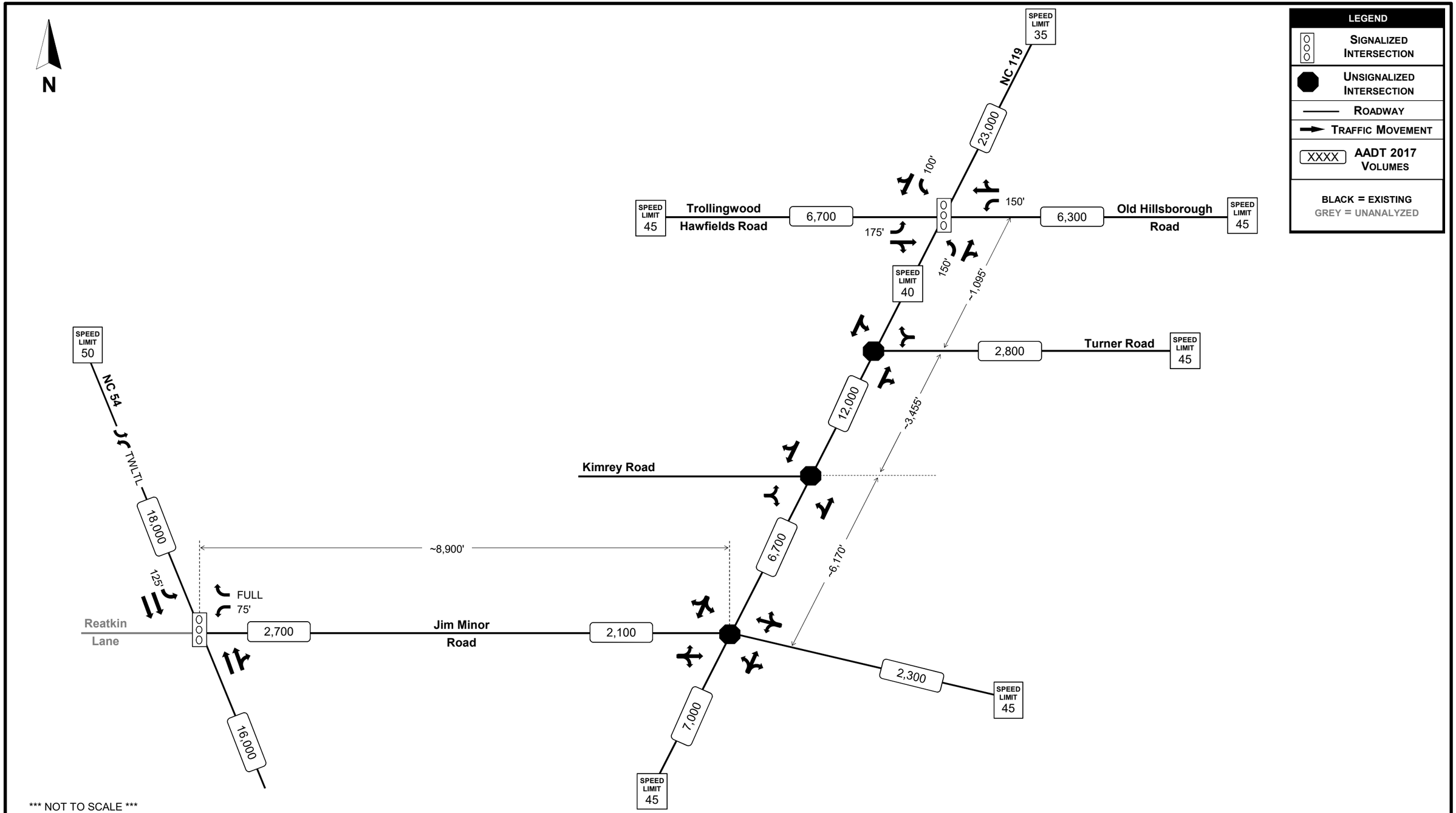

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Figure 3 - Existing Lane Geometry

Bradford Academy

Mebane, NC

DAVENPORT Project Number 190020

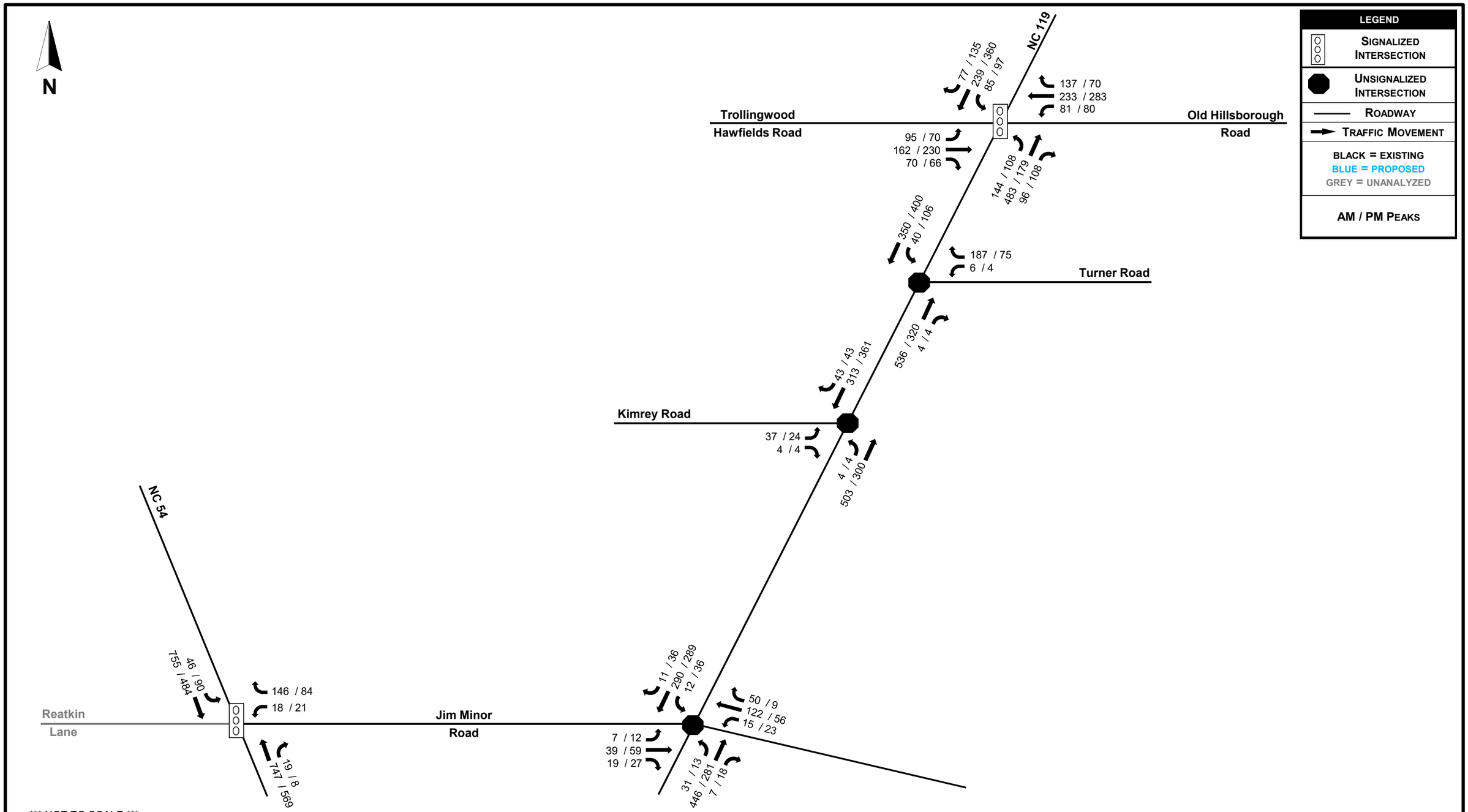

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Figure 4
Existing Traffic Volumes

Bradford Academy
Mebane, NC
DAVENPORT Project Number 190020

3.0 Approved Developments and Committed Improvements

3.1 Approved Developments

Approved developments are developments that have been recently approved in the area, but not yet constructed. There are three (3) nearby developments to account for in future conditions: The Meadows, Magnolia Glen, and Cambridge Park. Since these sites are not yet built out, the traffic associated with these developments was included in this analysis to project future no-build and build traffic volumes.

The **Meadows Residential Development** is to be located on the northwest quadrant of the intersection of Bowman Road and Ben Wilson Road. It is planned to consist of 330 single-family detached homes and 51 townhomes. A TIA was completed by DAVENPORT for this project in November 2015. Based on a field visit, it was determined that some homes have been built and occupied. It was estimated that 30% of the trips associated with this development were captured in the traffic counts. The remaining 70% of these trips were distributed at the study intersections based on the expected routing patterns.

The **Magnolia Glen Residential Development** is to be located on the south side of Old Hillsborough Road, approximately 0.5 mile east of Jones Drive. It is planned to consist of 138 single-family detached homes and 106 lots of active adult detached homes. A TIA was completed by DAVENPORT for this project in June 2015.

The **Cambridge Park Residential Development** is to be located east of Turner Road and west of Jones Drive. It is planned to consist of 599 single-family detached homes and 131 townhomes. A TIA was completed by Ramey Kemp & Associates, Inc. in November 2017.

Also, there is another planned development which has not yet been approved but has been accounted for in the analysis. **Hawfield Development** is to be located adjacent to the Bradford Academy and Summerhaven Subdivision. It is planned to consist of senior living homes, townhomes and single family homes. It is in the preliminary stages and a TIA by Ramey Kemp & Associates has not been completed at this moment. However, the proposed site trips for this development were taken into account in the analysis.

More information regarding these future developments can be found in the Supporting Documentation section of the Appendix.

3.2 Committed Improvements

Committed improvements are improvements that are planned by NCDOT, City of Mebane or a developer in the area, but not yet constructed. Per discussions with NCDOT and City of Mebane, the following committed roadway improvements along NC 119 corridor at the intersections of Trollingwood Hawfields Road / Old Hillsborough Road and Turner Road associated with the **Cambridge Park Residential Development**

were to be included in the traffic impact analysis in the future conditions:

- Extension of the southbound left turn lane along NC 119 at the intersection of Trollingwood Hawfields Road / Old Hillsborough Road to provide 225 feet of storage with appropriate taper.
- Construction of a westbound right turn lane along Old Hillsborough Road at the intersection of NC 119 with 150 feet of storage and appropriate taper.
- Construction of a southbound left turn lane along NC 119 at the intersection of Turner Road with 125 feet of storage and appropriate taper.
- Construction of a westbound right turn lane along Turner Road at the intersection of NC 119 with 50 feet of storage and appropriate taper.

4.0 Methodology

4.1 Base Assumptions and Standards

In general, the analysis for this project was conducted utilizing commonly accepted NCDOT and City of Mebane standards. The following table contains a summary of the base assumptions:

Table 4.1 - Assumptions	
Peak Hour Factor	0.50 for movements affected by school traffic only 0.75 for movements affected by both school and background traffic 0.90 for movements affected by background traffic only
Background Traffic Annual Growth Rate	1% per year for all roadways
Analysis Software	Synchro/SimTraffic Version 10.0
Lane widths	12-feet
Truck percentages	0% for school internal movements 2% for typical movements

4.2 Trip Generation

The North Carolina Department of Transportation Traffic Engineering Branch has compiled a database for school operation in North Carolina based on numerous studies conducted by the Municipal & School Transportation Assistance Unit (MSTA). NCDOT has developed a school trip calculator based on this database. This trip calculator is generally accepted as standard for school trip generation in North Carolina because it is specific to this region of the country.

Bradford Academy is proposed to have a full capacity of approximately 450 students from Pre-K to 12th grade. Bradford Academy is expected to have 35 staff members and no school buses. Table 4.2 illustrates the trips generated using the MSTA calculator.

Table 4.2 – MSTA Calculator

Bradford Academy

Average Weekday Driveway Volumes			AM Peak Hour		Dismissal Peak Hour	
Land Use	Size		Enter	Exit	Enter	Exit
Private School (Pre-K-12)	423	Parents	197	197	133	133
	25	Student Drivers	25	0	0	25
	35	Staff	35	0	0	35
Total Trips			**252**	**197**	**133**	**193**

The TIA was carried out based on NCDOT MSTA guidelines. The NCDOT MSTA calculator is used to calculate potential school volumes as well to determine the amount of queue NCDOT would require onsite.

This school provides adequate and accessible parking for parents of Pre-K and K students to park and walk into the building with their students. The MSTA School Calculator spreadsheet allows a reduction to the queue length in this case, which was applied.

4.3 Trip Distribution

Site trips for this school were distributed based on the existing traffic patterns and engineering judgment. The trip distribution for site trips is shown in Figure 5, and is based on the following directional patterns:

- 30% to and from the north on NC 119
- 18% to and from the north on NC 54
- 15% to and from the south on NC 119
- 12% to and from the west on Trollingwood Hawfields Road
- 10% to and from the east on Turner Road

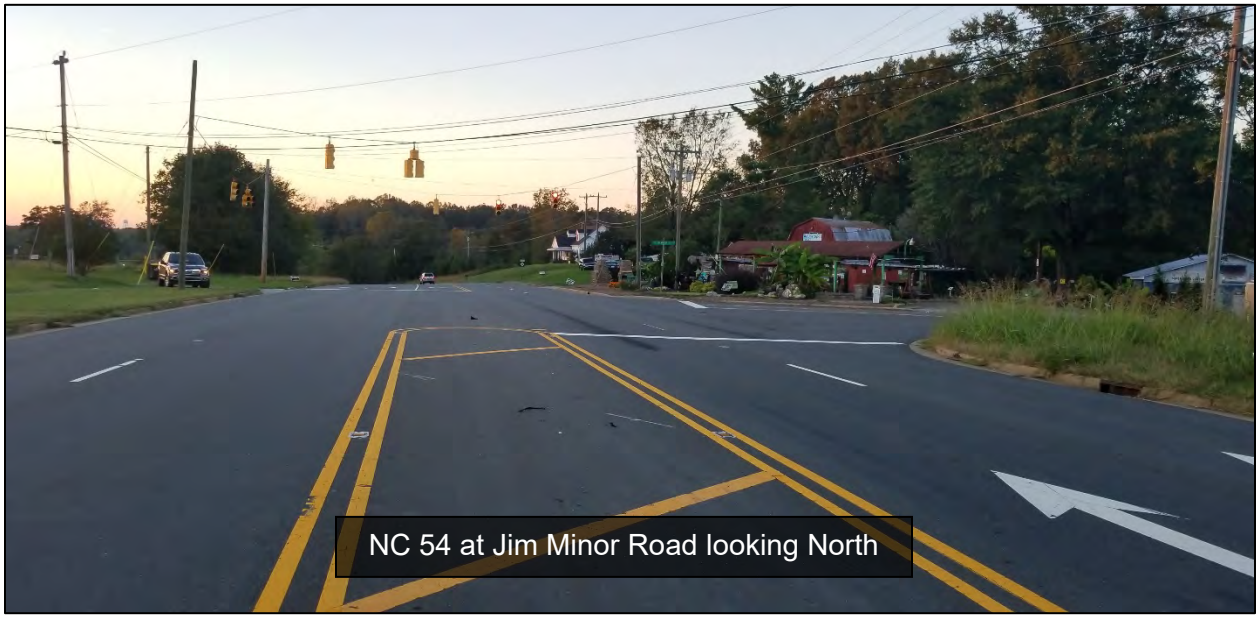
- 8% to and from the east on Old Hillsborough Road
- 5% to and from the east on Jim Minor Road
- 2% to and from the west on Kimrey Road

4.4 Future No Build Traffic Volumes

The 2023 future no build traffic volumes were computed by applying a 1.0% compounded annual growth rate to the existing traffic volumes and adding approved development trips. Figure 6 shows the **Scenario 1**: 2023 future no build traffic volumes for AM and Dismissal peaks.

4.5 Future Build Traffic Volumes

The 2023 future build traffic volumes were computed by summing the 2023 future no build volumes and school trips due to the proposed project. School trips are shown in Figure 7. The **Scenario 1**: 2023 future build volumes are shown for AM and Dismissal peaks in Figure 8.



N

LEGEND

- Signalized Intersection
- Unsignalized Intersection
- Roadway
- Traffic Movement
- % Destination Node

BLACK = EXISTING
BLUE = PROPOSED
GREY = UNANALYZED

30%
30% IN
NC 119
12% IN
8%
Trollingwood
Hawfields Road
8% IN
Old Hillsborough
Road
12%
8% OUT
30% OUT
12% OUT
50% IN
10% IN
Turner Road
10%
50% OUT
10% OUT
60% IN
2%
Kimrey Road
2% IN
2% OUT
60% OUT
62% IN
62% OUT
38% OUT
Site Access 2
Exit Only
38% OUT
62% IN
Site Access 1
100% IN
38% IN
18% OUT
15% OUT
5% OUT
5% IN
18% IN
15% IN
15%
5%
18%
NC 54
18% IN
18% OUT
Reatkin
Lane
Jim Minor
Road

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Figure 5 - Trip Distribution

Bradford Academy

Mebane, NC
DAVENPORT Project Number 190020

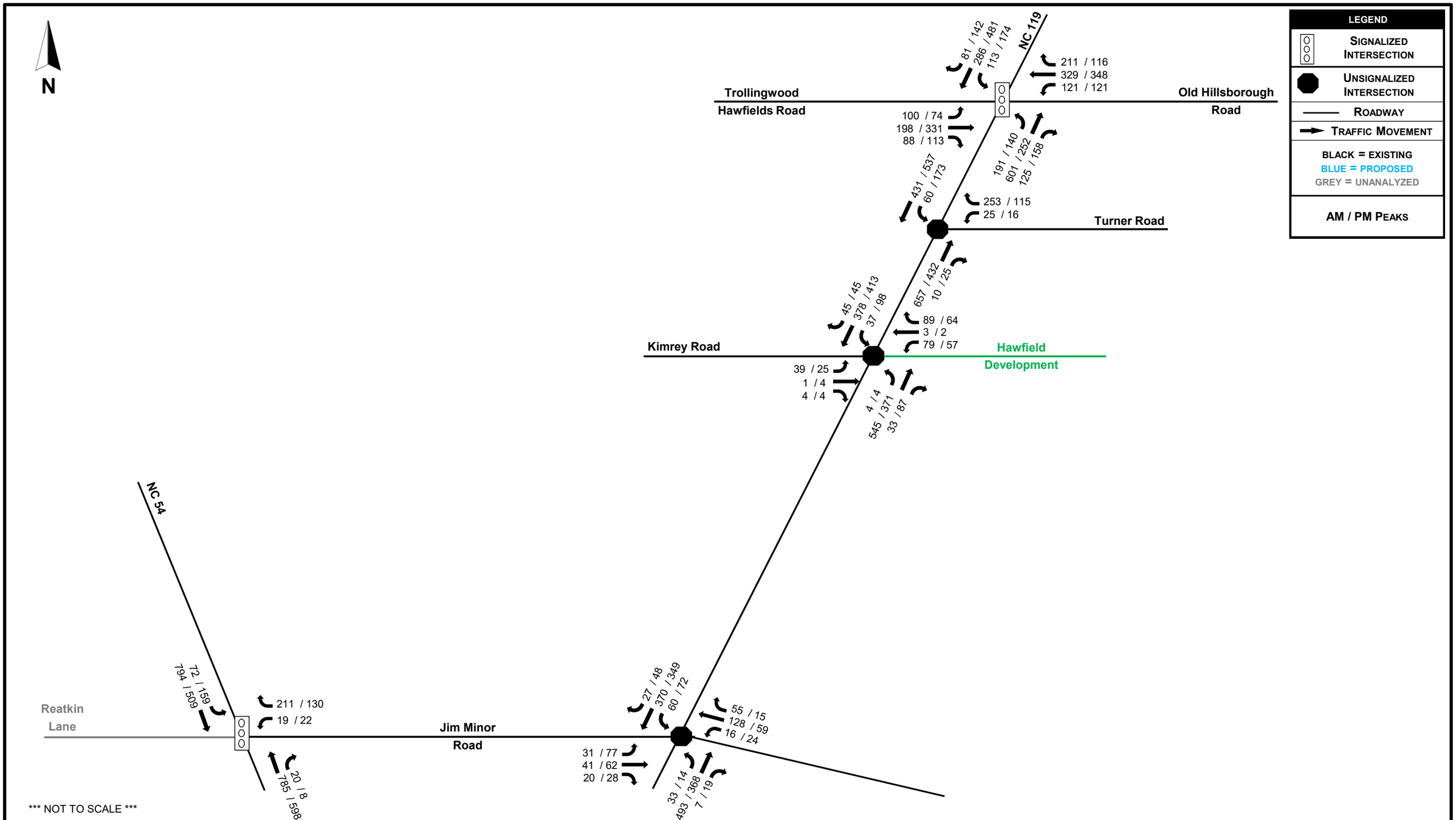

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Figure 6
Scenario 1: 2023 Future No Build Volumes

Bradford Academy
Mebane, NC
DAVENPORT Project Number 190020

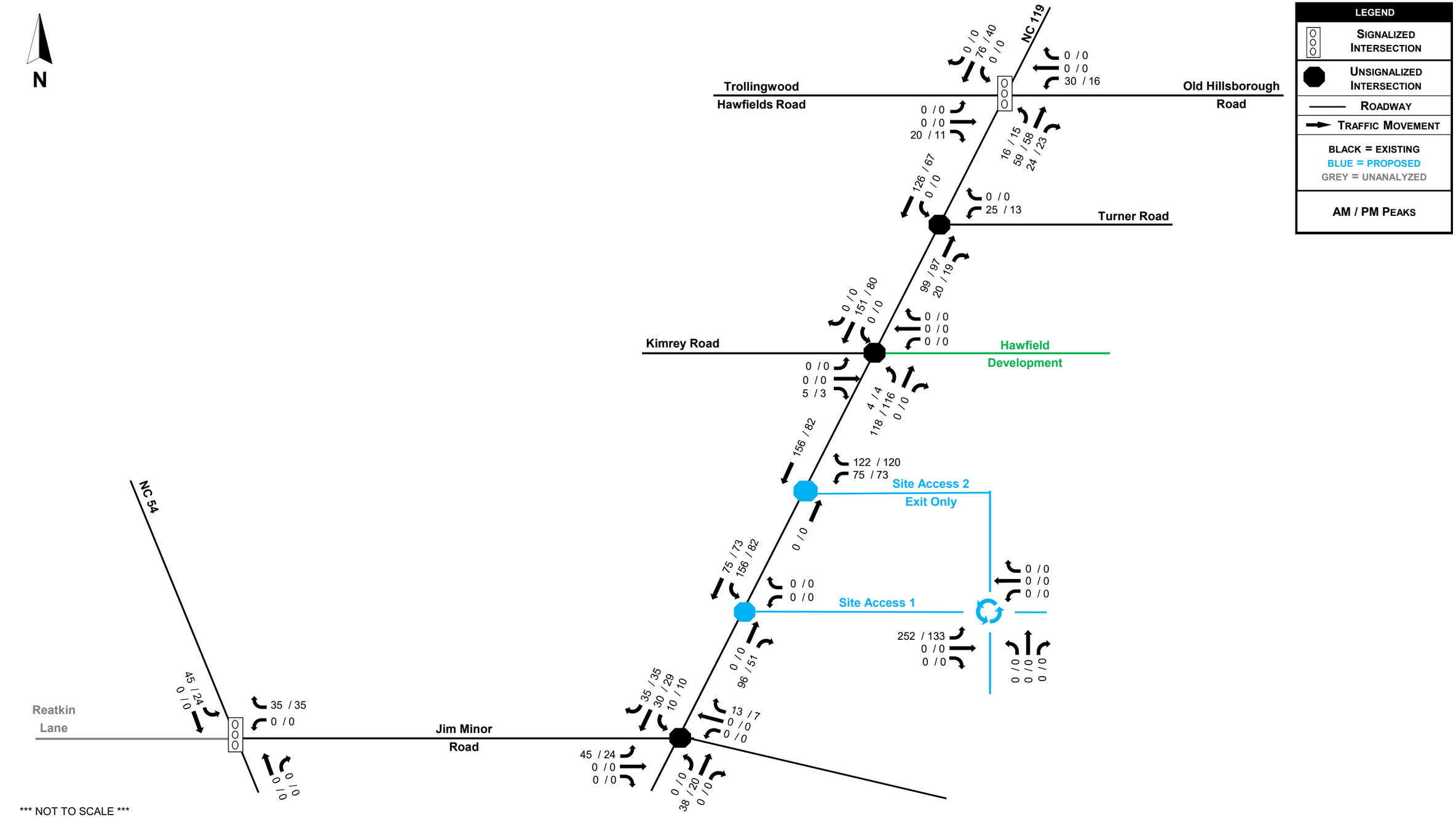

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Figure 7
School Trips

Bradford Academy
Mebane, NC
DAVENPORT Project Number 190020

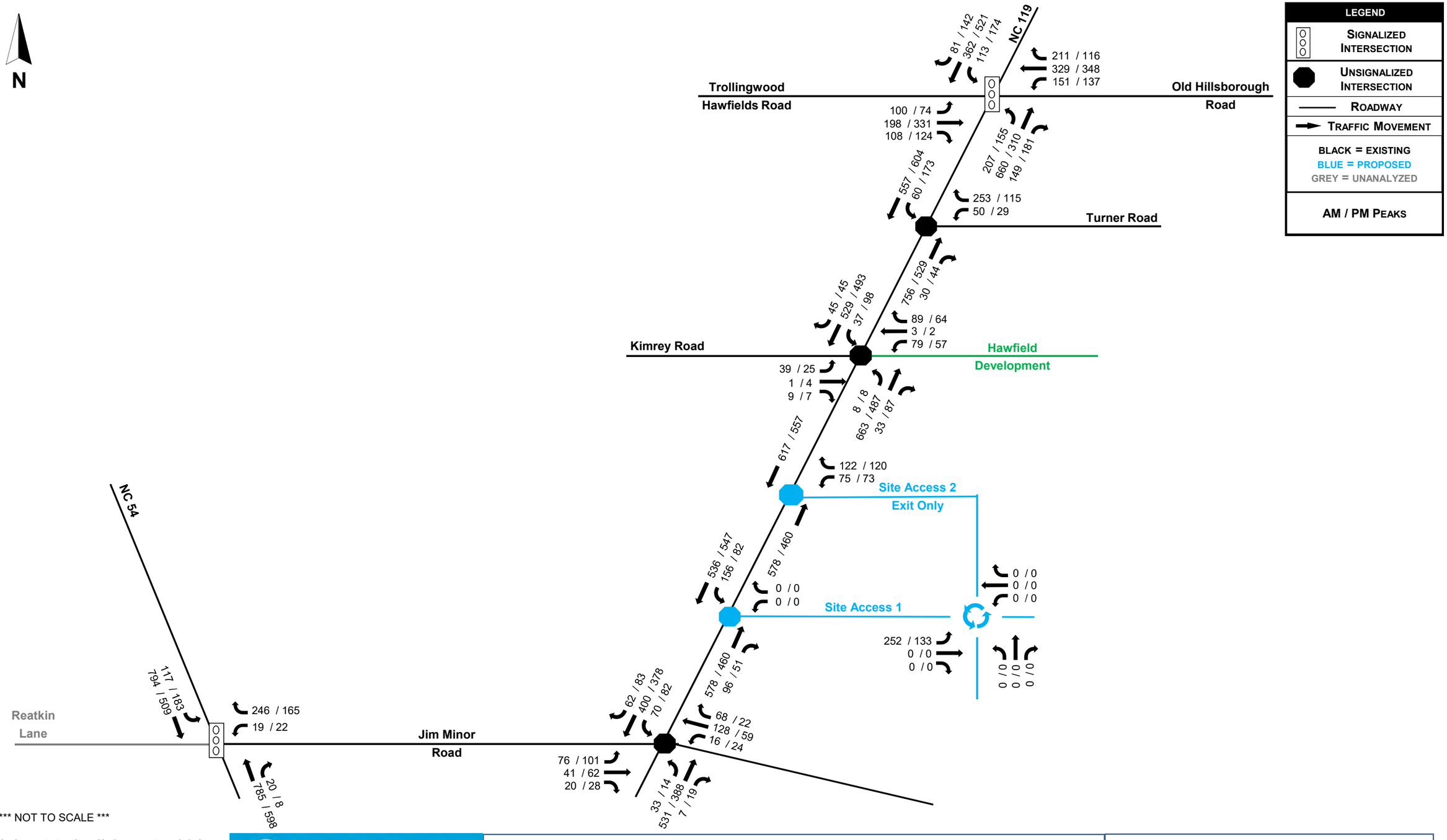

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Figure 8
Scenario 1: 2023 Future Build Volumes

Bradford Academy
Mebane, NC
DAVENPORT Project Number 190020

5.0 Intersection Capacity Analysis

5.1 Level of Service Evaluation Criteria

The Transportation Research Board's Highway Capacity Manual (HCM) utilizes a term "level of service" to measure how traffic operates in intersections and on roadway segments. There are currently six levels of service ranging from A to F. Level of service "A" represents low-volume traffic operations and Level of Service "F" represents high-volume, oversaturated traffic operations. Synchro Traffic Modeling software was used to determine the level of service for studied intersections. Note for unsignalized intersection analysis, the level of service noted is for the worst approach of the intersection. This is typically the left turn movement for the side street approach, due to the number of opposing movements. All worksheet reports from the analyses can be found in the Appendix.

Table 5.1 – Highway Capacity Manual

Levels of Service and Control Delay Criteria

Signalized Intersection		**Unsignalized Intersection**	
Level of Service	Control Delay Per vehicle (sec)	Level of Service	Delay Range (sec)
A	≤ 10	A	≤ 10
B	> 10 and ≤ 20	B	> 10 and ≤ 15
C	> 20 and ≤ 35	C	> 15 and ≤ 25
D	> 35 and ≤ 55	D	> 25 and ≤ 35
E	> 55 and ≤ 80	E	> 35 and ≤ 50
F	> 80	F	> 50

5.2 Scenario 1: Proposed School Only – Discussion of Results

The results of the level of service analysis are discussed by intersection below.

NC 119 at Trollingwood Hawfields Road / Old Hillsborough Road

This signalized intersection currently operates at LOS C during both the AM and Dismissal peak hours. In 2023 future no build conditions, this intersection is expected to operate at LOS E in the AM and Dismissal peaks. In 2023 future build conditions, it is expected to operate at LOS F during the AM and Dismissal peaks. New site traffic represents an increase of 8% during the AM peak and 6% during the Dismissal peak. Analysis indicates that a northbound right turn lane at this intersection will help improve the level of service. However, it should be noted this turn lane is needed regardless of the proposed project. To mitigate the level of service, it is recommended to provide northbound right turn lane of 150 feet of storage on NC 119 with appropriate taper and modify the signal.

NC 119 at Turner Road

This unsignalized intersection currently operates at LOS C during the AM peak hour and LOS B during the Dismissal peak hour. In 2023 future no build conditions, LOS D is anticipated in the AM peak and LOS C in the Dismissal peak. In 2023 future build conditions, it is expected to operate at LOS F during the AM peak and LOS E during the Dismissal peak.

This LOS E/F is a typical condition for stop-controlled movements onto major roads such as NC 119 and this condition is expected to be limited to the peak hours. There are constraints which pose challenges to widening at this intersection, including a cemetery, drainage features, and utilities. No improvements are recommended.

NC 119 at Kimrey Road

This unsignalized intersection currently operates at LOS C during both the AM and Dismissal peak hours. In 2023 future no build conditions, Hawfield Development will add a westbound leg to the intersection and is expected to operate at LOS F in the AM peak and LOS E in the Dismissal peak. In 2023 future build conditions this intersection is expected to operate at LOS F in the AM and Dismissal peaks. It is anticipated that traffic volumes for the Hawfield Development may warrant a northbound right turn lane of 100 feet of storage, a southbound left turn lane of 100 feet of storage and a westbound left turn lane of 100 feet of storage all with appropriate tapers. However, these improvements should be considered regardless of the proposed project.

NC 119 at Jim Minor Road

This unsignalized intersection currently operates at LOS D during the AM peak and LOS C during the Dismissal peak hour. In 2023 future no build conditions, it is expected to operate at LOS F during the AM and Dismissal peaks.

The LOS F condition occurs on the stop-controlled approach of Jim Minor Road and is mainly due to the high intersection volumes during the peak periods and lack of sufficient gaps on NC 119 for the traffic on the stop-controlled approaches to make left turns. It should be noted that this condition is expected in 2023 no-build conditions, regardless of the proposed project.

To mitigate the LOS F, a signal warrant analysis was conducted to determine if signalization at this intersection would be warranted based on the Federal Highway Administration criteria presented in The Manual on Uniform Traffic Control Devices (MUTCD).

DAVENPORT collected a thirteen (13) hour turning movement traffic count at the intersection of NC 119 at Jim Minor Road. The full report for this traffic count can be found in the Appendix.

The signal warrant analysis for this intersection was conducted using PC-Warrants software. The Federal Highway Administration Manual on Uniform Traffic Control Devices (MUTCD 2009 Edition) has established nine criteria that can be used to justify the installation of a Traffic signal, which are the following:

- Warrant 1, Eight-Hour Vehicular Volume
- Warrant 2, Four-Hour Vehicular Volume
- Warrant 3, Peak Hour
- Warrant 4, Pedestrian Volume
- Warrant 5, School Crossing
- Warrant 6, Coordinated Signal System
- Warrant 7, Crash Experience
- Warrant 8, Roadway Network
- Warrant 9, Intersection Near a Grade Crossing

The warrants measured for existing conditions, future no-build conditions and for future build conditions included Warrants 1, 2 & 3.

Warrants 1-3, Traffic Volumes

Warrants 1-3 are related to traffic volumes and were considered for existing and future conditions. The 85th percentile speed on NC 119 was assumed to be 50 mph for this analysis; therefore, the 70% volumes were utilized for the warrants. Based on the background traffic volumes at this intersection, Warrants 2 and 3 are satisfied in the existing conditions and all volume warrants for the future conditions.

Signal Warrant Analysis Results

The results of the signal warrant analysis are summarized in Table 5.2, below. Based on the criteria for determining the need of a signal, a signal at this intersection is warranted under background conditions without the addition of site generated traffic. Additional information and reports from PC-Warrants can be found in the signal warrant analysis section of the appendix.

Table 5.2 – Signal Warrant Analysis

Warrant	Existing Conditions			Future No-Build Conditions			Future Build Conditions		
	Status			Status			Status		
	N/A	Not Met	Met	N/A	Not Met	Met	N/A	Not Met	Met
Warrant 1: Eight-Hour Vehicular Volume		X				**X**			**X**
Warrant 1A – Minimum Vehicular Volume		X			X			X	
Warrant 1B – Interruption of Continuous Traffic		X			X			X	
Warrant 1C – Combination of Warrants		X				**X**			**X**
Warrant 2: Four-Hour Vehicular Volume			**X**			**X**			**X**
Warrant 3: Peak Hour			**X**			**X**			**X**

The Manual on Uniform Traffic Control Devices (MUTCD) indicates that a traffic signal can be considered when one of the nine warrants is met. Our analysis indicates that in background conditions, one (1) signal warrant was met for the peak hour vehicular volume warrant. Therefore, the following is recommended to mitigate the background capacity issues:

- Signalize intersection

With these improvements in place, this intersection is anticipated to operate at LOS B during the AM and PM peaks.

NC 54 at Jim Minor Road

This signalized intersection currently operates at LOS A during both the AM and Dismissal peak hours. In 2023 future no build and build conditions, this intersection is expected to operate at LOS B in both peaks. No improvements are recommended.

NC 119 at Site Access 1

This unsignalized intersection is expected to operate at LOS A during both the AM and Dismissal peak hours in 2023 future build conditions. The need for auxiliary turn lanes was reviewed based on page 80 of the NCDOT “Policy on Street and Driveway Access

to North Carolina Highways". Based on projected volumes, a left and right turn lane are warranted on NC 119. The following improvements are recommended for the site access:

- Provide a northbound right turn lane on NC 119 with 100 feet of storage and appropriate taper
- Provide a southbound left turn lane on NC 119 with 150 feet of storage and appropriate taper

NC 119 at Site Access 2 (exit only)

This unsignalized intersection is expected to operate at LOS F during both the AM and Dismissal peak hours in 2023 future build conditions. The LOS F condition occurs on the stop-controlled approach of the exit only access and is mainly due to the high intersection volumes during the peak periods and lack of sufficient gaps on NC 119 for left turn movements. It is recommended to provide a westbound left turn lane on the egress approach with 100 feet of storage and appropriate taper.

Site Access 1 at Internal Roundabout

This proposed roundabout is expected to operate at LOS A in the AM and Dismissal peaks. With the school proposing a separate exiting access, this intersection is not expected to have a capacity nor queuing issue. The site plan shows approximately 190 feet of queue storage between NC 119 and the roundabout, which is greater than the maximum anticipated queue of 66 feet (see Table 7.7). The presence of a separate exit access for the School will help to keep expected queues from blocking the roundabout.

The recommended improvements are illustrated in Figure 9.

5.3 Level of Service and Queuing Summary

Table 5.3 presents the summary of the level of service analysis for the proposed development. Tables 5.4 – 5.11 present the summaries of the SimTraffic Queuing Analysis for each study intersection by movement.

Table 5.3 - Level of Service Summary – Scenario 1 (without Summerhaven Development)

AM Peak	2018 Existing	2023 Future No Build	2023 Future Build	2023 Future Build with Improvements
NC 119 at Trollingwood Hawfields Road / Old Hillsborough Road	C (34.3)	E (58.7)	F (125.4)	E (76.2)
NC 119 at Turner Road	C (18.2) WB Approach	D (29.8) WB Approach	F (114.0) WB Approach	
NC 119 at Kimrey Road	C (19.5) EB Approach	F (54.5) EB Approach	F (507.2) WB Approach	F (374.9) EB Approach
NC 119 at Jim Minor Road	D (32.6) WB Approach	F (371.0) EB Approach	F (545.4) WB Approach	B (10.4) Signalized
NC 54 at Jim Minor Road / Reatkin Lane	A (7.7)	B (10.2)	B (12.4)	
NC 119 at Site Access 1			A (4.2) SB Approach	A (4.2) SB Approach
NC 119 at Site Access 2 (exit only)			F (442.1) WB Approach	F (105.2) WB Approach
Site Access 1 at Internal Roundabout			A (6.0) Roundabout	
Dismissal peak	**2018 Existing**	**2023 Future No Build**	**2023 Future Build**	**2023 Future Build with Improvements**
NC 119 at Trollingwood Hawfields Road / Old Hillsborough Road	C (29.8)	E (74.2)	F (140.3)	F (125.8)
NC 119 at Turner Road	B (11.8) WB Approach	C (16.6) WB Approach	E (48.7) WB Approach	
NC 119 at Kimrey Road	C (15.4) EB Approach	E (42.8) EB Approach	F (221.6) WB Approach	F (128.3) EB Approach
NC 119 at Jim Minor Road	C (24.8) EB Approach	F (247.8) EB Approach	F (1451.2) EB Approach	B (10.4) Signalized
NC 54 at Jim Minor Road / Reatkin Lane	A (7.2)	B (10.4)	B (12.0)	
NC 119 at Site Access 1			A (1.8) SB Approach	A (1.8) SB Approach
NC 119 at Site Access 2 (exit only)			F (215.9) WB Approach	E (47.0) WB Approach
Site Access 1 at Internal Roundabout			A (4.2) Roundabout	

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

Table 5.4 - Queue Summary NC 119 at Trollingwood Hawfields Road / Old Hillsborough Road AM Peak Hour Queues										
2023 No Build	**EBL**	**EBTR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBTR**	**SBL**	**SBTR**	
Max Queue (ft)	275	243	249	531	250	200	1045	300	368	
95th Percentile Queue (ft)	290	228	248	481	290	232	1054	286	355	
Storage Bay (ft)	175	-	150	-	150	150	-	225	-	
2023 Build	**EBL**	**EBTR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBTR**	**SBL**	**SBTR**	
Max Queue (ft)	275	631	250	1004	250	200	1046	300	1120	
95th Percentile Queue (ft)	313	609	269	824	296	229	1208	352	1103	
Storage Bay (ft)	175	-	150	-	150	150	-	225	-	
2023 Build + Imp	**EBL**	**EBTR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBTR**
Max Queue (ft)	275	1210	250	1002	250	249	1045	250	300	803
95th Percentile Queue (ft)	353	1485	271	1219	319	281	1051	318	366	775
Storage Bay (ft)	175	-	150	-	150	150	-	150	225	-
Dismissal peak Hour Queues										
2023 No Build	**EBL**	**EBTR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBTR**	**SBL**	**SBTR**	
Max Queue (ft)	274	1209	249	595	250	200	624	300	1168	
95th Percentile Queue (ft)	306	1265	276	658	311	251	644	378	1223	
Storage Bay (ft)	175	-	150	-	150	150	-	225	-	
2023 Build	**EBL**	**EBTR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBTR**	**SBL**	**SBTR**	
Max Queue (ft)	275	1233	250	488	250	200	1038	300	1157	
95th Percentile Queue (ft)	256	1230	277	445	296	218	1118	330	1147	
Storage Bay (ft)	175	-	150	-	150	150	-	225	-	
2023 Build + Imp	**EBL**	**EBTR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBTR**
Max Queue (ft)	275	1233	250	643	250	250	734	250	300	1139
95th Percentile Queue (ft)	327	1359	283	681	327	295	640	272	355	1138
Storage Bay (ft)	175	-	150	-	150	150	-	150	225	-

Table 5.5 - Queue Summary NC 119 at Turner Road AM Peak Hour Queues					
2023 No Build	**WBL**	**WBR**	**NBTR**	**SBL**	
Max Queue (ft)	806	150	987	125	
95th Percentile Queue (ft)	1101	168	1022	102	
Storage Bay (ft)	-	50	125		
2023 Build	**WBL**	**WBR**	**NBTR**	**SBL**	**SBT**
Max Queue (ft)	843	150	1722	69	1030
95th Percentile Queue (ft)	905	198	1812	60	776
Storage Bay (ft)	-	50	-	125	-
2023 Build + Imp	**WBL**	**WBR**	**NBTR**	**SBL**	**SBT**
Max Queue (ft)	806	150	606	115	162
95th Percentile Queue (ft)	930	153	633	108	77
Storage Bay (ft)	-	50	-	125	-
Dismissal peak Hour Queues					
2023 No Build	**WBL**	**WBR**	**SBL**		
Max Queue (ft)	15	51	96		
95th Percentile Queue (ft)	17	36	87		
Storage Bay (ft)	-	50	125		
2023 Build	**WBL**	**WBR**	**NBTR**	**SBL**	
Max Queue (ft)	59	66	153	95	
95th Percentile Queue (ft)	47	54	96	81	
Storage Bay (ft)	-	50	-	125	
2023 Build + Imp	**WBL**	**WBR**	**NBTR**	**SBL**	
Max Queue (ft)	103	89	22	102	
95th Percentile Queue (ft)	85	75	11	99	
Storage Bay (ft)	-	50	-	125	

Table 5.6 - Queue Summary NC 119 at Kimrey Road AM Peak Hour Queues					
2023 No Build	**EBLTR**	**WBLTR**	**SBLTR**		
Max Queue (ft)	43	194	152		
95th Percentile Queue (ft)	40	182	89		
Storage Bay (ft)	-	-	-		
2023 Build	**EBLTR**	**WBLTR**	**NBLTR**	**SBLTR**	
Max Queue (ft)	365	516	179	1407	
95th Percentile Queue (ft)	310	597	92	1795	
Storage Bay (ft)	-	-	-	-	
2023 Build + Imp	**EBLTR**	**WBLT**	**WBR**	**NBLT**	**SBL**
Max Queue (ft)	301	478	200	191	40
95th Percentile Queue (ft)	295	488	258	147	27
Storage Bay (ft)	-	-	100	-	100
Dismissal peak Hour Queues					
2023 No Build	**EBLTR**	**WBLTR**	**SBLTR**		
Max Queue (ft)	75	111	182		
95th Percentile Queue (ft)	65	90	126		
Storage Bay (ft)	-	-	-		
2023 Build	**EBLTR**	**WBLTR**	**NBLTR**	**SBLTR**	
Max Queue (ft)	23	90	101	195	
95th Percentile Queue (ft)	23	82	58	177	
Storage Bay (ft)	-	-	-	-	
2023 Build + Imp	**EBLTR**	**WBLT**	**WBR**	**NBLT**	**SBL**
Max Queue (ft)	45	152	71	59	42
95th Percentile Queue (ft)	43	142	49	28	36
Storage Bay (ft)	-	-	100	-	100

Table 5.7 - Queue Summary NC 119 at Jim Minor Road AM Peak Hour Queues				
2023 No Build	**EBLTR**	**WBLTR**	**NBLTR**	**SBLTR**
Max Queue (ft)	113	165	24	164
95th Percentile Queue (ft)	96	151	23	115
Storage Bay (ft)	-	-	-	-
2023 Build	**EBLTR**	**WBLTR**	**NBLTR**	**SBLTR**
Max Queue (ft)	292	793	1382	114
95th Percentile Queue (ft)	285	741	815	98
Storage Bay (ft)	-	-	-	-
2023 Build + Imp	**EBLTR**	**WBLTR**	**NBLTR**	**SBLTR**
Max Queue (ft)	140	207	574	1018
95th Percentile Queue (ft)	138	179	534	815
Storage Bay (ft)	-	-	-	-
Dismissal peak Hour Queues				
2023 No Build	**EBLTR**	**WBLTR**	**NBLTR**	**SBLTR**
Max Queue (ft)	155	96	87	69
95th Percentile Queue (ft)	127	94	54	61
Storage Bay (ft)	-	-	-	-
2023 Build	**EBLTR**	**WBLTR**	**NBLTR**	**SBLTR**
Max Queue (ft)	286	118	45	119
95th Percentile Queue (ft)	233	109	27	104
Storage Bay (ft)	-	-	-	-
2023 Build + Imp	**EBLTR**	**WBLTR**	**NBLTR**	**SBLTR**
Max Queue (ft)	181	119	265	447
95th Percentile Queue (ft)	161	95	223	430
Storage Bay (ft)	-	-	-	-

Table 5.8 - Queue Summary NC 54 at Jim Minor Road AM Peak Hour Queues							
2023 No Build	**WBL**	**WBR**	**NBT**	**NBTR**	**SBL**	**SBT**	**SBT**
Max Queue (ft)	37	156	138	118	73	72	53
95th Percentile Queue (ft)	25	134	122	107	69	70	58
Storage Bay (ft)	75	-	-	-	125	-	-
2023 Build	**WBL**	**WBR**	**NBT**	**NBTR**	**SBL**	**SBT**	**SBT**
Max Queue (ft)	37	150	124	138	75	75	72
95th Percentile Queue (ft)	31	148	131	125	77	70	57
Storage Bay (ft)	75	-	-	-	125	-	-
2023 Build + Imp	**WBL**	**WBR**	**NBT**	**NBTR**	**SBL**	**SBT**	**SBT**
Max Queue (ft)	174	178	175	165	190	208	94
95th Percentile Queue (ft)	92	173	150	164	180	145	69
Storage Bay (ft)	75	-	-	-	125	-	-
Dismissal peak Hour Queues							
2023 No Build	**WBL**	**WBR**	**NBT**	**NBTR**	**SBL**	**SBT**	**SBT**
Max Queue (ft)	37	70	167	108	96	74	53
95th Percentile Queue (ft)	26	72	126	99	93	48	52
Storage Bay (ft)	75	-	-	-	125	-	-
2023 Build	**WBL**	**WBR**	**NBT**	**NBTR**	**SBL**	**SBT**	**SBT**
Max Queue (ft)	15	71	93	74	199	94	52
95th Percentile Queue (ft)	15	73	79	71	168	51	39
Storage Bay (ft)	75	-	-	-	125	-	-
2023 Build + Imp	**WBL**	**WBR**	**NBT**	**NBTR**	**SBL**	**SBT**	**SBT**
Max Queue (ft)	36	132	134	126	198	53	74
95th Percentile Queue (ft)	30	111	120	115	182	49	48
Storage Bay (ft)	75	-	-	-	125	-	-

Table 5.9 - Queue Summary NC 119 at Site Access 1 AM Peak Hour Queues		
2023 Build	**NBTR**	**SBLT**
Max Queue (ft)	529	514
95th Percentile Queue (ft)	695	599
Storage Bay (ft)	-	-
2023 Build + Imp	**NBR**	**SBL**
Max Queue (ft)	40	142
95th Percentile Queue (ft)	24	116
Storage Bay (ft)	100	150
Dismissal peak Hour Queues		
2023 Build	**SBLT**	
Max Queue (ft)	116	
95th Percentile Queue (ft)	114	
Storage Bay (ft)	-	
2023 Build + Imp	**NBR**	**SBL**
Max Queue (ft)	22	71
95th Percentile Queue (ft)	10	58
Storage Bay (ft)	100	150

Table 5.10 - Queue Summary NC 119 at Site Access 2 AM Peak Hour Queues		
2023 Build	**WBLR**	**SBT**
Max Queue (ft)	68	552
95th Percentile Queue (ft)	66	757
Storage Bay (ft)	-	-
2023 Build + Imp	**WBL**	**WBR**
Max Queue (ft)	152	114
95th Percentile Queue (ft)	154	107
Storage Bay (ft)	100	-
Dismissal peak Hour Queues		
2023 Build	**WBLR**	
Max Queue (ft)	68	
95th Percentile Queue (ft)	68	
Storage Bay (ft)	-	
2023 Build + Imp	**WBL**	**WBR**
Max Queue (ft)	162	176
95th Percentile Queue (ft)	124	146
Storage Bay (ft)	100	-

Table 5.11 - Queue Summary Site Access 1 at Internal Roundabout AM Peak Hour Queues	
2023 Build	**EBLTR**
Max Queue (ft)	25
Storage Bay (ft)	-
Dismissal peak Hour Queues	
2023 Build	**EBLTR**
Max Queue (ft)	11
Storage Bay (ft)	-

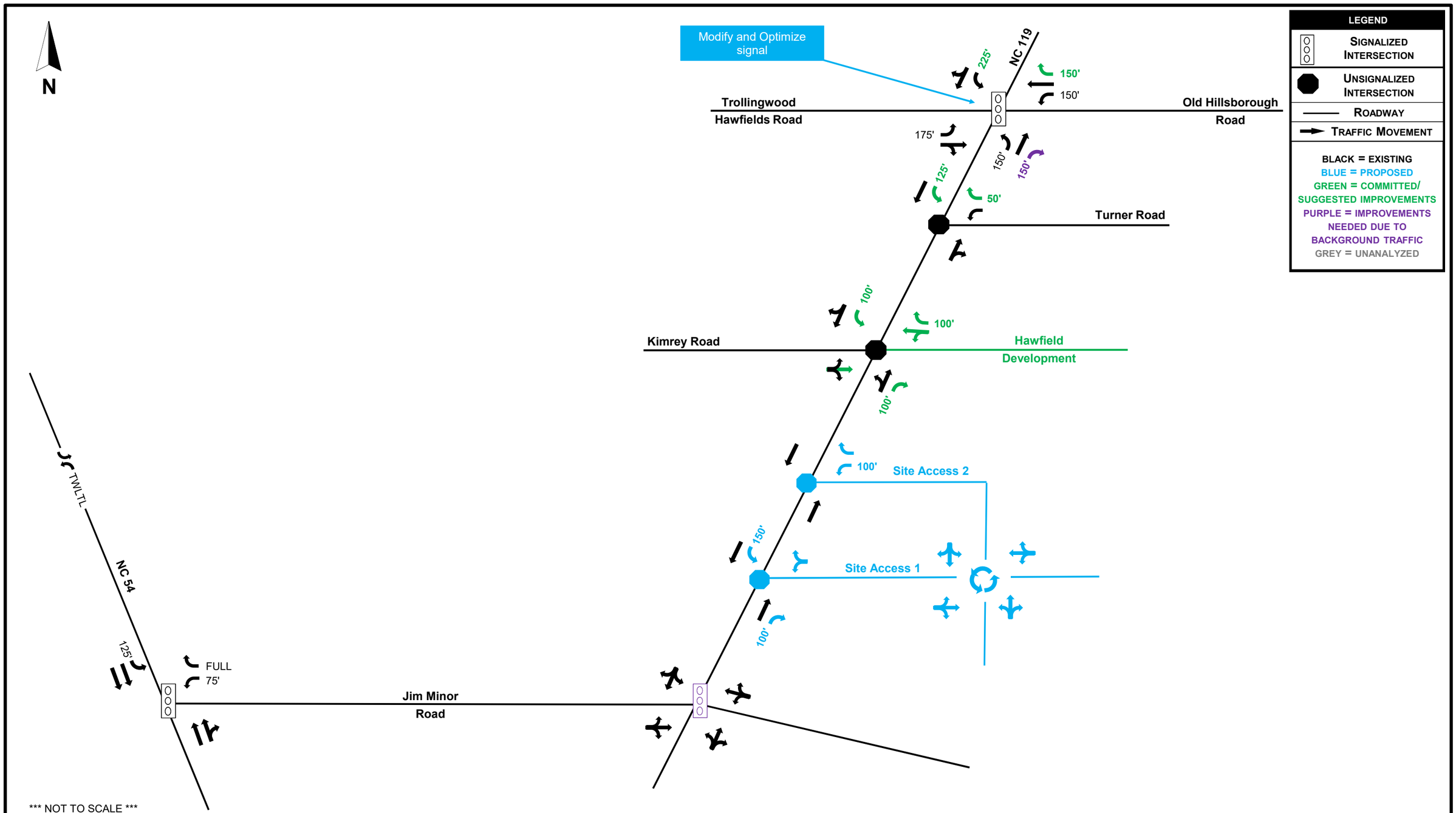

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Figure 9 - Recommended Improvements

Bradford Academy

Mebane, NC

DAVENPORT Project Number 190020

6.0 Internal Circulation

The proposed Bradford Academy will have one (1) access point on NC 119 for entry and one (1) access point on NC 119 for exit only. As shown in on-site traffic recommendations (Exhibit A), parents will turn left at the roundabout to enter then school, and then veer right toward the loading zone. The access road provides two (2) lanes of queue storage approaching the front of the school where the loading zone is located.

The NCDOT Division of Mobility and Safety has complied a database for school operation in North Carolina based on numerous studies conducted by the MSTA Unit. Projections from the MSTA school traffic generator indicate an average queue of 996 feet and a high demand day queue of 1,296 feet. The adequacy of the queue storage provided in the site plan was reviewed using both the MSTA School Calculator spreadsheet and a traffic simulation with SimTraffic software.

An analysis was conducted on the proposed site plan to simulate typical drop-off and pick-up operations for the proposed site. The traffic simulation was set to MSTA requirements. The provided onsite storage is anticipated to be adequate for the loading zones.

The following table summarizes the required and provided queue storage lengths.

Table 6.1 – School Loading Zone Queue Summary	
Student Capacity	450 Students (Grades Pre-K-12)
MSTA Maximum Queue	996 feet
Provided Storage Distance Based on MSTA Standards and SimTraffic Simulation	1,296 feet
Site Plan Accommodates	1,300 feet

We also offer the following recommendations related to the loading zones and traffic circulation:

- Provide double stacking where indicated on Exhibits during the peak hours of arrival and dismissal
- Identify Short Term / Visitor Parking Spaces past the loading zone, as shown in Exhibit A. 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.
- Implement an organized loading process to expedite drop-off and pickup process.

- In the afternoon, the loading process may involve using an intercom system to notify students when their parent has arrived and directing them to the appropriate loading space to allow quick loading
- Coordination with City of Mebane and NCDOT will be required to install appropriate school zone signage.

Exhibit A illustrates the on-campus recommendations for the school.

Bradford Academy

450 Future School Population

1296 Feet Projected Queue

This Design Provides

1300 Feet Total Queue Storage

NOTES:

A = DENOTES LOADING ZONE OF (5) SPACES @ 8' X 20'

B = DENOTES SHORT TERM VISITOR PARKING (10) SPACES

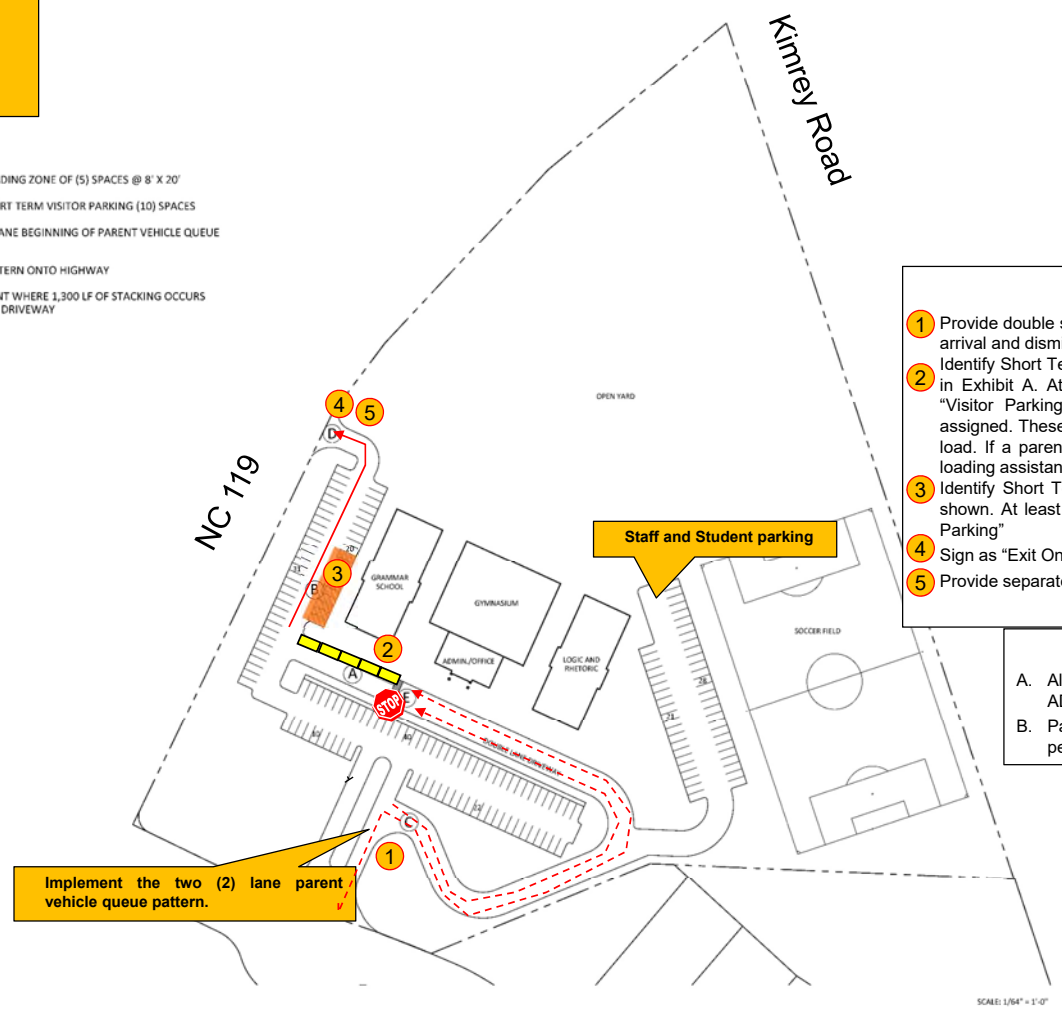
C = DENOTES (2) LANE BEGINNING OF PARENT VEHICLE QUEUE PATTERN

D = NEW EXIT PATTERN ONTO HIGHWAY

E = DENOTES POINT WHERE 1,300 LF OF STACKING OCCURS ALONG TWO LANE DRIVEWAY

LEGEND

- Recommendation
- Entering Parent Traffic
- Exiting Parent Traffic



NOTES

1. Provide double stacking where indicated on Exhibits during the peak hours of arrival and dismissal
2. Identify Short Term / Visitor Parking Spaces past the loading zone, as shown in Exhibit A. 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. Identify Short Term / Visitor Parking Spaces near the vehicle exit lane, as shown. At least 10 parking spaces should be identified by installing "Visitor Parking"
4. Sign as "Exit Only"
5. Provide separate left and right egress lanes

OTHER COMMENTS

A. All sidewalks, crosswalks, and curb cuts should comply with ADA standards.

B. Parking lots should be designed to safely accommodate pedestrians.

CONCEPT PLAN
NOT FOR CONSTRUCTION

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Exhibit A
Bradford Academy
On-site Recommendations

Division 7	Alamance County	Mebane, NC
SCALE:	N. C. DEPARTMENT OF TRANSPORTATION	REVIEWED BY:
DATE: 10/18/2019	TRANSPORTATION MOBILITY AND SAFETY DIVISION	REVISIONS:
PREPARED BY: DCB		

7.0 Scenario 2: Proposed School and Summerhaven Development

7.1 Future No Build Traffic Volumes

The 2023 future no build traffic volumes were computed by applying a 1.0% compounded annual growth rate to the existing traffic volumes, adding approved development trips and the Summerhaven subdivision. Figure 10 shows the **Scenario 2**: 2023 future no build traffic volumes for AM and Dismissal peaks.

7.2 Future Build Traffic Volumes

The 2023 future build traffic volumes were computed by summing the 2023 future no build volumes and school trips due to the proposed project. School trips remains the same in Scenario 1 which is shown in Figure 7. The **Scenario 2**: 2023 future build volumes are shown for AM and Dismissal peaks in Figure 11.

N

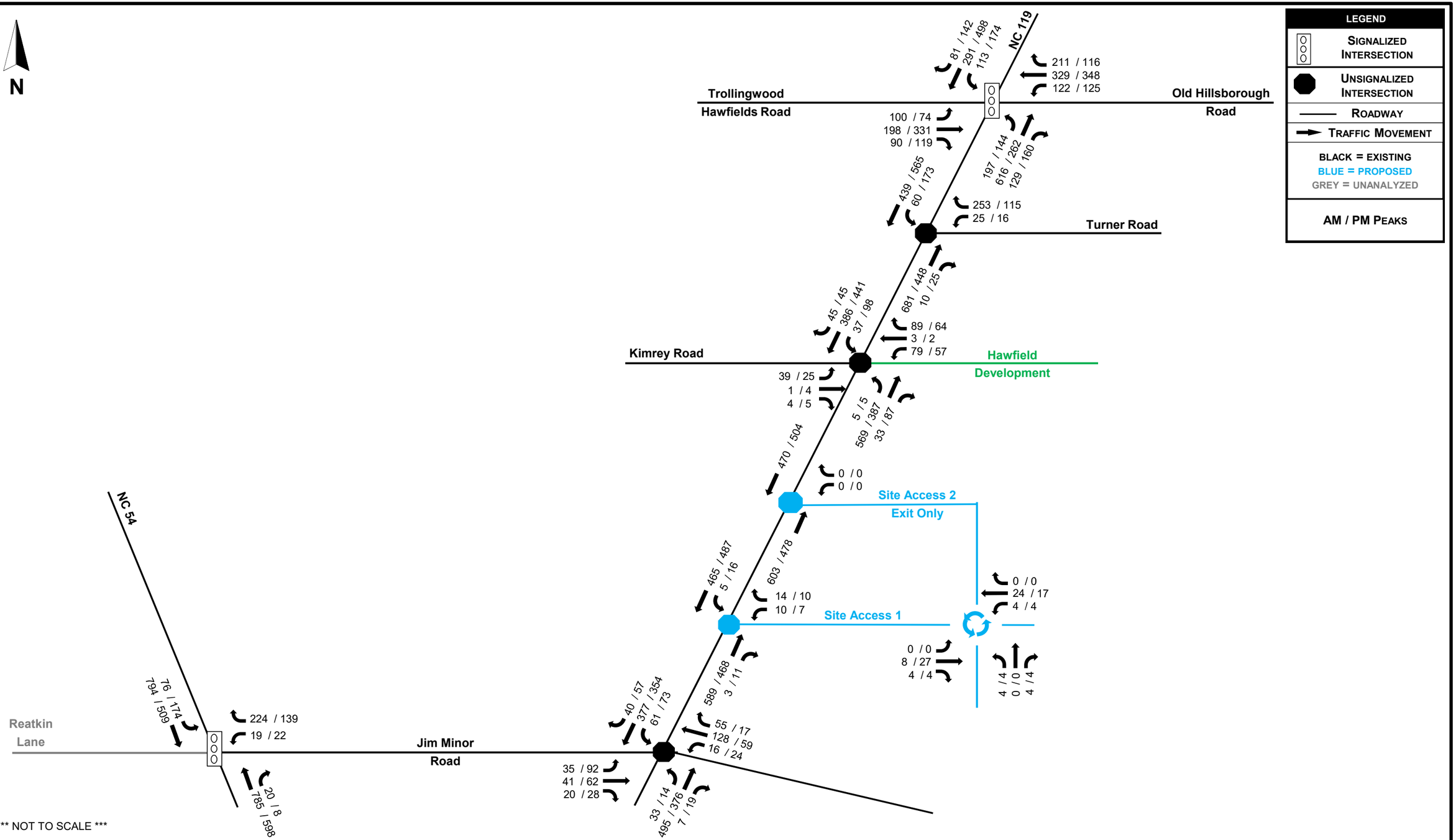

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Figure 10
Scenario 2: 2023 Future No Build Volumes

Bradford Academy
Mebane, NC
DAVENPORT Project Number 190020

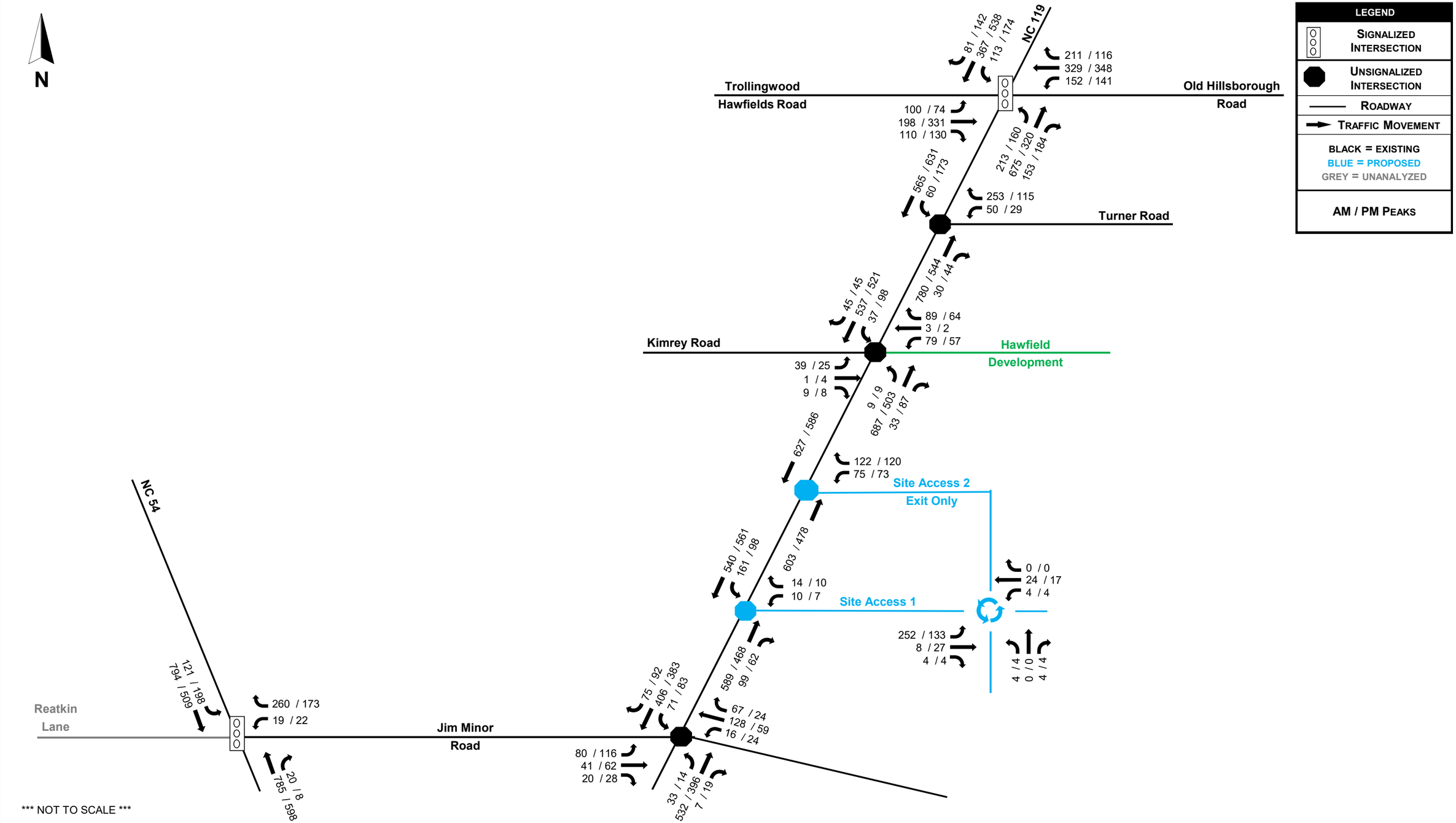

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Figure 11
Scenario 2: 2023 Future Build Volumes

Bradford Academy
Mebane, NC
DAVENPORT Project Number 190020

7.3 Scenario 2: Proposed School and Subdivision – Discussion of Results

The results of the level of service analysis remain the same as Scenario 1. The recommended improvements remain the same for each study intersection.

The recommended improvements are illustrated in Figure 12.

7.4 Level of Service and Queuing Summary

Table 7.1 presents the summary of the level of service analysis for the proposed development.

Table 7.1 - Level of Service Summary – Scenario 2

AM Peak	2018 Existing	2023 Future No Build	2023 Future Build	2023 Future Build with Improvements
NC 119 at Trollingwood Hawfields Road / Old Hillsborough Road	C (34.3)	E (61.2)	F (132.4)	E (78.8)
NC 119 at Turner Road	C (18.2) WB Approach	D (32.2) WB Approach	F (129.3) WB Approach	
NC 119 at Kimrey Road	C (19.5) EB Approach	F (67.2) EB Approach	F (584.6) WB Approach	F (438.9) EB Approach
NC 119 at Jim Minor Road	D (32.6) WB Approach	F (506.0) EB Approach	F (623.7) WB Approach	B (10.7) Signalized
NC 54 at Jim Minor Road / Reatkin Lane	A (7.7)	B (10.5)	B (12.8)	
NC 119 at Site Access 1		C (17.7) WB Approach	F (149.4) WB Approach	F (149.4) WB Approach
NC 119 at Site Access 2 (exit only)			F (488.9) WB Approach	F (119.6) WB Approach
Site Access 1 at Internal Roundabout			A (6.0) Roundabout	
Dismissal peak	**2018 Existing**	**2023 Future No Build**	**2023 Future Build**	**2023 Future Build with Improvements**
NC 119 at Trollingwood Hawfields Road / Old Hillsborough Road	C (29.8)	F (91.6)	F (147.8)	F (133.1)
NC 119 at Turner Road	B (11.8) WB Approach	C (17.3) WB Approach	F (55.3) WB Approach	
NC 119 at Kimrey Road	C (15.4) EB Approach	E (49.2) EB Approach	F (277.9) WB Approach	F (153.0) EB Approach
NC 119 at Jim Minor Road	C (24.8) EB Approach	F (344.8) EB Approach	F (1867.1) EB Approach	B (11.4)
NC 54 at Jim Minor Road / Reatkin Lane	A (7.2)	B (10.6)	B (12.9)	
NC 119 at Site Access 1		C (15.7) WB Approach	E (37.0) WB Approach	E (37.0) WB Approach
NC 119 at Site Access 2 (exit only)			F (258.4) WB Approach	F (57.4) WB Approach
Site Access 1 at Internal Roundabout			A (4.3) Roundabout	

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

Tables 7.2- 7.9 present the summaries of the SimTraffic Queuing Analysis for each study intersection by movement.

Table 7.2 - Queue Summary NC 119 at Trollingwood Hawfields Road / Old Hillsborough Road AM Peak Hour Queues										
2023 No Build	**EBL**	**EBTR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBTR**	**SBL**	**SBTR**	
Max Queue (ft)	275	243	250	720	250	200	1045	299	725	
95th Percentile Queue (ft)	311	228	228	624	275	222	1054	334	564	
Storage Bay (ft)	175	-	150	-	150	150	-	225	-	
2023 Build	**EBL**	**EBTR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBTR**	**SBL**	**SBTR**	
Max Queue (ft)	274	601	250	1013	250	200	1045	300	1157	
95th Percentile Queue (ft)	307	608	267	1206	274	228	1046	336	1396	
Storage Bay (ft)	175	-	150	-	150	150	-	225	-	
2023 Build + Imp	**EBL**	**EBTR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBTR**
Max Queue (ft)	275	1209	250	1002	250	249	1044	250	300	774
95th Percentile Queue (ft)	364	1402	280	1147	310	274	1050	316	320	825
Storage Bay (ft)	175	-	150	-	150	150	-	150	225	-
Dismissal peak Hour Queues										
2023 No Build	**EBL**	**EBTR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBTR**	**SBL**	**SBTR**	
Max Queue (ft)	275	1209	249	413	250	200	580	299	1157	
95th Percentile Queue (ft)	323	1445	258	378	238	243	615	379	1252	
Storage Bay (ft)	175	-	150	-	150	150	-	225	-	
2023 Build	**EBL**	**EBTR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBTR**	**SBL**	**SBTR**	
Max Queue (ft)	275	1233	250	535	250	200	1045	300	1168	
95th Percentile Queue (ft)	316	1436	258	539	271	220	1118	357	1149	
Storage Bay (ft)	175	-	150	-	150	150	-	225	-	
2023 Build + Imp	**EBL**	**EBTR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBTR**
Max Queue (ft)	274	1246	250	943	250	250	521	250	300	1144
95th Percentile Queue (ft)	341	1302	285	1053	306	266	478	307	358	1142
Storage Bay (ft)	175	-	150	-	150	150	-	150	225	-

Table 7.3 - Queue Summary NC 119 at Turner Road AM Peak Hour Queues					
2023 No Build	**WBL**	**WBR**	**NBTR**	**SBL**	
Max Queue (ft)	806	150	1078	72	
95th Percentile Queue (ft)	980	154	1172	67	
Storage Bay (ft)	-	50	-	125	
2023 Build	**WBL**	**WBR**	**NBTR**	**SBL**	**SBT**
Max Queue (ft)	806	150	2004	81	161
95th Percentile Queue (ft)	814	159	2291	86	94
Storage Bay (ft)	-	50	-	125	-
2023 Build + Imp	**WBL**	**WBR**	**NBTR**	**SBL**	**SBT**
Max Queue (ft)	806	150	591	79	104
95th Percentile Queue (ft)	1011	155	518	77	50
Storage Bay (ft)	-	50	-	125	
Dismissal peak Hour Queues					
2023 No Build	**WBL**	**WBR**	**SBL**		
Max Queue (ft)	37	47	75		
95th Percentile Queue (ft)	25	32	75		
Storage Bay (ft)	-	50	125		
2023 Build	**WBL**	**WBR**	**NBTR**	**SBL**	**SBT**
Max Queue (ft)	150	108	396	111	108
95th Percentile Queue (ft)	78	84	291	112	52
Storage Bay (ft)	-	50	-	125	-
2023 Build + Imp	**WBL**	**WBR**	**SBL**		
Max Queue (ft)	15	74	132		
95th Percentile Queue (ft)	18	61	112		
Storage Bay (ft)	-	50	125		

Table 7.4 - Queue Summary
NC 119 at Kimrey Road
AM Peak Hour Queues

2023 No Build	EBLTR	WBLTR	NBLTR	SBLTR	
Max Queue (ft)	69	151	15	86	
95th Percentile Queue (ft)	63	143	7	76	
Storage Bay (ft)	-	-	-	-	
2023 Build	**EBLTR**	**WBLTR**	**NBLTR**	**SBLTR**	
Max Queue (ft)	123	496	435	302	
95th Percentile Queue (ft)	112	532	341	240	
Storage Bay (ft)	-	-	-	-	
2023 Build + Imp	**EBLTR**	**WBLT**	**WBR**	**NBLT**	**SBL**
Max Queue (ft)	88	178	195	39	19
95th Percentile Queue (ft)	81	182	118	26	25
Storage Bay (ft)	-	-	100	-	100

Dismissal peak Hour Queues

2023 No Build	EBLTR	WBLTR	NBLTR	SBLTR	
Max Queue (ft)	18	133	35	169	
95th Percentile Queue (ft)	22	120	19	124	
Storage Bay (ft)	-	-			
2023 Build	**EBLTR**	**WBLTR**	**NBLTR**	**SBLTR**	
Max Queue (ft)	66	215	78	130	
95th Percentile Queue (ft)	59	177	39	109	
Storage Bay (ft)	-	-			
2023 Build + Imp	**EBLTR**	**WBLT**	**WBR**	**NBLT**	**SBL**
Max Queue (ft)	67	153	45	112	40
95th Percentile Queue (ft)	46	115	39	58	30
Storage Bay (ft)	-	-	100	-	100

Table 7.5 - Queue Summary NC 119 at Jim Minor Road AM Peak Hour Queues				
2023 No Build	**EBLTR**	**WBLTR**	**NBLTR**	**SBLTR**
Max Queue (ft)	115	321	221	113
95th Percentile Queue (ft)	108	298	119	111
Storage Bay (ft)	-	-	-	-
2023 Build	**EBLTR**	**WBLTR**	**NBLTR**	**SBLTR**
Max Queue (ft)	549	1238	86	136
95th Percentile Queue (ft)	598	1454	52	112
Storage Bay (ft)	-	-	-	-
2023 Build + Imp	**EBLTR**	**WBLTR**	**NBLTR**	**SBLTR**
Max Queue (ft)	159	126	1691	1276
95th Percentile Queue (ft)	156	117	1553	1172
Storage Bay (ft)	-	-	-	-
Dismissal peak Hour Queues				
2023 No Build	**EBLTR**	**WBLTR**	**NBLTR**	**SBLTR**
Max Queue (ft)	174	135	23	74
95th Percentile Queue (ft)	167	111	19	73
Storage Bay (ft)	-	-	-	-
2023 Build	**EBLTR**	**WBLTR**	**NBLTR**	**SBLTR**
Max Queue (ft)	589	136	45	160
95th Percentile Queue (ft)	478	119	32	120
Storage Bay (ft)	-	-	-	-
2023 Build + Imp	**EBLTR**	**WBLTR**	**NBLTR**	**SBLTR**
Max Queue (ft)	175	184	335	605
95th Percentile Queue (ft)	166	135	274	616
Storage Bay (ft)	-	-	-	-

Table 7.6 - Queue Summary NC 54 at Jim Minor Road AM Peak Hour Queues							
2023 No Build	**WBL**	**WBR**	**NBT**	**NBTR**	**SBL**	**SBT**	**SBT**
Max Queue (ft)	167	156	163	149	93	96	116
95th Percentile Queue (ft)	87	160	153	135	84	93	80
Storage Bay (ft)	75	-	-	-	125	-	-
2023 Build	**WBL**	**WBR**	**NBT**	**NBTR**	**SBL**	**SBT**	**SBT**
Max Queue (ft)	16	208	138	116	140	52	30
95th Percentile Queue (ft)	13	182	115	88	123	32	20
Storage Bay (ft)	75	-	-	-	125	-	-
2023 Build + Imp	**WBL**	**WBR**	**NBT**	**NBTR**	**SBL**	**SBT**	**SBT**
Max Queue (ft)	174	506	137	121	144	84	49
95th Percentile Queue (ft)	87	404	115	102	122	59	33
Storage Bay (ft)	75	-	-	-	125	-	-
Dismissal peak Hour Queues							
2023 No Build	**WBL**	**WBR**	**NBT**	**NBTR**	**SBL**	**SBT**	**SBT**
Max Queue (ft)	35	112	174	138	116	53	54
95th Percentile Queue (ft)	24	103	129	110	118	48	50
Storage Bay (ft)	75	-	-	-	125	-	-
2023 Build	**WBL**	**WBR**	**NBT**	**NBTR**	**SBL**	**SBT**	**SBT**
Max Queue (ft)	15	71	120	135	157	147	152
95th Percentile Queue (ft)	17	74	112	115	172	104	92
Storage Bay (ft)	75	-	-	-	125	-	-
2023 Build + Imp	**WBL**	**WBR**	**NBT**	**NBTR**	**SBL**	**SBT**	**SBT**
Max Queue (ft)	37	106	94	113	238	53	53
95th Percentile Queue (ft)	26	100	99	89	170	44	58
Storage Bay (ft)	75	-	-	-	125	-	-

Table 7.7 - Queue Summary NC 119 at Site Access 1 AM Peak Hour Queues				
2023 Build	**WBLR**	**NBR**	**SBL**	**SBT**
Max Queue (ft)	64	22	101	159
95th Percentile Queue (ft)	50	22	91	76
Storage Bay (ft)	-	100	100	-
2023 Build + Imp	**WBLR**	**NBR**	**SBL**	
Max Queue (ft)	66	38	128	
95th Percentile Queue (ft)	48	33	128	
Storage Bay (ft)	-	100	150	
Dismissal peak Hour Queues				
2023 Build	**WBLR**	**NBR**	**SBL**	
Max Queue (ft)	62	20	76	
95th Percentile Queue (ft)	46	9	73	
Storage Bay (ft)	-	100	100	
2023 Build + Imp	**WBLR**	**SBL**		
Max Queue (ft)	64	54		
95th Percentile Queue (ft)	42	65		
Storage Bay (ft)	-	150		

Table 7.8 - Queue Summary NC 119 at Site Access 2 AM Peak Hour Queues		
2023 Build	**WBLR**	
Max Queue (ft)	62	
95th Percentile Queue (ft)	62	
Storage Bay (ft)	-	
2023 Build + Imp	**WBL**	**WBR**
Max Queue (ft)	184	137
95th Percentile Queue (ft)	147	130
Storage Bay (ft)	100	-
Dismissal peak Hour Queues		
2023 Build	**WBLR**	
Max Queue (ft)	62	
95th Percentile Queue (ft)	63	
Storage Bay (ft)	-	
2023 Build + Imp	**WBL**	**WBR**
Max Queue (ft)	120	200
95th Percentile Queue (ft)	111	157
Storage Bay (ft)	100	-

Table 7.9 - Queue Summary Site Access 1 at Internal Roundabout AM Peak Hour Queues	
2023 Build	**EBLTR**
Max Queue (ft)	26
Storage Bay (ft)	-
Dismissal peak Hour Queues	
2023 Build	**EBLTR**
Max Queue (ft)	12
Storage Bay (ft)	-

N

Modify and Optimize signal

NC 119

225'

150'

150'

Trollingwood Hawfields Road

Old Hillsborough Road

175'

150'

150'

125'

50'

Turner Road

100'

100'

Kimrey Road

Hawfield Development

100'

100'

100'

Site Access 2

150'

Site Access 1

100'

TWLTL

NC 54

125'

FULL

75'

Jim Minor Road

LEGEND

- SIGNALIZED INTERSECTION
- UNSIGNALIZED INTERSECTION
- ROADWAY
- TRAFFIC MOVEMENT

BLACK = EXISTING
BLUE = PROPOSED
GREEN = COMMITTED/ SUGGESTED IMPROVEMENTS
PURPLE = IMPROVEMENTS NEEDED DUE TO BACKGROUND TRAFFIC
GREY = UNANALYZED

*** NOT TO SCALE ***

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DAVENPORT

Figure 12 - Recommended Improvements

Bradford Academy
Mebane, NC
DAVENPORT Project Number 190020

8.0 Summary and Conclusion

The proposed Bradford Academy will have approximately 450 students from grade levels Pre-K to 12th grade by 2023. The analysis studied two (2) scenarios: **Scenario 1** analyzed the proposed school only and describe any recommended improvements from this development only. **Scenario 2** analyzed the Summerhaven subdivision in the background traffic while incorporating the proposed school.

The MSTA calculator estimated that there would be 449 trips in the AM peak and 326 trips in the Dismissal peak. This would include parents, staff and student drivers. This school will not have any buses. The calculator determined that the school would need to provide at least 1,297 feet of queue on campus to accommodate the school traffic. The site plan is expected to provide 1,300 feet of queue on campus which will satisfy the MSTA requirement. To achieve the queue, it is recommended to have double stacking on campus. Other recommendations can be found on Exhibit A.

Based on the analysis there is expected queueing and capacity issues along NC 119 in future no build conditions and build conditions. Some mitigations were recommended as background improvements but it should be noted that queuing is still an issue along NC 119.

Based on the analysis, Summerhaven Subdivision is proposed to construct a 100 foot northbound right turn lane and 100 foot southbound lane with appropriate tapers at Site Access 1. It is recommended that the proposed Bradford Academy provide a southbound left turn lane of 150 feet of storage and a northbound right turn lane of 100 feet of storage with appropriate tapers. It should be noted that the Bradford Academy's recommendation is 50 feet longer than the Summerhaven Subdivision. Though all school traffic will enter through the internal roundabout, the traffic will exit to the north from a separate access point onto NC 119. Therefore, the internal roundabout is not expected to be an operational issue. The subdivision also proposes to construct a southern access on NC 119 that can serve as a relief valve if deemed necessary. **The continuation of the subdivision's approval process should not be an issue as long as the auxiliary lanes at Site Access 1 are constructed to 100 feet of storage for northbound right turn lane and 100 feet of storage for southbound left turn lane on NC 119 prior to the school opening.**

Table 8.1 summarizes the recommended improvements.

In conclusion, this study has reviewed the impacts of both background traffic and this development traffic, and has determined that with the recommended improvements in place, there will be adequate capacity to accommodate future traffic. Please note that all accesses to the site are required to be constructed to NCDOT and City of Mebane standards.

Table 8.1 – Recommended Improvements	
INTERSECTION	**RECOMMENDATIONS**
NC 119 at Trollingwood Hawfields Road / Old Hillsborough Road	These improvements are suggested regardless of Bradford Academy: • Modify signal • Provide a northbound right turn lane of 150 feet storage with appropriate taper
NC 119 at Turner Road	No improvements recommended.
NC 119 at Kimrey Road	These improvements are suggested for the Hawfield Development: • Provide a northbound right turn lane of 100 feet storage with appropriate taper • Provide a southbound left turn lane of 100 feet storage with appropriate taper • Provide a westbound right turn lane of 100 feet storage with appropriate taper
NC 119 at Jim Minor Road	These improvements are suggested regardless of Bradford Academy: • Provide a signal
NC 54 at Jim Minor Road	No improvements recommended.
NC 119 at Site Access 1	• Provide a northbound right turn lane on NC 119 with 100 feet of storage and appropriate taper. • Provide a southbound left turn lane on NC 119 with 150 feet of storage and appropriate taper.
NC 119 at Site Access 2	• Provide a separate egress lane with left lane of 100 feet storage with appropriate taper.

Appendix

Trip Generation

MSTA School Traffic Calculations

AM and PM Peak Traffic Estimates

(These numbers do not reflect peak hour traffic volumes)

School Name: Bradford Academy

Type: **Private / Non-urban Charter**

Version: 102816

AM Cars / Student	PM Cars / Student	Avg. Car Length	PM At one Time
55.94%	39.15%	22.19	48.67%
43.35%	26.30%	22.00	37.87%
52.91%	47.50%	22.19	46.12%
50.08%	47.58%	22.83	55.71%

MSTA School Queue Input / Calculations

Grade Level	Student Population	Number of Buses	Staff Members	Student Drivers	PM Total Vehicles	PM Peak Vehicles	Average Queue Length	Total AM Trips	Total PM Trips	High Demand Length
										30%
Pre-K & K	64		3		26	13		75	55	
		1								
1-10	320		28		85	33	726	305	198	944
		4								
11th	32		2	10	12	6	133	35	36	173
		1								
12th	32		2	15	10	6	137	33	37	179
		1								
Sum >>	448		35	25	133	58	996	374	271	1296

Yes - If Pre-K & K students are provided parking spaces at or above their PM Peak Vehicles >>>>>> yes 300

Pre-K & K loading is usually park and walk "PM Peak Vehicles" indicates minimum number of parking spaces needed.

Private & Non-Urban Charter data is based on few to no buses and uses the same percentages for all school types except 11th and 12th grades which makes adjustments for student drivers.

Pre-K & K

Direction	AM Trips Generated: Parents	Buses	Staff	Trips	PM Trips Generated: Parents	Buses	Staff	Trips
IN	36		3	39	26			26
OUT	36			36	26		3	29
		AM Pre-K-K Trips		75		PM PK-K Trips		55

1-10

Direction	AM Trips Generated: Parents	Buses	Staff	Trips	PM Trips Generated: Parents	Buses	Staff	Trips
IN	139		28	167	85			85
OUT	139			139	85		28	113
		AM K-10 Trips		305		PM K-10 Trips		198

11th

Direction	AM Trips Generated: Parents	Buses	Staff	Student Dvr	Trips	PM Trips Generated: Parents	Buses	Staff	Student Dvr	Trips
IN	12		2	8	22	12				12
OUT	12				12	12		2	10	24
			AM 11 Trips		35			PM 11 Trips		36

12th

Direction	AM Trips Generated: Parents	Buses	Staff	Student Dvr	Trips	PM Trips Generated: Parents	Buses	Staff	Student Dvr	Trips
IN	10		2	12	24	10				10
OUT	10				10	10		2	15	27
			AM 12 Trips		33			PM 12 Trips		37

			ADT
			130
			503
			71
			70

All AM TRIPS		
	In	252
	Out	197
	Total	448

All PM TRIPS		
	In	133
	Out	193
	Total	326

	774

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)

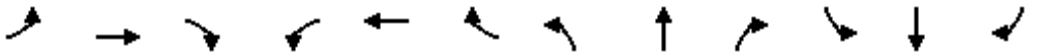
Calculated 9/5/2019 By:_____

Level of Service Analysis

NC 119 at Trollingwood Hawfields Road/ Old Hillsborough Road

HCM 6th Signalized Intersection Summary
100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

10/25/2019



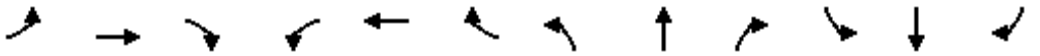
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	162	70	81	233	137	144	483	96	85	239	77
Future Volume (veh/h)	95	162	70	81	233	137	144	483	96	85	239	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1817	1817	1817	1817	1817	1817	1909	1909	1909	1870	1870	1870
Adj Flow Rate, veh/h	106	180	78	90	259	152	160	537	107	94	266	86
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	195	318	138	316	284	167	490	682	136	277	585	189
Arrive On Green	0.06	0.26	0.28	0.06	0.26	0.26	0.07	0.44	0.45	0.06	0.43	0.44
Sat Flow, veh/h	1731	1202	521	1731	1074	630	1818	1546	308	1781	1354	438
Grp Volume(v), veh/h	106	0	258	90	0	411	160	0	644	94	0	352
Grp Sat Flow(s),veh/h/ln	1731	0	1724	1731	0	1704	1818	0	1854	1781	0	1792
Q Serve(g_s), s	5.1	0.0	14.8	4.2	0.0	26.8	5.6	0.0	34.0	3.3	0.0	15.8
Cycle Q Clear(g_c), s	5.1	0.0	14.8	4.2	0.0	26.8	5.6	0.0	34.0	3.3	0.0	15.8
Prop In Lane	1.00		0.30	1.00		0.37	1.00		0.17	1.00		0.24
Lane Grp Cap(c), veh/h	195	0	455	316	0	451	490	0	818	277	0	775
V/C Ratio(X)	0.54	0.00	0.57	0.28	0.00	0.91	0.33	0.00	0.79	0.34	0.00	0.45
Avail Cap(c_a), veh/h	241	0	602	361	0	595	605	0	1376	406	0	1330
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.5	0.0	36.2	28.5	0.0	40.9	17.3	0.0	27.3	21.3	0.0	22.8
Incr Delay (d2), s/veh	0.9	0.0	0.4	0.2	0.0	13.3	0.1	0.0	6.0	0.3	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	6.0	1.7	0.0	12.4	2.2	0.0	15.6	1.3	0.0	6.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.4	0.0	36.6	28.7	0.0	54.1	17.4	0.0	33.3	21.6	0.0	24.3
LnGrp LOS	C	A	D	C	A	D	B	A	C	C	A	C
Approach Vol, veh/h		364			501			804			446	
Approach Delay, s/veh		35.4			49.6			30.2			23.8	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	55.5	12.0	35.3	12.7	54.5	11.9	35.3
Change Period (Y+Rc), s	5.1	5.6	5.4	5.4	5.1	5.6	5.1	5.4
Max Green Setting (Gmax), s	14.9	84.4	9.6	39.6	14.9	84.4	9.9	39.6
Max Q Clear Time (g_c+I1), s	5.3	36.0	6.2	16.8	7.6	17.8	7.1	28.8
Green Ext Time (p_c), s	0.1	13.9	0.0	0.8	0.1	6.6	0.0	1.1

Intersection Summary	
HCM 6th Ctrl Delay	34.3
HCM 6th LOS	C

HCM 6th Signalized Intersection Summary
100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

10/25/2019



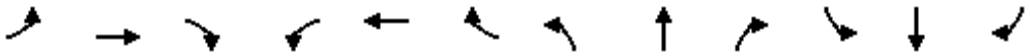
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	198	88	121	329	211	191	601	125	113	286	81
Future Volume (veh/h)	100	198	88	121	329	211	191	601	125	113	286	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1817	1817	1817	1817	1817	1817	1909	1909	1909	1870	1870	1870
Adj Flow Rate, veh/h	111	220	98	134	366	234	212	668	139	126	318	90
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	253	113	178	432	366	257	708	147	153	569	161
Arrive On Green	0.08	0.21	0.21	0.10	0.24	0.24	0.14	0.46	0.46	0.09	0.41	0.41
Sat Flow, veh/h	1731	1191	531	1731	1817	1540	1818	1533	319	1781	1402	397
Grp Volume(v), veh/h	111	0	318	134	366	234	212	0	807	126	0	408
Grp Sat Flow(s),veh/h/ln	1731	0	1722	1731	1817	1540	1818	0	1852	1781	0	1799
Q Serve(g_s), s	9.2	0.0	26.0	11.0	28.0	19.9	16.5	0.0	60.6	10.2	0.0	25.4
Cycle Q Clear(g_c), s	9.2	0.0	26.0	11.0	28.0	19.9	16.5	0.0	60.6	10.2	0.0	25.4
Prop In Lane	1.00		0.31	1.00		1.00	1.00		0.17	1.00		0.22
Lane Grp Cap(c), veh/h	134	0	366	178	432	366	257	0	855	153	0	731
V/C Ratio(X)	0.83	0.00	0.87	0.75	0.85	0.64	0.82	0.00	0.94	0.83	0.00	0.56
Avail Cap(c_a), veh/h	134	0	565	254	723	612	297	0	866	153	0	731
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	66.3	0.0	55.5	63.6	53.0	49.9	60.9	0.0	37.4	65.6	0.0	33.3
Incr Delay (d2), s/veh	31.4	0.0	5.8	3.9	2.1	0.7	13.4	0.0	19.4	27.9	0.0	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	0.0	11.6	5.0	12.8	7.6	8.5	0.0	31.0	5.8	0.0	11.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	97.7	0.0	61.2	67.5	55.1	50.6	74.2	0.0	56.9	93.5	0.0	35.8
LnGrp LOS	F	A	E	E	E	D	E	A	E	F	A	D
Approach Vol, veh/h		429			734			1019			534	
Approach Delay, s/veh		70.7			55.9			60.5			49.4	
Approach LOS		E			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.5	72.3	20.0	36.0	25.6	64.2	16.3	39.7
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	10.5	66.2	19.4	45.9	21.8	54.9	9.3	56.0
Max Q Clear Time (g_c+I1), s	12.2	62.6	13.0	28.0	18.5	27.4	11.2	30.0
Green Ext Time (p_c), s	0.0	2.7	0.1	1.0	0.1	6.4	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	58.7
HCM 6th LOS	E

HCM 6th Signalized Intersection Summary
100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

10/25/2019



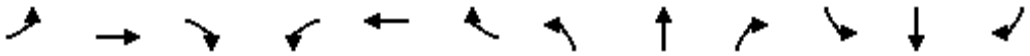
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	198	108	151	329	211	207	660	149	113	362	81
Future Volume (veh/h)	100	198	108	151	329	211	207	660	149	113	362	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1817	1817	1817	1817	1817	1817	1909	1909	1909	1870	1870	1870
Adj Flow Rate, veh/h	111	220	144	201	366	234	276	880	199	126	483	90
Peak Hour Factor	0.90	0.90	0.75	0.75	0.90	0.90	0.75	0.75	0.75	0.90	0.75	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	245	160	231	549	446	270	641	145	139	544	101
Arrive On Green	0.07	0.24	0.24	0.13	0.30	0.29	0.15	0.43	0.43	0.08	0.35	0.35
Sat Flow, veh/h	1731	1025	671	1731	1817	1540	1818	1507	341	1781	1533	286
Grp Volume(v), veh/h	111	0	364	201	366	234	276	0	1079	126	0	573
Grp Sat Flow(s),veh/h/ln	1731	0	1697	1731	1817	1540	1818	0	1848	1781	0	1819
Q Serve(g_s), s	10.2	0.0	33.4	18.3	28.2	20.4	23.8	0.0	68.2	11.3	0.0	47.6
Cycle Q Clear(g_c), s	10.2	0.0	33.4	18.3	28.2	20.4	23.8	0.0	68.2	11.3	0.0	47.6
Prop In Lane	1.00		0.40	1.00		1.00	1.00		0.18	1.00		0.16
Lane Grp Cap(c), veh/h	122	0	405	231	549	446	270	0	786	139	0	645
V/C Ratio(X)	0.91	0.00	0.90	0.87	0.67	0.53	1.02	0.00	1.37	0.91	0.00	0.89
Avail Cap(c_a), veh/h	122	0	507	231	657	538	270	0	786	139	0	645
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	74.1	0.0	59.2	68.2	49.0	47.8	68.3	0.0	46.1	73.4	0.0	48.8
Incr Delay (d2), s/veh	53.7	0.0	14.4	27.2	1.2	0.4	60.9	0.0	176.1	48.7	0.0	16.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	0.0	15.7	9.7	12.8	7.8	15.5	0.0	68.9	7.0	0.0	24.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	127.8	0.0	73.5	95.4	50.2	48.1	129.2	0.0	222.2	122.1	0.0	64.8
LnGrp LOS	F	A	E	F	D	D	F	A	F	F	A	E
Approach Vol, veh/h		475			801			1355			699	
Approach Delay, s/veh		86.2			60.9			203.2			75.1	
Approach LOS		F			E			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.5	73.2	26.4	43.3	28.8	61.9	16.3	53.4
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	10.5	66.2	19.4	45.9	21.8	54.9	9.3	56.0
Max Q Clear Time (g_c+I1), s	13.3	70.2	20.3	35.4	25.8	49.6	12.2	30.2
Green Ext Time (p_c), s	0.0	0.0	0.0	1.0	0.0	3.0	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	125.4
HCM 6th LOS	F

HCM 6th Signalized Intersection Summary
100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

10/25/2019



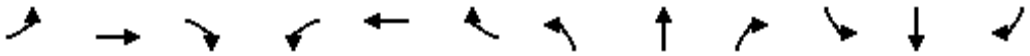
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	198	108	151	329	211	207	660	149	113	362	81
Future Volume (veh/h)	100	198	108	151	329	211	207	660	149	113	362	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1817	1817	1817	1817	1817	1817	1909	1909	1909	1870	1870	1870
Adj Flow Rate, veh/h	111	220	144	201	366	234	276	880	199	126	483	90
Peak Hour Factor	0.90	0.90	0.75	0.75	0.90	0.90	0.75	0.75	0.75	0.90	0.75	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	149	211	138	210	439	455	313	911	968	138	587	109
Arrive On Green	0.09	0.21	0.21	0.12	0.24	0.23	0.17	0.48	0.48	0.08	0.38	0.38
Sat Flow, veh/h	1731	1025	671	1731	1817	1540	1818	1909	1618	1781	1533	286
Grp Volume(v), veh/h	111	0	364	201	366	234	276	880	199	126	0	573
Grp Sat Flow(s),veh/h/ln	1731	0	1697	1731	1817	1540	1818	1909	1618	1781	0	1819
Q Serve(g_s), s	10.6	0.0	35.0	19.6	32.5	21.4	25.2	75.9	9.6	11.9	0.0	48.2
Cycle Q Clear(g_c), s	10.6	0.0	35.0	19.6	32.5	21.4	25.2	75.9	9.6	11.9	0.0	48.2
Prop In Lane	1.00		0.40	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	149	0	350	210	439	455	313	911	968	138	0	696
V/C Ratio(X)	0.75	0.00	1.04	0.96	0.83	0.51	0.88	0.97	0.21	0.91	0.00	0.82
Avail Cap(c_a), veh/h	149	0	350	210	439	455	340	913	970	138	0	696
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	75.8	0.0	67.4	74.2	61.2	49.7	68.6	43.1	15.6	77.7	0.0	47.3
Incr Delay (d2), s/veh	16.7	0.0	59.2	49.6	12.3	0.4	20.1	22.4	0.4	49.4	0.0	9.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	20.7	11.5	16.3	8.2	13.4	40.5	3.6	7.4	0.0	23.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.5	0.0	126.7	123.8	73.4	50.1	88.7	65.5	16.0	127.2	0.0	57.2
LnGrp LOS	F	A	F	F	E	D	F	E	B	F	A	E
Approach Vol, veh/h		475			801			1355			699	
Approach Delay, s/veh		118.7			79.2			62.9			69.8	
Approach LOS		F			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.2	86.0	25.6	40.0	34.3	70.0	19.6	46.0
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	11.2	79.2	18.6	33.0	29.8	60.6	12.6	39.0
Max Q Clear Time (g_c+I1), s	13.9	77.9	21.6	37.0	27.2	50.2	12.6	34.5
Green Ext Time (p_c), s	0.0	1.1	0.0	0.0	0.1	5.2	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	76.2
HCM 6th LOS	E

HCM 6th Signalized Intersection Summary
100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

10/25/2019



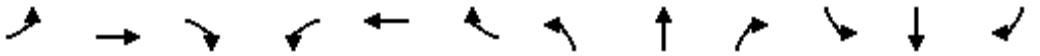
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	198	90	122	329	211	197	616	129	113	291	81
Future Volume (veh/h)	100	198	90	122	329	211	197	616	129	113	291	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1817	1817	1817	1817	1817	1817	1909	1909	1909	1870	1870	1870
Adj Flow Rate, veh/h	111	220	100	136	366	234	219	684	143	126	323	90
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	133	253	115	180	437	350	263	708	148	151	566	158
Arrive On Green	0.08	0.21	0.21	0.10	0.24	0.23	0.14	0.46	0.46	0.08	0.40	0.40
Sat Flow, veh/h	1731	1183	538	1731	1817	1540	1818	1531	320	1781	1408	392
Grp Volume(v), veh/h	111	0	320	136	366	234	219	0	827	126	0	413
Grp Sat Flow(s),veh/h/ln	1731	0	1721	1731	1817	1540	1818	0	1852	1781	0	1800
Q Serve(g_s), s	9.3	0.0	26.5	11.3	28.2	20.4	17.3	0.0	64.0	10.3	0.0	26.2
Cycle Q Clear(g_c), s	9.3	0.0	26.5	11.3	28.2	20.4	17.3	0.0	64.0	10.3	0.0	26.2
Prop In Lane	1.00		0.31	1.00		1.00	1.00		0.17	1.00		0.22
Lane Grp Cap(c), veh/h	133	0	367	180	437	350	263	0	856	151	0	724
V/C Ratio(X)	0.84	0.00	0.87	0.76	0.84	0.67	0.83	0.00	0.97	0.83	0.00	0.57
Avail Cap(c_a), veh/h	133	0	559	251	715	585	294	0	857	151	0	724
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	67.2	0.0	56.0	64.3	53.2	51.9	61.3	0.0	38.5	66.4	0.0	34.2
Incr Delay (d2), s/veh	33.4	0.0	6.4	4.7	2.1	0.8	15.0	0.0	23.3	29.8	0.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	11.9	5.1	12.9	7.8	9.0	0.0	33.5	5.9	0.0	12.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	100.6	0.0	62.4	69.0	55.3	52.8	76.4	0.0	61.9	96.3	0.0	36.8
LnGrp LOS	F	A	E	E	E	D	E	A	E	F	A	D
Approach Vol, veh/h		431			736			1046			539	
Approach Delay, s/veh		72.2			57.0			64.9			50.7	
Approach LOS		E			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.5	73.2	20.3	36.5	26.3	64.3	16.3	40.5
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	10.5	66.2	19.4	45.9	21.8	54.9	9.3	56.0
Max Q Clear Time (g_c+I1), s	12.3	66.0	13.3	28.5	19.3	28.2	11.3	30.2
Green Ext Time (p_c), s	0.0	0.2	0.1	1.0	0.1	6.5	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	61.2
HCM 6th LOS	E

HCM 6th Signalized Intersection Summary
100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

10/25/2019



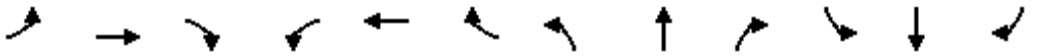
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	198	110	152	329	211	213	675	153	113	367	81
Future Volume (veh/h)	100	198	110	152	329	211	213	675	153	113	367	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1817	1817	1817	1817	1817	1817	1909	1909	1909	1870	1870	1870
Adj Flow Rate, veh/h	111	220	147	203	366	234	284	900	204	126	489	90
Peak Hour Factor	0.90	0.90	0.75	0.75	0.90	0.90	0.75	0.75	0.75	0.90	0.75	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	245	163	230	552	448	269	639	145	138	544	100
Arrive On Green	0.07	0.24	0.24	0.13	0.30	0.29	0.15	0.42	0.42	0.08	0.35	0.35
Sat Flow, veh/h	1731	1016	679	1731	1817	1540	1818	1506	341	1781	1537	283
Grp Volume(v), veh/h	111	0	367	203	366	234	284	0	1104	126	0	579
Grp Sat Flow(s),veh/h/ln	1731	0	1695	1731	1817	1540	1818	0	1848	1781	0	1819
Q Serve(g_s), s	10.2	0.0	33.7	18.5	28.2	20.4	23.8	0.0	68.2	11.3	0.0	48.5
Cycle Q Clear(g_c), s	10.2	0.0	33.7	18.5	28.2	20.4	23.8	0.0	68.2	11.3	0.0	48.5
Prop In Lane	1.00		0.40	1.00		1.00	1.00		0.18	1.00		0.16
Lane Grp Cap(c), veh/h	122	0	408	230	552	448	269	0	784	138	0	644
V/C Ratio(X)	0.91	0.00	0.90	0.88	0.66	0.52	1.06	0.00	1.41	0.91	0.00	0.90
Avail Cap(c_a), veh/h	122	0	505	230	656	536	269	0	784	138	0	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	74.3	0.0	59.2	68.5	48.8	47.7	68.5	0.0	46.3	73.6	0.0	49.2
Incr Delay (d2), s/veh	54.4	0.0	14.8	29.3	1.2	0.4	70.1	0.0	191.5	49.4	0.0	17.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	0.0	15.9	10.0	12.8	7.8	16.2	0.0	72.1	7.1	0.0	25.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	128.7	0.0	74.0	97.7	50.0	48.0	138.6	0.0	237.8	123.0	0.0	66.5
LnGrp LOS	F	A	E	F	D	D	F	A	F	F	A	E
Approach Vol, veh/h		478			803			1388			705	
Approach Delay, s/veh		86.7			61.5			217.5			76.6	
Approach LOS		F			E			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.5	73.2	26.4	43.7	28.8	61.9	16.3	53.8
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	10.5	66.2	19.4	45.9	21.8	54.9	9.3	56.0
Max Q Clear Time (g_c+I1), s	13.3	70.2	20.5	35.7	25.8	50.5	12.2	30.2
Green Ext Time (p_c), s	0.0	0.0	0.0	1.0	0.0	2.5	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	132.4
HCM 6th LOS	F

HCM 6th Signalized Intersection Summary
100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

10/25/2019



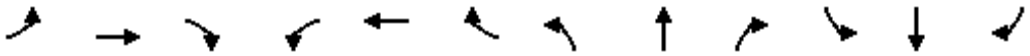
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	198	110	152	329	211	213	675	153	113	367	81
Future Volume (veh/h)	100	198	110	152	329	211	213	675	153	113	367	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1817	1817	1817	1817	1817	1817	1909	1909	1909	1870	1870	1870
Adj Flow Rate, veh/h	111	220	147	203	366	234	284	900	204	126	489	90
Peak Hour Factor	0.90	0.90	0.75	0.75	0.90	0.90	0.75	0.75	0.75	0.90	0.75	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	148	209	140	204	432	446	319	923	973	134	589	108
Arrive On Green	0.09	0.21	0.21	0.12	0.24	0.23	0.18	0.48	0.48	0.08	0.38	0.38
Sat Flow, veh/h	1731	1016	679	1731	1817	1540	1818	1909	1618	1781	1537	283
Grp Volume(v), veh/h	111	0	367	203	366	234	284	900	204	126	0	579
Grp Sat Flow(s),veh/h/ln	1731	0	1695	1731	1817	1540	1818	1909	1618	1781	0	1819
Q Serve(g_s), s	10.7	0.0	35.0	19.9	32.7	21.6	25.9	78.3	9.8	12.0	0.0	48.9
Cycle Q Clear(g_c), s	10.7	0.0	35.0	19.9	32.7	21.6	25.9	78.3	9.8	12.0	0.0	48.9
Prop In Lane	1.00		0.40	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	148	0	349	204	432	446	319	923	973	134	0	698
V/C Ratio(X)	0.75	0.00	1.05	1.00	0.85	0.52	0.89	0.97	0.21	0.94	0.00	0.83
Avail Cap(c_a), veh/h	149	0	349	204	432	446	319	923	973	134	0	698
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	75.9	0.0	67.5	75.0	61.8	50.6	68.5	42.9	15.5	78.2	0.0	47.4
Incr Delay (d2), s/veh	16.7	0.0	62.4	62.1	13.8	0.6	24.6	24.0	0.4	58.7	0.0	10.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	20.9	12.3	16.5	8.3	14.2	42.0	3.7	7.7	0.0	24.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.6	0.0	129.9	137.1	75.7	51.2	93.1	66.9	15.9	136.9	0.0	57.7
LnGrp LOS	F	A	F	F	E	D	F	E	B	F	A	E
Approach Vol, veh/h		478			803			1388			705	
Approach Delay, s/veh		121.2			84.0			64.7			71.8	
Approach LOS		F			F			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.8	87.2	25.0	40.0	34.8	70.2	19.6	45.4
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	10.8	80.2	18.0	33.0	27.8	63.2	12.6	38.4
Max Q Clear Time (g_c+I1), s	14.0	80.3	21.9	37.0	27.9	50.9	12.7	34.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	78.8
HCM 6th LOS	E

HCM 6th Signalized Intersection Summary
100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

10/25/2019



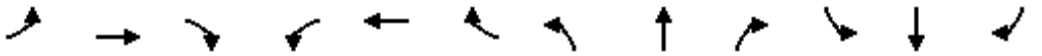
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	230	66	80	283	70	108	179	108	97	360	135
Future Volume (veh/h)	70	230	66	80	283	70	108	179	108	97	360	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1817	1817	1817	1817	1817	1817	1909	1909	1909	1870	1870	1870
Adj Flow Rate, veh/h	78	256	73	89	314	78	120	199	120	108	400	150
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	217	336	96	267	354	88	325	458	276	492	532	199
Arrive On Green	0.06	0.25	0.26	0.07	0.25	0.25	0.07	0.41	0.43	0.07	0.41	0.42
Sat Flow, veh/h	1731	1360	388	1731	1405	349	1818	1116	673	1781	1297	486
Grp Volume(v), veh/h	78	0	329	89	0	392	120	0	319	108	0	550
Grp Sat Flow(s),veh/h/ln	1731	0	1748	1731	0	1755	1818	0	1788	1781	0	1783
Q Serve(g_s), s	3.2	0.0	17.1	3.6	0.0	21.1	3.6	0.0	12.4	3.3	0.0	25.7
Cycle Q Clear(g_c), s	3.2	0.0	17.1	3.6	0.0	21.1	3.6	0.0	12.4	3.3	0.0	25.7
Prop In Lane	1.00		0.22	1.00		0.20	1.00		0.38	1.00		0.27
Lane Grp Cap(c), veh/h	217	0	432	267	0	442	325	0	735	492	0	731
V/C Ratio(X)	0.36	0.00	0.76	0.33	0.00	0.89	0.37	0.00	0.43	0.22	0.00	0.75
Avail Cap(c_a), veh/h	283	0	714	324	0	716	476	0	1552	642	0	1547
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.9	0.0	34.0	25.8	0.0	35.3	18.4	0.0	20.5	15.3	0.0	24.5
Incr Delay (d2), s/veh	0.4	0.0	1.1	0.3	0.0	4.8	0.3	0.0	1.5	0.1	0.0	5.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	6.9	1.4	0.0	9.1	1.4	0.0	5.2	1.3	0.0	11.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.3	0.0	35.1	26.0	0.0	40.1	18.7	0.0	21.9	15.4	0.0	30.1
LnGrp LOS	C	A	D	C	A	D	B	A	C	B	A	C
Approach Vol, veh/h		407			481			439			658	
Approach Delay, s/veh		33.6			37.5			21.0			27.7	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	45.3	11.8	29.2	11.8	45.2	11.3	29.7
Change Period (Y+Rc), s	5.1	5.6	5.4	5.4	5.1	5.6	5.1	5.4
Max Green Setting (Gmax), s	14.9	84.4	9.6	39.6	14.9	84.4	9.9	39.6
Max Q Clear Time (g_c+I1), s	5.3	14.4	5.6	19.1	5.6	27.7	5.2	23.1
Green Ext Time (p_c), s	0.1	5.8	0.0	1.1	0.1	11.8	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	29.8
HCM 6th LOS	C

HCM 6th Signalized Intersection Summary
100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

10/25/2019



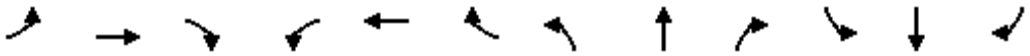
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	331	113	121	348	116	140	252	158	174	481	142
Future Volume (veh/h)	74	331	113	121	348	116	140	252	158	174	481	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1817	1817	1817	1817	1817	1817	1909	1909	1909	1870	1870	1870
Adj Flow Rate, veh/h	82	368	126	134	387	129	156	280	176	193	534	158
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	388	133	157	585	478	187	396	249	232	539	159
Arrive On Green	0.07	0.30	0.30	0.09	0.32	0.31	0.10	0.36	0.36	0.13	0.39	0.39
Sat Flow, veh/h	1731	1294	443	1731	1817	1540	1818	1096	689	1781	1386	410
Grp Volume(v), veh/h	82	0	494	134	387	129	156	0	456	193	0	692
Grp Sat Flow(s),veh/h/ln	1731	0	1738	1731	1817	1540	1818	0	1785	1781	0	1797
Q Serve(g_s), s	7.9	0.0	47.3	13.0	31.2	10.7	14.3	0.0	37.2	18.0	0.0	65.1
Cycle Q Clear(g_c), s	7.9	0.0	47.3	13.0	31.2	10.7	14.3	0.0	37.2	18.0	0.0	65.1
Prop In Lane	1.00		0.26	1.00		1.00	1.00		0.39	1.00		0.23
Lane Grp Cap(c), veh/h	119	0	521	157	585	478	187	0	646	232	0	699
V/C Ratio(X)	0.69	0.00	0.95	0.85	0.66	0.27	0.83	0.00	0.71	0.83	0.00	0.99
Avail Cap(c_a), veh/h	159	0	521	157	585	478	187	0	646	307	0	699
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	77.4	0.0	58.2	76.2	49.7	44.2	74.8	0.0	46.5	72.1	0.0	51.6
Incr Delay (d2), s/veh	3.6	0.0	26.6	32.9	2.2	0.1	25.0	0.0	5.6	10.7	0.0	31.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	24.2	7.1	14.3	4.1	8.0	0.0	17.4	8.9	0.0	35.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.0	0.0	84.8	109.1	51.9	44.3	99.8	0.0	52.1	82.9	0.0	83.4
LnGrp LOS	F	A	F	F	D	D	F	A	D	F	A	F
Approach Vol, veh/h		576			650			612			885	
Approach Delay, s/veh		84.2			62.2			64.3			83.3	
Approach LOS		F			E			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.1	66.5	20.4	56.0	22.5	71.1	16.7	59.7
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	27.3	52.3	13.4	49.0	15.5	64.1	13.6	48.8
Max Q Clear Time (g_c+I1), s	20.0	39.2	15.0	49.3	16.3	67.1	9.9	33.2
Green Ext Time (p_c), s	0.2	4.8	0.0	0.0	0.0	0.0	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	74.2
HCM 6th LOS	E

HCM 6th Signalized Intersection Summary
100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

10/25/2019



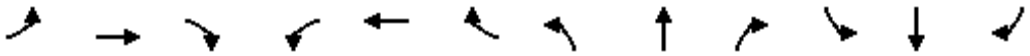
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	331	124	137	348	116	155	310	181	174	521	142
Future Volume (veh/h)	74	331	124	137	348	116	155	310	181	174	521	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1817	1817	1817	1817	1817	1817	1909	1909	1909	1870	1870	1870
Adj Flow Rate, veh/h	82	368	165	183	387	129	207	413	241	193	695	158
Peak Hour Factor	0.90	0.90	0.75	0.75	0.90	0.90	0.75	0.75	0.75	0.90	0.75	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	116	337	151	219	624	510	245	450	262	132	496	113
Arrive On Green	0.07	0.28	0.28	0.13	0.34	0.33	0.13	0.40	0.40	0.07	0.34	0.34
Sat Flow, veh/h	1731	1189	533	1731	1817	1540	1818	1131	660	1781	1475	335
Grp Volume(v), veh/h	82	0	533	183	387	129	207	0	654	193	0	853
Grp Sat Flow(s),veh/h/ln	1731	0	1721	1731	1817	1540	1818	0	1791	1781	0	1810
Q Serve(g_s), s	7.8	0.0	47.9	17.5	30.0	10.3	18.8	0.0	58.6	12.5	0.0	56.9
Cycle Q Clear(g_c), s	7.8	0.0	47.9	17.5	30.0	10.3	18.8	0.0	58.6	12.5	0.0	56.9
Prop In Lane	1.00		0.31	1.00		1.00	1.00		0.37	1.00		0.19
Lane Grp Cap(c), veh/h	116	0	488	219	624	510	245	0	712	132	0	609
V/C Ratio(X)	0.71	0.00	1.09	0.84	0.62	0.25	0.84	0.00	0.92	1.46	0.00	1.40
Avail Cap(c_a), veh/h	116	0	488	219	624	510	256	0	723	132	0	609
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	77.2	0.0	60.6	72.1	46.3	41.2	71.4	0.0	48.3	78.3	0.0	56.1
Incr Delay (d2), s/veh	15.7	0.0	68.2	22.3	1.4	0.1	19.9	0.0	18.2	245.9	0.0	189.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	29.7	9.0	13.6	3.9	10.1	0.0	29.3	14.7	0.0	57.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.9	0.0	128.8	94.4	47.7	41.3	91.3	0.0	66.5	324.1	0.0	245.8
LnGrp LOS	F	A	F	F	D	D	F	A	E	F	A	F
Approach Vol, veh/h		615			699			861			1046	
Approach Delay, s/veh		124.0			58.8			72.5			260.2	
Approach LOS		F			E			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.5	72.2	26.4	52.9	27.8	61.9	16.3	63.0
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	10.5	66.2	19.4	45.9	21.8	54.9	9.3	56.0
Max Q Clear Time (g_c+I1), s	14.5	60.6	19.5	49.9	20.8	58.9	9.8	32.0
Green Ext Time (p_c), s	0.0	3.5	0.0	0.0	0.0	0.0	0.0	1.5

Intersection Summary	
HCM 6th Ctrl Delay	140.3
HCM 6th LOS	F

HCM 6th Signalized Intersection Summary
100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

10/25/2019



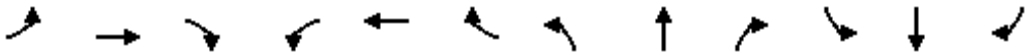
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	331	124	137	348	116	155	310	181	174	521	142
Future Volume (veh/h)	74	331	124	137	348	116	155	310	181	174	521	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1817	1817	1817	1817	1817	1817	1909	1909	1909	1870	1870	1870
Adj Flow Rate, veh/h	82	368	165	183	387	129	207	413	241	193	695	158
Peak Hour Factor	0.90	0.90	0.75	0.75	0.90	0.90	0.75	0.75	0.75	0.90	0.75	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	121	260	117	222	503	515	249	851	928	147	577	131
Arrive On Green	0.07	0.22	0.22	0.13	0.28	0.26	0.14	0.45	0.45	0.08	0.39	0.39
Sat Flow, veh/h	1731	1189	533	1731	1817	1540	1818	1909	1618	1781	1475	335
Grp Volume(v), veh/h	82	0	533	183	387	129	207	413	241	193	0	853
Grp Sat Flow(s),veh/h/ln	1731	0	1721	1731	1817	1540	1818	1909	1618	1781	0	1810
Q Serve(g_s), s	7.4	0.0	35.0	16.5	31.3	9.7	17.7	24.5	11.9	13.2	0.0	62.6
Cycle Q Clear(g_c), s	7.4	0.0	35.0	16.5	31.3	9.7	17.7	24.5	11.9	13.2	0.0	62.6
Prop In Lane	1.00		0.31	1.00		1.00	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	121	0	377	222	503	515	249	851	928	147	0	708
V/C Ratio(X)	0.68	0.00	1.42	0.83	0.77	0.25	0.83	0.49	0.26	1.31	0.00	1.20
Avail Cap(c_a), veh/h	158	0	377	223	503	515	361	969	1028	147	0	708
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	72.7	0.0	62.5	68.0	53.2	38.7	67.2	31.4	17.1	73.4	0.0	48.7
Incr Delay (d2), s/veh	3.5	0.0	202.1	20.5	6.4	0.1	7.0	1.6	0.5	181.1	0.0	105.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	36.2	8.5	15.0	3.7	8.7	11.6	4.5	13.4	0.0	48.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.2	0.0	264.6	88.5	59.6	38.8	74.2	32.9	17.6	254.5	0.0	153.9
LnGrp LOS	E	A	F	F	E	D	E	C	B	F	A	F
Approach Vol, veh/h		615			699			861			1046	
Approach Delay, s/veh		239.5			63.3			38.6			172.5	
Approach LOS		F			E			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.2	76.3	25.5	40.0	26.9	67.6	16.2	49.3
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	11.2	79.2	18.6	33.0	29.8	60.6	12.6	39.0
Max Q Clear Time (g_c+I1), s	15.2	26.5	18.5	37.0	19.7	64.6	9.4	33.3
Green Ext Time (p_c), s	0.0	11.2	0.0	0.0	0.2	0.0	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	125.8
HCM 6th LOS	F

HCM 6th Signalized Intersection Summary
100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

10/25/2019



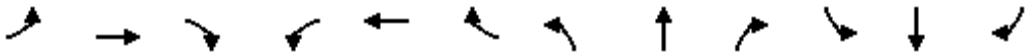
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	331	119	125	348	116	144	262	160	174	498	142
Future Volume (veh/h)	74	331	119	125	348	116	144	262	160	174	498	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1817	1817	1817	1817	1817	1817	1909	1909	1909	1870	1870	1870
Adj Flow Rate, veh/h	82	368	132	139	387	129	160	291	178	193	553	158
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	121	385	138	179	609	497	203	433	265	140	501	143
Arrive On Green	0.07	0.30	0.30	0.10	0.34	0.32	0.11	0.39	0.39	0.08	0.36	0.36
Sat Flow, veh/h	1731	1277	458	1731	1817	1540	1818	1109	678	1781	1399	400
Grp Volume(v), veh/h	82	0	500	139	387	129	160	0	469	193	0	711
Grp Sat Flow(s),veh/h/ln	1731	0	1735	1731	1817	1540	1818	0	1787	1781	0	1798
Q Serve(g_s), s	7.4	0.0	45.0	12.4	28.6	9.8	13.6	0.0	34.5	12.5	0.0	56.9
Cycle Q Clear(g_c), s	7.4	0.0	45.0	12.4	28.6	9.8	13.6	0.0	34.5	12.5	0.0	56.9
Prop In Lane	1.00		0.26	1.00		1.00	1.00		0.38	1.00		0.22
Lane Grp Cap(c), veh/h	121	0	523	179	609	497	203	0	698	140	0	644
V/C Ratio(X)	0.68	0.00	0.96	0.77	0.64	0.26	0.79	0.00	0.67	1.38	0.00	1.10
Avail Cap(c_a), veh/h	123	0	523	233	663	542	272	0	767	140	0	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	72.2	0.0	54.5	69.4	44.7	39.8	68.8	0.0	40.0	73.2	0.0	51.0
Incr Delay (d2), s/veh	11.3	0.0	28.4	8.2	1.2	0.1	7.5	0.0	4.3	208.4	0.0	67.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	23.3	5.9	12.9	3.7	6.7	0.0	15.8	13.8	0.0	37.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.5	0.0	83.0	77.7	45.9	39.9	76.3	0.0	44.3	281.7	0.0	118.7
LnGrp LOS	F	A	F	E	D	D	E	A	D	F	A	F
Approach Vol, veh/h		582			655			629			904	
Approach Delay, s/veh		83.0			51.4			52.4			153.5	
Approach LOS		F			D			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.5	67.1	21.5	52.9	22.7	61.9	16.1	58.3
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	10.5	66.2	19.4	45.9	21.8	54.9	9.3	56.0
Max Q Clear Time (g_c+I1), s	14.5	36.5	14.4	47.0	15.6	58.9	9.4	30.6
Green Ext Time (p_c), s	0.0	7.8	0.1	0.0	0.1	0.0	0.0	1.5

Intersection Summary	
HCM 6th Ctrl Delay	91.6
HCM 6th LOS	F

HCM 6th Signalized Intersection Summary
100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

10/25/2019



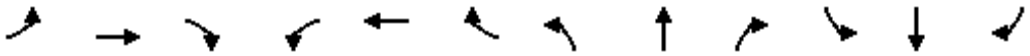
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	331	130	141	348	116	160	320	184	174	538	142
Future Volume (veh/h)	74	331	130	141	348	116	160	320	184	174	538	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1817	1817	1817	1817	1817	1817	1909	1909	1909	1870	1870	1870
Adj Flow Rate, veh/h	82	368	173	188	387	129	213	427	245	193	717	158
Peak Hour Factor	0.90	0.90	0.75	0.75	0.90	0.90	0.75	0.75	0.75	0.90	0.75	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	115	330	155	218	621	509	251	455	261	131	498	110
Arrive On Green	0.07	0.28	0.28	0.13	0.34	0.33	0.14	0.40	0.40	0.07	0.34	0.34
Sat Flow, veh/h	1731	1169	550	1731	1817	1540	1818	1138	653	1781	1484	327
Grp Volume(v), veh/h	82	0	541	188	387	129	213	0	672	193	0	875
Grp Sat Flow(s),veh/h/ln	1731	0	1718	1731	1817	1540	1818	0	1792	1781	0	1811
Q Serve(g_s), s	7.9	0.0	47.9	18.1	30.2	10.4	19.4	0.0	61.1	12.5	0.0	56.9
Cycle Q Clear(g_c), s	7.9	0.0	47.9	18.1	30.2	10.4	19.4	0.0	61.1	12.5	0.0	56.9
Prop In Lane	1.00		0.32	1.00		1.00	1.00		0.36	1.00		0.18
Lane Grp Cap(c), veh/h	115	0	485	218	621	509	251	0	716	131	0	608
V/C Ratio(X)	0.71	0.00	1.11	0.86	0.62	0.25	0.85	0.00	0.94	1.47	0.00	1.44
Avail Cap(c_a), veh/h	115	0	485	218	621	509	255	0	720	131	0	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	77.6	0.0	60.9	72.6	46.7	41.5	71.4	0.0	48.9	78.6	0.0	56.4
Incr Delay (d2), s/veh	16.0	0.0	76.1	26.6	1.5	0.1	21.3	0.0	21.1	248.1	0.0	207.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	30.7	9.5	13.7	4.0	10.5	0.0	31.0	14.8	0.0	60.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.6	0.0	136.9	99.3	48.1	41.6	92.7	0.0	69.9	326.7	0.0	263.5
LnGrp LOS	F	A	F	F	D	D	F	A	E	F	A	F
Approach Vol, veh/h		623			704			885			1068	
Approach Delay, s/veh		131.2			60.6			75.4			275.0	
Approach LOS		F			E			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.5	72.8	26.4	52.9	28.4	61.9	16.3	63.0
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	10.5	66.2	19.4	45.9	21.8	54.9	9.3	56.0
Max Q Clear Time (g_c+I1), s	14.5	63.1	20.1	49.9	21.4	58.9	9.9	32.2
Green Ext Time (p_c), s	0.0	2.1	0.0	0.0	0.0	0.0	0.0	1.5

Intersection Summary	
HCM 6th Ctrl Delay	147.8
HCM 6th LOS	F

HCM 6th Signalized Intersection Summary
100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

10/25/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	331	130	141	348	116	160	320	184	174	538	142
Future Volume (veh/h)	74	331	130	141	348	116	160	320	184	174	538	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1817	1817	1817	1817	1817	1817	1909	1909	1909	1870	1870	1870
Adj Flow Rate, veh/h	82	368	173	188	387	129	213	427	245	193	717	158
Peak Hour Factor	0.90	0.90	0.75	0.75	0.90	0.90	0.75	0.75	0.75	0.90	0.75	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	120	251	118	212	487	496	254	881	945	140	594	131
Arrive On Green	0.07	0.21	0.21	0.12	0.27	0.26	0.14	0.46	0.46	0.08	0.40	0.40
Sat Flow, veh/h	1731	1169	550	1731	1817	1540	1818	1909	1618	1781	1484	327
Grp Volume(v), veh/h	82	0	541	188	387	129	213	427	245	193	0	875
Grp Sat Flow(s),veh/h/ln	1731	0	1718	1731	1817	1540	1818	1909	1618	1781	0	1811
Q Serve(g_s), s	7.5	0.0	35.0	17.4	32.3	10.1	18.6	25.3	12.1	12.8	0.0	65.2
Cycle Q Clear(g_c), s	7.5	0.0	35.0	17.4	32.3	10.1	18.6	25.3	12.1	12.8	0.0	65.2
Prop In Lane	1.00		0.32	1.00		1.00	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	120	0	369	212	487	496	254	881	945	140	0	725
V/C Ratio(X)	0.68	0.00	1.47	0.89	0.79	0.26	0.84	0.48	0.26	1.38	0.00	1.21
Avail Cap(c_a), veh/h	155	0	369	212	487	496	333	963	1015	140	0	725
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	74.1	0.0	64.0	70.4	55.5	40.9	68.3	30.5	16.6	75.1	0.0	48.9
Incr Delay (d2), s/veh	4.1	0.0	224.0	31.8	8.2	0.1	10.8	1.5	0.5	209.0	0.0	106.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	38.0	9.5	15.6	3.8	9.4	11.9	4.5	14.0	0.0	50.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.2	0.0	288.0	102.2	63.7	41.0	79.2	32.0	17.1	284.1	0.0	154.9
LnGrp LOS	E	A	F	F	E	D	E	C	B	F	A	F
Approach Vol, veh/h		623			704			885			1068	
Approach Delay, s/veh		260.4			69.8			39.2			178.2	
Approach LOS		F			E			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.8	80.2	25.0	40.0	27.8	70.2	16.3	48.7
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	10.8	80.2	18.0	33.0	27.8	63.2	12.6	38.4
Max Q Clear Time (g_c+I1), s	14.8	27.3	19.4	37.0	20.6	67.2	9.5	34.3
Green Ext Time (p_c), s	0.0	11.6	0.0	0.0	0.2	0.0	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	133.1
HCM 6th LOS	F

NC 119 at Turner Road

Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	187	536	4	40	350
Future Vol, veh/h	6	187	536	4	40	350
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	-2
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	208	596	4	44	389

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1075	598	0	0	600	0
Stage 1	598	-	-	-	-	-
Stage 2	477	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	243	502	-	-	977	-
Stage 1	549	-	-	-	-	-
Stage 2	624	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	229	502	-	-	977	-
Mov Cap-2 Maneuver	229	-	-	-	-	-
Stage 1	549	-	-	-	-	-
Stage 2	588	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.2	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	484	977	-
HCM Lane V/C Ratio	-	-	0.443	0.045	-
HCM Control Delay (s)	-	-	18.2	8.9	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	2.2	0.1	-

Intersection	
Int Delay, s/veh	6.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	253	657	10	60	431
Future Vol, veh/h	25	253	657	10	60	431
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	-	-	125	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	-2
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	281	730	11	67	479

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1349	736	0	0	741	0
Stage 1	736	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	166	419	-	-	866	-
Stage 1	474	-	-	-	-	-
Stage 2	541	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	153	419	-	-	866	-
Mov Cap-2 Maneuver	153	-	-	-	-	-
Stage 1	474	-	-	-	-	-
Stage 2	499	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	29.8	0	1.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	153	419	866	-
HCM Lane V/C Ratio	-	-	0.182	0.671	0.077	-
HCM Control Delay (s)	-	-	33.7	29.4	9.5	-
HCM Lane LOS	-	-	D	D	A	-
HCM 95th %tile Q(veh)	-	-	0.6	4.8	0.2	-

Intersection	
Int Delay, s/veh	18.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	50	253	756	30	60	557
Future Vol, veh/h	50	253	756	30	60	557
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	-	-	125	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	-2
Peak Hour Factor	75	90	75	75	90	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	67	281	1008	40	67	743

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1905	1028	0	0	1048	0
Stage 1	1028	-	-	-	-	-
Stage 2	877	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	75	284	-	-	664	-
Stage 1	345	-	-	-	-	-
Stage 2	407	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	67	284	-	-	664	-
Mov Cap-2 Maneuver	67	-	-	-	-	-
Stage 1	345	-	-	-	-	-
Stage 2	366	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	114	0	0.9
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	67	284	664	-
HCM Lane V/C Ratio	-	-	0.995	0.99	0.1	-
HCM Control Delay (s)	-	-	212.7	90.6	11	-
HCM Lane LOS	-	-	F	F	B	-
HCM 95th %tile Q(veh)	-	-	5	10.1	0.3	-

Intersection	
Int Delay, s/veh	6.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	253	681	10	60	439
Future Vol, veh/h	25	253	681	10	60	439
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	-	-	125	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	-2
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	281	757	11	67	488

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1385	763	0	0	768	0
Stage 1	763	-	-	-	-	-
Stage 2	622	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	158	404	-	-	846	-
Stage 1	460	-	-	-	-	-
Stage 2	535	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	146	404	-	-	846	-
Mov Cap-2 Maneuver	146	-	-	-	-	-
Stage 1	460	-	-	-	-	-
Stage 2	493	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	32.2	0	1.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	146	404	846	-
HCM Lane V/C Ratio	-	-	0.19	0.696	0.079	-
HCM Control Delay (s)	-	-	35.4	31.9	9.6	-
HCM Lane LOS	-	-	E	D	A	-
HCM 95th %tile Q(veh)	-	-	0.7	5.1	0.3	-

Intersection	
Int Delay, s/veh	20.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	50	253	780	30	60	565
Future Vol, veh/h	50	253	780	30	60	565
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	-	-	125	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	-2
Peak Hour Factor	75	90	75	75	90	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	67	281	1040	40	67	753

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1947	1060	0	0	1080	0
Stage 1	1060	-	-	-	-	-
Stage 2	887	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	71	~ 272	-	-	646	-
Stage 1	333	-	-	-	-	-
Stage 2	402	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 64	~ 272	-	-	646	-
Mov Cap-2 Maneuver	~ 64	-	-	-	-	-
Stage 1	333	-	-	-	-	-
Stage 2	360	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	129.3	0	0.9
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	64	272	646	-
HCM Lane V/C Ratio	-	-	1.042	1.033	0.103	-
HCM Control Delay (s)	-	-	233.3	104.6	11.2	-
HCM Lane LOS	-	-	F	F	B	-
HCM 95th %tile Q(veh)	-	-	5.2	10.9	0.3	-

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

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	75	320	4	106	400
Future Vol, veh/h	4	75	320	4	106	400
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	-2
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	83	356	4	118	444

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1038	358	0	0	360	0
Stage 1	358	-	-	-	-	-
Stage 2	680	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	256	686	-	-	1199	-
Stage 1	707	-	-	-	-	-
Stage 2	503	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	222	686	-	-	1199	-
Mov Cap-2 Maneuver	222	-	-	-	-	-
Stage 1	707	-	-	-	-	-
Stage 2	437	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.8	0	1.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	620	1199	-
HCM Lane V/C Ratio	-	-	0.142	0.098	-
HCM Control Delay (s)	-	-	11.8	8.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.3	-

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	16	115	432	25	173	537
Future Vol, veh/h	16	115	432	25	173	537
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	-	-	125	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	-2
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	128	480	28	192	597

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1475	494	0	0	508	0
Stage 1	494	-	-	-	-	-
Stage 2	981	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	139	575	-	-	1057	-
Stage 1	613	-	-	-	-	-
Stage 2	363	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	114	575	-	-	1057	-
Mov Cap-2 Maneuver	114	-	-	-	-	-
Stage 1	613	-	-	-	-	-
Stage 2	297	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.6	0	2.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	114	575	1057	-
HCM Lane V/C Ratio	-	-	0.156	0.222	0.182	-
HCM Control Delay (s)	-	-	42.3	13	9.2	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.8	0.7	-

Intersection	
Int Delay, s/veh	5.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	29	115	529	44	173	604
Future Vol, veh/h	29	115	529	44	173	604
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	-	-	125	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	-2
Peak Hour Factor	75	90	75	75	90	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	128	705	59	192	805

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1924	735	0	0	764	0
Stage 1	735	-	-	-	-	-
Stage 2	1189	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	73	420	-	-	849	-
Stage 1	474	-	-	-	-	-
Stage 2	289	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	57	420	-	-	849	-
Mov Cap-2 Maneuver	57	-	-	-	-	-
Stage 1	474	-	-	-	-	-
Stage 2	224	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	48.7	0	2
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	57	420	849	-
HCM Lane V/C Ratio	-	-	0.678	0.304	0.226	-
HCM Control Delay (s)	-	-	152.4	17.3	10.5	-
HCM Lane LOS	-	-	F	C	B	-
HCM 95th %tile Q(veh)	-	-	2.8	1.3	0.9	-

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	16	115	448	25	173	565
Future Vol, veh/h	16	115	448	25	173	565
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	-	-	125	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	-2
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	128	498	28	192	628

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1524	512	0	0	526	0
Stage 1	512	-	-	-	-	-
Stage 2	1012	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	130	562	-	-	1041	-
Stage 1	602	-	-	-	-	-
Stage 2	351	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	106	562	-	-	1041	-
Mov Cap-2 Maneuver	106	-	-	-	-	-
Stage 1	602	-	-	-	-	-
Stage 2	286	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.3	0	2.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	106	562	1041	-
HCM Lane V/C Ratio	-	-	0.168	0.227	0.185	-
HCM Control Delay (s)	-	-	45.7	13.3	9.2	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0.9	0.7	-

Intersection	
Int Delay, s/veh	5.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	29	115	544	44	173	631
Future Vol, veh/h	29	115	544	44	173	631
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	-	-	125	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	-2
Peak Hour Factor	75	90	75	75	90	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	128	725	59	192	841

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1980	755	0	0	784	0
Stage 1	755	-	-	-	-	-
Stage 2	1225	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	68	409	-	-	834	-
Stage 1	464	-	-	-	-	-
Stage 2	278	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	52	409	-	-	834	-
Mov Cap-2 Maneuver	52	-	-	-	-	-
Stage 1	464	-	-	-	-	-
Stage 2	214	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	55.3	0	2
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	52	409	834	-
HCM Lane V/C Ratio	-	-	0.744	0.312	0.23	-
HCM Control Delay (s)	-	-	179.3	17.8	10.6	-
HCM Lane LOS	-	-	F	C	B	-
HCM 95th %tile Q(veh)	-	-	3.1	1.3	0.9	-

NC 119 at Kimrey Road

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	37	4	4	503	313	43
Future Vol, veh/h	37	4	4	503	313	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	2	1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	4	4	559	348	48

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	939	372	396	0	-	0
Stage 1	372	-	-	-	-	-
Stage 2	567	-	-	-	-	-
Critical Hdwy	6.62	6.32	4.12	-	-	-
Critical Hdwy Stg 1	5.62	-	-	-	-	-
Critical Hdwy Stg 2	5.62	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	278	667	1163	-	-	-
Stage 1	683	-	-	-	-	-
Stage 2	550	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	277	667	1163	-	-	-
Mov Cap-2 Maneuver	277	-	-	-	-	-
Stage 1	680	-	-	-	-	-
Stage 2	550	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.5	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1163	-	294	-	-
HCM Lane V/C Ratio	0.004	-	0.155	-	-
HCM Control Delay (s)	8.1	0	19.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

Intersection	
Int Delay, s/veh	9.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	39	1	4	79	3	89	4	545	33	37	378	45
Future Vol, veh/h	39	1	4	79	3	89	4	545	33	37	378	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	2	-	-	1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	1	4	88	3	99	4	606	37	41	420	50

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1211	1178	445	1163	1185	625	470	0	0	643	0	0
Stage 1	527	527	-	633	633	-	-	-	-	-	-	-
Stage 2	684	651	-	530	552	-	-	-	-	-	-	-
Critical Hdwy	7.32	6.72	6.32	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.32	5.72	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.32	5.72	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	149	179	606	172	189	485	1092	-	-	942	-	-
Stage 1	519	513	-	468	473	-	-	-	-	-	-	-
Stage 2	422	448	-	533	515	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	111	167	606	162	177	485	1092	-	-	942	-	-
Mov Cap-2 Maneuver	111	167	-	162	177	-	-	-	-	-	-	-
Stage 1	516	483	-	465	470	-	-	-	-	-	-	-
Stage 2	332	445	-	497	485	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	53.6	54.5	0.1	0.7
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1092	-	-	121	249	942	-	-
HCM Lane V/C Ratio	0.004	-	-	0.404	0.763	0.044	-	-
HCM Control Delay (s)	8.3	0	-	53.6	54.5	9	0	-
HCM Lane LOS	A	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.7	5.5	0.1	-	-

Intersection	
Int Delay, s/veh	61

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	39	4	9	79	4	89	8	663	33	37	529	45
Future Vol, veh/h	39	4	9	79	4	89	8	663	33	37	529	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	2	-	-	1	-
Peak Hour Factor	90	90	75	90	90	90	75	75	90	90	75	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	4	12	88	4	99	11	884	37	41	705	50

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1788	1755	730	1745	1762	903	755	0	0	921	0	0
Stage 1	812	812	-	925	925	-	-	-	-	-	-	-
Stage 2	976	943	-	820	837	-	-	-	-	-	-	-
Critical Hdwy	7.32	6.72	6.32	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.32	5.72	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.32	5.72	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	57	77	414	~ 68	84	336	855	-	-	741	-	-
Stage 1	356	375	-	323	348	-	-	-	-	-	-	-
Stage 2	286	324	-	369	382	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 35	68	414	~ 57	74	336	855	-	-	741	-	-
Mov Cap-2 Maneuver	~ 35	68	-	~ 57	74	-	-	-	-	-	-	-
Stage 1	346	339	-	314	339	-	-	-	-	-	-	-
Stage 2	194	315	-	320	345	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 389.7	$ 507.2	0.1	0.5
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	855	-	-	45	101	741	-	-
HCM Lane V/C Ratio	0.012	-	-	1.328	1.892	0.055	-	-
HCM Control Delay (s)	9.3	0	-	$ 389.7	$ 507.2	10.1	0	-
HCM Lane LOS	A	A	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0	-	-	5.7	15.8	0.2	-	-

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

Intersection	
Int Delay, s/veh	31.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	4	9	79	4	89	8	663	33	37	529	45
Future Vol, veh/h	39	4	9	79	4	89	8	663	33	37	529	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	100	-	-	100	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	2	-	-	1	-
Peak Hour Factor	90	90	75	90	90	90	75	75	90	90	75	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	4	12	88	4	99	11	884	37	41	705	50

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1788	1755	730	1726	1743	884	755	0	0	921	0	0
Stage 1	812	812	-	906	906	-	-	-	-	-	-	-
Stage 2	976	943	-	820	837	-	-	-	-	-	-	-
Critical Hdwy	7.32	6.72	6.32	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.32	5.72	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.32	5.72	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	57	77	414	~ 70	87	344	855	-	-	741	-	-
Stage 1	356	375	-	331	355	-	-	-	-	-	-	-
Stage 2	286	324	-	369	382	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 36	71	414	~ 61	80	344	855	-	-	741	-	-
Mov Cap-2 Maneuver	~ 36	71	-	~ 61	80	-	-	-	-	-	-	-
Stage 1	346	354	-	322	345	-	-	-	-	-	-	-
Stage 2	196	315	-	334	361	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 374.9	202.3	0.1	0.5
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	855	-	-	46	62	344	741	-	-
HCM Lane V/C Ratio	0.012	-	-	1.3	1.487	0.287	0.055	-	-
HCM Control Delay (s)	9.3	0	-	$ 374.9	$ 398.3	19.6	10.1	-	-
HCM Lane LOS	A	A	-	F	F	C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	5.7	8.1	1.2	0.2	-	-

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

Intersection	
Int Delay, s/veh	11.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	39	4	4	79	4	89	4	569	33	37	386	45
Future Vol, veh/h	39	4	4	79	4	89	4	569	33	37	386	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	2	-	-	1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	4	4	88	4	99	4	632	37	41	429	50

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1246	1213	454	1199	1220	651	479	0	0	669	0	0
Stage 1	536	536	-	659	659	-	-	-	-	-	-	-
Stage 2	710	677	-	540	561	-	-	-	-	-	-	-
Critical Hdwy	7.32	6.72	6.32	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.32	5.72	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.32	5.72	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	140	170	598	162	180	469	1083	-	-	921	-	-
Stage 1	513	508	-	453	461	-	-	-	-	-	-	-
Stage 2	408	435	-	526	510	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	103	159	598	149	168	469	1083	-	-	921	-	-
Mov Cap-2 Maneuver	103	159	-	149	168	-	-	-	-	-	-	-
Stage 1	510	477	-	450	458	-	-	-	-	-	-	-
Stage 2	317	432	-	486	479	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	60.9	67.2	0.1	0.7
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1083	-	-	114	231	921	-	-
HCM Lane V/C Ratio	0.004	-	-	0.458	0.827	0.045	-	-
HCM Control Delay (s)	8.3	0	-	60.9	67.2	9.1	0	-
HCM Lane LOS	A	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2	6.3	0.1	-	-

Intersection	
Int Delay, s/veh	69

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	39	4	9	79	4	89	9	687	33	37	537	45
Future Vol, veh/h	39	4	9	79	4	89	9	687	33	37	537	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	2	-	-	1	-
Peak Hour Factor	90	90	75	90	90	90	75	75	90	90	75	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	4	12	88	4	99	12	916	37	41	716	50

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1833	1800	741	1790	1807	935	766	0	0	953	0	0
Stage 1	823	823	-	959	959	-	-	-	-	-	-	-
Stage 2	1010	977	-	831	848	-	-	-	-	-	-	-
Critical Hdwy	7.32	6.72	6.32	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.32	5.72	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.32	5.72	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	53	72	408	~ 63	79	322	847	-	-	721	-	-
Stage 1	351	370	-	309	335	-	-	-	-	-	-	-
Stage 2	273	312	-	364	378	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 32	63	408	~ 52	69	322	847	-	-	721	-	-
Mov Cap-2 Maneuver	~ 32	63	-	~ 52	69	-	-	-	-	-	-	-
Stage 1	340	333	-	300	325	-	-	-	-	-	-	-
Stage 2	181	303	-	314	340	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 457.1	$ 584.6	0.1	0.5
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	847	-	-	41	93	721	-	-
HCM Lane V/C Ratio	0.014	-	-	1.458	2.055	0.057	-	-
HCM Control Delay (s)	9.3	0	-	$ 457.1	$ 584.6	10.3	0	-
HCM Lane LOS	A	A	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0	-	-	6.1	16.6	0.2	-	-

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

Intersection	
Int Delay, s/veh	35.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	4	9	79	4	89	8	687	33	37	537	45
Future Vol, veh/h	39	4	9	79	4	89	8	687	33	37	537	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	100	-	-	100	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	2	-	-	1	-
Peak Hour Factor	90	90	75	90	90	90	75	75	90	90	75	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	4	12	88	4	99	11	916	37	41	716	50

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1831	1798	741	1769	1786	916	766	0	0	953	0	0
Stage 1	823	823	-	938	938	-	-	-	-	-	-	-
Stage 2	1008	975	-	831	848	-	-	-	-	-	-	-
Critical Hdwy	7.32	6.72	6.32	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.32	5.72	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.32	5.72	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	53	72	408	~ 65	81	330	847	-	-	721	-	-
Stage 1	351	370	-	317	343	-	-	-	-	-	-	-
Stage 2	274	312	-	364	378	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 33	66	408	~ 56	74	330	847	-	-	721	-	-
Mov Cap-2 Maneuver	~ 33	66	-	~ 56	74	-	-	-	-	-	-	-
Stage 1	341	349	-	308	333	-	-	-	-	-	-	-
Stage 2	184	303	-	329	356	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 438.9	233.9	0.1	0.5
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	847	-	-	42	57	330	721	-	-
HCM Lane V/C Ratio	0.013	-	-	1.423	1.618	0.3	0.057	-	-
HCM Control Delay (s)	9.3	0	-	$ 438.9	$ 462.8	20.5	10.3	-	-
HCM Lane LOS	A	A	-	F	F	C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	6	8.5	1.2	0.2	-	-

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

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	4	4	300	361	43
Future Vol, veh/h	24	4	4	300	361	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	2	1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	4	4	333	401	48

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	766	425	449	0	-	0
Stage 1	425	-	-	-	-	-
Stage 2	341	-	-	-	-	-
Critical Hdwy	6.62	6.32	4.12	-	-	-
Critical Hdwy Stg 1	5.62	-	-	-	-	-
Critical Hdwy Stg 2	5.62	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	355	622	1111	-	-	-
Stage 1	644	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	354	622	1111	-	-	-
Mov Cap-2 Maneuver	354	-	-	-	-	-
Stage 1	641	-	-	-	-	-
Stage 2	707	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.4	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1111	-	377	-	-
HCM Lane V/C Ratio	0.004	-	0.083	-	-
HCM Control Delay (s)	8.3	0	15.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	4	4	57	4	64	4	371	87	98	413	45
Future Vol, veh/h	25	4	4	57	4	64	4	371	87	98	413	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	2	-	-	1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	4	4	63	4	71	4	412	97	109	459	50

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1208	1219	484	1175	1196	461	509	0	0	509	0	0
Stage 1	702	702	-	469	469	-	-	-	-	-	-	-
Stage 2	506	517	-	706	727	-	-	-	-	-	-	-
Critical Hdwy	7.32	6.72	6.32	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.32	5.72	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.32	5.72	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	150	168	575	168	186	600	1056	-	-	1056	-	-
Stage 1	412	424	-	575	561	-	-	-	-	-	-	-
Stage 2	534	519	-	427	429	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	115	143	575	144	158	600	1056	-	-	1056	-	-
Mov Cap-2 Maneuver	115	143	-	144	158	-	-	-	-	-	-	-
Stage 1	410	363	-	572	558	-	-	-	-	-	-	-
Stage 2	465	516	-	358	367	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	42.8	39.7	0.1	1.6
HCM LOS	E	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1056	-	-	131	237	1056	-	-
HCM Lane V/C Ratio	0.004	-	-	0.28	0.586	0.103	-	-
HCM Control Delay (s)	8.4	0	-	42.8	39.7	8.8	0	-
HCM Lane LOS	A	A	-	E	E	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.1	3.3	0.3	-	-

Intersection	
Int Delay, s/veh	21.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	25	4	4	57	4	64	8	487	87	98	493	45
Future Vol, veh/h	25	4	4	57	4	64	8	487	87	98	493	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	2	-	-	1	-
Peak Hour Factor	90	90	75	90	90	90	75	75	90	90	75	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	4	5	63	4	71	11	649	97	109	657	50

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1657	1668	682	1625	1645	698	707	0	0	746	0	0
Stage 1	900	900	-	720	720	-	-	-	-	-	-	-
Stage 2	757	768	-	905	925	-	-	-	-	-	-	-
Critical Hdwy	7.32	6.72	6.32	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.32	5.72	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.32	5.72	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	71	88	441	82	99	440	891	-	-	862	-	-
Stage 1	317	340	-	419	432	-	-	-	-	-	-	-
Stage 2	383	394	-	331	348	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	47	68	441	64	77	440	891	-	-	862	-	-
Mov Cap-2 Maneuver	47	68	-	64	77	-	-	-	-	-	-	-
Stage 1	310	269	-	410	423	-	-	-	-	-	-	-
Stage 2	311	386	-	254	275	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	153	221.6	0.1	1.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	891	-	-	56	115	862	-	-
HCM Lane V/C Ratio	0.012	-	-	0.671	1.208	0.126	-	-
HCM Control Delay (s)	9.1	0	-	153	221.6	9.8	0	-
HCM Lane LOS	A	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2.8	8.9	0.4	-	-

Intersection	
Int Delay, s/veh	10.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	4	4	57	4	64	8	487	87	98	493	45
Future Vol, veh/h	25	4	4	57	4	64	8	487	87	98	493	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	100	-	-	100	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	2	-	-	1	-
Peak Hour Factor	90	90	75	90	90	90	75	75	90	90	75	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	4	5	63	4	71	11	649	97	109	657	50

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1657	1668	682	1576	1596	649	707	0	0	746	0	0
Stage 1	900	900	-	671	671	-	-	-	-	-	-	-
Stage 2	757	768	-	905	925	-	-	-	-	-	-	-
Critical Hdwy	7.32	6.72	6.32	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.32	5.72	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.32	5.72	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	71	88	441	89	107	470	891	-	-	862	-	-
Stage 1	317	340	-	446	455	-	-	-	-	-	-	-
Stage 2	383	394	-	331	348	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	52	75	441	75	92	470	891	-	-	862	-	-
Mov Cap-2 Maneuver	52	75	-	75	92	-	-	-	-	-	-	-
Stage 1	310	297	-	437	445	-	-	-	-	-	-	-
Stage 2	315	386	-	281	304	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	128.3	89.2	0.1	1.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	891	-	-	62	76	470	862	-	-
HCM Lane V/C Ratio	0.012	-	-	0.606	0.892	0.151	0.126	-	-
HCM Control Delay (s)	9.1	0	-	128.3	168	14	9.8	-	-
HCM Lane LOS	A	A	-	F	F	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	2.5	4.6	0.5	0.4	-	-

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	4	4	57	4	64	7	387	87	98	441	45
Future Vol, veh/h	25	4	4	57	4	64	7	387	87	98	441	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	2	-	-	1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	4	4	63	4	71	8	430	97	109	490	50

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1265	1276	515	1232	1253	479	540	0	0	527	0	0
Stage 1	733	733	-	495	495	-	-	-	-	-	-	-
Stage 2	532	543	-	737	758	-	-	-	-	-	-	-
Critical Hdwy	7.32	6.72	6.32	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.32	5.72	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.32	5.72	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	136	155	552	154	172	587	1028	-	-	1040	-	-
Stage 1	396	409	-	556	546	-	-	-	-	-	-	-
Stage 2	516	504	-	410	415	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	102	130	552	131	144	587	1028	-	-	1040	-	-
Mov Cap-2 Maneuver	102	130	-	131	144	-	-	-	-	-	-	-
Stage 1	392	347	-	550	540	-	-	-	-	-	-	-
Stage 2	445	498	-	341	352	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	49.2	46.2	0.1	1.5
HCM LOS	E	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1028	-	-	117	219	1040	-	-
HCM Lane V/C Ratio	0.008	-	-	0.313	0.634	0.105	-	-
HCM Control Delay (s)	8.5	0	-	49.2	46.2	8.9	0	-
HCM Lane LOS	A	A	-	E	E	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.2	3.8	0.3	-	-

Intersection	
Int Delay, s/veh	25.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	4	4	57	4	64	7	503	87	98	521	45
Future Vol, veh/h	25	4	4	57	4	64	7	503	87	98	521	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	2	-	-	1	-
Peak Hour Factor	90	90	75	90	90	90	75	75	90	90	75	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	4	5	63	4	71	9	671	97	109	695	50

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1713	1724	720	1681	1701	720	745	0	0	768	0	0
Stage 1	938	938	-	738	738	-	-	-	-	-	-	-
Stage 2	775	786	-	943	963	-	-	-	-	-	-	-
Critical Hdwy	7.32	6.72	6.32	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.32	5.72	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.32	5.72	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	65	81	419	75	92	428	863	-	-	846	-	-
Stage 1	301	326	-	410	424	-	-	-	-	-	-	-
Stage 2	374	386	-	315	334	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	42	62	419	~ 57	70	428	863	-	-	846	-	-
Mov Cap-2 Maneuver	42	62	-	~ 57	70	-	-	-	-	-	-	-
Stage 1	295	254	-	402	416	-	-	-	-	-	-	-
Stage 2	303	379	-	238	260	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	186.7	277.9	0.1	1.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	863	-	-	50	104	846	-	-
HCM Lane V/C Ratio	0.011	-	-	0.751	1.335	0.129	-	-
HCM Control Delay (s)	9.2	0	-	186.7	277.9	9.9	0	-
HCM Lane LOS	A	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	3.1	9.7	0.4	-	-

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

Intersection	
Int Delay, s/veh	12.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	4	4	57	4	64	7	503	87	98	521	45
Future Vol, veh/h	25	4	4	57	4	64	7	503	87	98	521	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	100	-	-	100	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	0	-	-	2	-	-	1	-
Peak Hour Factor	90	90	75	90	90	90	75	75	90	90	75	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	4	5	63	4	71	9	671	97	109	695	50

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1713	1724	720	1632	1652	671	745	0	0	768	0	0
Stage 1	938	938	-	689	689	-	-	-	-	-	-	-
Stage 2	775	786	-	943	963	-	-	-	-	-	-	-
Critical Hdwy	7.32	6.72	6.32	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.32	5.72	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.32	5.72	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	65	81	419	81	98	456	863	-	-	846	-	-
Stage 1	301	326	-	436	446	-	-	-	-	-	-	-
Stage 2	374	386	-	315	334	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	47	69	419	68	84	456	863	-	-	846	-	-
Mov Cap-2 Maneuver	47	69	-	68	84	-	-	-	-	-	-	-
Stage 1	295	284	-	428	438	-	-	-	-	-	-	-
Stage 2	307	379	-	267	291	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	153	107.4	0.1	1.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	863	-	-	56	69	456	846	-	-
HCM Lane V/C Ratio	0.011	-	-	0.671	0.982	0.156	0.129	-	-
HCM Control Delay (s)	9.2	0	-	153	205.1	14.3	9.9	-	-
HCM Lane LOS	A	A	-	F	F	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	2.8	5	0.5	0.4	-	-

NC 119 at Jim Minor Road

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	7	39	19	15	122	50	31	446	7	12	290	11
Future Vol, veh/h	7	39	19	15	122	50	31	446	7	12	290	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	5	-	-	-3	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	43	21	17	136	56	34	496	8	13	322	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1018	926	328	954	928	500	334	0	0	504	0	0
Stage 1	354	354	-	568	568	-	-	-	-	-	-	-
Stage 2	664	572	-	386	360	-	-	-	-	-	-	-
Critical Hdwy	8.12	7.52	6.72	6.52	5.92	5.92	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	7.12	6.52	-	5.52	4.92	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.12	6.52	-	5.52	4.92	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	163	208	682	280	313	595	1225	-	-	1061	-	-
Stage 1	601	571	-	558	557	-	-	-	-	-	-	-
Stage 2	374	430	-	680	665	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	91	197	682	216	296	595	1225	-	-	1061	-	-
Mov Cap-2 Maneuver	91	197	-	216	296	-	-	-	-	-	-	-
Stage 1	578	562	-	536	535	-	-	-	-	-	-	-
Stage 2	243	413	-	599	655	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	30	32.6	0.5	0.3
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1225	-	-	215	331	1061	-	-
HCM Lane V/C Ratio	0.028	-	-	0.336	0.628	0.013	-	-
HCM Control Delay (s)	8	0	-	30	32.6	8.4	0	-
HCM Lane LOS	A	A	-	D	D	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.4	4	0	-	-

Intersection	
Int Delay, s/veh	43.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	31	41	20	16	128	55	33	493	7	60	370	27
Future Vol, veh/h	31	41	20	16	128	55	33	493	7	60	370	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	5	-	-	-3	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	46	22	18	142	61	37	548	8	67	411	30

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1288	1190	426	1220	1201	552	441	0	0	556	0	0
Stage 1	560	560	-	626	626	-	-	-	-	-	-	-
Stage 2	728	630	-	594	575	-	-	-	-	-	-	-
Critical Hdwy	8.12	7.52	6.72	6.52	5.92	5.92	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	7.12	6.52	-	5.52	4.92	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.12	6.52	-	5.52	4.92	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	98	135	592	192	226	558	1119	-	-	1015	-	-
Stage 1	439	437	-	524	529	-	-	-	-	-	-	-
Stage 2	339	399	-	543	553	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 33	117	592	117	196	558	1119	-	-	1015	-	-
Mov Cap-2 Maneuver	~ 33	117	-	117	196	-	-	-	-	-	-	-
Stage 1	418	399	-	499	504	-	-	-	-	-	-	-
Stage 2	206	380	-	422	504	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 371	102.7	0.5	1.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1119	-	-	70	224	1015	-	-
HCM Lane V/C Ratio	0.033	-	-	1.46	0.987	0.066	-	-
HCM Control Delay (s)	8.3	0	-	$ 371	102.7	8.8	0	-
HCM Lane LOS	A	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	8.5	8.9	0.2	-	-

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

Intersection	
Int Delay, s/veh	73.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	76	41	20	16	128	68	33	531	7	70	400	62
Future Vol, veh/h	76	41	20	16	128	68	33	531	7	70	400	62
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	5	-	-	-3	-	-	0	-	-	0	-
Peak Hour Factor	75	90	90	90	90	75	90	75	90	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	101	46	22	18	142	91	37	708	8	93	533	83

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1664	1551	575	1581	1588	712	616	0	0	716	0	0
Stage 1	761	761	-	786	786	-	-	-	-	-	-	-
Stage 2	903	790	-	795	802	-	-	-	-	-	-	-
Critical Hdwy	8.12	7.52	6.72	6.52	5.92	5.92	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	7.12	6.52	-	5.52	4.92	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.12	6.52	-	5.52	4.92	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 49	74	478	115	~ 140	459	964	-	-	885	-	-
Stage 1	322	335	-	439	460	-	-	-	-	-	-	-
Stage 2	258	322	-	435	453	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	58	478	33	~ 110	459	964	-	-	885	-	-
Mov Cap-2 Maneuver	-	58	-	33	~ 110	-	-	-	-	-	-	-
Stage 1	301	281	-	411	431	-	-	-	-	-	-	-
Stage 2	130	301	-	291	380	-	-	-	-	-	-	-

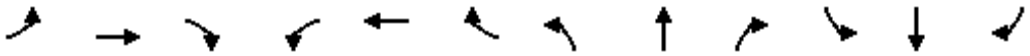
Approach	EB	WB	NB	SB
HCM Control Delay, s		$ 545.4	0.4	1.3
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	964	-	-	-	124	885	-	-
HCM Lane V/C Ratio	0.038	-	-	-	2.022	0.105	-	-
HCM Control Delay (s)	8.9	0	-	-	$ 545.4	9.5	0	-
HCM Lane LOS	A	A	-	-	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	-	20.4	0.4	-	-

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

HCM 6th Signalized Intersection Summary
400: NC 119 & Jim Minor Road

10/25/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	41	20	16	128	68	33	531	7	70	400	62
Future Volume (veh/h)	76	41	20	16	128	68	33	531	7	70	400	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1988	1988	1988	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	101	46	22	18	142	91	37	708	8	93	533	83
Peak Hour Factor	0.75	0.90	0.90	0.90	0.90	0.75	0.90	0.75	0.90	0.75	0.75	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	317	118	44	112	258	158	116	920	10	176	686	101
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.52	0.52	0.52	0.52	0.52	0.52
Sat Flow, veh/h	754	499	188	81	1089	665	48	1758	19	150	1311	194
Grp Volume(v), veh/h	169	0	0	251	0	0	753	0	0	709	0	0
Grp Sat Flow(s),veh/h/ln	1440	0	0	1835	0	0	1825	0	0	1655	0	0
Q Serve(g_s), s	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
Cycle Q Clear(g_c), s	3.6	0.0	0.0	5.0	0.0	0.0	13.4	0.0	0.0	13.8	0.0	0.0
Prop In Lane	0.60		0.13	0.07		0.36	0.05		0.01	0.13		0.12
Lane Grp Cap(c), veh/h	479	0	0	527	0	0	1045	0	0	964	0	0
V/C Ratio(X)	0.35	0.00	0.00	0.48	0.00	0.00	0.72	0.00	0.00	0.74	0.00	0.00
Avail Cap(c_a), veh/h	779	0	0	969	0	0	1391	0	0	1265	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.5	0.0	0.0	14.0	0.0	0.0	7.9	0.0	0.0	7.9	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.7	0.0	0.0	1.2	0.0	0.0	1.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.0	1.6	0.0	0.0	2.8	0.0	0.0	2.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.0	0.0	0.0	14.7	0.0	0.0	9.2	0.0	0.0	9.5	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		169			251			753			709	
Approach Delay, s/veh		14.0			14.7			9.2			9.5	
Approach LOS		B			B			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.8		14.9		26.8		14.9				
Change Period (Y+Rc), s		7.0		7.0		7.0		7.0				
Max Green Setting (Gmax), s		28.0		18.0		28.0		18.0				
Max Q Clear Time (g_c+I1), s		15.4		5.6		15.8		7.0				
Green Ext Time (p_c), s		4.0		0.7		4.0		0.9				

Intersection Summary												
HCM 6th Ctrl Delay			10.4									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	55.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	35	41	20	16	128	55	33	495	7	61	377	40
Future Vol, veh/h	35	41	20	16	128	55	33	495	7	61	377	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	5	-	-	-3	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	46	22	18	142	61	37	550	8	68	419	44

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1307	1209	441	1239	1227	554	463	0	0	558	0	0
Stage 1	577	577	-	628	628	-	-	-	-	-	-	-
Stage 2	730	632	-	611	599	-	-	-	-	-	-	-
Critical Hdwy	8.12	7.52	6.72	6.52	5.92	5.92	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	7.12	6.52	-	5.52	4.92	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.12	6.52	-	5.52	4.92	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	95	131	580	187	219	557	1098	-	-	1013	-	-
Stage 1	428	427	-	523	528	-	-	-	-	-	-	-
Stage 2	338	398	-	533	542	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 30	113	580	111	189	557	1098	-	-	1013	-	-
Mov Cap-2 Maneuver	~ 30	113	-	111	189	-	-	-	-	-	-	-
Stage 1	407	388	-	497	502	-	-	-	-	-	-	-
Stage 2	205	378	-	411	493	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 506	114.8	0.5	1.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1098	-	-	61	216	1013	-	-
HCM Lane V/C Ratio	0.033	-	-	1.749	1.024	0.067	-	-
HCM Control Delay (s)	8.4	0	-	$ 506	114.8	8.8	0	-
HCM Lane LOS	A	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	9.8	9.4	0.2	-	-

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

Intersection	
Int Delay, s/veh	81.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	80	41	20	16	128	67	33	532	7	71	406	75
Future Vol, veh/h	80	41	20	16	128	67	33	532	7	71	406	75
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	5	-	-	-3	-	-	0	-	-	0	-
Peak Hour Factor	75	90	90	90	90	75	90	75	90	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	107	46	22	18	142	89	37	709	8	95	541	100

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1684	1572	591	1602	1618	713	641	0	0	717	0	0
Stage 1	781	781	-	787	787	-	-	-	-	-	-	-
Stage 2	903	791	-	815	831	-	-	-	-	-	-	-
Critical Hdwy	8.12	7.52	6.72	6.52	5.92	5.92	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	7.12	6.52	-	5.52	4.92	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.12	6.52	-	5.52	4.92	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 47	71	467	111	~ 135	458	943	-	-	884	-	-
Stage 1	312	326	-	439	459	-	-	-	-	-	-	-
Stage 2	258	322	-	425	442	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	55	467	28	~ 105	458	943	-	-	884	-	-
Mov Cap-2 Maneuver	-	55	-	28	~ 105	-	-	-	-	-	-	-
Stage 1	292	271	-	410	429	-	-	-	-	-	-	-
Stage 2	130	301	-	279	367	-	-	-	-	-	-	-

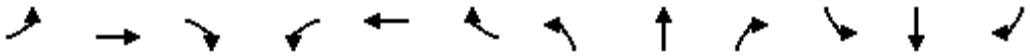
Approach	EB	WB	NB	SB
HCM Control Delay, s		$ 623.7	0.4	1.2
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	943	-	-	-	114	884	-	-
HCM Lane V/C Ratio	0.039	-	-	-	2.187	0.107	-	-
HCM Control Delay (s)	9	0	-	-	$ 623.7	9.6	0	-
HCM Lane LOS	A	A	-	-	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	-	21.3	0.4	-	-

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

HCM 6th Signalized Intersection Summary
400: NC 119 & Jim Minor Road

10/25/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	41	20	16	128	67	33	532	7	71	406	75
Future Volume (veh/h)	80	41	20	16	128	67	33	532	7	71	406	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1988	1988	1988	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	107	46	22	18	142	89	37	709	8	95	541	100
Peak Hour Factor	0.75	0.90	0.90	0.90	0.90	0.75	0.90	0.75	0.90	0.75	0.75	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	314	109	41	109	256	153	113	939	10	174	683	120
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.53	0.53	0.53	0.53	0.53	0.53
Sat Flow, veh/h	771	468	178	82	1101	658	47	1756	19	149	1278	224
Grp Volume(v), veh/h	175	0	0	249	0	0	754	0	0	736	0	0
Grp Sat Flow(s),veh/h/ln	1416	0	0	1841	0	0	1823	0	0	1652	0	0
Q Serve(g_s), s	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0
Cycle Q Clear(g_c), s	4.0	0.0	0.0	5.1	0.0	0.0	13.6	0.0	0.0	15.0	0.0	0.0
Prop In Lane	0.61		0.13	0.07		0.36	0.05		0.01	0.13		0.14
Lane Grp Cap(c), veh/h	464	0	0	518	0	0	1062	0	0	978	0	0
V/C Ratio(X)	0.38	0.00	0.00	0.48	0.00	0.00	0.71	0.00	0.00	0.75	0.00	0.00
Avail Cap(c_a), veh/h	752	0	0	944	0	0	1352	0	0	1231	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.2	0.0	0.0	14.6	0.0	0.0	7.8	0.0	0.0	7.9	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.7	0.0	0.0	1.3	0.0	0.0	2.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	1.7	0.0	0.0	2.9	0.0	0.0	3.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.7	0.0	0.0	15.3	0.0	0.0	9.0	0.0	0.0	10.0	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		175			249			754			736	
Approach Delay, s/veh		14.7			15.3			9.0			10.0	
Approach LOS		B			B			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		27.9		14.9		27.9		14.9				
Change Period (Y+Rc), s		7.0		7.0		7.0		7.0				
Max Green Setting (Gmax), s		28.0		18.0		28.0		18.0				
Max Q Clear Time (g_c+I1), s		15.6		6.0		17.0		7.1				
Green Ext Time (p_c), s		4.0		0.7		3.9		0.9				

Intersection Summary												
HCM 6th Ctrl Delay			10.7									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	12	59	27	23	56	9	13	281	18	36	289	36
Future Vol, veh/h	12	59	27	23	56	9	13	281	18	36	289	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	5	-	-	-3	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	66	30	26	62	10	14	312	20	40	321	40

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	807	781	341	819	791	322	361	0	0	332	0	0
Stage 1	421	421	-	350	350	-	-	-	-	-	-	-
Stage 2	386	360	-	469	441	-	-	-	-	-	-	-
Critical Hdwy	8.12	7.52	6.72	6.52	5.92	5.92	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	7.12	6.52	-	5.52	4.92	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.12	6.52	-	5.52	4.92	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	240	263	669	337	367	738	1198	-	-	1227	-	-
Stage 1	543	524	-	706	671	-	-	-	-	-	-	-
Stage 2	573	567	-	621	621	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	196	249	669	246	347	738	1198	-	-	1227	-	-
Mov Cap-2 Maneuver	196	249	-	246	347	-	-	-	-	-	-	-
Stage 1	535	503	-	696	662	-	-	-	-	-	-	-
Stage 2	505	559	-	495	596	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.8	20.5	0.3	0.8
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1198	-	-	289	329	1227	-	-
HCM Lane V/C Ratio	0.012	-	-	0.377	0.297	0.033	-	-
HCM Control Delay (s)	8	0	-	24.8	20.5	8	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.7	1.2	0.1	-	-

Intersection	
Int Delay, s/veh	40.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	77	62	28	24	59	15	14	368	19	72	349	48
Future Vol, veh/h	77	62	28	24	59	15	14	368	19	72	349	48
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	5	-	-	-3	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	86	69	31	27	66	17	16	409	21	80	388	53

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1068	1037	415	1077	1053	420	441	0	0	430	0	0
Stage 1	575	575	-	452	452	-	-	-	-	-	-	-
Stage 2	493	462	-	625	601	-	-	-	-	-	-	-
Critical Hdwy	8.12	7.52	6.72	6.52	5.92	5.92	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	7.12	6.52	-	5.52	4.92	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.12	6.52	-	5.52	4.92	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	148	173	602	235	270	656	1119	-	-	1129	-	-
Stage 1	429	429	-	633	615	-	-	-	-	-	-	-
Stage 2	486	497	-	524	541	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	104	154	602	133	240	656	1119	-	-	1129	-	-
Mov Cap-2 Maneuver	104	154	-	133	240	-	-	-	-	-	-	-
Stage 1	421	388	-	621	603	-	-	-	-	-	-	-
Stage 2	414	488	-	370	490	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	247.8	36.9	0.3	1.3
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1119	-	-	140	218	1129	-	-
HCM Lane V/C Ratio	0.014	-	-	1.325	0.499	0.071	-	-
HCM Control Delay (s)	8.3	0	-	247.8	36.9	8.4	0	-
HCM Lane LOS	A	A	-	F	E	A	A	-
HCM 95th %tile Q(veh)	0	-	-	11.7	2.5	0.2	-	-

Intersection	
Int Delay, s/veh	224.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	101	62	28	24	59	22	14	388	19	82	378	83
Future Vol, veh/h	101	62	28	24	59	22	14	388	19	82	378	83
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	5	-	-	-3	-	-	0	-	-	0	-
Peak Hour Factor	75	90	90	90	90	75	90	75	90	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	135	69	31	27	66	29	16	517	21	109	504	111

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1385	1348	560	1388	1393	528	615	0	0	538	0	0
Stage 1	778	778	-	560	560	-	-	-	-	-	-	-
Stage 2	607	570	-	828	833	-	-	-	-	-	-	-
Critical Hdwy	8.12	7.52	6.72	6.52	5.92	5.92	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	7.12	6.52	-	5.52	4.92	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.12	6.52	-	5.52	4.92	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 82	104	488	151	179	575	965	-	-	1030	-	-
Stage 1	314	328	-	563	561	-	-	-	-	-	-	-
Stage 2	408	431	-	419	441	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 44	85	488	41	146	575	965	-	-	1030	-	-
Mov Cap-2 Maneuver	~ 44	85	-	41	146	-	-	-	-	-	-	-
Stage 1	306	274	-	549	548	-	-	-	-	-	-	-
Stage 2	333	421	-	245	369	-	-	-	-	-	-	-

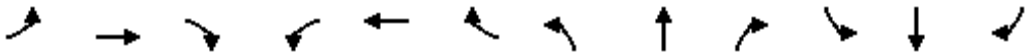
Approach	EB	WB	NB	SB
HCM Control Delay, $	1451.2	208.4	0.2	1.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	965	-	-	60	106	1030	-	-
HCM Lane V/C Ratio	0.016	-	-	3.911	1.147	0.106	-	-
HCM Control Delay (s)	8.8	0	-	$ 1451.2	208.4	8.9	0	-
HCM Lane LOS	A	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	25.3	7.8	0.4	-	-

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

HCM 6th Signalized Intersection Summary
400: NC 119 & Jim Minor Road

10/25/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	62	28	24	59	22	14	388	19	82	378	83
Future Volume (veh/h)	101	62	28	24	59	22	14	388	19	82	378	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1988	1988	1988	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	135	69	31	27	66	29	16	517	21	109	504	111
Peak Hour Factor	0.75	0.90	0.90	0.90	0.90	0.75	0.90	0.75	0.90	0.75	0.75	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	315	121	47	165	287	110	96	912	36	191	640	133
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.52	0.52	0.52	0.52	0.52	0.52
Sat Flow, veh/h	747	484	187	261	1149	440	22	1745	70	185	1224	255
Grp Volume(v), veh/h	235	0	0	122	0	0	554	0	0	724	0	0
Grp Sat Flow(s),veh/h/ln	1418	0	0	1849	0	0	1836	0	0	1664	0	0
Q Serve(g_s), s	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.4	0.0	0.0
Cycle Q Clear(g_c), s	6.3	0.0	0.0	2.3	0.0	0.0	8.9	0.0	0.0	15.3	0.0	0.0
Prop In Lane	0.57		0.13	0.22		0.24	0.03		0.04	0.15		0.15
Lane Grp Cap(c), veh/h	483	0	0	562	0	0	1044	0	0	964	0	0
V/C Ratio(X)	0.49	0.00	0.00	0.22	0.00	0.00	0.53	0.00	0.00	0.75	0.00	0.00
Avail Cap(c_a), veh/h	760	0	0	919	0	0	1329	0	0	1212	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.6	0.0	0.0	13.2	0.0	0.0	7.1	0.0	0.0	8.4	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.2	0.0	0.0	0.4	0.0	0.0	2.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	0.0	0.8	0.0	0.0	1.9	0.0	0.0	3.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.4	0.0	0.0	13.4	0.0	0.0	7.6	0.0	0.0	10.4	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	B	A	A
Approach Vol, veh/h		235			122			554			724	
Approach Delay, s/veh		15.4			13.4			7.6			10.4	
Approach LOS		B			B			A			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		28.0		16.0		28.0		16.0				
Change Period (Y+Rc), s		7.0		7.0		7.0		7.0				
Max Green Setting (Gmax), s		28.0		18.0		28.0		18.0				
Max Q Clear Time (g_c+I1), s		10.9		8.3		17.3		4.3				
Green Ext Time (p_c), s		3.1		0.8		3.7		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			10.4									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	57.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	92	62	28	24	59	17	14	376	19	73	354	57
Future Vol, veh/h	92	62	28	24	59	17	14	376	19	73	354	57
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	5	-	-	-3	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	102	69	31	27	66	19	16	418	21	81	393	63

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1090	1058	425	1098	1079	429	456	0	0	439	0	0
Stage 1	587	587	-	461	461	-	-	-	-	-	-	-
Stage 2	503	471	-	637	618	-	-	-	-	-	-	-
Critical Hdwy	8.12	7.52	6.72	6.52	5.92	5.92	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	7.12	6.52	-	5.52	4.92	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.12	6.52	-	5.52	4.92	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	142	167	593	228	261	649	1105	-	-	1121	-	-
Stage 1	421	422	-	627	610	-	-	-	-	-	-	-
Stage 2	479	491	-	518	533	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 99	148	593	126	231	649	1105	-	-	1121	-	-
Mov Cap-2 Maneuver	~ 99	148	-	126	231	-	-	-	-	-	-	-
Stage 1	413	381	-	615	598	-	-	-	-	-	-	-
Stage 2	406	482	-	363	481	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 344.8	39.3	0.3	1.3
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1105	-	-	130	212	1121	-	-
HCM Lane V/C Ratio	0.014	-	-	1.556	0.524	0.072	-	-
HCM Control Delay (s)	8.3	0	-	$ 344.8	39.3	8.5	0	-
HCM Lane LOS	A	A	-	F	E	A	A	-
HCM 95th %tile Q(veh)	0	-	-	14.3	2.7	0.2	-	-

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

Intersection	
Int Delay, s/veh	304.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	116	62	28	24	59	24	14	396	19	83	383	92
Future Vol, veh/h	116	62	28	24	59	24	14	396	19	83	383	92
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	5	-	-	-3	-	-	0	-	-	0	-
Peak Hour Factor	75	90	90	90	90	75	90	75	90	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	155	69	31	27	66	32	16	528	21	111	511	123

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1415	1376	573	1416	1427	539	634	0	0	549	0	0
Stage 1	795	795	-	571	571	-	-	-	-	-	-	-
Stage 2	620	581	-	845	856	-	-	-	-	-	-	-
Critical Hdwy	8.12	7.52	6.72	6.52	5.92	5.92	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	7.12	6.52	-	5.52	4.92	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.12	6.52	-	5.52	4.92	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 78	99	479	145	171	567	949	-	-	1021	-	-
Stage 1	305	320	-	556	555	-	-	-	-	-	-	-
Stage 2	400	425	-	411	432	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 40	80	479	32	138	567	949	-	-	1021	-	-
Mov Cap-2 Maneuver	~ 40	80	-	32	138	-	-	-	-	-	-	-
Stage 1	298	265	-	543	542	-	-	-	-	-	-	-
Stage 2	324	415	-	236	358	-	-	-	-	-	-	-

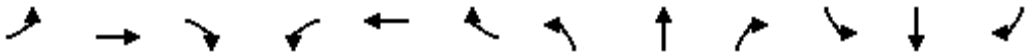
Approach	EB	WB	NB	SB
HCM Control Delay, $	1867.1	$ 302.9	0.2	1.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	949	-	-	53	91	1021	-	-
HCM Lane V/C Ratio	0.016	-	-	4.805	1.365	0.108	-	-
HCM Control Delay (s)	8.9	0	-	$ 1867.1	$ 302.9	9	0	-
HCM Lane LOS	A	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	28.6	9.2	0.4	-	-

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

HCM 6th Signalized Intersection Summary
400: NC 119 & Jim Minor Road

10/25/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	62	28	24	59	24	14	396	19	83	383	92
Future Volume (veh/h)	116	62	28	24	59	24	14	396	19	83	383	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1988	1988	1988	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	155	69	31	27	66	32	16	528	21	111	511	123
Peak Hour Factor	0.75	0.90	0.90	0.90	0.90	0.75	0.90	0.75	0.90	0.75	0.75	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	331	114	44	158	294	123	90	920	36	186	631	144
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.53	0.53	0.53	0.53	0.53	0.53
Sat Flow, veh/h	796	436	171	248	1131	475	21	1749	68	185	1200	274
Grp Volume(v), veh/h	255	0	0	125	0	0	565	0	0	745	0	0
Grp Sat Flow(s),veh/h/ln	1404	0	0	1854	0	0	1838	0	0	1659	0	0
Q Serve(g_s), s	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.5	0.0	0.0
Cycle Q Clear(g_c), s	7.4	0.0	0.0	2.4	0.0	0.0	9.7	0.0	0.0	17.2	0.0	0.0
Prop In Lane	0.61		0.12	0.22		0.26	0.03		0.04	0.15		0.17
Lane Grp Cap(c), veh/h	489	0	0	576	0	0	1046	0	0	961	0	0
V/C Ratio(X)	0.52	0.00	0.00	0.22	0.00	0.00	0.54	0.00	0.00	0.77	0.00	0.00
Avail Cap(c_a), veh/h	713	0	0	868	0	0	1253	0	0	1141	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.4	0.0	0.0	13.7	0.0	0.0	7.5	0.0	0.0	9.0	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.2	0.0	0.0	0.4	0.0	0.0	2.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	0.8	0.0	0.0	2.2	0.0	0.0	4.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.2	0.0	0.0	13.9	0.0	0.0	8.0	0.0	0.0	11.9	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	B	A	A
Approach Vol, veh/h		255			125			565			745	
Approach Delay, s/veh		16.2			13.9			8.0			11.9	
Approach LOS		B			B			A			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		29.6		17.2		29.6		17.2				
Change Period (Y+Rc), s		7.0		7.0		7.0		7.0				
Max Green Setting (Gmax), s		28.0		18.0		28.0		18.0				
Max Q Clear Time (g_c+I1), s		11.7		9.4		19.2		4.4				
Green Ext Time (p_c), s		3.1		0.8		3.4		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			11.4									
HCM 6th LOS			B									

NC 54 at Jim Minor Road

HCM 6th Signalized Intersection Summary
500: NC 54 & Jim Minor Road

10/25/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	18	146	747	19	46	755
Future Volume (veh/h)	18	146	747	19	46	755
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1949	1949	1817	1817
Adj Flow Rate, veh/h	20	162	830	21	51	839
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	265	407	1431	36	452	2081
Arrive On Green	0.15	0.17	0.39	0.40	0.09	0.60
Sat Flow, veh/h	1781	1585	3787	93	1731	3544
Grp Volume(v), veh/h	20	162	416	435	51	839
Grp Sat Flow(s),veh/h/ln	1781	1585	1851	1932	1731	1726
Q Serve(g_s), s	0.4	3.4	7.1	7.1	0.6	5.1
Cycle Q Clear(g_c), s	0.4	3.4	7.1	7.1	0.6	5.1
Prop In Lane	1.00	1.00		0.05	1.00	
Lane Grp Cap(c), veh/h	265	407	718	749	452	2081
V/C Ratio(X)	0.08	0.40	0.58	0.58	0.11	0.40
Avail Cap(c_a), veh/h	886	959	1841	1921	726	4721
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.7	12.4	9.7	9.7	6.2	4.2
Incr Delay (d2), s/veh	0.0	0.2	0.3	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	1.7	1.8	0.1	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.8	12.6	10.0	10.0	6.3	4.2
LnGrp LOS	B	B	B	A	A	A
Approach Vol, veh/h	182		851			890
Approach Delay, s/veh	12.9		10.0			4.4
Approach LOS	B		A			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		29.2		11.0	8.6	20.6
Change Period (Y+Rc), s		* 6.6		* 4.9	5.6	* 6.6
Max Green Setting (Gmax), s		* 53		* 20	9.4	* 38
Max Q Clear Time (g_c+I1), s		7.1		5.4	2.6	9.1
Green Ext Time (p_c), s		3.6		0.1	0.0	2.9

Intersection Summary	
HCM 6th Ctrl Delay	7.7
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	19	211	785	20	72	794
Future Volume (veh/h)	19	211	785	20	72	794
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1949	1949	1817	1817
Adj Flow Rate, veh/h	21	234	872	22	80	882
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	350	530	1291	33	239	2048
Arrive On Green	0.20	0.20	0.35	0.35	0.14	0.59
Sat Flow, veh/h	1781	1585	3787	93	1731	3544
Grp Volume(v), veh/h	21	234	437	457	80	882
Grp Sat Flow(s),veh/h/ln	1781	1585	1851	1932	1731	1726
Q Serve(g_s), s	0.5	5.5	9.6	9.6	2.0	6.6
Cycle Q Clear(g_c), s	0.5	5.5	9.6	9.6	2.0	6.6
Prop In Lane	1.00	1.00		0.05	1.00	
Lane Grp Cap(c), veh/h	350	530	648	676	239	2048
V/C Ratio(X)	0.06	0.44	0.68	0.68	0.33	0.43
Avail Cap(c_a), veh/h	750	886	1559	1627	364	3998
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.5	12.3	13.1	13.1	18.5	5.3
Incr Delay (d2), s/veh	0.0	0.2	0.5	0.4	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.2	2.8	2.9	0.7	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.6	12.6	13.6	13.6	18.8	5.3
LnGrp LOS	B	B	B	B	B	A
Approach Vol, veh/h	255		894			962
Approach Delay, s/veh	12.8		13.6			6.5
Approach LOS	B		B			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		33.2		14.3	11.6	21.6
Change Period (Y+Rc), s		7.0		7.0	7.0	7.0
Max Green Setting (Gmax), s		53.0		18.0	8.0	38.0
Max Q Clear Time (g_c+I1), s		8.6		7.5	4.0	11.6
Green Ext Time (p_c), s		3.8		0.1	0.0	3.1

Intersection Summary	
HCM 6th Ctrl Delay	10.2
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary
500: NC 54 & Jim Minor Road

10/25/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	19	246	785	20	117	794
Future Volume (veh/h)	19	246	785	20	117	794
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1949	1949	1817	1817
Adj Flow Rate, veh/h	21	328	872	22	156	882
Peak Hour Factor	0.90	0.75	0.90	0.90	0.75	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	418	616	1237	31	266	2006
Arrive On Green	0.23	0.23	0.34	0.34	0.15	0.58
Sat Flow, veh/h	1781	1585	3787	93	1731	3544
Grp Volume(v), veh/h	21	328	437	457	156	882
Grp Sat Flow(s),veh/h/ln	1781	1585	1851	1932	1731	1726
Q Serve(g_s), s	0.5	8.7	11.2	11.2	4.6	7.8
Cycle Q Clear(g_c), s	0.5	8.7	11.2	11.2	4.6	7.8
Prop In Lane	1.00	1.00		0.05	1.00	
Lane Grp Cap(c), veh/h	418	616	621	648	266	2006
V/C Ratio(X)	0.05	0.53	0.70	0.70	0.59	0.44
Avail Cap(c_a), veh/h	656	827	1364	1424	319	3499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.1	12.8	15.7	15.7	21.4	6.4
Incr Delay (d2), s/veh	0.0	0.3	0.6	0.5	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	8.0	3.7	3.8	1.6	1.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.1	13.1	16.3	16.2	22.1	6.5
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	349		894			1038
Approach Delay, s/veh	13.3		16.2			8.8
Approach LOS	B		B			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		36.5		17.7	13.3	23.2
Change Period (Y+Rc), s		7.0		7.0	7.0	7.0
Max Green Setting (Gmax), s		53.0		18.0	8.0	38.0
Max Q Clear Time (g_c+I1), s		9.8		10.7	6.6	13.2
Green Ext Time (p_c), s		3.8		0.1	0.0	3.0

Intersection Summary	
HCM 6th Ctrl Delay	12.4
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary
500: NC 54 & Jim Minor Road

10/25/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	19	224	785	20	76	794
Future Volume (veh/h)	19	224	785	20	76	794
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1949	1949	1817	1817
Adj Flow Rate, veh/h	21	249	872	22	84	882
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	362	543	1283	32	241	2038
Arrive On Green	0.20	0.20	0.35	0.35	0.14	0.59
Sat Flow, veh/h	1781	1585	3787	93	1731	3544
Grp Volume(v), veh/h	21	249	437	457	84	882
Grp Sat Flow(s),veh/h/ln	1781	1585	1851	1932	1731	1726
Q Serve(g_s), s	0.5	5.9	9.8	9.8	2.1	6.8
Cycle Q Clear(g_c), s	0.5	5.9	9.8	9.8	2.1	6.8
Prop In Lane	1.00	1.00		0.05	1.00	
Lane Grp Cap(c), veh/h	362	543	644	672	241	2038
V/C Ratio(X)	0.06	0.46	0.68	0.68	0.35	0.43
Avail Cap(c_a), veh/h	736	876	1530	1597	358	3925
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.5	12.4	13.5	13.5	18.8	5.5
Incr Delay (d2), s/veh	0.0	0.2	0.5	0.5	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.6	2.9	3.1	0.7	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.6	12.6	14.0	13.9	19.2	5.5
LnGrp LOS	B	B	B	B	B	A
Approach Vol, veh/h	270		894			966
Approach Delay, s/veh	12.9		13.9			6.7
Approach LOS	B		B			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		33.6		14.8	11.7	21.8
Change Period (Y+Rc), s		7.0		7.0	7.0	7.0
Max Green Setting (Gmax), s		53.0		18.0	8.0	38.0
Max Q Clear Time (g_c+I1), s		8.8		7.9	4.1	11.8
Green Ext Time (p_c), s		3.8		0.1	0.0	3.1

Intersection Summary	
HCM 6th Ctrl Delay	10.5
HCM 6th LOS	B



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	19	260	785	20	121	794
Future Volume (veh/h)	19	260	785	20	121	794
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1949	1949	1817	1817
Adj Flow Rate, veh/h	21	347	872	22	161	882
Peak Hour Factor	0.90	0.75	0.90	0.90	0.75	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	434	627	1230	31	263	1988
Arrive On Green	0.24	0.24	0.33	0.33	0.15	0.58
Sat Flow, veh/h	1781	1585	3787	93	1731	3544
Grp Volume(v), veh/h	21	347	437	457	161	882
Grp Sat Flow(s),veh/h/ln	1781	1585	1851	1932	1731	1726
Q Serve(g_s), s	0.5	9.4	11.4	11.4	4.8	8.1
Cycle Q Clear(g_c), s	0.5	9.4	11.4	11.4	4.8	8.1
Prop In Lane	1.00	1.00		0.05	1.00	
Lane Grp Cap(c), veh/h	434	627	617	644	263	1988
V/C Ratio(X)	0.05	0.55	0.71	0.71	0.61	0.44
Avail Cap(c_a), veh/h	644	814	1338	1396	313	3432
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.0	12.9	16.1	16.1	21.9	6.7
Incr Delay (d2), s/veh	0.0	0.3	0.6	0.5	1.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	3.8	4.0	1.7	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.0	13.2	16.7	16.6	23.1	6.7
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	368		894			1043
Approach Delay, s/veh	13.4		16.7			9.3
Approach LOS	B		B			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		36.9		18.5	13.4	23.4
Change Period (Y+Rc), s		7.0		7.0	7.0	7.0
Max Green Setting (Gmax), s		53.0		18.0	8.0	38.0
Max Q Clear Time (g_c+I1), s		10.1		11.4	6.8	13.4
Green Ext Time (p_c), s		3.8		0.1	0.0	3.0

Intersection Summary	
HCM 6th Ctrl Delay	12.8
HCM 6th LOS	B



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	21	84	569	8	90	484
Future Volume (veh/h)	21	84	569	8	90	484
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1949	1949	1817	1817
Adj Flow Rate, veh/h	23	93	632	9	100	538
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	219	375	1422	20	578	2187
Arrive On Green	0.12	0.12	0.38	0.39	0.13	0.63
Sat Flow, veh/h	1781	1585	3835	53	1731	3544
Grp Volume(v), veh/h	23	93	313	328	100	538
Grp Sat Flow(s),veh/h/ln	1781	1585	1851	1939	1731	1726
Q Serve(g_s), s	0.5	2.0	5.2	5.2	1.2	2.8
Cycle Q Clear(g_c), s	0.5	2.0	5.2	5.2	1.2	2.8
Prop In Lane	1.00	1.00		0.03	1.00	
Lane Grp Cap(c), veh/h	219	375	705	738	578	2187
V/C Ratio(X)	0.11	0.25	0.44	0.44	0.17	0.25
Avail Cap(c_a), veh/h	869	954	1807	1892	774	4633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.0	12.7	9.5	9.5	5.4	3.3
Incr Delay (d2), s/veh	0.1	0.1	0.2	0.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.9	1.3	1.3	0.2	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.1	12.8	9.6	9.6	5.5	3.3
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	116		641			638
Approach Delay, s/veh	13.5		9.6			3.6
Approach LOS	B		A			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		31.0		10.0	10.4	20.6
Change Period (Y+Rc), s		* 6.6		* 4.9	5.6	* 6.6
Max Green Setting (Gmax), s		* 53		* 20	9.4	* 38
Max Q Clear Time (g_c+I1), s		4.8		4.0	3.2	7.2
Green Ext Time (p_c), s		2.1		0.0	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	7.2
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
500: NC 54 & Jim Minor Road

10/25/2019



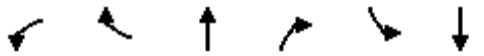
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	22	130	598	8	159	509
Future Volume (veh/h)	22	130	598	8	159	509
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1949	1949	1817	1817
Adj Flow Rate, veh/h	24	144	664	9	177	566
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	309	552	1258	17	303	2129
Arrive On Green	0.17	0.17	0.34	0.34	0.18	0.62
Sat Flow, veh/h	1781	1585	3837	51	1731	3544
Grp Volume(v), veh/h	24	144	329	344	177	566
Grp Sat Flow(s),veh/h/ln	1781	1585	1851	1940	1731	1726
Q Serve(g_s), s	0.5	3.1	6.8	6.8	4.5	3.6
Cycle Q Clear(g_c), s	0.5	3.1	6.8	6.8	4.5	3.6
Prop In Lane	1.00	1.00		0.03	1.00	
Lane Grp Cap(c), veh/h	309	552	623	652	303	2129
V/C Ratio(X)	0.08	0.26	0.53	0.53	0.58	0.27
Avail Cap(c_a), veh/h	749	944	1557	1631	364	3993
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.5	11.1	12.7	12.7	18.0	4.2
Incr Delay (d2), s/veh	0.0	0.1	0.3	0.2	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.2	2.0	2.1	1.5	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.5	11.2	13.0	13.0	18.7	4.2
LnGrp LOS	B	B	B	B	B	A
Approach Vol, veh/h	168		673			743
Approach Delay, s/veh	12.0		13.0			7.7
Approach LOS	B		B			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		34.3		13.2	13.3	21.0
Change Period (Y+Rc), s		7.0		7.0	7.0	7.0
Max Green Setting (Gmax), s		53.0		18.0	8.0	38.0
Max Q Clear Time (g_c+I1), s		5.6		5.1	6.5	8.8
Green Ext Time (p_c), s		2.2		0.1	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	10.4
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary
500: NC 54 & Jim Minor Road

10/25/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	22	165	598	8	183	509
Future Volume (veh/h)	22	165	598	8	183	509
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1949	1949	1817	1817
Adj Flow Rate, veh/h	24	220	664	9	244	566
Peak Hour Factor	0.90	0.75	0.90	0.90	0.75	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	316	599	1200	16	347	2147
Arrive On Green	0.18	0.18	0.32	0.32	0.20	0.62
Sat Flow, veh/h	1781	1585	3837	51	1731	3544
Grp Volume(v), veh/h	24	220	329	344	244	566
Grp Sat Flow(s),veh/h/ln	1781	1585	1851	1940	1731	1726
Q Serve(g_s), s	0.6	5.0	7.3	7.3	6.5	3.7
Cycle Q Clear(g_c), s	0.6	5.0	7.3	7.3	6.5	3.7
Prop In Lane	1.00	1.00		0.03	1.00	
Lane Grp Cap(c), veh/h	316	599	594	622	347	2147
V/C Ratio(X)	0.08	0.37	0.55	0.55	0.70	0.26
Avail Cap(c_a), veh/h	715	954	1485	1556	347	3809
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	11.2	14.0	14.0	18.5	4.3
Incr Delay (d2), s/veh	0.0	0.1	0.3	0.3	5.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.0	2.3	2.4	2.6	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.1	11.3	14.3	14.3	23.9	4.3
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	244		673			810
Approach Delay, s/veh	11.9		14.3			10.2
Approach LOS	B		B			B

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		36.0		13.9	15.0	21.0
Change Period (Y+Rc), s		7.0		7.0	7.0	7.0
Max Green Setting (Gmax), s		53.0		18.0	8.0	38.0
Max Q Clear Time (g_c+I1), s		5.7		7.0	8.5	9.3
Green Ext Time (p_c), s		2.2		0.1	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	12.0
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary
500: NC 54 & Jim Minor Road

10/25/2019



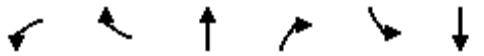
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	22	139	598	8	174	509
Future Volume (veh/h)	22	139	598	8	174	509
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1949	1949	1817	1817
Adj Flow Rate, veh/h	24	154	664	9	193	566
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	311	557	1252	17	306	2128
Arrive On Green	0.17	0.17	0.33	0.33	0.18	0.62
Sat Flow, veh/h	1781	1585	3837	51	1731	3544
Grp Volume(v), veh/h	24	154	329	344	193	566
Grp Sat Flow(s),veh/h/ln	1781	1585	1851	1940	1731	1726
Q Serve(g_s), s	0.5	3.3	6.9	6.9	4.9	3.6
Cycle Q Clear(g_c), s	0.5	3.3	6.9	6.9	4.9	3.6
Prop In Lane	1.00	1.00		0.03	1.00	
Lane Grp Cap(c), veh/h	311	557	620	649	306	2128
V/C Ratio(X)	0.08	0.28	0.53	0.53	0.63	0.27
Avail Cap(c_a), veh/h	745	944	1549	1623	362	3973
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.5	11.1	12.9	12.9	18.2	4.2
Incr Delay (d2), s/veh	0.0	0.1	0.3	0.3	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	2.1	2.2	1.7	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.5	11.2	13.1	13.1	19.6	4.2
LnGrp LOS	B	B	B	B	B	A
Approach Vol, veh/h	178		673			759
Approach Delay, s/veh	11.9		13.1			8.1
Approach LOS	B		B			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		34.5		13.3	13.5	21.0
Change Period (Y+Rc), s		7.0		7.0	7.0	7.0
Max Green Setting (Gmax), s		53.0		18.0	8.0	38.0
Max Q Clear Time (g_c+I1), s		5.6		5.3	6.9	8.9
Green Ext Time (p_c), s		2.2		0.1	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	10.6
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary
500: NC 54 & Jim Minor Road

10/25/2019



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	22	173	598	8	198	509
Future Volume (veh/h)	22	173	598	8	198	509
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1949	1949	1817	1817
Adj Flow Rate, veh/h	24	231	664	9	264	566
Peak Hour Factor	0.90	0.75	0.90	0.90	0.75	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	326	606	1192	16	345	2133
Arrive On Green	0.18	0.18	0.32	0.32	0.20	0.62
Sat Flow, veh/h	1781	1585	3837	51	1731	3544
Grp Volume(v), veh/h	24	231	329	344	264	566
Grp Sat Flow(s),veh/h/ln	1781	1585	1851	1940	1731	1726
Q Serve(g_s), s	0.6	5.3	7.4	7.4	7.2	3.8
Cycle Q Clear(g_c), s	0.6	5.3	7.4	7.4	7.2	3.8
Prop In Lane	1.00	1.00		0.03	1.00	
Lane Grp Cap(c), veh/h	326	606	590	618	345	2133
V/C Ratio(X)	0.07	0.38	0.56	0.56	0.77	0.27
Avail Cap(c_a), veh/h	710	948	1476	1546	345	3784
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.0	11.2	14.2	14.2	19.0	4.4
Incr Delay (d2), s/veh	0.0	0.1	0.3	0.3	8.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.2	2.3	2.4	3.1	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.0	11.4	14.5	14.4	27.9	4.4
LnGrp LOS	B	B	B	B	C	A
Approach Vol, veh/h	255		673			830
Approach Delay, s/veh	11.9		14.5			11.9
Approach LOS	B		B			B

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		36.0		14.2	15.0	21.0
Change Period (Y+Rc), s		7.0		7.0	7.0	7.0
Max Green Setting (Gmax), s		53.0		18.0	8.0	38.0
Max Q Clear Time (g_c+I1), s		5.8		7.3	9.2	9.4
Green Ext Time (p_c), s		2.2		0.1	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	12.9
HCM 6th LOS	B

NC 119 at Site Access 1

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	578	96	156	532
Future Vol, veh/h	0	0	578	96	156	532
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	0
Peak Hour Factor	50	50	75	50	50	75
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	0	0	771	192	312	709

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2200	867	0	0	963	0
Stage 1	867	-	-	-	-	-
Stage 2	1333	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	50	355	-	-	723	-
Stage 1	415	-	-	-	-	-
Stage 2	248	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	14	355	-	-	723	-
Mov Cap-2 Maneuver	14	-	-	-	-	-
Stage 1	415	-	-	-	-	-
Stage 2	71	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	4.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	723	-
HCM Lane V/C Ratio	-	-	-	0.432	-
HCM Control Delay (s)	-	-	0	13.7	0
HCM Lane LOS	-	-	A	B	A
HCM 95th %tile Q(veh)	-	-	-	2.2	-

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	578	96	156	532
Future Vol, veh/h	0	0	578	96	156	532
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	100	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	0
Peak Hour Factor	50	50	75	50	50	75
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	0	0	771	192	312	709

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2104	771	0	0	963	0
Stage 1	771	-	-	-	-	-
Stage 2	1333	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	57	403	-	-	723	-
Stage 1	460	-	-	-	-	-
Stage 2	248	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	32	403	-	-	723	-
Mov Cap-2 Maneuver	32	-	-	-	-	-
Stage 1	460	-	-	-	-	-
Stage 2	141	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	4.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	723	-
HCM Lane V/C Ratio	-	-	-	0.432	-
HCM Control Delay (s)	-	-	0	13.7	-
HCM Lane LOS	-	-	A	B	-
HCM 95th %tile Q(veh)	-	-	-	2.2	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	14	589	3	5	461
Future Vol, veh/h	10	14	589	3	5	461
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	100	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	16	654	3	6	512

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1178	654	0	0	657	0
Stage 1	654	-	-	-	-	-
Stage 2	524	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	211	467	-	-	931	-
Stage 1	517	-	-	-	-	-
Stage 2	594	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	210	467	-	-	931	-
Mov Cap-2 Maneuver	210	-	-	-	-	-
Stage 1	517	-	-	-	-	-
Stage 2	590	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.7	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	309	931	-
HCM Lane V/C Ratio	-	-	0.086	0.006	-
HCM Control Delay (s)	-	-	17.7	8.9	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	5.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	14	589	99	161	536
Future Vol, veh/h	10	14	589	99	161	536
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	100	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	0
Peak Hour Factor	50	50	75	50	50	75
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	20	28	785	198	322	715

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2144	785	0	0	983	0
Stage 1	785	-	-	-	-	-
Stage 2	1359	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	54	396	-	-	711	-
Stage 1	453	-	-	-	-	-
Stage 2	241	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	30	396	-	-	711	-
Mov Cap-2 Maneuver	30	-	-	-	-	-
Stage 1	453	-	-	-	-	-
Stage 2	132	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	149.4	0	4.4
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	65	711	-
HCM Lane V/C Ratio	-	-	0.738	0.453	-
HCM Control Delay (s)	-	-	149.4	14.2	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	3.3	2.4	-

Intersection	
Int Delay, s/veh	5.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	14	589	99	161	536
Future Vol, veh/h	10	14	589	99	161	536
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	100	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	0
Peak Hour Factor	50	50	75	50	50	75
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	20	28	785	198	322	715

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2144	785	0	0	983	0
Stage 1	785	-	-	-	-	-
Stage 2	1359	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	54	396	-	-	711	-
Stage 1	453	-	-	-	-	-
Stage 2	241	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	30	396	-	-	711	-
Mov Cap-2 Maneuver	30	-	-	-	-	-
Stage 1	453	-	-	-	-	-
Stage 2	132	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	149.4	0	4.4
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	65	711	-
HCM Lane V/C Ratio	-	-	0.738	0.453	-
HCM Control Delay (s)	-	-	149.4	14.2	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	3.3	2.4	-

Intersection	
Int Delay, s/veh	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	460	51	82	543
Future Vol, veh/h	0	0	460	51	82	543
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	0
Peak Hour Factor	50	50	75	50	50	75
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	0	0	613	102	164	724

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1716	664	0	0	715	0
Stage 1	664	-	-	-	-	-
Stage 2	1052	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	100	464	-	-	895	-
Stage 1	516	-	-	-	-	-
Stage 2	339	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	69	464	-	-	895	-
Mov Cap-2 Maneuver	69	-	-	-	-	-
Stage 1	516	-	-	-	-	-
Stage 2	235	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	1.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	895	-
HCM Lane V/C Ratio	-	-	-	0.183	-
HCM Control Delay (s)	-	-	0	9.9	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	-	0.7	-

Intersection	
Int Delay, s/veh	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	460	51	82	543
Future Vol, veh/h	0	0	460	51	82	543
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	100	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	0
Peak Hour Factor	50	50	75	50	50	75
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	0	0	613	102	164	724

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1665	613	0	0	715	0
Stage 1	613	-	-	-	-	-
Stage 2	1052	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	108	496	-	-	895	-
Stage 1	544	-	-	-	-	-
Stage 2	339	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	88	496	-	-	895	-
Mov Cap-2 Maneuver	88	-	-	-	-	-
Stage 1	544	-	-	-	-	-
Stage 2	277	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	1.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	895	-
HCM Lane V/C Ratio	-	-	-	0.183	-
HCM Control Delay (s)	-	-	0	9.9	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0.7	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	10	468	11	16	483
Future Vol, veh/h	7	10	468	11	16	483
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	100	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	11	520	12	18	537

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1093	520	0	0	532	0
Stage 1	520	-	-	-	-	-
Stage 2	573	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	237	556	-	-	1036	-
Stage 1	597	-	-	-	-	-
Stage 2	564	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	233	556	-	-	1036	-
Mov Cap-2 Maneuver	233	-	-	-	-	-
Stage 1	597	-	-	-	-	-
Stage 2	554	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.7	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	354	1036	-
HCM Lane V/C Ratio	-	-	0.053	0.017	-
HCM Control Delay (s)	-	-	15.7	8.5	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	10	468	62	98	556
Future Vol, veh/h	7	10	468	62	98	556
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	100	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	0
Peak Hour Factor	50	50	75	50	50	75
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	14	20	624	124	196	741

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1757	624	0	0	748	0
Stage 1	624	-	-	-	-	-
Stage 2	1133	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	94	489	-	-	870	-
Stage 1	538	-	-	-	-	-
Stage 2	310	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	73	489	-	-	870	-
Mov Cap-2 Maneuver	73	-	-	-	-	-
Stage 1	538	-	-	-	-	-
Stage 2	240	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	37	0	2.2
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	146	870	-
HCM Lane V/C Ratio	-	-	0.233	0.225	-
HCM Control Delay (s)	-	-	37	10.3	-
HCM Lane LOS	-	-	E	B	-
HCM 95th %tile Q(veh)	-	-	0.9	0.9	-

Intersection	
Int Delay, s/veh	1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	10	468	62	98	556
Future Vol, veh/h	7	10	468	62	98	556
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	100	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	0
Peak Hour Factor	50	50	75	50	50	75
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	14	20	624	124	196	741

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1757	624	0	0	748	0
Stage 1	624	-	-	-	-	-
Stage 2	1133	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	94	489	-	-	870	-
Stage 1	538	-	-	-	-	-
Stage 2	310	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	73	489	-	-	870	-
Mov Cap-2 Maneuver	73	-	-	-	-	-
Stage 1	538	-	-	-	-	-
Stage 2	240	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	37	0	2.2
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	146	870	-
HCM Lane V/C Ratio	-	-	0.233	0.225	-
HCM Control Delay (s)	-	-	37	10.3	-
HCM Lane LOS	-	-	E	B	-
HCM 95th %tile Q(veh)	-	-	0.9	0.9	-

NC 119 at Site Access 2

Intersection	
Int Delay, s/veh	87.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	75	122	578	0	0	613
Future Vol, veh/h	75	122	578	0	0	613
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	0
Peak Hour Factor	50	50	75	50	50	75
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	150	244	771	0	0	817

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1588	771	0	-	-	-
Stage 1	771	-	-	-	-	-
Stage 2	817	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-	-
Pot Cap-1 Maneuver	~ 120	403	-	0	0	-
Stage 1	460	-	-	0	0	-
Stage 2	438	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	~ 120	403	-	-	-	-
Mov Cap-2 Maneuver	~ 120	-	-	-	-	-
Stage 1	460	-	-	-	-	-
Stage 2	438	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 442.1	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	212	-
HCM Lane V/C Ratio	-	1.858	-
HCM Control Delay (s)	-	$ 442.1	-
HCM Lane LOS	-	F	-
HCM 95th %tile Q(veh)	-	28	-

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

Intersection	
Int Delay, s/veh	20.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	75	122	578	0	0	613
Future Vol, veh/h	75	122	578	0	0	613
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	0
Peak Hour Factor	50	50	75	50	50	75
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	150	244	771	0	0	817

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1588	771	0	-	-	-
Stage 1	771	-	-	-	-	-
Stage 2	817	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-	-
Pot Cap-1 Maneuver	~ 120	403	-	0	0	-
Stage 1	460	-	-	0	0	-
Stage 2	438	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	~ 120	403	-	-	-	-
Mov Cap-2 Maneuver	~ 120	-	-	-	-	-
Stage 1	460	-	-	-	-	-
Stage 2	438	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	105.2	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBT
Capacity (veh/h)	-	120	403	-
HCM Lane V/C Ratio	-	1.25	0.605	-
HCM Control Delay (s)	-	232.8	26.7	-
HCM Lane LOS	-	F	D	-
HCM 95th %tile Q(veh)	-	9.6	3.9	-

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

Intersection	
Int Delay, s/veh	95

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	75	122	603	0	0	622
Future Vol, veh/h	75	122	603	0	0	622
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	0
Peak Hour Factor	50	50	75	50	50	75
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	150	244	804	0	0	829

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1633	804	0	-	-	-
Stage 1	804	-	-	-	-	-
Stage 2	829	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-	-
Pot Cap-1 Maneuver	~ 113	386	-	0	0	-
Stage 1	444	-	-	0	0	-
Stage 2	432	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	~ 113	386	-	-	-	-
Mov Cap-2 Maneuver	~ 113	-	-	-	-	-
Stage 1	444	-	-	-	-	-
Stage 2	432	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 488.9	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	201	-
HCM Lane V/C Ratio	-	1.96	-
HCM Control Delay (s)	-	$ 488.9	-
HCM Lane LOS	-	F	-
HCM 95th %tile Q(veh)	-	29.2	-

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

Intersection	
Int Delay, s/veh	23.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	75	122	603	0	0	622
Future Vol, veh/h	75	122	603	0	0	622
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	0
Peak Hour Factor	50	50	75	50	50	75
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	150	244	804	0	0	829

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1633	804	0	-	-	-
Stage 1	804	-	-	-	-	-
Stage 2	829	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-	-
Pot Cap-1 Maneuver	~ 113	386	-	0	0	-
Stage 1	444	-	-	0	0	-
Stage 2	432	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	~ 113	386	-	-	-	-
Mov Cap-2 Maneuver	~ 113	-	-	-	-	-
Stage 1	444	-	-	-	-	-
Stage 2	432	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	119.6	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBT
Capacity (veh/h)	-	113	386	-
HCM Lane V/C Ratio	-	1.327	0.632	-
HCM Control Delay (s)	-	266.9	29	-
HCM Lane LOS	-	F	D	-
HCM 95th %tile Q(veh)	-	10.2	4.2	-

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

Intersection	
Int Delay, s/veh	48

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	73	120	460	0	0	552
Future Vol, veh/h	73	120	460	0	0	552
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	0
Peak Hour Factor	50	50	75	50	50	75
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	146	240	613	0	0	736

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1349	613	0	-	-	-
Stage 1	613	-	-	-	-	-
Stage 2	736	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-	-
Pot Cap-1 Maneuver	168	496	-	0	0	-
Stage 1	544	-	-	0	0	-
Stage 2	477	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	168	496	-	-	-	-
Mov Cap-2 Maneuver	168	-	-	-	-	-
Stage 1	544	-	-	-	-	-
Stage 2	477	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	215.9	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	285	-
HCM Lane V/C Ratio	-	1.354	-
HCM Control Delay (s)	-	215.9	-
HCM Lane LOS	-	F	-
HCM 95th %tile Q(veh)	-	19.9	-

Intersection	
Int Delay, s/veh	10.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	73	120	460	0	0	552
Future Vol, veh/h	73	120	460	0	0	552
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	0
Peak Hour Factor	50	50	75	50	50	75
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	146	240	613	0	0	736

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1349	613	0	-	-	-
Stage 1	613	-	-	-	-	-
Stage 2	736	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-	-
Pot Cap-1 Maneuver	168	496	-	0	0	-
Stage 1	544	-	-	0	0	-
Stage 2	477	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	168	496	-	-	-	-
Mov Cap-2 Maneuver	168	-	-	-	-	-
Stage 1	544	-	-	-	-	-
Stage 2	477	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	47	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBT
Capacity (veh/h)	-	168	496	-
HCM Lane V/C Ratio	-	0.869	0.484	-
HCM Control Delay (s)	-	93.1	18.9	-
HCM Lane LOS	-	F	C	-
HCM 95th %tile Q(veh)	-	6.2	2.6	-

Intersection	
Int Delay, s/veh	55.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	73	120	478	0	0	582
Future Vol, veh/h	73	120	478	0	0	582
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	0
Peak Hour Factor	50	50	75	50	50	75
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	146	240	637	0	0	776

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1413	637	0	-	-	-
Stage 1	637	-	-	-	-	-
Stage 2	776	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-	-
Pot Cap-1 Maneuver	153	481	-	0	0	-
Stage 1	531	-	-	0	0	-
Stage 2	457	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	153	481	-	-	-	-
Mov Cap-2 Maneuver	153	-	-	-	-	-
Stage 1	531	-	-	-	-	-
Stage 2	457	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	258.4	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	266	-
HCM Lane V/C Ratio	-	1.451	-
HCM Control Delay (s)	-	258.4	-
HCM Lane LOS	-	F	-
HCM 95th %tile Q(veh)	-	21.7	-

Intersection	
Int Delay, s/veh	12.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	73	120	478	0	0	582
Future Vol, veh/h	73	120	478	0	0	582
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	0
Peak Hour Factor	50	50	75	50	50	75
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	146	240	637	0	0	776

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1413	637	0	-	-	-
Stage 1	637	-	-	-	-	-
Stage 2	776	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-	-
Pot Cap-1 Maneuver	153	481	-	0	0	-
Stage 1	531	-	-	0	0	-
Stage 2	457	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	153	481	-	-	-	-
Mov Cap-2 Maneuver	153	-	-	-	-	-
Stage 1	531	-	-	-	-	-
Stage 2	457	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	57.4	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBT
Capacity (veh/h)	-	153	481	-
HCM Lane V/C Ratio	-	0.954	0.499	-
HCM Control Delay (s)	-	119.3	19.7	-
HCM Lane LOS	-	F	C	-
HCM 95th %tile Q(veh)	-	7	2.7	-

Site Access 1 at Internal Roundabout

DELAY (CONTROL)

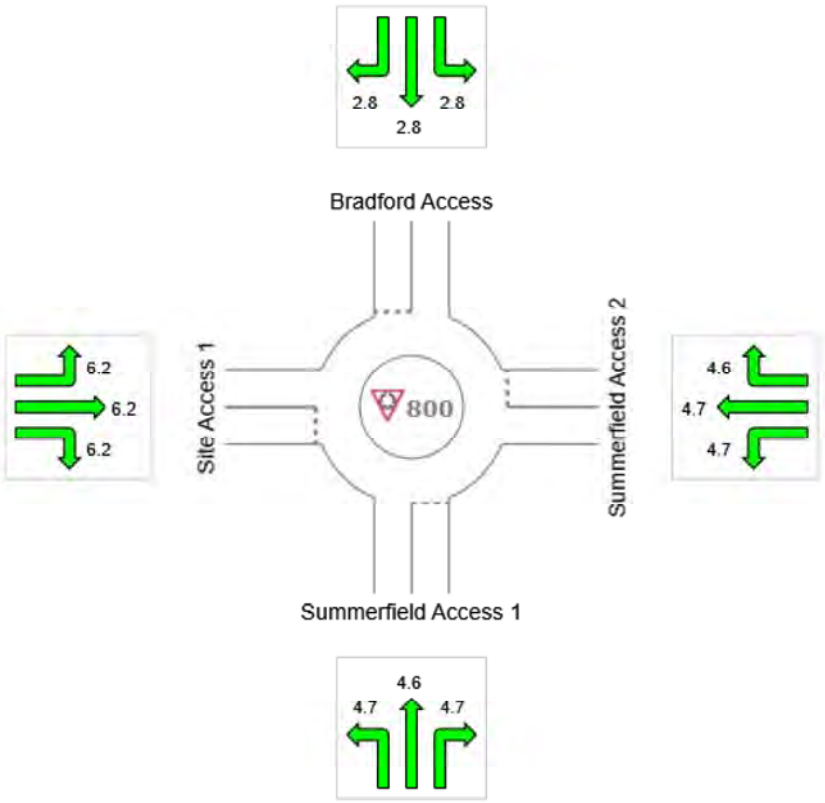
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 800 [AM Peak Scenario 1]

Bradford Academy
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	4.7	4.7	2.8	6.2	6.0
LOS	A	A	A	A	A



Colour code based on Level of Service

LOS A | LOS B | LOS C | LOS D | LOS E | LOS F

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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DELAY (CONTROL)

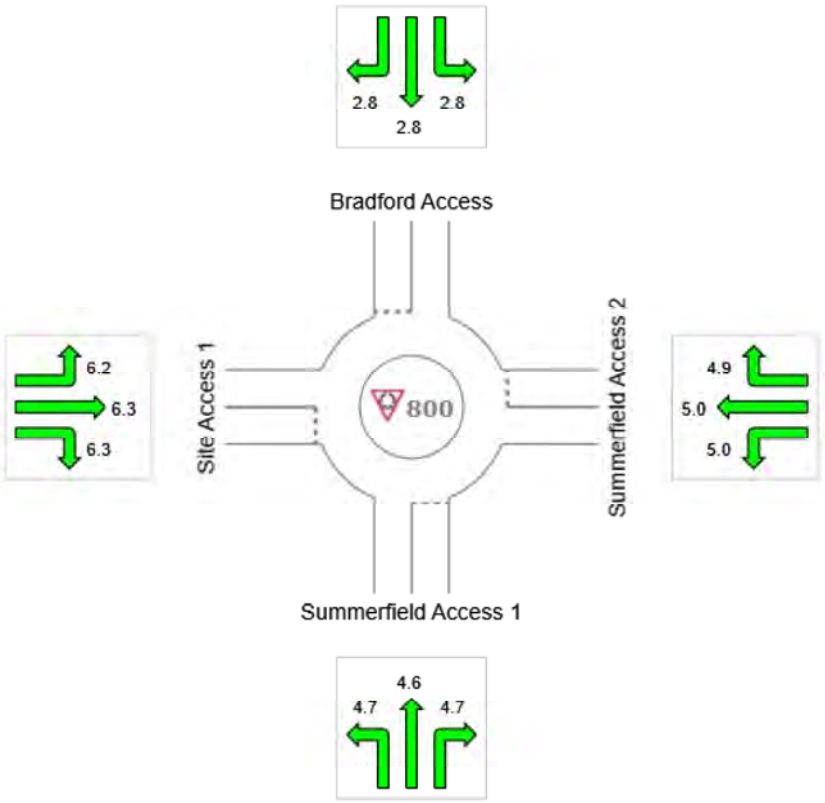
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 800 [AM Peak Scenario 2]

Bradford Academy
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	4.7	5.0	2.8	6.2	6.0
LOS	A	A	A	A	A



Colour code based on Level of Service

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Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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DELAY (CONTROL)

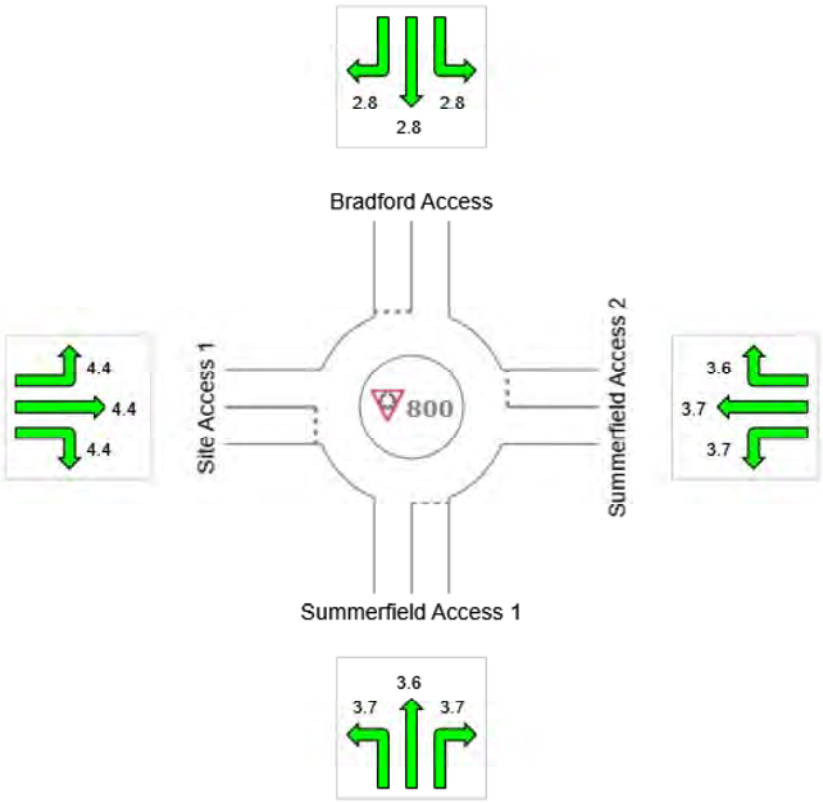
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 800 [PM Peak Scenario 1]

Bradford Academy
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	3.6	3.6	2.8	4.4	4.2
LOS	A	A	A	A	A



Colour code based on Level of Service

LOS A | LOS B | LOS C | LOS D | LOS E | LOS F

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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DELAY (CONTROL)

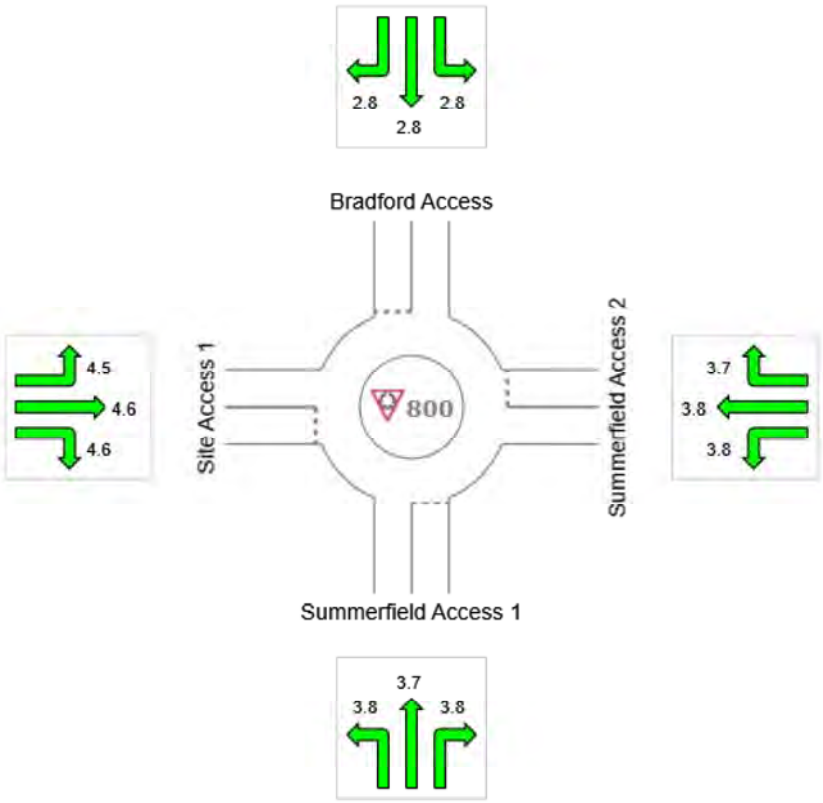
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 800 [PM Peak Scenario 2]

Bradford Academy
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	3.7	3.8	2.8	4.5	4.3
LOS	A	A	A	A	A



Colour code based on Level of Service

LOS A | LOS B | LOS C | LOS D | LOS E | LOS F

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
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HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

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Traffic Volume Data

DAVENPORT

119 Brookstown Ave., Suite PH1,
Winston Salem, NC 27101
Ph:(336)744-1636

Counted by: P.Peek
*No U-turns observed

Weather: Cloudy

File Name : 1. NC 119 at Trollingwood Hawfields Rd_Old Hillsborough Rd
Site Code : 00180046
Start Date : 10/16/2018
Page No : 1

Groups Printed- Cars - Trucks & Buses - Bicycles

	NC 119 Southbound					Old Hillsborough Rd Westbound					NC 119 Northbound					Trollingwood Hawfields Rd Eastbound							
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	6	48	5	0	59	11	34	18	0	63	13	96	39	0	148	19	25	14	0	58	0	328	328
07:15 AM	14	58	11	0	83	22	37	18	0	77	31	134	29	0	194	11	33	25	0	69	0	423	423
07:30 AM	23	69	24	0	116	46	72	20	0	138	32	129	40	0	201	20	62	32	0	114	0	569	569
07:45 AM	21	47	23	0	91	42	76	18	0	136	20	141	33	0	194	26	38	18	0	82	0	503	503
Total	64	222	63	0	349	121	219	74	0	414	96	500	141	0	737	76	158	89	0	323	0	1823	1823
08:00 AM	22	52	19	0	93	27	37	16	1	80	10	85	31	0	126	28	27	19	0	74	1	373	374
08:15 AM	13	45	9	0	67	18	31	10	0	59	12	73	18	0	103	27	27	9	0	63	0	292	292
08:30 AM	15	40	9	0	64	15	23	10	0	48	13	55	26	0	94	17	20	19	0	56	0	262	262
08:45 AM	9	20	10	0	39	19	20	10	0	49	12	69	19	0	100	16	10	13	0	39	0	227	227
Total	59	157	47	0	263	79	111	46	1	236	47	282	94	0	423	88	84	60	0	232	1	1154	1155
*** BREAK ***																							
04:00 PM	26	98	31	0	155	27	33	18	0	78	18	71	18	0	107	34	36	15	0	85	0	425	425
04:15 PM	18	67	29	0	114	29	21	31	0	81	14	82	17	0	113	34	34	26	0	94	0	402	402
04:30 PM	20	65	25	0	110	22	26	20	0	68	13	68	23	0	104	51	28	22	0	101	0	383	383
04:45 PM	25	83	26	0	134	33	25	30	0	88	17	55	15	0	87	28	32	23	0	83	0	392	392
Total	89	313	111	0	513	111	105	99	0	315	62	276	73	0	411	147	130	86	0	363	0	1602	1602
05:00 PM	22	107	23	0	152	16	42	33	0	91	24	54	19	0	97	47	30	22	0	99	0	439	439
05:15 PM	23	113	24	0	160	30	20	37	0	87	25	74	23	0	122	54	37	23	0	114	0	483	483
05:30 PM	24	101	27	0	152	24	32	26	0	82	18	70	23	0	111	34	22	18	0	74	0	419	419
05:45 PM	22	70	28	0	120	40	57	25	0	122	14	72	23	0	109	40	36	14	0	90	0	441	441
Total	91	391	102	0	584	110	151	121	0	382	81	270	88	0	439	175	125	77	0	377	0	1782	1782
Grand Total	303	1083	323	0	1709	421	586	340	1	1347	286	1328	396	0	2010	486	497	312	0	1295	1	6361	6362
Apprch %	17.7	63.4	18.9			31.3	43.5	25.2			14.2	66.1	19.7			37.5	38.4	24.1					
Total %	4.8	17	5.1		26.9	6.6	9.2	5.3		21.2	4.5	20.9	6.2		31.6	7.6	7.8	4.9		20.4	0	100	
Cars	296	1075	315		1686	417	568	338		1324	278	1323	381		1982	470	479	311		1260	0	0	6252
% Cars	97.7	99.3	97.5	0	98.7	99	96.9	99.4	100	98.2	97.2	99.6	96.2	0	98.6	96.7	96.4	99.7	0	97.3	0	0	98.3
Trucks & Buses	7	8	8		23	4	18	2		24	8	5	15		28	16	18	1		35	0	0	110
% Trucks & Buses	2.3	0.7	2.5	0	1.3	1	3.1	0.6	0	1.8	2.8	0.4	3.8	0	1.4	3.3	3.6	0.3	0	2.7	0	0	1.7
Bicycles	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

DAVENPORT

119 Brookstown Ave., Suite PH1,
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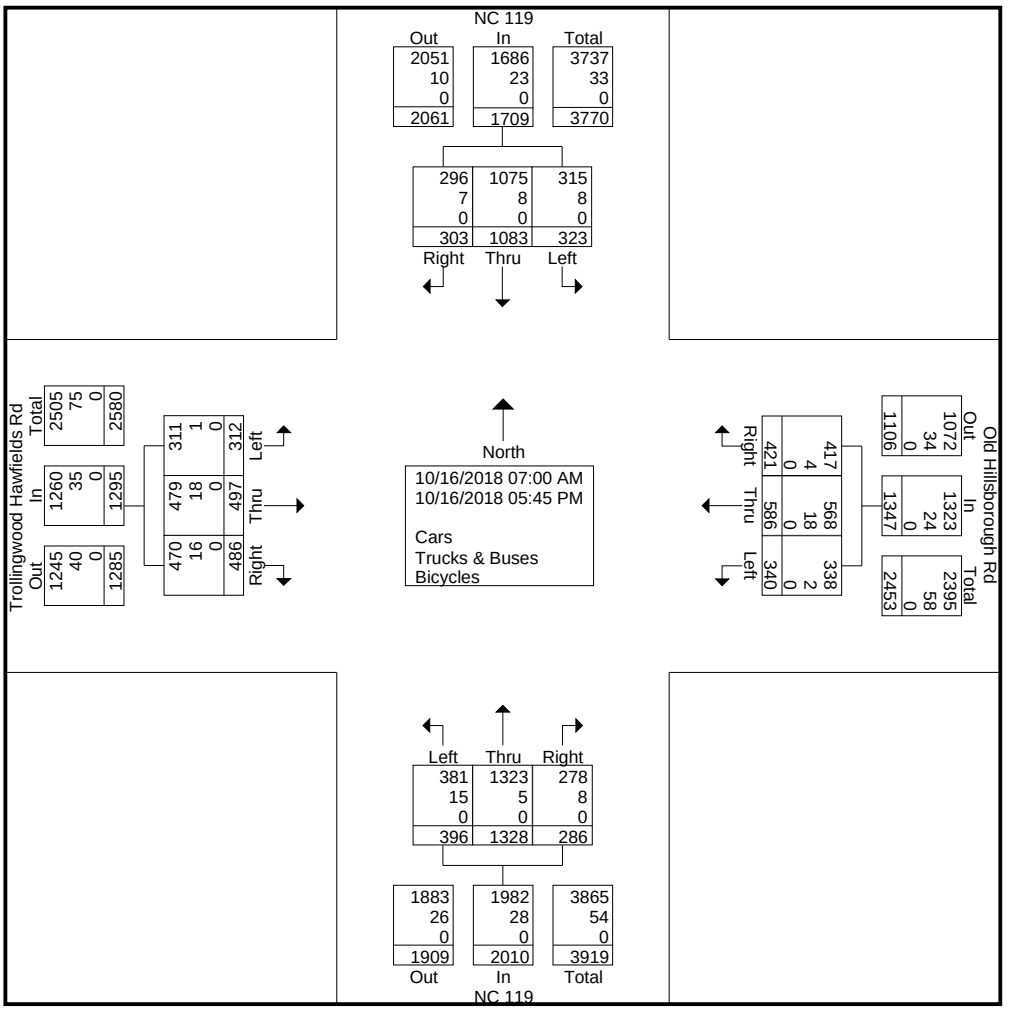
Ph:(336)744-1636

File Name : 1. NC 119 at Trollingwood Hawfields Rd_Old Hillsborough Rd
Site Code : 00180046
Start Date : 10/16/2018
Page No : 2



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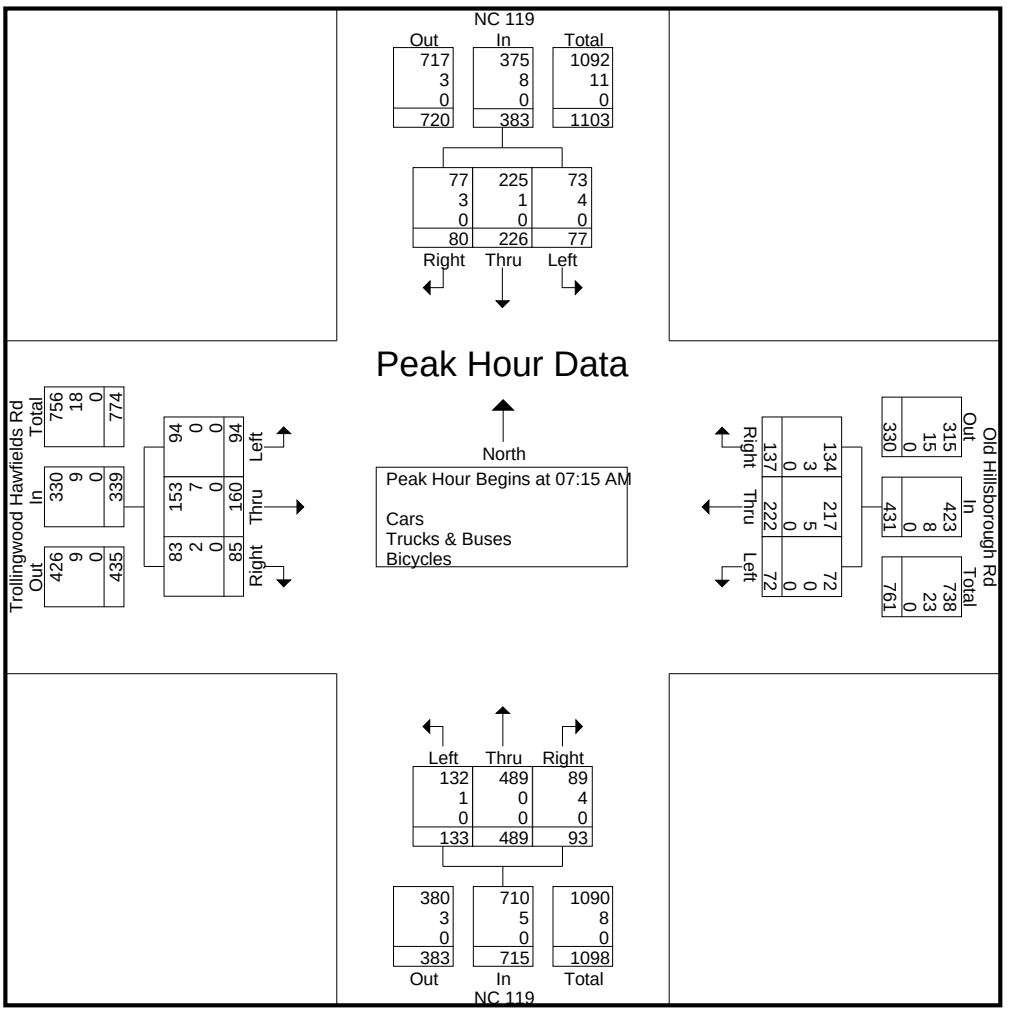
119 Brookstown Ave., Suite PH1,
Winston Salem, NC 27101
Ph:(336)744-1636

File Name : 1. NC 119 at Trollingwood Hawfields Rd_Old Hillsborough Rd
Site Code : 00180046
Start Date : 10/16/2018
Page No : 3

	NC 119 Southbound				Old Hillsborough Rd Westbound				NC 119 Northbound				Trollingwood Hawfields Rd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	14	58	11	83	22	37	18	77	31	134	29	194	11	33	25	69	423
07:30 AM	**23**	**69**	**24**	**116**	**46**	72	**20**	**138**	**32**	129	**40**	**201**	20	**62**	**32**	**114**	**569**
07:45 AM	21	47	23	91	42	**76**	18	136	20	**141**	33	194	26	38	18	82	503
08:00 AM	22	52	19	93	27	37	16	80	10	85	31	126	**28**	27	19	74	373
Total Volume	80	226	77	383	137	222	72	431	93	489	133	715	85	160	94	339	1868
% App. Total	20.9	59	20.1		31.8	51.5	16.7		13	68.4	18.6		25.1	47.2	27.7		
PHF	.870	.819	.802	.825	.745	.730	.900	.781	.727	.867	.831	.889	.759	.645	.734	.743	.821
Cars	77	225	73	375	134	217	72	423	89	489	132	710	83	153	94	330	1838
% Cars	96.3	99.6	94.8	97.9	97.8	97.7	100	98.1	95.7	100	99.2	99.3	97.6	95.6	100	97.3	98.4
Trucks & Buses	3	1	4	8	3	5	0	8	4	0	1	5	2	7	0	9	30
% Trucks & Buses	3.8	0.4	5.2	2.1	2.2	2.3	0	1.9	4.3	0	0.8	0.7	2.4	4.4	0	2.7	1.6
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



DAVENPORT

119 Brookstown Ave., Suite PH1,
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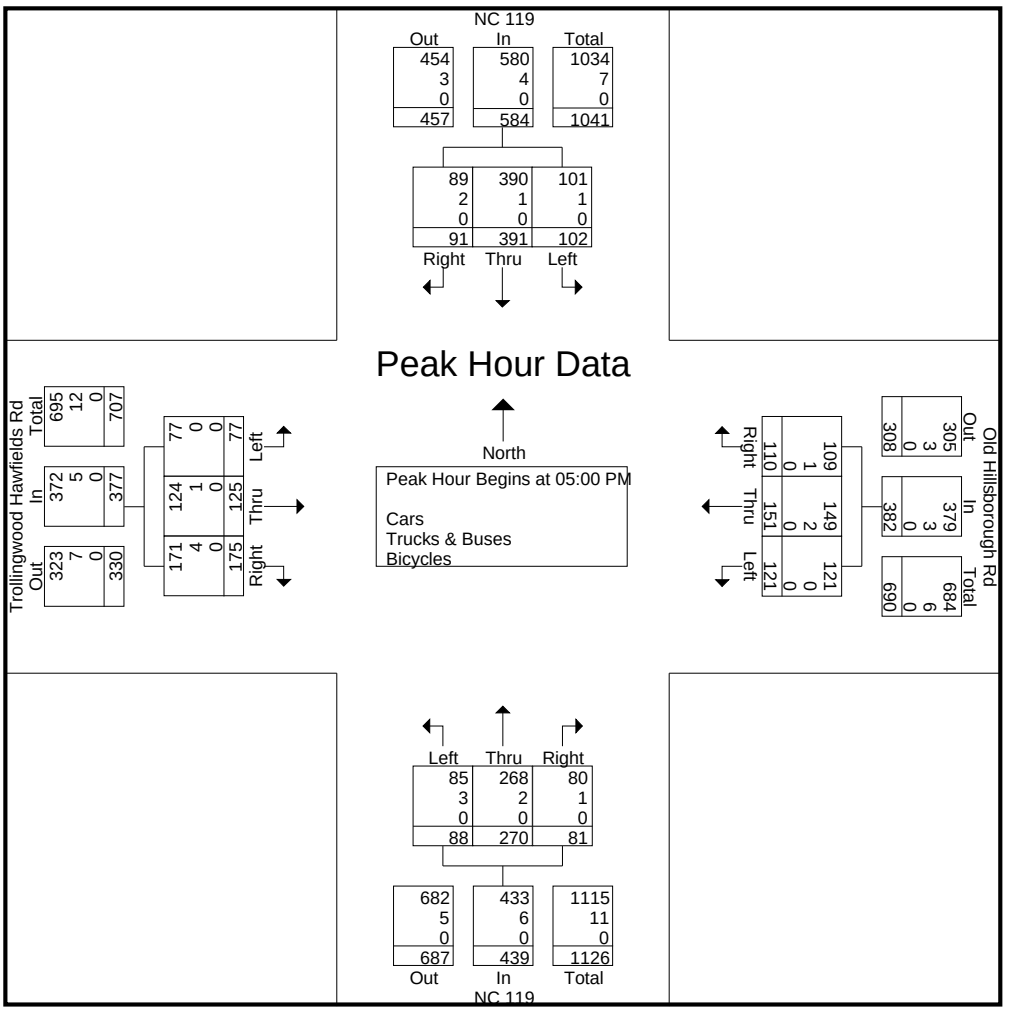
Ph:(336)744-1636

File Name : 1. NC 119 at Trollingwood Hawfields Rd_Old Hillsborough Rd
Site Code : 00180046
Start Date : 10/16/2018
Page No : 4

	NC 119 Southbound				Old Hillsborough Rd Westbound				NC 119 Northbound				Trollingwood Hawfields Rd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	22	107	23	152	16	42	33	91	24	54	19	97	47	30	22	99	439
05:15 PM	23	**113**	24	**160**	30	20	**37**	87	**25**	**74**	**23**	**122**	**54**	**37**	**23**	**114**	**483**
05:30 PM	**24**	101	27	152	24	32	26	82	18	70	23	111	34	22	18	74	419
05:45 PM	22	70	**28**	120	**40**	**57**	25	**122**	14	72	23	109	40	36	14	90	441
Total Volume	91	391	102	584	110	151	121	382	81	270	88	439	175	125	77	377	1782
% App. Total	15.6	67	17.5		28.8	39.5	31.7		18.5	61.5	20		46.4	33.2	20.4		
PHF	.948	.865	.911	.913	.688	.662	.818	.783	.810	.912	.957	.900	.810	.845	.837	.827	.922
Cars	89	390	101	580	109	149	121	379	80	268	85	433	171	124	77	372	1764
% Cars	97.8	99.7	99.0	99.3	99.1	98.7	100	99.2	98.8	99.3	96.6	98.6	97.7	99.2	100	98.7	99.0
Trucks & Buses	2	1	1	4	1	2	0	3	1	2	3	6	4	1	0	5	18
% Trucks & Buses	2.2	0.3	1.0	0.7	0.9	1.3	0	0.8	1.2	0.7	3.4	1.4	2.3	0.8	0	1.3	1.0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



DAVENPORT

119 Brookstown Aveue, Suite PH1
Winston-Salem, NC 27101

Counted By: N. Baskett
Weather: Clear

File Name : 190020 1. NC 119 at Trollingwood Hawfields Road.Old Hillsborough Road
Site Code : 00190020
Start Date : 10/16/2018
Page No : 1

Groups Printed- Cars - Buses and Trucks - Bikes

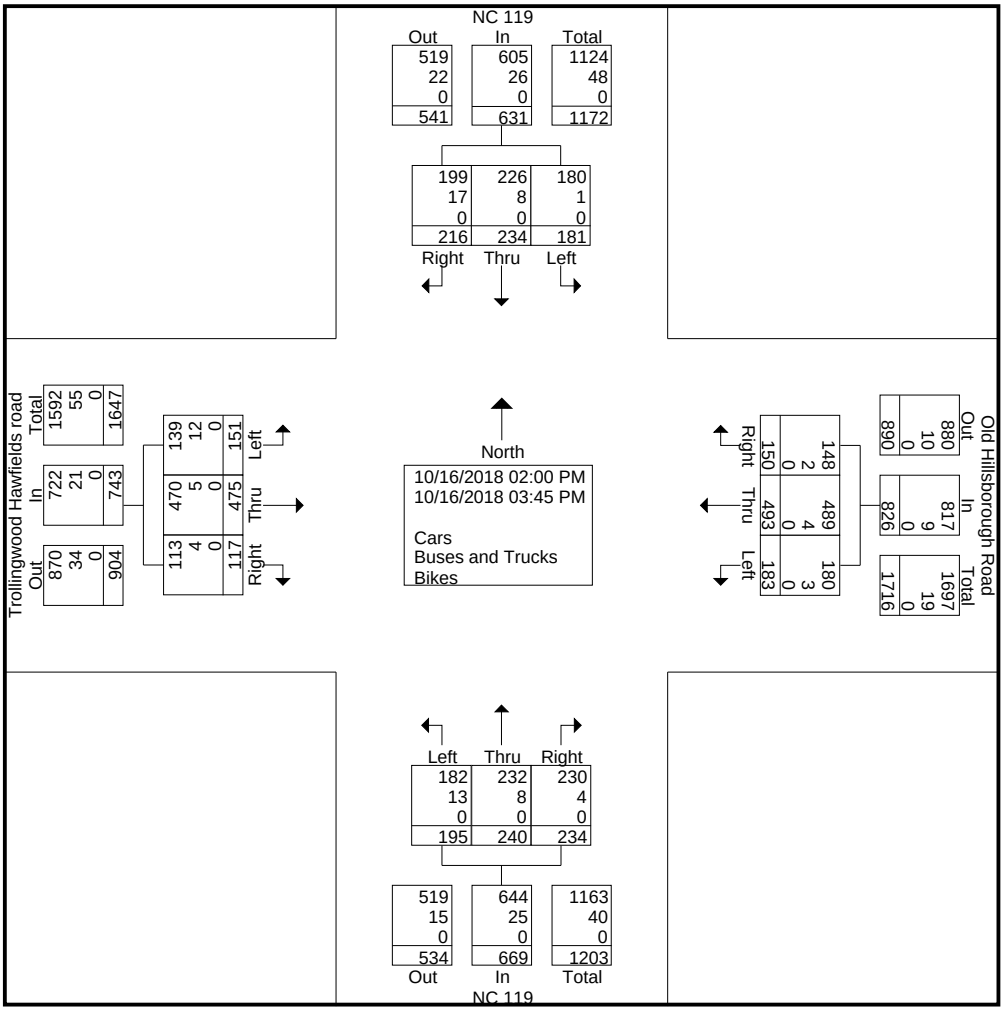
	NC 119 Southbound					Old Hillsborough Road Westbound					NC 119 Northbound					Trollingwood Hawfields road Eastbound							
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
02:00 PM	17	25	14	0	56	20	50	24	0	94	26	22	18	0	66	16	55	21	0	92	0	308	308
02:15 PM	30	21	26	1	77	18	46	27	0	91	26	17	15	0	58	10	51	17	0	78	1	304	305
02:30 PM	18	31	26	0	75	17	74	26	0	117	33	28	24	0	85	15	90	22	0	127	0	404	404
02:45 PM	16	27	18	0	61	25	40	26	0	91	41	44	30	0	115	10	49	21	0	80	0	347	347
Total	81	104	84	1	269	80	210	103	0	393	126	111	87	0	324	51	245	81	0	377	1	1363	1364
03:00 PM	19	32	26	0	77	13	52	14	0	79	22	32	22	0	76	13	49	20	0	82	0	314	314
03:15 PM	30	28	20	0	78	16	50	20	0	86	30	30	22	0	82	17	55	16	0	88	0	334	334
03:30 PM	42	41	23	0	106	23	87	28	0	138	24	35	35	2	94	16	71	18	0	105	2	443	445
03:45 PM	44	29	28	0	101	18	94	18	0	130	32	32	29	0	93	20	55	16	0	91	0	415	415
Total	135	130	97	0	362	70	283	80	0	433	108	129	108	2	345	66	230	70	0	366	2	1506	1508
Grand Total	216	234	181	1	631	150	493	183	0	826	234	240	195	2	669	117	475	151	0	743	3	2869	2872
Apprch %	34.2	37.1	28.7			18.2	59.7	22.2			35	35.9	29.1			15.7	63.9	20.3					
Total %	7.5	8.2	6.3		22	5.2	17.2	6.4		28.8	8.2	8.4	6.8		23.3	4.1	16.6	5.3		25.9	0.1	99.9	
Cars	199	226	180		605	148	489	180		817	230	232	182		646	113	470	139		722	0	0	2790
% Cars	92.1	96.6	99.4	0	95.7	98.7	99.2	98.4	0	98.9	98.3	96.7	93.3	100	96.3	96.6	98.9	92.1	0	97.2	0	0	97.1
Buses and Trucks	17	8	1		26	2	4	3		9	4	8	13		25	4	5	12		21	0	0	81
% Buses and Trucks	7.9	3.4	0.6	0	4.1	1.3	0.8	1.6	0	1.1	1.7	3.3	6.7	0	3.7	3.4	1.1	7.9	0	2.8	0	0	2.8
Bikes	0	0	0		1	0	0	0		0	0	0	0		0	0	0	0		0	0	0	1
% Bikes	0	0	0	100	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

DAVENPORT

119 Brookstown Aveue, Suite PH1
Winston-Salem, NC 27101

Counted By: N. Baskett
Weather: Clear

File Name : 190020 1. NC 119 at Trollingwood Hawfields Road.Old Hillsborough Road
Site Code : 00190020
Start Date : 10/16/2018
Page No : 2



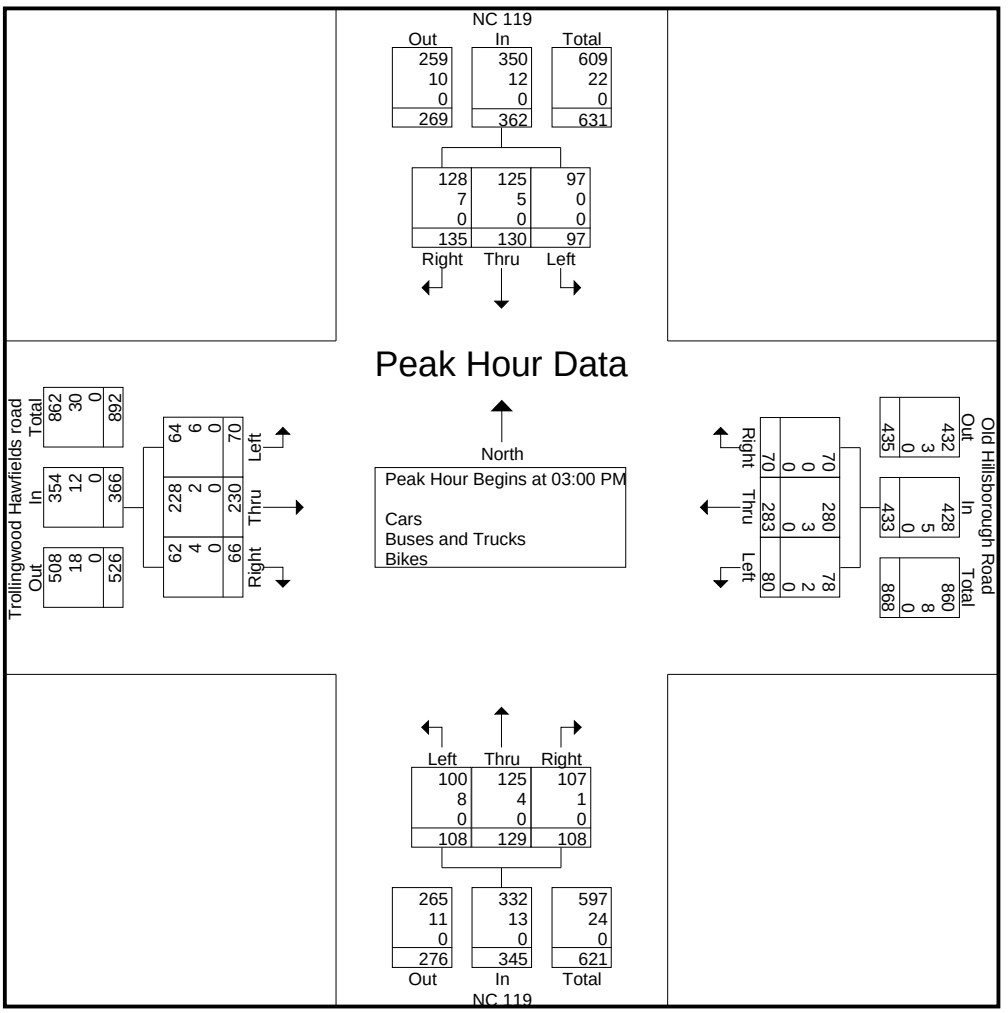
DAVENPORT

119 Brookstown Aveue, Suite PH1
Winston-Salem, NC 27101

Counted By: N. Baskett
Weather: Clear

File Name : 190020 1. NC 119 at Trollingwood Hawfields Road.Old Hillsborough Road
Site Code : 00190020
Start Date : 10/16/2018
Page No : 3

	NC 119 Southbound				Old Hillsborough Road Westbound				NC 119 Northbound				Trollingwood Hawfields road Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 2:00:00 PM to 3:45:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 3:00:00 PM																	
3:00:00 PM	19	32	26	77	13	52	14	79	22	32	22	76	13	49	**20**	82	314
3:15:00 PM	30	28	20	78	16	50	20	86	30	30	22	82	17	55	16	88	334
3:30:00 PM	42	**41**	23	**106**	**23**	87	**28**	**138**	24	**35**	**35**	**94**	16	**71**	18	**105**	**443**
3:45:00 PM	**44**	29	**28**	101	18	**94**	18	130	**32**	32	29	93	**20**	55	16	91	415
Total Volume	135	130	97	362	70	283	80	433	108	129	108	345	66	230	70	366	1506
% App. Total	37.3	35.9	26.8		16.2	65.4	18.5		31.3	37.4	31.3		18	62.8	19.1		
PHF	.767	.793	.866	.854	.761	.753	.714	.784	.844	.921	.771	.918	.825	.810	.875	.871	.850
Cars	128	125	97	350	70	280	78	428	107	125	100	332	62	228	64	354	1464
% Cars	94.8	96.2	100	96.7	100	98.9	97.5	98.8	99.1	96.9	92.6	96.2	93.9	99.1	91.4	96.7	97.2
Buses and Trucks	7	5	0	12	0	3	2	5	1	4	8	13	4	2	6	12	42
% Buses and Trucks	5.2	3.8	0	3.3	0	1.1	2.5	1.2	0.9	3.1	7.4	3.8	6.1	0.9	8.6	3.3	2.8
Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



DAVENPORT

119 Brookstown Ave., Suite PH1,
Winston Salem, NC 27101
Ph:(336)744-1636

Counted by: P.Peek
*No U-turns observed

Weather: Cloudy

File Name : 2. NC 119 at Kimrey Road
Site Code : 00180046
Start Date : 10/16/2018
Page No : 1

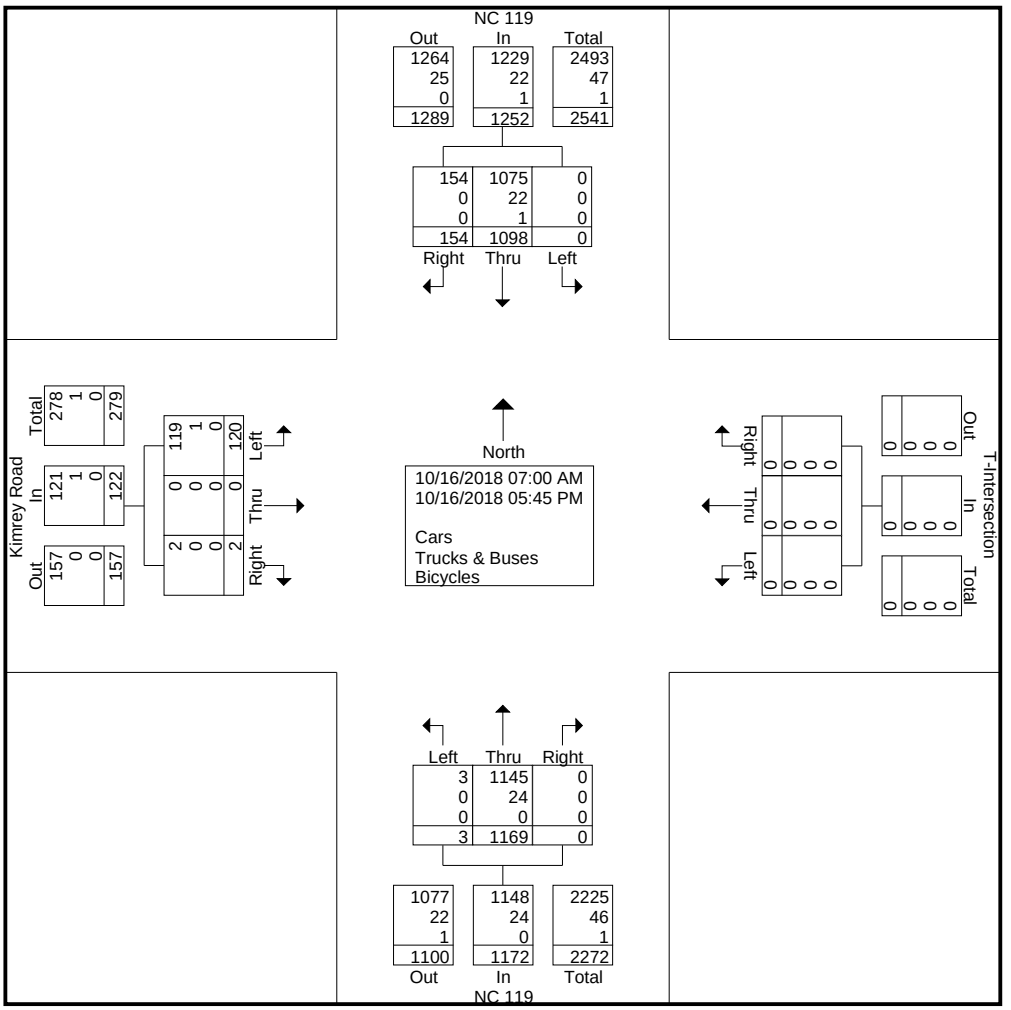
Groups Printed- Cars - Trucks & Buses - Bicycles

	NC 119 Southbound					T-Intersection Westbound					NC 119 Northbound					Kimrey Road Eastbound							
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	9	45	0	0	54	0	0	0	0	0	0	89	0	0	89	0	0	5	0	5	0	148	148
07:15 AM	16	52	0	0	68	0	0	0	0	0	0	120	0	0	120	0	0	9	0	9	0	197	197
07:30 AM	6	65	0	0	71	0	0	0	0	0	0	116	0	0	116	0	0	10	0	10	0	197	197
07:45 AM	12	56	0	0	68	0	0	0	0	0	0	102	0	0	102	0	0	13	0	13	0	183	183
Total	43	218	0	0	261	0	0	0	0	0	0	427	0	0	427	0	0	37	0	37	0	725	725
08:00 AM	6	48	0	0	54	0	0	0	0	0	0	71	0	0	71	0	0	8	0	8	0	133	133
08:15 AM	12	37	0	0	49	0	0	0	0	0	0	69	0	0	69	0	0	4	0	4	0	122	122
08:30 AM	5	47	0	0	52	0	0	0	0	0	0	52	0	0	52	0	0	4	0	4	0	108	108
08:45 AM	5	17	0	0	22	0	0	0	0	0	0	65	0	0	65	1	0	1	0	2	0	89	89
Total	28	149	0	0	177	0	0	0	0	0	0	257	0	0	257	1	0	17	0	18	0	452	452
*** BREAK ***																							
04:00 PM	8	94	0	0	102	0	0	0	0	0	0	61	1	0	62	0	0	10	0	10	0	174	174
04:15 PM	8	85	0	0	93	0	0	0	0	0	0	78	1	0	79	0	0	11	0	11	0	183	183
04:30 PM	10	76	0	0	86	0	0	0	0	0	0	55	0	0	55	0	0	9	0	9	0	150	150
04:45 PM	6	85	0	0	91	0	0	0	0	0	0	45	0	0	45	1	0	7	0	8	0	144	144
Total	32	340	0	0	372	0	0	0	0	0	0	239	2	0	241	1	0	37	0	38	0	651	651
05:00 PM	12	117	0	0	129	0	0	0	0	0	0	54	0	0	54	0	0	7	0	7	0	190	190
05:15 PM	15	106	0	0	121	0	0	0	0	0	0	69	1	0	70	0	0	7	0	7	0	198	198
05:30 PM	13	93	0	0	106	0	0	0	0	0	0	63	0	0	63	0	0	5	0	5	0	174	174
05:45 PM	11	75	0	0	86	0	0	0	0	0	0	60	0	0	60	0	0	10	0	10	0	156	156
Total	51	391	0	0	442	0	0	0	0	0	0	246	1	0	247	0	0	29	0	29	0	718	718
Grand Total	154	1098	0	0	1252	0	0	0	0	0	0	1169	3	0	1172	2	0	120	0	122	0	2546	2546
Apprch %	12.3	87.7	0			0	0	0			0	99.7	0.3			1.6	0	98.4					
Total %	6	43.1	0		49.2	0	0	0		0	0	45.9	0.1		46	0.1	0	4.7		4.8	0	100	
Cars	154	1075	0		1229	0	0	0		0	0	1145	3		1148	2	0	119		121	0	0	2498
% Cars	100	97.9	0	0	98.2	0	0	0	0	0	0	97.9	100	0	98	100	0	99.2	0	99.2	0	0	98.1
Trucks & Buses	0	22	0		22	0	0	0		0	0	24	0		24	0	0	1		1	0	0	47
% Trucks & Buses	0	2	0	0	1.8	0	0	0	0	0	0	2.1	0	0	2	0	0	0.8	0	0.8	0	0	1.8
Bicycles	0	1	0		1	0	0	0		0	0	0	0		0	0	0	0		0	0	0	1
% Bicycles	0	0.1	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

DAVENPORT

119 Brookstown Ave., Suite PH1,
Winston Salem, NC 27101
Ph:(336)744-1636

File Name : 2. NC 119 at Kimrey Road
Site Code : 00180046
Start Date : 10/16/2018
Page No : 2

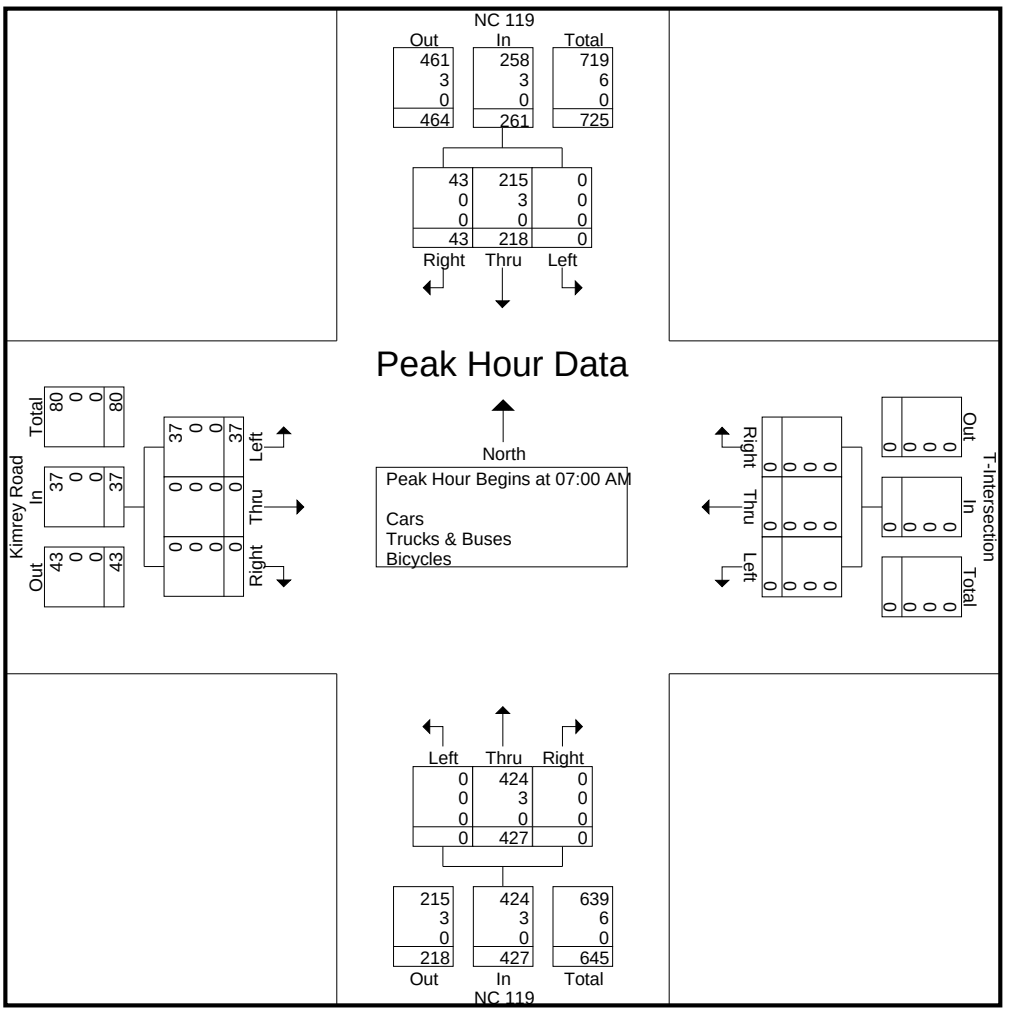


DAVENPORT

119 Brookstown Ave., Suite PH1,
Winston Salem, NC 27101
Ph:(336)744-1636

File Name : 2. NC 119 at Kimrey Road
Site Code : 00180046
Start Date : 10/16/2018
Page No : 3

	NC 119 Southbound				T-Intersection Westbound				NC 119 Northbound				Kimrey Road Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	9	45	0	54	0	0	0	0	0	89	0	89	0	0	5	5	148
07:15 AM	**16**	52	0	68	0	0	0	0	0	**120**	0	**120**	0	0	9	9	**197**
07:30 AM	6	**65**	0	**71**	0	0	0	0	0	116	0	116	0	0	10	10	197
07:45 AM	12	56	0	68	0	0	0	0	0	102	0	102	0	0	**13**	**13**	183
Total Volume	43	218	0	261	0	0	0	0	0	427	0	427	0	0	37	37	725
% App. Total	16.5	83.5	0		0	0	0		0	100	0		0	0	100		
PHF	.672	.838	.000	.919	.000	.000	.000	.000	.000	.890	.000	.890	.000	.000	.712	.712	.920
Cars	43	215	0	258	0	0	0	0	0	424	0	424	0	0	37	37	719
% Cars	100	98.6	0	98.9	0	0	0	0	0	99.3	0	99.3	0	0	100	100	99.2
Trucks & Buses	0	3	0	3	0	0	0	0	0	3	0	3	0	0	0	0	6
% Trucks & Buses	0	1.4	0	1.1	0	0	0	0	0	0.7	0	0.7	0	0	0	0	0.8
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

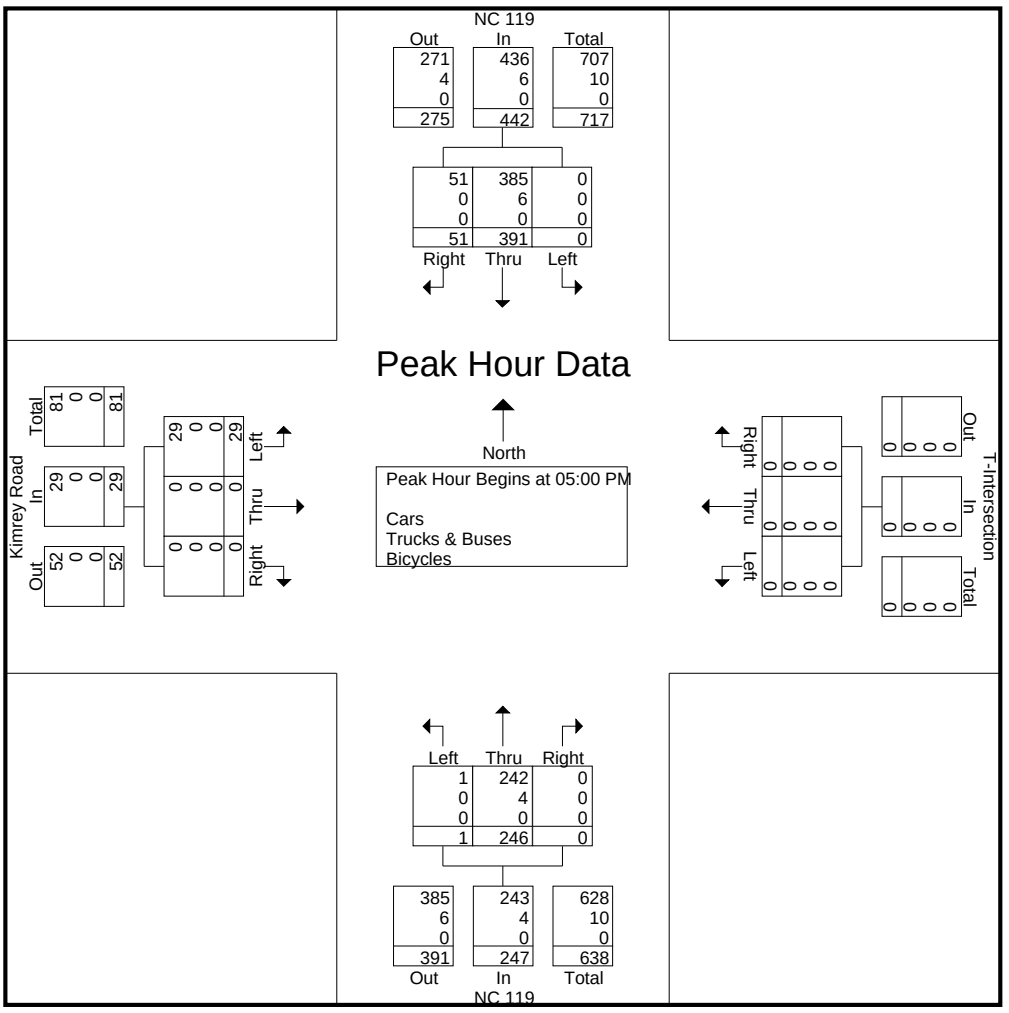


DAVENPORT

119 Brookstown Ave., Suite PH1,
Winston Salem, NC 27101
Ph:(336)744-1636

File Name : 2. NC 119 at Kimrey Road
Site Code : 00180046
Start Date : 10/16/2018
Page No : 4

	NC 119 Southbound				T-Intersection Westbound				NC 119 Northbound				Kimrey Road Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	12	**117**	0	**129**	0	0	0	0	0	54	0	54	0	0	7	7	190
05:15 PM	**15**	106	0	121	0	0	0	0	0	**69**	**1**	**70**	0	0	7	7	**198**
05:30 PM	13	93	0	106	0	0	0	0	0	63	0	63	0	0	5	5	174
05:45 PM	11	75	0	86	0	0	0	0	0	60	0	60	0	0	**10**	**10**	156
Total Volume	51	391	0	442	0	0	0	0	0	246	1	247	0	0	29	29	718
% App. Total	11.5	88.5	0		0	0	0		0	99.6	0.4		0	0	100		
PHF	.850	.835	.000	.857	.000	.000	.000	.000	.000	.891	.250	.882	.000	.000	.725	.725	.907
Cars	51	385	0	436	0	0	0	0	0	242	1	243	0	0	29	29	708
% Cars	100	98.5	0	98.6	0	0	0	0	0	98.4	100	98.4	0	0	100	100	98.6
Trucks & Buses	0	6	0	6	0	0	0	0	0	4	0	4	0	0	0	0	10
% Trucks & Buses	0	1.5	0	1.4	0	0	0	0	0	1.6	0	1.6	0	0	0	0	1.4
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



DAVENPORT

119 Brookstown Aveue, Suite PH1
Winston-Salem, NC 27101

Counted By: N. Baskett

Weather: Clear

File Name : 190020 2. NC 119 at Kimrey Road
Site Code : 00190020
Start Date : 10/16/2018
Page No : 1

Groups Printed- Cars - Buses and Trucks - Bikes

	NC 119 Southbound					Driveway Westbound					NC 119 Northbound					Kimrey Road Eastbound							
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
02:00 PM	9	52	0	0	61	0	0	0	0	0	0	61	1	0	62	3	0	15	0	18	0	141	141
02:15 PM	4	71	0	0	75	0	0	0	0	0	0	56	0	0	56	0	0	3	0	3	0	134	134
02:30 PM	8	63	0	0	71	0	0	0	0	0	0	66	0	0	66	1	0	6	0	7	0	144	144
02:45 PM	8	68	0	0	76	0	0	0	0	0	0	58	0	0	58	0	0	6	0	6	0	140	140
Total	29	254	0	0	283	0	0	0	0	0	0	241	1	0	242	4	0	30	0	34	0	559	559
03:00 PM	3	62	0	0	65	0	0	0	0	0	0	47	1	0	48	0	0	5	0	5	0	118	118
03:15 PM	8	62	0	1	70	0	0	0	0	0	0	63	0	0	63	0	0	5	0	5	1	138	139
03:30 PM	17	85	0	0	102	0	0	0	0	0	0	74	0	0	74	0	0	11	0	11	0	187	187
03:45 PM	15	85	0	0	100	0	0	0	0	0	0	52	1	0	53	0	0	3	0	3	0	156	156
Total	43	294	0	1	337	0	0	0	0	0	0	236	2	0	238	0	0	24	0	24	1	599	600
Grand Total	72	548	0	1	620	0	0	0	0	0	0	477	3	0	480	4	0	54	0	58	1	1158	1159
Apprch %	11.6	88.4	0			0	0	0			0	99.4	0.6			6.9	0	93.1					
Total %	6.2	47.3	0		53.5	0	0	0		0	0	41.2	0.3		41.5	0.3	0	4.7		5	0.1	99.9	
Cars	71	525	0		596	0	0	0		0	0	462	3		465	4	0	53		57	0	0	1118
% Cars	98.6	95.8	0	0	96	0	0	0	0	0	0	96.9	100	0	96.9	100	0	98.1	0	98.3	0	0	96.5
Buses and Trucks	1	23	0		24	0	0	0		0	0	15	0		15	0	0	1		1	0	0	40
% Buses and Trucks	1.4	4.2	0	0	3.9	0	0	0	0	0	0	3.1	0	0	3.1	0	0	1.9	0	1.7	0	0	3.5
Bikes	0	0	0		1	0	0	0		0	0	0	0		0	0	0	0		0	0	0	1
% Bikes	0	0	0	100	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1

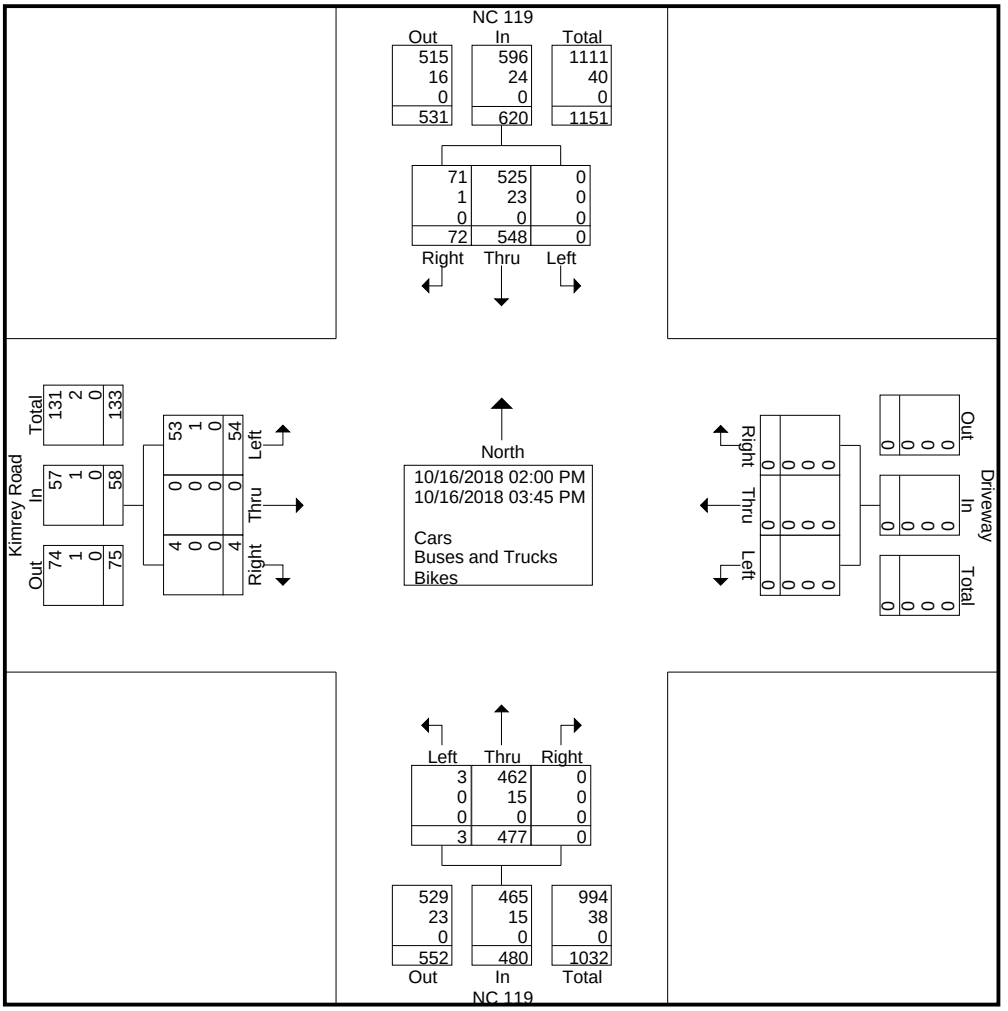
DAVENPORT

119 Brookstown Aveue, Suite PH1
Winston-Salem, NC 27101

Counted By: N. Baskett

Weather: Clear

File Name : 190020 2. NC 119 at Kimrey Road
Site Code : 00190020
Start Date : 10/16/2018
Page No : 2



DAVENPORT

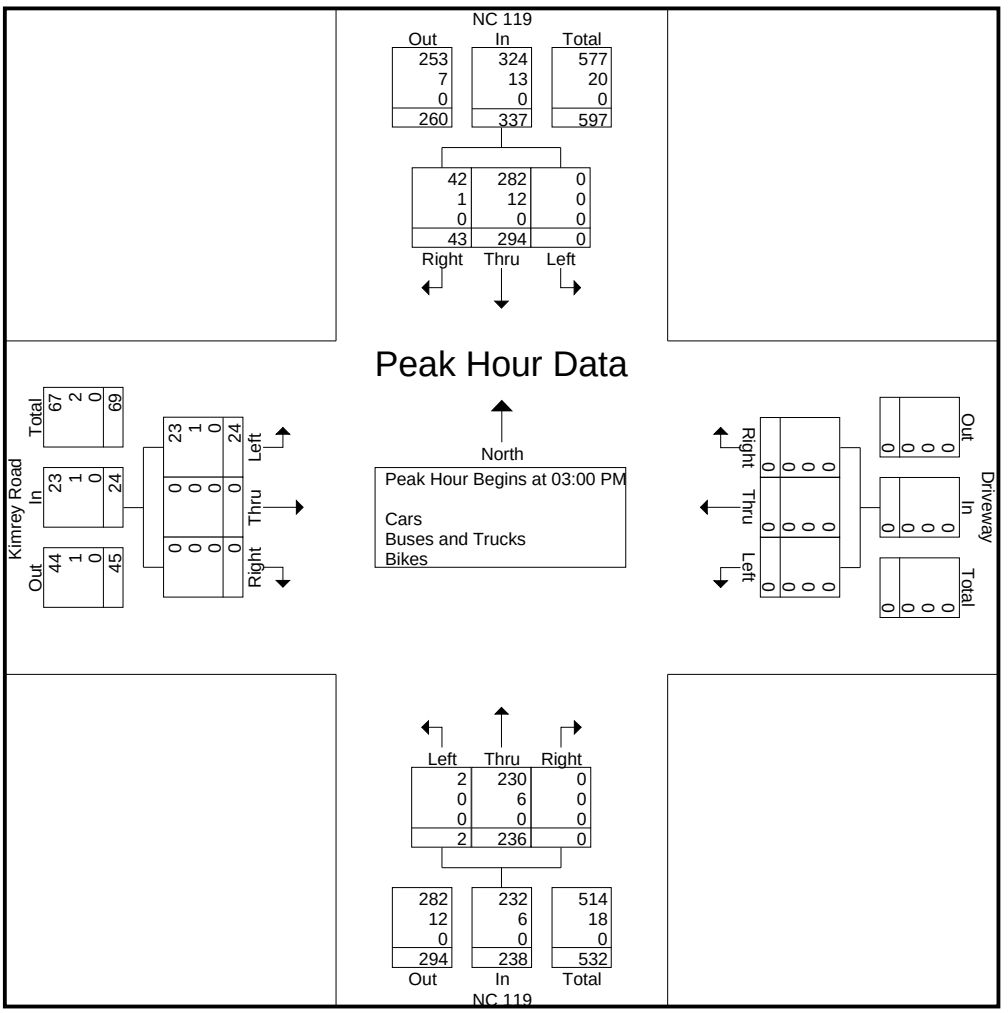
119 Brookstown Aveue, Suite PH1
Winston-Salem, NC 27101

Counted By: N. Baskett

Weather: Clear

File Name : 190020 2. NC 119 at Kimrey Road
Site Code : 00190020
Start Date : 10/16/2018
Page No : 3

	NC 119 Southbound				Driveway Westbound				NC 119 Northbound				Kimrey Road Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 2:00:00 PM to 3:45:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 3:00:00 PM																	
3:00:00 PM	3	62	0	65	0	0	0	0	0	47	**1**	48	0	0	5	5	118
3:15:00 PM	8	62	0	70	0	0	0	0	0	63	0	63	0	0	5	5	138
3:30:00 PM	**17**	**85**	0	**102**	0	0	0	0	0	**74**	0	**74**	0	0	**11**	**11**	**187**
3:45:00 PM	15	85	0	100	0	0	0	0	0	52	1	53	0	0	3	3	156
Total Volume	43	294	0	337	0	0	0	0	0	236	2	238	0	0	24	24	599
% App. Total	12.8	87.2	0		0	0	0		0	99.2	0.8		0	0	100		
PHF	.632	.865	.000	.826	.000	.000	.000	.000	.000	.797	.500	.804	.000	.000	.545	.545	.801
Cars	42	282	0	324	0	0	0	0	0	230	2	232	0	0	23	23	579
% Cars	97.7	95.9	0	96.1	0	0	0	0	0	97.5	100	97.5	0	0	95.8	95.8	96.7
Buses and Trucks	1	12	0	13	0	0	0	0	0	6	0	6	0	0	1	1	20
% Buses and Trucks	2.3	4.1	0	3.9	0	0	0	0	0	2.5	0	2.5	0	0	4.2	4.2	3.3
Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



DAVENPORT

119 Brookstown Avenue, Suite PH1
Winston-Salem, NC 27101
Ph: (336) 744-1636

Counted by: N. Baez

Weather: Clear

File Name : 3. NC 119 at Jim Minor Road
Site Code : 190020
Start Date : 10/16/2018
Page No : 1

Groups Printed- Cars - Trucks and Buses - Bicycles

	NC 119 Southbound					Jim Minor Road Westbound					NC 119 Northbound					Jim Minor Road Eastbound							
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
06:00 AM	1	11	5	0	17	4	9	0	0	13	0	41	2	0	43	2	0	1	0	3	0	76	76
06:15 AM	1	17	1	0	19	7	5	3	0	15	0	65	7	0	72	1	0	3	0	4	0	110	110
06:30 AM	1	27	2	0	30	14	17	0	0	31	0	91	11	0	102	4	2	3	0	9	0	172	172
06:45 AM	2	46	3	0	51	6	14	2	0	22	3	94	5	0	102	3	3	1	0	7	0	182	182
Total	5	101	11	0	117	31	45	5	0	81	3	291	25	0	319	10	5	8	0	23	0	540	540
07:00 AM	2	52	1	0	55	9	25	3	0	37	0	68	4	0	72	3	4	0	0	7	0	171	171
07:15 AM	3	43	4	0	50	18	24	7	0	49	2	110	11	0	123	7	5	4	0	16	0	238	238
07:30 AM	2	55	6	0	63	9	28	4	0	41	3	91	5	0	99	6	2	2	0	10	0	213	213
07:45 AM	4	45	1	0	50	11	21	1	0	33	1	84	11	0	96	3	4	1	0	8	0	187	187
Total	11	195	12	0	218	47	98	15	0	160	6	353	31	0	390	19	15	7	0	41	0	809	809
08:00 AM	5	42	5	0	52	6	14	1	0	21	2	71	5	0	78	3	6	1	0	10	0	161	161
08:15 AM	2	38	3	0	43	8	11	0	0	19	2	40	1	0	43	5	8	3	0	16	0	121	121
08:30 AM	2	34	4	0	40	5	11	0	0	16	1	48	4	0	53	5	4	0	0	9	0	118	118
08:45 AM	0	11	5	0	16	8	14	0	0	22	1	49	9	0	59	0	5	4	0	9	0	106	106
Total	9	125	17	0	151	27	50	1	0	78	6	208	19	0	233	13	23	8	0	44	0	506	506
09:00 AM	1	21	3	0	25	9	13	0	0	22	0	32	5	0	37	2	11	4	0	17	0	101	101
09:15 AM	2	30	5	0	37	5	11	2	0	18	3	33	2	0	38	3	5	1	0	9	0	102	102
09:30 AM	5	34	4	0	43	3	11	2	0	16	1	29	5	0	35	3	9	0	0	12	0	106	106
09:45 AM	3	25	4	0	32	3	6	2	0	11	1	43	4	0	48	1	1	0	0	2	0	93	93
Total	11	110	16	0	137	20	41	6	0	67	5	137	16	0	158	9	26	5	0	40	0	402	402
10:00 AM	1	25	4	0	30	5	9	1	0	15	0	42	3	0	45	1	6	1	0	8	0	98	98
10:15 AM	1	22	3	0	26	8	7	0	0	15	1	31	0	0	32	7	10	2	1	19	1	92	93
10:30 AM	3	23	5	0	31	4	6	1	0	11	1	32	1	0	34	1	5	2	0	8	0	84	84
10:45 AM	2	30	2	0	34	4	9	1	0	14	7	27	1	0	35	7	5	3	0	15	0	98	98
Total	7	100	14	0	121	21	31	3	0	55	9	132	5	0	146	16	26	8	1	50	1	372	373
11:00 AM	1	39	2	0	42	4	6	4	0	14	1	42	2	0	45	3	4	0	0	7	0	108	108
11:15 AM	4	26	4	0	34	4	9	0	0	13	2	43	1	0	46	1	7	2	0	10	0	103	103
11:30 AM	2	38	5	0	45	8	12	1	0	21	0	50	3	0	53	3	7	3	0	13	0	132	132
11:45 AM	2	30	6	0	38	3	7	1	0	11	2	40	3	0	45	3	5	0	0	8	0	102	102
Total	9	133	17	0	159	19	34	6	0	59	5	175	9	0	189	10	23	5	0	38	0	445	445
12:00 PM	2	38	4	0	44	5	7	0	0	12	3	37	2	0	42	6	8	4	0	18	0	116	116
12:15 PM	2	39	6	0	47	6	11	3	0	20	3	42	7	0	52	7	9	4	0	20	0	139	139
12:30 PM	0	46	6	0	52	7	10	2	0	19	2	37	2	0	41	3	9	3	0	15	0	127	127
12:45 PM	1	40	4	0	45	7	9	1	0	17	2	26	1	0	29	3	5	3	0	11	0	102	102
Total	5	163	20	0	188	25	37	6	0	68	10	142	12	0	164	19	31	14	0	64	0	484	484
01:00 PM	1	40	6	0	47	6	13	1	0	20	1	27	1	0	29	3	5	2	0	10	0	106	106
01:15 PM	0	45	2	0	47	5	13	0	0	18	0	32	2	0	34	3	10	0	0	13	0	112	112

DAVENPORT

119 Brookstown Avenue, Suite PH1
Winston-Salem, NC 27101
Ph: (336) 744-1636

File Name : 3. NC 119 at Jim Minor Road
Site Code : 190020
Start Date : 10/16/2018
Page No : 2

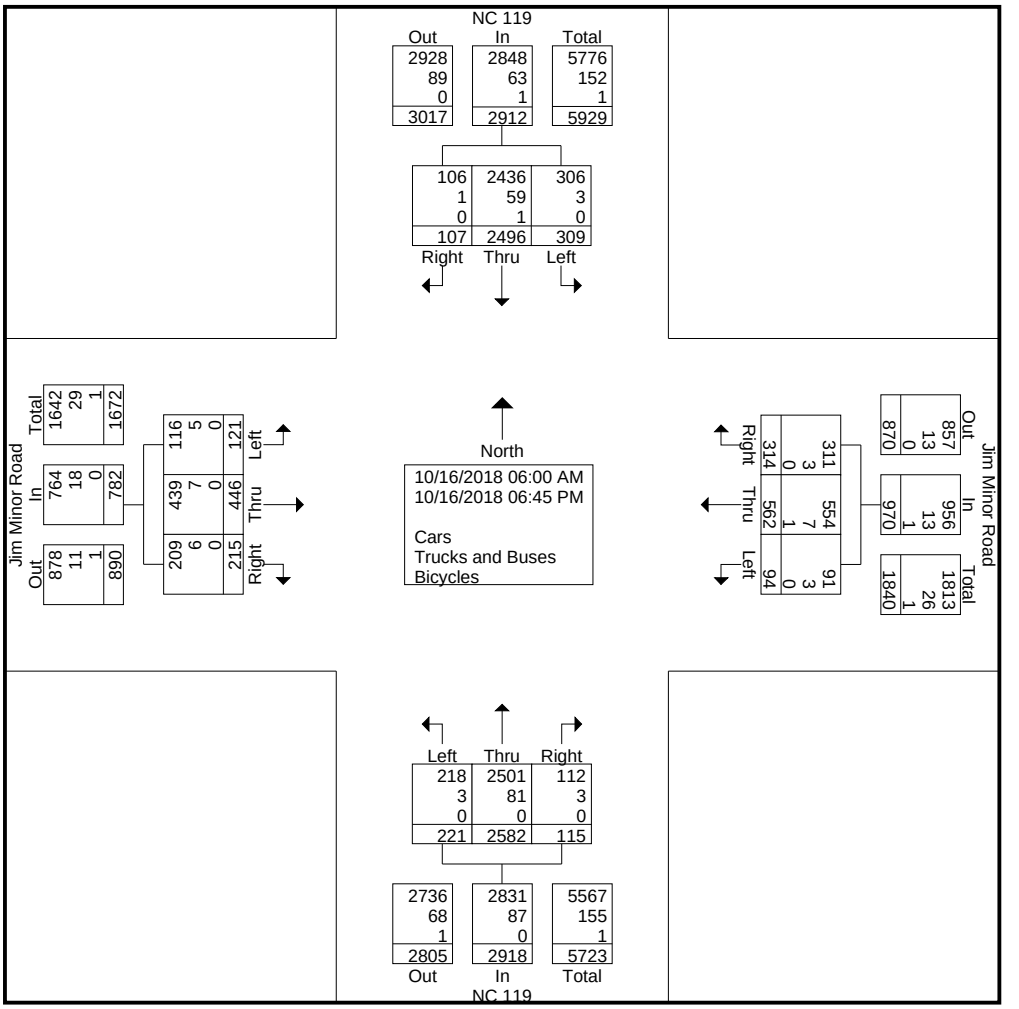
Groups Printed- Cars - Trucks and Buses - Bicycles

	NC 119 Southbound					Jim Minor Road Westbound					NC 119 Northbound					Jim Minor Road Eastbound							
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
01:30 PM	2	49	4	0	55	5	10	1	0	16	1	35	1	0	37	0	6	3	0	9	0	117	117
01:45 PM	0	52	7	0	59	6	12	2	0	20	2	38	1	0	41	1	4	1	0	6	0	126	126
Total	3	186	19	0	208	22	48	4	0	74	4	132	5	0	141	7	25	6	0	38	0	461	461
02:00 PM	2	51	13	0	66	6	14	0	0	20	2	44	2	0	48	2	6	2	0	10	0	144	144
02:15 PM	1	60	11	0	72	4	7	2	0	13	0	52	5	0	57	1	7	5	0	13	0	155	155
02:30 PM	1	49	10	0	60	9	2	3	0	14	3	61	5	0	69	6	18	2	0	26	0	169	169
02:45 PM	6	61	11	0	78	6	5	1	0	12	6	45	7	0	58	5	13	5	0	23	0	171	171
Total	10	221	45	0	276	25	28	6	0	59	11	202	19	0	232	14	44	14	0	72	0	639	639
03:00 PM	1	52	7	0	60	2	12	3	0	17	4	42	6	0	52	7	8	1	0	16	0	145	145
03:15 PM	2	51	6	0	59	7	8	1	0	16	3	40	2	0	45	5	9	3	0	17	0	137	137
03:30 PM	3	70	11	0	84	8	7	4	0	19	4	61	2	0	67	9	14	3	0	26	0	196	196
03:45 PM	4	83	7	0	94	5	10	2	0	17	3	45	1	0	49	5	17	3	0	25	0	185	185
Total	10	256	31	0	297	22	37	10	0	69	14	188	11	0	213	26	48	10	0	84	0	663	663
04:00 PM	4	78	12	0	94	1	6	2	0	9	6	73	27	0	106	7	18	4	0	29	0	238	238
04:15 PM	5	71	10	0	86	6	9	1	0	16	6	65	6	0	77	6	19	4	0	29	0	208	208
04:30 PM	0	72	5	0	77	8	3	1	0	12	6	47	2	0	55	8	13	5	0	26	0	170	170
04:45 PM	3	90	6	0	99	1	8	4	0	13	3	34	2	0	39	4	13	3	0	20	0	171	171
Total	12	311	33	0	356	16	26	8	0	50	21	219	37	0	277	25	63	16	0	104	0	787	787
05:00 PM	3	96	9	0	108	7	13	3	0	23	1	60	5	0	66	3	12	2	0	17	0	214	214
05:15 PM	1	87	11	0	99	3	11	1	0	15	4	60	0	0	64	8	17	2	0	27	0	205	205
05:30 PM	1	82	9	0	92	4	14	3	0	21	4	55	6	0	65	5	30	5	0	40	0	218	218
05:45 PM	0	68	10	0	78	6	14	4	0	24	5	56	5	0	66	8	12	1	0	21	0	189	189
Total	5	333	39	0	377	20	52	11	0	83	14	231	16	0	261	24	71	10	0	105	0	826	826
06:00 PM	6	79	9	0	94	3	12	2	0	17	2	42	4	0	48	1	18	3	0	22	0	181	181
06:15 PM	1	68	10	0	79	5	9	2	0	16	1	38	6	0	45	7	12	2	0	21	0	161	161
06:30 PM	2	55	5	0	62	7	6	3	0	16	3	48	4	0	55	6	10	1	0	17	0	150	150
06:45 PM	1	60	11	0	72	4	8	6	0	18	1	44	2	0	47	9	6	4	0	19	0	156	156
Total	10	262	35	0	307	19	35	13	0	67	7	172	16	0	195	23	46	10	0	79	0	648	648
Grand Total	107	2496	309	0	2912	314	562	94	0	970	115	2582	221	0	2918	215	446	121	1	782	1	7582	7583
Apprch %	3.7	85.7	10.6			32.4	57.9	9.7			3.9	88.5	7.6			27.5	57	15.5					
Total %	1.4	32.9	4.1		38.4	4.1	7.4	1.2		12.8	1.5	34.1	2.9		38.5	2.8	5.9	1.6		10.3	0	100	
Cars	106	2436	306		2848	311	554	91		956	112	2501	218		2831	209	439	116		765	0	0	7400
% Cars	99.1	97.6	99	0	97.8	99	98.6	96.8	0	98.6	97.4	96.9	98.6	0	97	97.2	98.4	95.9	100	97.7	0	0	97.6
Trucks and Buses	1	59	3		63	3	7	3		13	3	81	3		87	6	7	5		18	0	0	181
% Trucks and Buses	0.9	2.4	1	0	2.2	1	1.2	3.2	0	1.3	2.6	3.1	1.4	0	3	2.8	1.6	4.1	0	2.3	0	0	2.4
Bicycles	0	1	0		1	0	1	0		1	0	0	0		0	0	0	0		0	0	0	2
% Bicycles	0	0	0	0	0	0	0.2	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0

DAVENPORT

119 Brookstown Avenue, Suite PH1
Winston-Salem, NC 27101
Ph: (336) 744-1636

File Name : 3. NC 119 at Jim Minor Road
Site Code : 190020
Start Date : 10/16/2018
Page No : 3

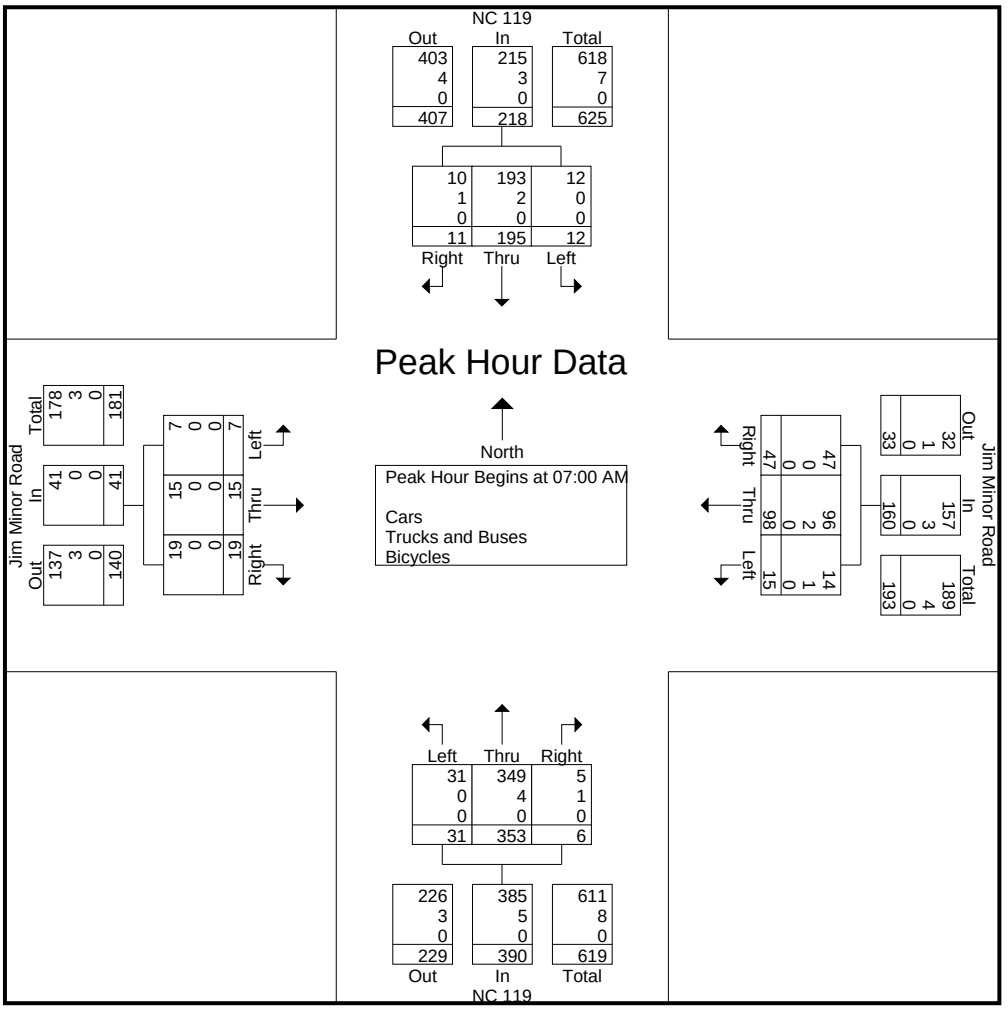


DAVENPORT

119 Brookstown Avenue, Suite PH1
Winston-Salem, NC 27101
Ph: (336) 744-1636

File Name : 3. NC 119 at Jim Minor Road
Site Code : 190020
Start Date : 10/16/2018
Page No : 4

	NC 119 Southbound				Jim Minor Road Westbound				NC 119 Northbound				Jim Minor Road Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	2	52	1	55	9	25	3	37	0	68	4	72	3	4	0	7	171
07:15 AM	3	43	4	50	**18**	24	**7**	**49**	2	**110**	**11**	**123**	**7**	**5**	**4**	**16**	**238**
07:30 AM	2	**55**	**6**	**63**	9	**28**	4	41	**3**	91	5	99	6	2	2	10	213
07:45 AM	**4**	45	1	50	11	21	1	33	1	84	11	96	3	4	1	8	187
Total Volume	11	195	12	218	47	98	15	160	6	353	31	390	19	15	7	41	809
% App. Total	5	89.4	5.5		29.4	61.2	9.4		1.5	90.5	7.9		46.3	36.6	17.1		
PHF	.688	.886	.500	.865	.653	.875	.536	.816	.500	.802	.705	.793	.679	.750	.438	.641	.850
Cars	10	193	12	215	47	96	14	157	5	349	31	385	19	15	7	41	798
% Cars	90.9	99.0	100	98.6	100	98.0	93.3	98.1	83.3	98.9	100	98.7	100	100	100	100	98.6
Trucks and Buses	1	2	0	3	0	2	1	3	1	4	0	5	0	0	0	0	11
% Trucks and Buses	9.1	1.0	0	1.4	0	2.0	6.7	1.9	16.7	1.1	0	1.3	0	0	0	0	1.4
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

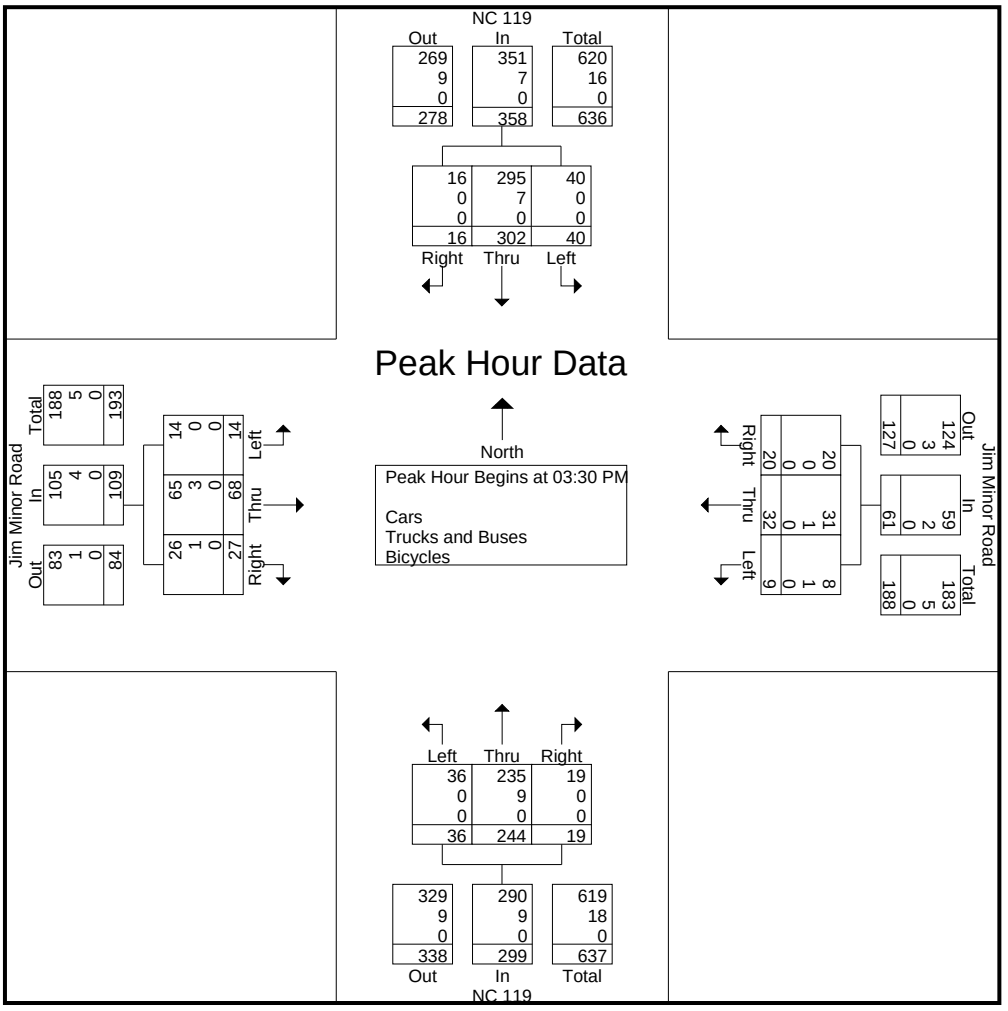


DAVENPORT

119 Brookstown Avenue, Suite PH1
Winston-Salem, NC 27101
Ph: (336) 744-1636

File Name : 3. NC 119 at Jim Minor Road
Site Code : 190020
Start Date : 10/16/2018
Page No : 5

	NC 119 Southbound				Jim Minor Road Westbound				NC 119 Northbound				Jim Minor Road Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:30 PM																	
03:30 PM	3	70	11	84	**8**	7	**4**	**19**	4	61	2	67	**9**	14	3	26	196
03:45 PM	4	**83**	7	**94**	5	**10**	2	17	3	45	1	49	5	17	3	25	185
04:00 PM	4	78	**12**	94	1	6	2	9	**6**	**73**	**27**	**106**	7	18	**4**	**29**	**238**
04:15 PM	**5**	71	10	86	6	9	1	16	6	65	6	77	6	**19**	4	29	208
Total Volume	16	302	40	358	20	32	9	61	19	244	36	299	27	68	14	109	827
% App. Total	4.5	84.4	11.2		32.8	52.5	14.8		6.4	81.6	12		24.8	62.4	12.8		
PHF	.800	.910	.833	.952	.625	.800	.563	.803	.792	.836	.333	.705	.750	.895	.875	.940	.869
Cars	16	295	40	351	20	31	8	59	19	235	36	290	26	65	14	105	805
% Cars	100	97.7	100	98.0	100	96.9	88.9	96.7	100	96.3	100	97.0	96.3	95.6	100	96.3	97.3
Trucks and Buses	0	7	0	7	0	1	1	2	0	9	0	9	1	3	0	4	22
% Trucks and Buses	0	2.3	0	2.0	0	3.1	11.1	3.3	0	3.7	0	3.0	3.7	4.4	0	3.7	2.7
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



DAVENPORT

119 Brookstown Ave., Suite PH1,
Winston Salem, NC 27101
Ph:(336)744-1636

Counted by: P.Peek
*No U-turns observed

Weather: Cloudy

File Name : 4. NC 54 at Jim Minor Road
Site Code : 00180046
Start Date : 10/16/2018
Page No : 1

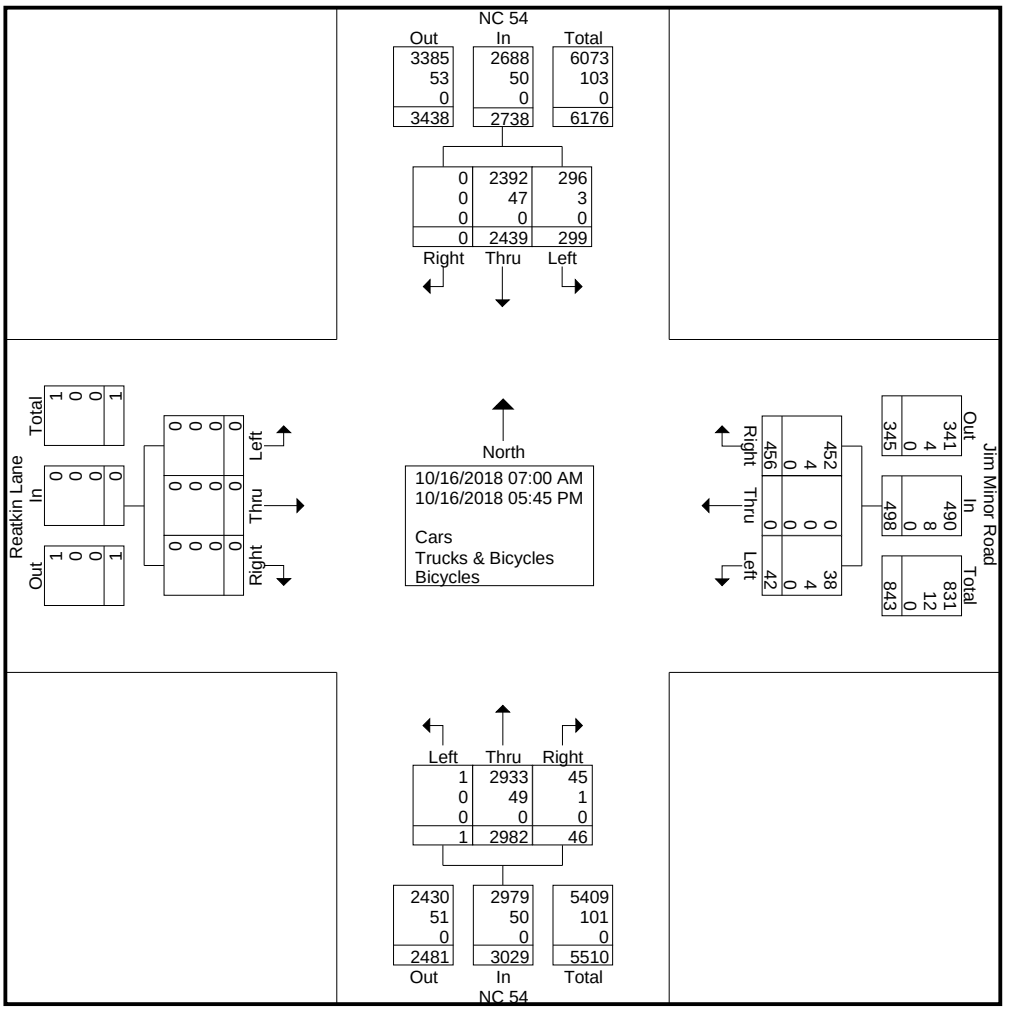
Groups Printed- Cars - Trucks & Bicycles - Bicycles

	NC 54 Southbound					Jim Minor Road Westbound					NC 54 Northbound					Reatkin Lane Eastbound							
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	236	7	0	243	33	0	1	0	34	2	124	0	0	126	0	0	0	0	0	0	403	403
07:15 AM	0	231	24	0	255	47	0	4	0	51	2	153	1	0	156	0	0	0	0	0	0	462	462
07:30 AM	0	166	10	0	176	35	0	7	0	42	11	248	0	0	259	0	0	0	0	0	0	477	477
07:45 AM	0	141	7	0	148	31	0	4	0	35	4	207	0	0	211	0	0	0	0	0	0	394	394
Total	0	774	48	0	822	146	0	16	0	162	19	732	1	0	752	0	0	0	0	0	0	1736	1736
08:00 AM	0	143	11	0	154	26	0	5	0	31	1	176	0	0	177	0	0	0	0	0	0	362	362
08:15 AM	0	101	11	0	112	29	0	0	0	29	2	113	0	0	115	0	0	0	0	0	0	256	256
08:30 AM	0	116	7	0	123	19	0	0	0	19	4	124	0	0	128	0	0	0	0	0	0	270	270
08:45 AM	0	109	9	0	118	16	0	1	0	17	1	110	0	0	111	0	0	0	0	0	0	246	246
Total	0	469	38	0	507	90	0	6	0	96	8	523	0	0	531	0	0	0	0	0	0	1134	1134
*** BREAK ***																							
04:00 PM	0	128	24	0	152	61	0	1	0	62	3	274	0	0	277	0	0	0	0	0	0	491	491
04:15 PM	0	131	28	0	159	28	0	4	0	32	1	261	0	0	262	0	0	0	0	0	0	453	453
04:30 PM	0	116	24	0	140	13	0	4	0	17	4	207	0	0	211	0	0	0	0	0	0	368	368
04:45 PM	0	142	21	0	163	14	0	3	0	17	2	167	0	0	169	0	0	0	0	0	0	349	349
Total	0	517	97	0	614	116	0	12	0	128	10	909	0	0	919	0	0	0	0	0	0	1661	1661
05:00 PM	0	202	22	0	224	26	0	4	0	30	1	228	0	0	229	0	0	0	0	0	0	483	483
05:15 PM	0	170	31	0	201	24	0	1	0	25	1	214	0	0	215	0	0	0	0	0	0	441	441
05:30 PM	0	156	37	0	193	21	0	3	0	24	4	199	0	0	203	0	0	0	0	0	0	420	420
05:45 PM	0	151	26	0	177	33	0	0	0	33	3	177	0	0	180	0	0	0	0	0	0	390	390
Total	0	679	116	0	795	104	0	8	0	112	9	818	0	0	827	0	0	0	0	0	0	1734	1734
Grand Total	0	2439	299	0	2738	456	0	42	0	498	46	2982	1	0	3029	0	0	0	0	0	0	6265	6265
Apprch %	0	89.1	10.9			91.6	0	8.4			1.5	98.4	0			0	0	0					
Total %	0	38.9	4.8		43.7	7.3	0	0.7		7.9	0.7	47.6	0		48.3	0	0	0		0	0	100	
Cars	0	2392	296		2688	452	0	38		490	45	2933	1		2979	0	0	0		0	0	0	6157
% Cars	0	98.1	99	0	98.2	99.1	0	90.5	0	98.4	97.8	98.4	100	0	98.3	0	0	0	0	0	0	0	98.3
Trucks & Bicycles	0	47	3		50	4	0	4		8	1	49	0		50	0	0	0		0	0	0	108
% Trucks & Bicycles	0	1.9	1	0	1.8	0.9	0	9.5	0	1.6	2.2	1.6	0	0	1.7	0	0	0	0	0	0	0	1.7
Bicycles	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

DAVENPORT

119 Brookstown Ave., Suite PH1,
Winston Salem, NC 27101
Ph:(336)744-1636

File Name : 4. NC 54 at Jim Minor Road
Site Code : 00180046
Start Date : 10/16/2018
Page No : 2

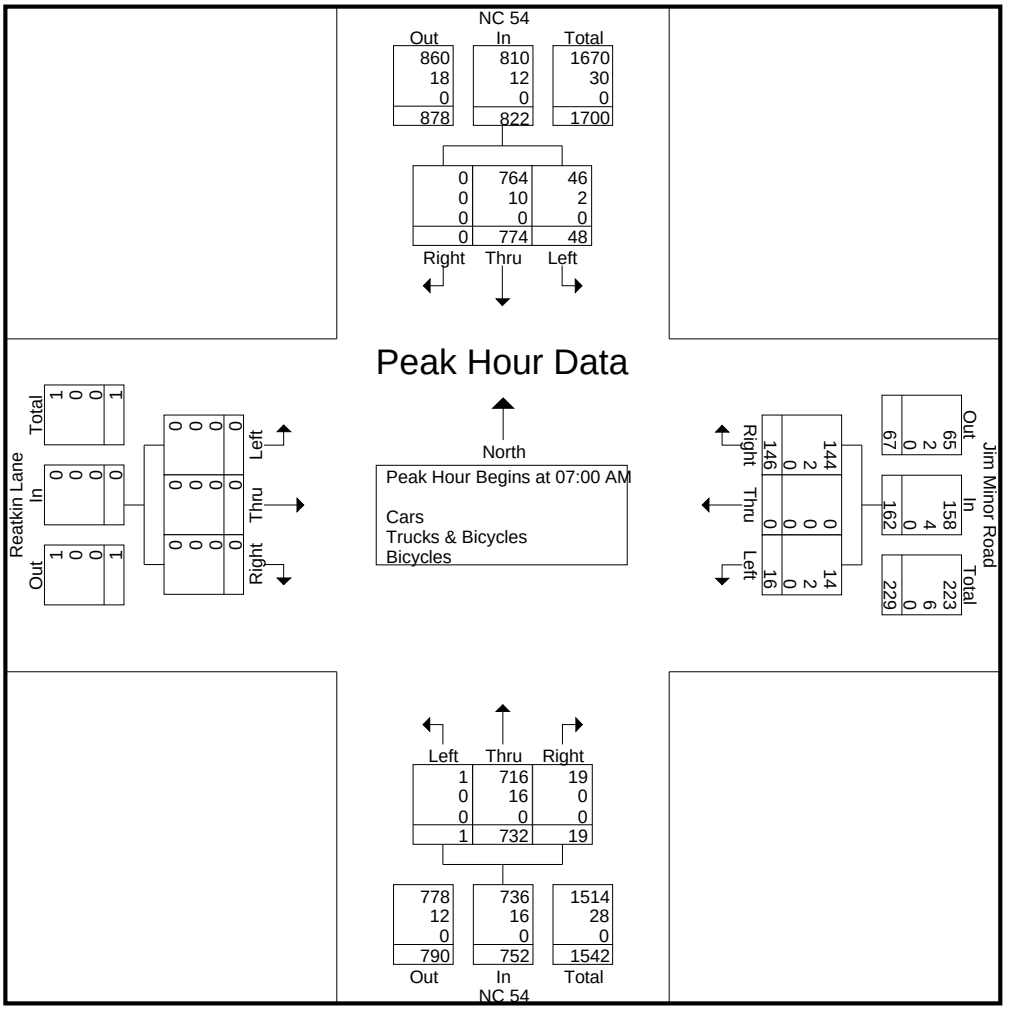


DAVENPORT

119 Brookstown Ave., Suite PH1,
Winston Salem, NC 27101
Ph:(336)744-1636

File Name : 4. NC 54 at Jim Minor Road
Site Code : 00180046
Start Date : 10/16/2018
Page No : 3

	NC 54 Southbound				Jim Minor Road Westbound				NC 54 Northbound				Reatkin Lane Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	**236**	7	243	33	0	1	34	2	124	0	126	0	0	0	0	403
07:15 AM	0	231	**24**	**255**	**47**	0	4	**51**	2	153	**1**	156	0	0	0	0	462
07:30 AM	0	166	10	176	35	0	**7**	42	**11**	**248**	0	**259**	0	0	0	0	**477**
07:45 AM	0	141	7	148	31	0	4	35	4	207	0	211	0	0	0	0	394
Total Volume	0	774	48	822	146	0	16	162	19	732	1	752	0	0	0	0	1736
% App. Total	0	94.2	5.8		90.1	0	9.9		2.5	97.3	0.1		0	0	0		
PHF	.000	.820	.500	.806	.777	.000	.571	.794	.432	.738	.250	.726	.000	.000	.000	.000	.910
Cars	0	764	46	810	144	0	14	158	19	716	1	736	0	0	0	0	1704
% Cars	0	98.7	95.8	98.5	98.6	0	87.5	97.5	100	97.8	100	97.9	0	0	0	0	98.2
Trucks & Bicycles	0	10	2	12	2	0	2	4	0	16	0	16	0	0	0	0	32
% Trucks & Bicycles	0	1.3	4.2	1.5	1.4	0	12.5	2.5	0	2.2	0	2.1	0	0	0	0	1.8
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

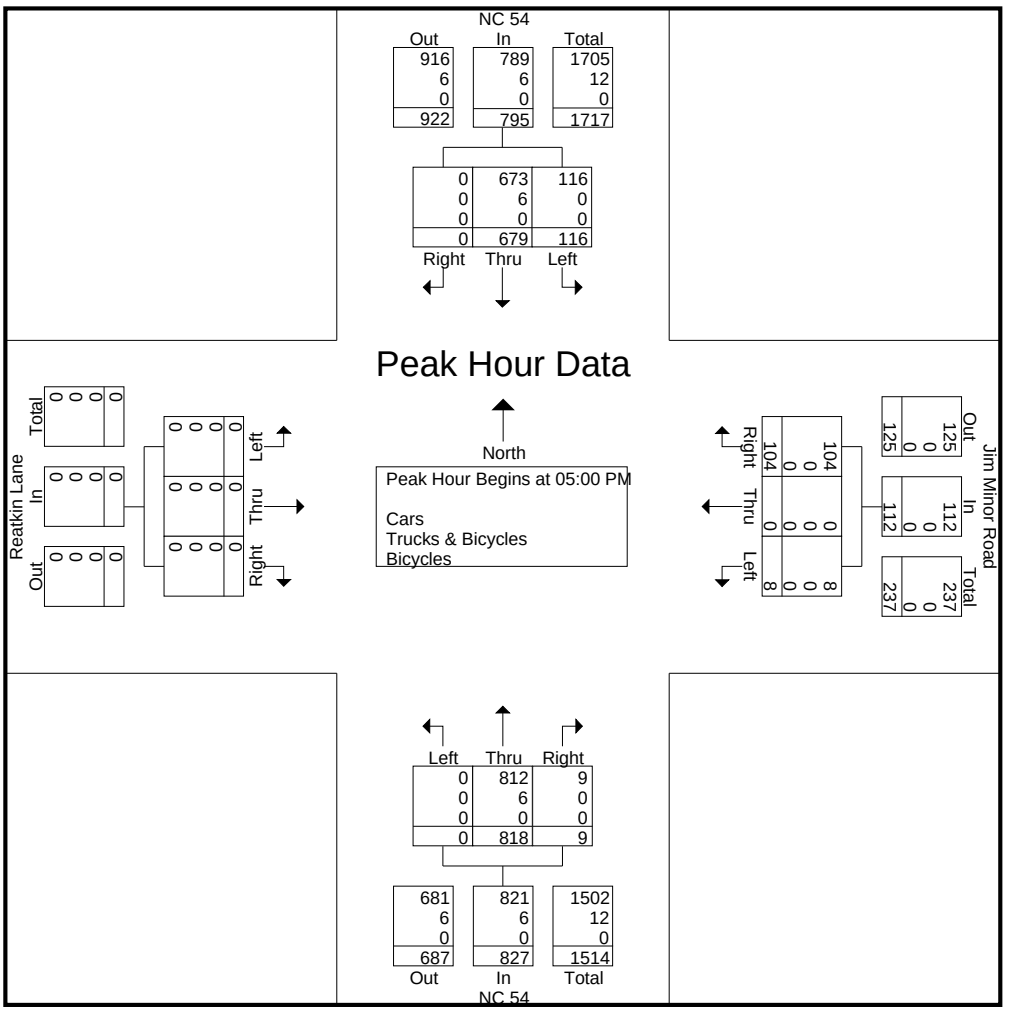


DAVENPORT

119 Brookstown Ave., Suite PH1,
Winston Salem, NC 27101
Ph:(336)744-1636

File Name : 4. NC 54 at Jim Minor Road
Site Code : 00180046
Start Date : 10/16/2018
Page No : 4

	NC 54 Southbound				Jim Minor Road Westbound				NC 54 Northbound				Reatkin Lane Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	**202**	22	**224**	26	0	**4**	30	1	**228**	0	**229**	0	0	0	0	**483**
05:15 PM	0	170	31	201	24	0	1	25	1	214	0	215	0	0	0	0	441
05:30 PM	0	156	**37**	193	21	0	3	24	**4**	199	0	203	0	0	0	0	420
05:45 PM	0	151	26	177	**33**	0	0	**33**	3	177	0	180	0	0	0	0	390
Total Volume	0	679	116	795	104	0	8	112	9	818	0	827	0	0	0	0	1734
% App. Total	0	85.4	14.6		92.9	0	7.1		1.1	98.9	0		0	0	0		
PHF	.000	.840	.784	.887	.788	.000	.500	.848	.563	.897	.000	.903	.000	.000	.000	.000	.898
Cars	0	673	116	789	104	0	8	112	9	812	0	821	0	0	0	0	1722
% Cars	0	99.1	100	99.2	100	0	100	100	100	99.3	0	99.3	0	0	0	0	99.3
Trucks & Bicycles	0	6	0	6	0	0	0	0	0	6	0	6	0	0	0	0	12
% Trucks & Bicycles	0	0.9	0	0.8	0	0	0	0	0	0.7	0	0.7	0	0	0	0	0.7
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



DAVENPORT

119 Brookstown Avenue, Suite PH1
Winston-Salem, NC 27101
Ph: (336) 744-1636

Counted by: N. Baez

Weather: Clear

File Name : 4. NC 54 at Jim Minor Road
Site Code : 190020
Start Date : 10/16/2018
Page No : 1

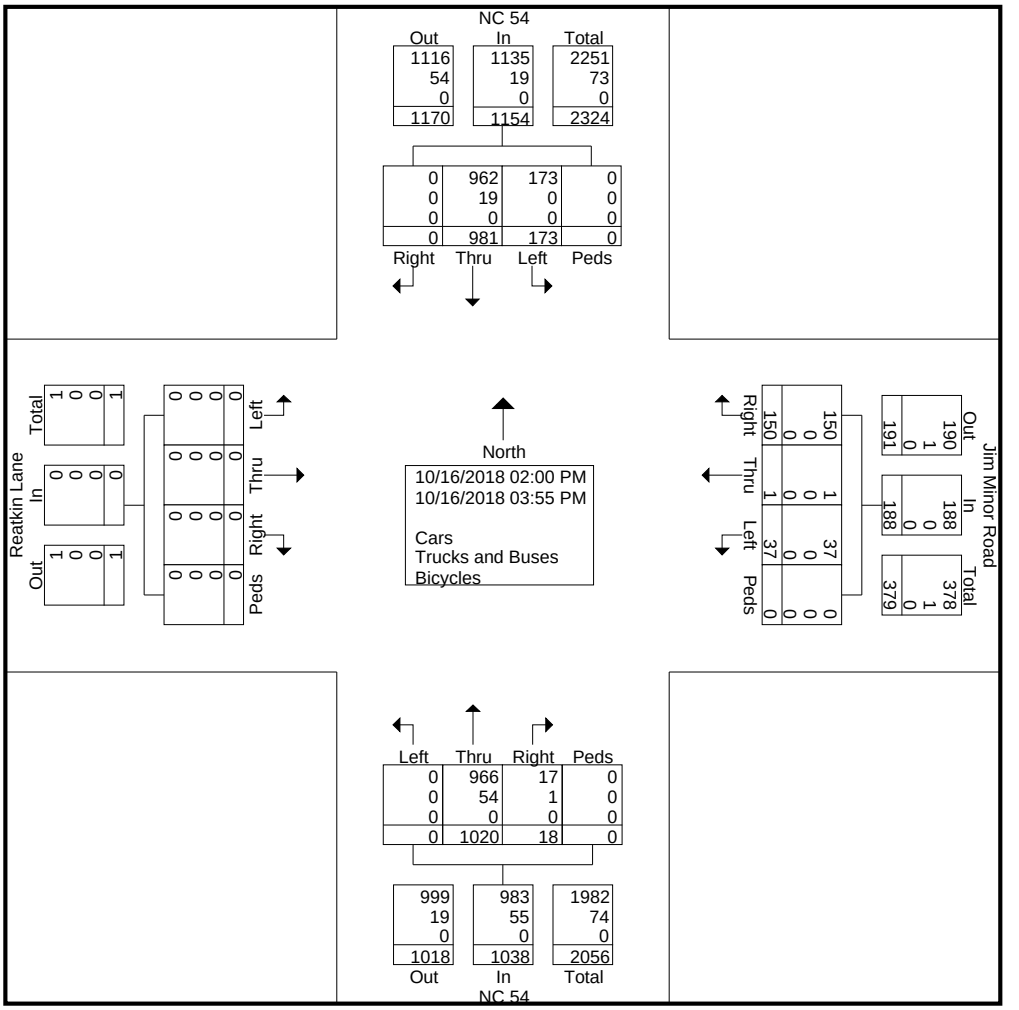
Groups Printed- Cars - Trucks and Buses - Bicycles

	NC 54 Southbound					Jim Minor Road Westbound					NC 54 Northbound					Reatkin Lane Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	0	35	5	0	40	11	0	1	0	12	0	24	0	0	24	0	0	0	0	0	76
02:05 PM	0	45	9	0	54	7	0	2	0	9	0	35	0	0	35	0	0	0	0	0	98
02:10 PM	0	43	6	0	49	6	0	0	0	6	2	33	0	0	35	0	0	0	0	0	90
02:15 PM	0	33	4	0	37	4	0	2	0	6	0	44	0	0	44	0	0	0	0	0	87
02:20 PM	0	42	2	0	44	2	0	1	0	3	2	38	0	0	40	0	0	0	0	0	87
02:25 PM	0	34	5	0	39	5	0	0	0	5	2	35	0	0	37	0	0	0	0	0	81
02:30 PM	0	39	12	0	51	6	0	0	0	6	1	34	0	0	35	0	0	0	0	0	92
02:35 PM	0	48	14	0	62	8	0	1	0	9	1	34	0	0	35	0	0	0	0	0	106
02:40 PM	0	36	12	0	48	2	0	3	0	5	0	48	0	0	48	0	0	0	0	0	101
02:45 PM	0	43	2	0	45	2	0	3	0	5	1	49	0	0	50	0	0	0	0	0	100
02:50 PM	0	56	7	0	63	8	0	2	0	10	1	38	0	0	39	0	0	0	0	0	112
02:55 PM	0	43	5	0	48	5	0	1	0	6	0	39	0	0	39	0	0	0	0	0	93
Total	0	497	83	0	580	66	0	16	0	82	10	451	0	0	461	0	0	0	0	0	1123
03:00 PM	0	37	4	0	41	5	0	1	0	6	0	42	0	0	42	0	0	0	0	0	89
03:05 PM	0	59	4	0	63	8	0	2	0	10	0	39	0	0	39	0	0	0	0	0	112
03:10 PM	0	39	7	0	46	12	0	1	0	13	1	34	0	0	35	0	0	0	0	0	94
03:15 PM	0	41	6	0	47	8	0	2	0	10	0	46	0	0	46	0	0	0	0	0	103
03:20 PM	0	42	6	0	48	7	0	2	0	9	2	37	0	0	39	0	0	0	0	0	96
03:25 PM	0	38	5	0	43	6	0	0	0	6	0	43	0	0	43	0	0	0	0	0	92
03:30 PM	0	29	5	0	34	4	0	2	0	6	2	46	0	0	48	0	0	0	0	0	88
03:35 PM	0	49	13	0	62	3	0	2	0	5	0	49	0	0	49	0	0	0	0	0	116
03:40 PM	0	47	13	0	60	11	0	3	0	14	0	66	0	0	66	0	0	0	0	0	140
03:45 PM	0	31	12	0	43	7	1	0	0	8	1	50	0	0	51	0	0	0	0	0	102
03:50 PM	0	37	9	0	46	5	0	3	0	8	1	58	0	0	59	0	0	0	0	0	113
03:55 PM	0	35	6	0	41	8	0	3	0	11	1	59	0	0	60	0	0	0	0	0	112
Total	0	484	90	0	574	84	1	21	0	106	8	569	0	0	577	0	0	0	0	0	1257
Grand Total	0	981	173	0	1154	150	1	37	0	188	18	1020	0	0	1038	0	0	0	0	0	2380
Apprch %	0	85	15	0		79.8	0.5	19.7	0		1.7	98.3	0	0		0	0	0	0		
Total %	0	41.2	7.3	0	48.5	6.3	0	1.6	0	7.9	0.8	42.9	0	0	43.6	0	0	0	0	0	
Cars	0	962	173	0	1135	150	1	37	0	188	17	966	0	0	983	0	0	0	0	0	2306
% Cars	0	98.1	100	0	98.4	100	100	100	0	100	94.4	94.7	0	0	94.7	0	0	0	0	0	96.9
Trucks and Buses	0	19	0	0	19	0	0	0	0	0	1	54	0	0	55	0	0	0	0	0	74
% Trucks and Buses																					
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

DAVENPORT

119 Brookstown Avenue, Suite PH1
Winston-Salem, NC 27101
Ph: (336) 744-1636

File Name : 4. NC 54 at Jim Minor Road
Site Code : 190020
Start Date : 10/16/2018
Page No : 2

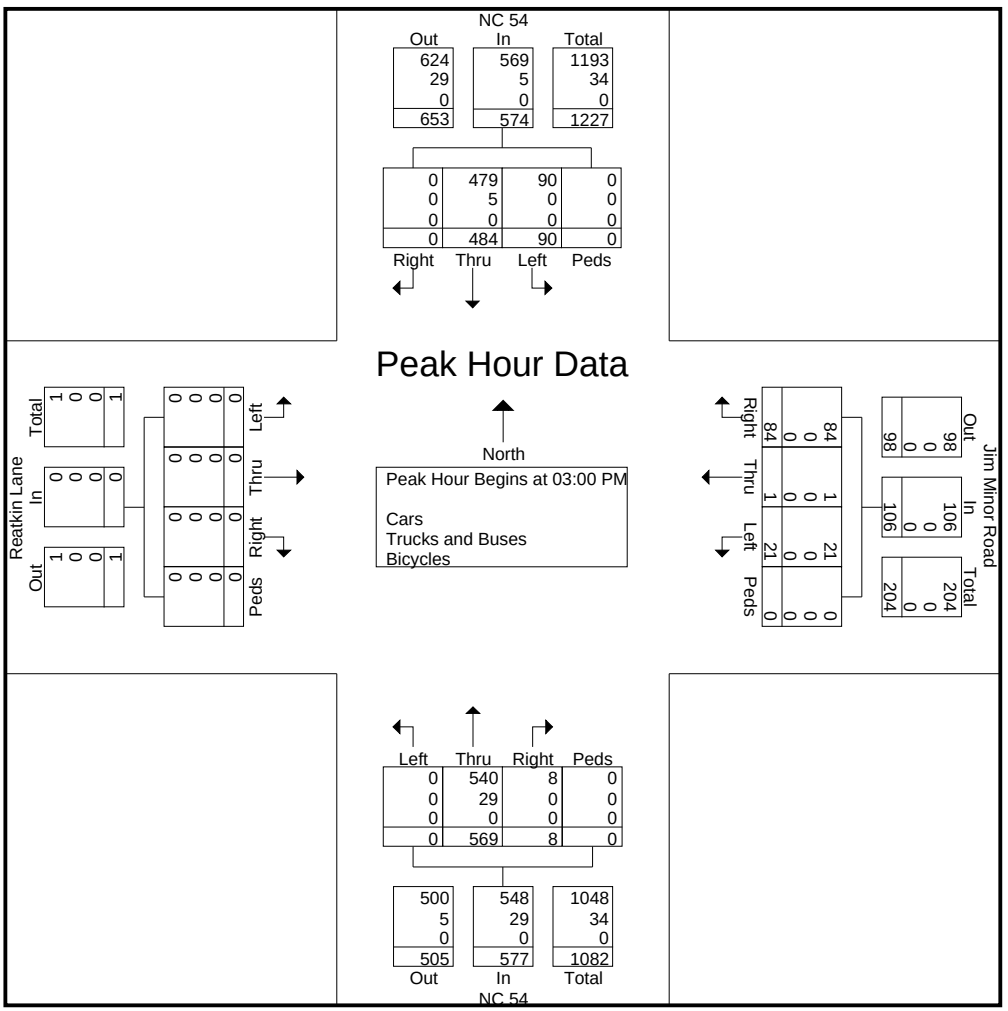


DAVENPORT

119 Brookstown Avenue, Suite PH1
Winston-Salem, NC 27101
Ph: (336) 744-1636

File Name : 4. NC 54 at Jim Minor Road
Site Code : 190020
Start Date : 10/16/2018
Page No : 3

	NC 54 Southbound					Jim Minor Road Westbound					NC 54 Northbound					Reatkin Lane Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 03:55 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	0	37	4	0	41	5	0	1	0	6	0	42	0	0	42	0	0	0	0	0	89
03:05 PM	0	**59**	4	0	**63**	8	0	2	0	10	0	39	0	0	39	0	0	0	0	0	112
03:10 PM	0	39	7	0	46	**12**	0	1	0	13	1	34	0	0	35	0	0	0	0	0	94
03:15 PM	0	41	6	0	47	8	0	2	0	10	0	46	0	0	46	0	0	0	0	0	103
03:20 PM	0	42	6	0	48	7	0	2	0	9	**2**	37	0	0	39	0	0	0	0	0	96
03:25 PM	0	38	5	0	43	6	0	0	0	6	0	43	0	0	43	0	0	0	0	0	92
03:30 PM	0	29	5	0	34	4	0	2	0	6	2	46	0	0	48	0	0	0	0	0	88
03:35 PM	0	49	**13**	0	62	3	0	2	0	5	0	49	0	0	49	0	0	0	0	0	116
03:40 PM	0	47	13	0	60	11	0	**3**	0	**14**	0	**66**	0	0	**66**	0	0	0	0	0	**140**
03:45 PM	0	31	12	0	43	7	**1**	0	0	8	1	50	0	0	51	0	0	0	0	0	102
03:50 PM	0	37	9	0	46	5	0	3	0	8	1	58	0	0	59	0	0	0	0	0	113
03:55 PM	0	35	6	0	41	8	0	3	0	11	1	59	0	0	60	0	0	0	0	0	112
Total Volume	0	484	90	0	574	84	1	21	0	106	8	569	0	0	577	0	0	0	0	0	1257
% App. Total	0	84.3	15.7	0		79.2	0.9	19.8	0		1.4	98.6	0	0		0	0	0	0		
PHF	.000	.684	.577	.000	.759	.583	.083	.583	.000	.631	.333	.718	.000	.000	.729	.000	.000	.000	.000	.000	.748
Cars	0	479	90	0	569	84	1	21	0	106	8	540	0	0	548	0	0	0	0	0	1223
% Cars	0	99.0	100	0	99.1	100	100	100	0	100	100	94.9	0	0	95.0	0	0	0	0	0	97.3
Trucks and Buses	0	5	0	0	5	0	0	0	0	0	0	29	0	0	29	0	0	0	0	0	34
% Trucks and Buses																					
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



DAVENPORT

305 West 4th Street,
Winston Salem NC, 27101
Ph:(336)744-1636

Counted by: R. Steiss
*U-Turns under peds column
in bicycle category
Weather: Clear

File Name : NC 119 at Turner Road
Site Code : 00190020
Start Date : 5/7/2019
Page No : 1

Groups Printed- Cars - Trucks and Buses - Bicycles

	T-intersection Southbound					NC 119 Westbound					Turner Road Northbound					NC 119 Eastbound							
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	0	21	0	0	21	10	0	0	0	10	0	34	0	0	34	0	65	65
07:05 AM	0	0	0	0	0	0	27	3	0	30	18	0	0	0	18	1	26	0	0	27	0	75	75
07:10 AM	0	0	0	0	0	0	30	2	0	32	13	0	0	0	13	0	41	0	0	41	0	86	86
07:15 AM	0	0	0	0	0	0	20	0	0	20	19	0	0	0	19	0	40	0	0	40	0	79	79
07:20 AM	0	0	0	0	0	0	20	3	0	23	10	0	1	0	11	0	38	0	0	38	0	72	72
07:25 AM	0	0	0	0	0	0	33	2	0	35	17	0	0	0	17	1	49	0	0	50	0	102	102
07:30 AM	0	0	0	0	0	0	21	4	0	25	15	0	1	0	16	1	52	0	0	53	0	94	94
07:35 AM	0	0	0	0	0	0	25	3	0	28	20	0	1	0	21	0	37	0	0	37	0	86	86
07:40 AM	0	0	0	0	0	0	23	3	0	26	21	0	1	0	22	1	61	0	0	62	0	110	110
07:45 AM	0	0	0	0	0	0	25	2	0	27	23	0	1	0	24	0	41	0	0	41	0	92	92
07:50 AM	0	0	0	0	0	0	18	6	0	24	10	0	0	0	10	0	43	0	0	43	0	77	77
07:55 AM	0	0	0	0	0	0	22	4	0	26	10	0	0	0	10	0	46	0	0	46	0	82	82
Total	0	0	0	0	0	0	285	32	0	317	186	0	5	0	191	4	508	0	0	512	0	1020	1020
08:00 AM	0	0	0	0	0	0	26	5	0	31	11	0	0	0	11	1	59	0	0	60	0	102	102
08:05 AM	0	0	0	0	0	0	25	6	0	31	18	0	1	0	19	0	29	0	0	29	0	79	79
08:10 AM	0	0	0	0	0	0	27	3	0	30	4	0	1	0	5	1	32	0	0	33	0	68	68
08:15 AM	0	0	0	0	0	0	24	4	0	28	11	0	1	0	12	1	26	0	0	27	0	67	67
08:20 AM	0	0	0	0	0	0	6	5	0	11	9	0	1	0	10	1	18	0	0	19	0	40	40
08:25 AM	0	0	0	0	0	0	20	2	0	22	13	0	0	0	13	1	23	0	0	24	0	59	59
08:30 AM	0	0	0	0	0	0	16	4	0	20	12	0	0	0	12	0	15	0	0	15	0	47	47
08:35 AM	0	0	0	0	0	0	8	3	0	11	7	0	0	0	7	1	30	0	0	31	0	49	49
08:40 AM	0	0	0	0	0	0	15	5	0	20	8	0	1	0	9	1	21	0	0	22	0	51	51
08:45 AM	0	0	0	0	0	0	14	6	0	20	4	0	1	0	5	0	23	0	0	23	0	48	48
08:50 AM	0	0	0	0	0	0	12	3	0	15	5	0	0	0	5	0	16	0	0	16	0	36	36
08:55 AM	0	0	0	0	0	0	12	3	0	15	4	0	0	0	4	1	22	0	0	23	0	42	42
Total	0	0	0	0	0	0	205	49	0	254	106	0	6	0	112	8	314	0	0	322	0	688	688
*** BREAK ***																							
02:00 PM	0	0	0	0	0	0	21	11	0	32	7	0	0	0	7	0	21	0	0	21	0	60	60
02:05 PM	0	0	0	0	0	0	23	7	0	30	6	0	0	0	6	0	26	0	0	26	0	62	62
02:10 PM	0	0	0	0	0	0	21	14	0	35	9	0	1	0	10	0	20	0	0	20	0	65	65
02:15 PM	0	0	0	0	0	0	28	6	0	34	10	0	1	0	11	0	24	0	0	24	0	69	69
02:20 PM	0	0	0	0	0	0	15	10	0	25	8	0	0	0	8	0	19	0	0	19	0	52	52
02:25 PM	0	0	0	0	0	0	27	7	0	34	6	0	0	0	6	0	15	0	0	15	0	55	55
02:30 PM	0	0	0	0	0	0	32	9	0	41	6	0	0	0	6	0	16	0	0	16	0	63	63
02:35 PM	0	0	0	0	0	0	29	5	0	34	1	0	0	0	1	0	28	0	0	28	0	63	63
02:40 PM	0	0	0	0	0	0	24	7	0	31	7	0	1	0	8	1	27	0	0	28	0	67	67
02:45 PM	0	0	0	0	0	0	25	5	0	30	5	0	0	0	5	0	27	0	0	27	0	62	62
02:50 PM	0	0	0	0	0	0	36	14	0	50	2	0	0	0	2	0	25	0	0	25	0	77	77
02:55 PM	0	0	0	0	0	0	37	5	0	42	5	0	0	0	5	0	23	0	0	23	0	70	70
Total	0	0	0	0	0	0	318	100	0	418	72	0	3	0	75	1	271	0	0	272	0	765	765

DAVENPORT

305 West 4th Street,
Winston Salem NC, 27101
Ph:(336)744-1636

File Name : NC 119 at Turner Road
Site Code : 00190020
Start Date : 5/7/2019
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Groups Printed- Cars - Trucks and Buses - Bicycles

	T-intersection Southbound					NC 119 Westbound					Turner Road Northbound					NC 119 Eastbound							
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
03:00 PM	0	0	0	0	0	0	20	5	0	25	6	0	0	0	6	0	28	0	0	28	0	59	59
03:05 PM	0	0	0	0	0	0	27	8	0	35	10	0	0	0	10	0	28	0	0	28	0	73	73
03:10 PM	0	0	0	0	0	0	33	11	0	44	7	0	0	0	7	1	29	0	0	30	0	81	81
03:15 PM	0	0	0	0	0	0	34	6	0	40	8	0	1	0	9	1	23	0	0	24	0	73	73
03:20 PM	0	0	0	0	0	0	25	7	0	32	10	0	0	0	10	0	23	0	0	23	0	65	65
03:25 PM	0	0	0	0	0	0	25	9	0	34	4	0	1	0	5	0	15	0	0	15	0	54	54
03:30 PM	0	0	0	0	0	0	37	13	0	50	10	0	0	0	10	0	41	0	0	41	0	101	101
03:35 PM	0	0	0	0	0	0	55	7	0	62	3	0	0	0	3	1	22	0	0	23	0	88	88
03:40 PM	0	0	0	0	0	0	39	10	0	49	5	0	0	0	5	1	29	0	0	30	0	84	84
03:45 PM	0	0	0	0	0	0	32	11	0	43	5	0	2	0	7	0	34	0	0	34	0	84	84
03:50 PM	0	0	0	0	0	0	45	7	0	52	5	0	0	0	5	0	19	0	0	19	0	76	76
03:55 PM	0	0	0	0	0	0	26	8	0	34	8	0	0	0	8	0	23	0	0	23	0	65	65
Total	0	0	0	0	0	0	398	102	0	500	81	0	4	0	85	4	314	0	0	318	0	903	903
Grand Total	0	0	0	0	0	0	1206	283	0	1489	445	0	18	0	463	17	1407	0	0	1424	0	3376	3376
Apprch %	0	0	0			0	81	19			96.1	0	3.9			1.2	98.8	0					
Total %	0	0	0		0	0	35.7	8.4		44.1	13.2	0	0.5		13.7	0.5	41.7	0		42.2	0	100	
Cars	0	0	0		0	0	1172	280		1452	439	0	18		457	17	1384	0		1401	0	0	3310
% Cars	0	0	0	0	0	0	97.2	98.9	0	97.5	98.7	0	100	0	98.7	100	98.4	0	0	98.4	0	0	98
Trucks and Buses	0	0	0		0	0	34	3		37	6	0	0		6	0	23	0		23	0	0	66
% Trucks and Buses	0	0	0	0	0	0	2.8	1.1	0	2.5	1.3	0	0	0	1.3	0	1.6	0	0	1.6	0	0	2
Bicycles	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

DAVENPORT

305 West 4th Street,
Winston Salem NC, 27101
Ph:(336)744-1636

File Name : NC 119 at Turner Road
Site Code : 00190020
Start Date : 5/7/2019
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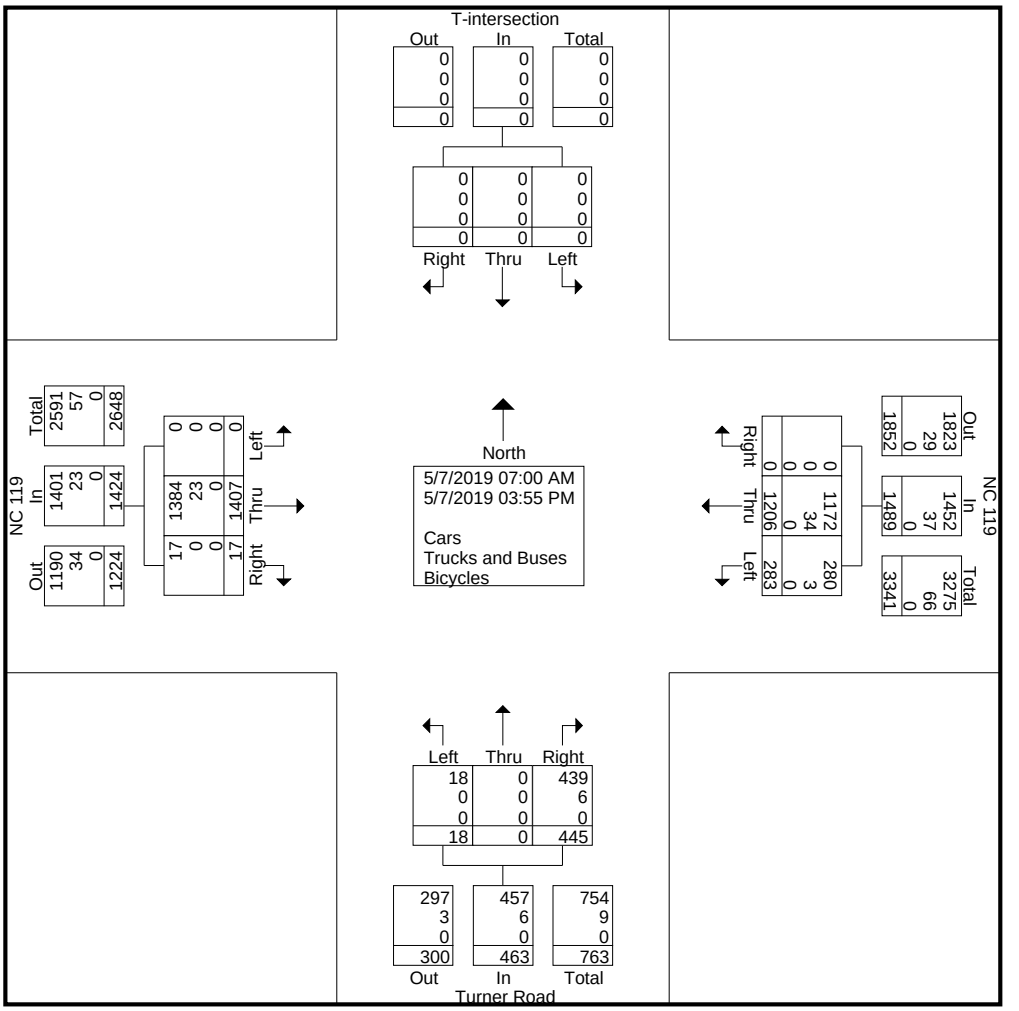

DAVENPORT

305 West 4th Street,
Winston Salem NC, 27101
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File Name : NC 119 at Turner Road
Site Code : 00190020
Start Date : 5/7/2019
Page No : 4

	T-intersection Southbound				NC 119 Westbound				Turner Road Northbound				NC 119 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:55 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:10 AM																	
07:10 AM	0	0	0	0	0	30	2	32	13	0	0	13	0	41	0	41	86
07:15 AM	0	0	0	0	0	20	0	20	19	0	0	19	0	40	0	40	79
07:20 AM	0	0	0	0	0	20	3	23	10	0	**1**	11	0	38	0	38	72
07:25 AM	0	0	0	0	0	**33**	2	**35**	17	0	0	17	**1**	49	0	50	102
07:30 AM	0	0	0	0	0	21	4	25	15	0	1	16	1	52	0	53	94
07:35 AM	0	0	0	0	0	25	3	28	20	0	1	21	0	37	0	37	86
07:40 AM	0	0	0	0	0	23	3	26	21	0	1	22	1	**61**	0	**62**	**110**
07:45 AM	0	0	0	0	0	25	2	27	**23**	0	1	**24**	0	41	0	41	92
07:50 AM	0	0	0	0	0	18	**6**	24	10	0	0	10	0	43	0	43	77
07:55 AM	0	0	0	0	0	22	4	26	10	0	0	10	0	46	0	46	82
08:00 AM	0	0	0	0	0	26	5	31	11	0	0	11	1	59	0	60	102
08:05 AM	0	0	0	0	0	25	6	31	18	0	1	19	0	29	0	29	79
Total Volume	0	0	0	0	0	288	40	328	187	0	6	193	4	536	0	540	1061
% App. Total	0	0	0		0	87.8	12.2		96.9	0	3.1		0.7	99.3	0		
PHF	.000	.000	.000	.000	.000	.727	.556	.781	.678	.000	.500	.670	.333	.732	.000	.726	.804
Cars	0	0	0	0	0	276	40	316	186	0	6	192	4	526	0	530	1038
% Cars	0	0	0	0	0	95.8	100	96.3	99.5	0	100	99.5	100	98.1	0	98.1	97.8
Trucks and Buses	0	0	0	0	0	12	0	12	1	0	0	1	0	10	0	10	23
% Trucks and Buses	0	0	0	0	0	4.2	0	3.7	0.5	0	0	0.5	0	1.9	0	1.9	2.2
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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305 West 4th Street,
Winston Salem NC, 27101
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File Name : NC 119 at Turner Road
Site Code : 00190020
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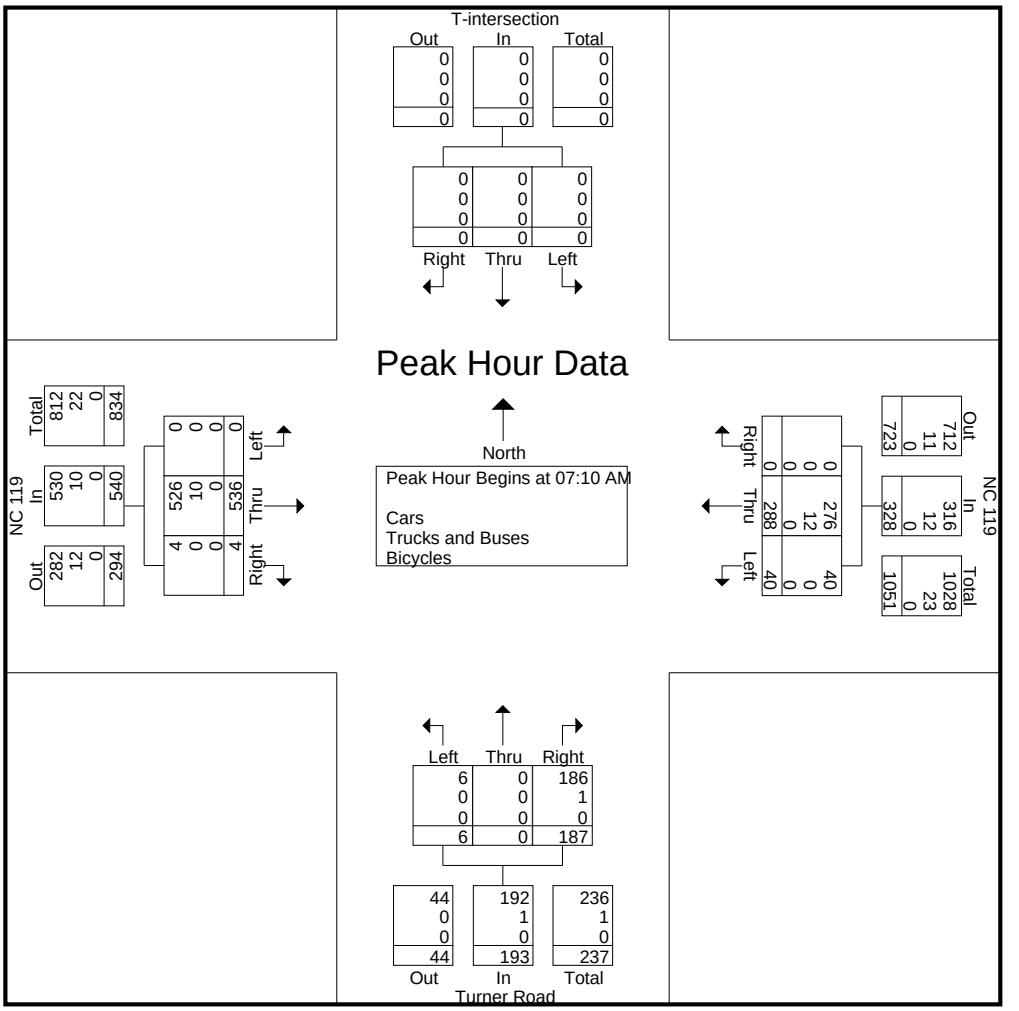

DAVENPORT

305 West 4th Street,
Winston Salem NC, 27101
Ph:(336)744-1636

File Name : NC 119 at Turner Road
Site Code : 00190020
Start Date : 5/7/2019
Page No : 6

	T-intersection Southbound				NC 119 Westbound				Turner Road Northbound				NC 119 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 03:55 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:50 PM																	
02:50 PM	0	0	0	0	0	36	**14**	50	2	0	0	2	0	25	0	25	77
02:55 PM	0	0	0	0	0	37	5	42	5	0	0	5	0	23	0	23	70
03:00 PM	0	0	0	0	0	20	5	25	6	0	0	6	0	28	0	28	59
03:05 PM	0	0	0	0	0	27	8	35	**10**	0	0	**10**	0	28	0	28	73
03:10 PM	0	0	0	0	0	33	11	44	7	0	0	7	**1**	29	0	30	81
03:15 PM	0	0	0	0	0	34	6	40	8	0	1	9	1	23	0	24	73
03:20 PM	0	0	0	0	0	25	7	32	10	0	0	10	0	23	0	23	65
03:25 PM	0	0	0	0	0	25	9	34	4	0	1	5	0	15	0	15	54
03:30 PM	0	0	0	0	0	37	13	50	10	0	0	10	0	**41**	0	**41**	**101**
03:35 PM	0	0	0	0	0	**55**	7	**62**	3	0	0	3	1	22	0	23	88
03:40 PM	0	0	0	0	0	39	10	49	5	0	0	5	1	29	0	30	84
03:45 PM	0	0	0	0	0	32	11	43	5	0	**2**	7	0	34	0	34	84
Total Volume	0	0	0	0	0	400	106	506	75	0	4	79	4	320	0	324	909
% App. Total	0	0	0		0	79.1	20.9		94.9	0	5.1		1.2	98.8	0		
PHF	.000	.000	.000	.000	.000	.606	.631	.680	.625	.000	.167	.658	.333	.650	.000	.659	.750
Cars	0	0	0	0	0	390	104	494	72	0	4	76	4	313	0	317	887
% Cars	0	0	0	0	0	97.5	98.1	97.6	96.0	0	100	96.2	100	97.8	0	97.8	97.6
Trucks and Buses	0	0	0	0	0	10	2	12	3	0	0	3	0	7	0	7	22
% Trucks and Buses	0	0	0	0	0	2.5	1.9	2.4	4.0	0	0	3.8	0	2.2	0	2.2	2.4
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

DAVENPORT

305 West 4th Street,
Winston Salem NC, 27101
Ph:(336)744-1636

File Name : NC 119 at Turner Road
Site Code : 00190020
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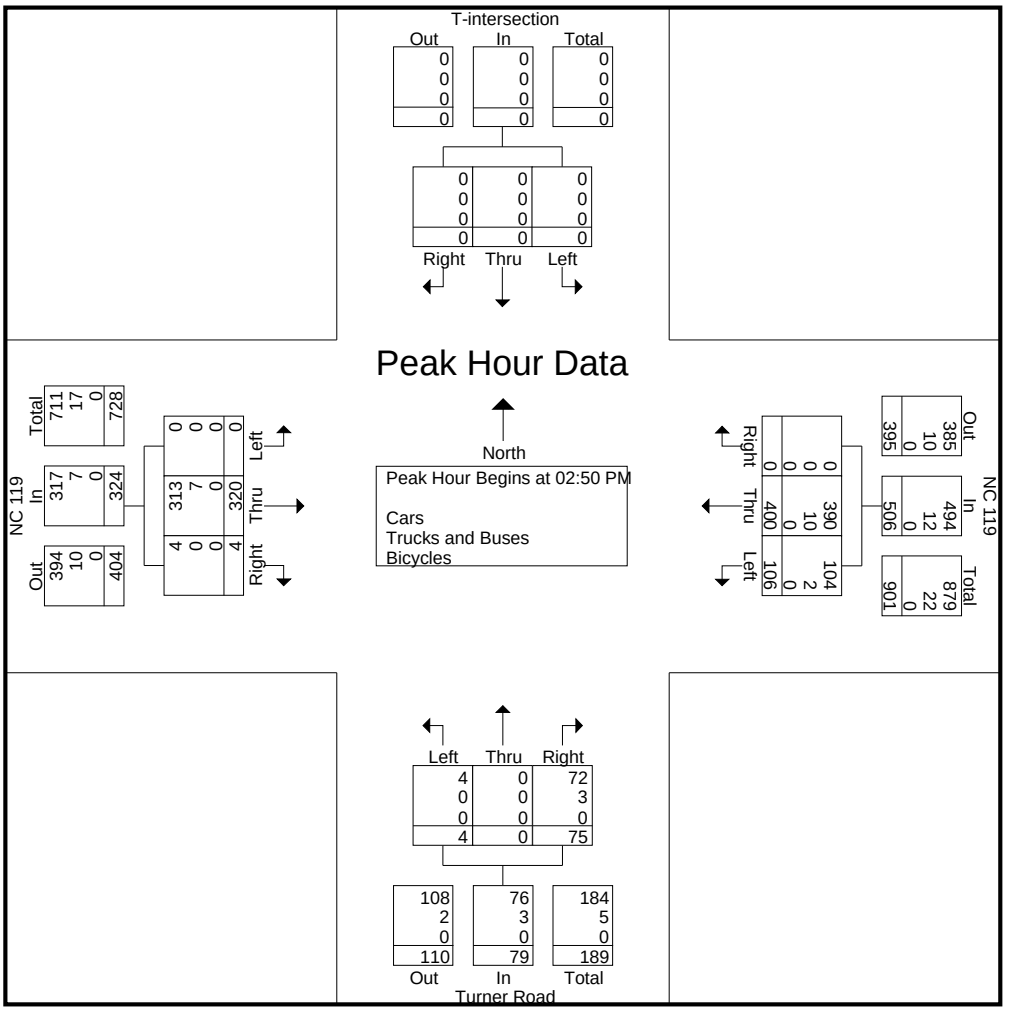


100

NC 119 at Trollingwood Hawfields Road / Old Hillsborough Road

AM Peak	2018 TMC	Balancing	2018 Base	2023 Projected	The Meadows	Magnolia Glen	Cambridge Park	Hawfiled Develp	Appd Dev Total	Scenario 1 - 2023 Future No Build	Site Trips	Scenario 1 - 2023 Future Build	Desco 119 Development	Scenario 2 - 2023 Future No Build	Scenario 2 - 2023 Future Build
EBL	95		95	100					0	100		100		100	100
EBT	162		162	170	4	4	19		27	198		198		198	198
EBR	70		70	74			6	9	15	88	20	108	2	90	110
WBL	81		81	85	5	6	19	6	36	121	30	151	1	122	152
WBT	233		233	245	15	11	58		84	329		329		329	329
WBR	137		137	144	9	39	19		67	211		211		211	211
NBL	144		144	151			19	21	40	191	16	207	6	197	213
NBT	469	14	483	508			39	55	94	601	59	660	15	616	675
NBR	96		96	101	3	2	6	14	24	125	24	149	4	129	153
SBL	85		85	89	2	15	6		23	113		113		113	113
SBT	239		239	251			12	23	35	286	76	362	5	291	367
SBR	77		77	81					0	81		81		81	81
Total	1888	14	1902	1999	38	77	203	126	444	2443	225	2669			

200

NC 119 at Turner Road

AM Peak	2019 TMC	Balancing	2019 Base	2023 Projected	The Meadows	Magnolia Glen	Cambridge Park	Hawfiled Develp	Appd Dev Total	Scenario 1 - 2023 Future No Build	Site Trips	Scenario 1 - 2023 Future Build	Desco 119 Development	Scenario 2 - 2023 Future No Build	Scenario 2 - 2023 Future Build
EBL	0		0	0					0	0		0		0	0
EBT	0		0	0					0	0		0		0	0
EBR	0		0	0					0	0		0		0	0
WBL	6		6	6			19		19	25	25	50		25	50
WBT	0		0	0					0	0		0		0	0
WBR	187		187	195			58		58	253		253		253	253
NBL	0		0	0					0	0		0		0	0
NBT	536		536	558	3	2	6	89	99	657	99	756	24	681	780
NBR	4		4	4			6		6	10	20	30		10	30
SBL	40		40	42			18		18	60		60		60	60
SBT	288	62	350	364	5	6	19	37	67	431	126	557	8	439	565
SBR	0		0	0					0	0		0		0	0
Total	1061	62	1123	1169	8	8	126	126	268	1436	269	1706			

100

NC 119 at Trollingwood Hawfields Road / Old Hillsborough Road

Dismissal Peak	2018 TMC	Balancing	2018 Base	2023 Projected	The Meadows	Magnolia Glen	Cambridge Park	Hawfiled Develp	Appd Dev Total	Scenario 1 - 2023 Future No Build	Site Trips	Scenario 1 - 2023 Future Build	Desco 119 Development	Scenario 2 - 2023 Future No Build	Scenario 2 - 2023 Future Build
EBL	70		70	74					0	74		74		74	74
EBT	230		230	242	13	12	64		89	331		331		331	331
EBR	66		66	69			21	23	44	113	11	124	6	119	130
WBL	80		80	84	6	4	12	15	37	121	16	137	4	125	141
WBT	283		283	297	7	7	37		51	348		348		348	348
WBR	70		70	74	5	25	12		42	116		116		116	116
NBL	108		108	114			12	15	27	140	15	155	4	144	160
NBT	129	50	179	188			25	39	64	252	58	310	10	262	320
NBR	108		108	114	8	6	21	10	45	158	23	181	2	160	184
SBL	97		97	102	10	41	21		72	174		174		174	174
SBT	130	230	360	378			42	60	102	481	40	521	17	498	538
SBR	135		135	142					0	142		142		142	142
Total	1506	280	1786	1877	49	95	267	162	573	2450	163	2613			

200

NC 119 at Turner Road

Dismissal Peak	2019 TMC	Balancing	2019 Base	2023 Projected	The Meadows	Magnolia Glen	Cambridge Park	Hawfiled Develp	Appd Dev Total	Scenario 1 - 2023 Future No Build	Site Trips	Scenario 1 - 2023 Future Build	Desco 119 Development	Scenario 2 - 2023 Future No Build	Scenario 2 - 2023 Future Build
EBL	0		0	0					0	0		0		0	0
EBT	0		0	0					0	0		0		0	0
EBR	0		0	0					0	0		0		0	0
WBL	4		4	4			12		12	16	13	29		16	29
WBT	0		0	0					0	0		0		0	0
WBR	75		75	78			37		37	115		115		115	115
NBL	0		0	0					0	0		0		0	0
NBT	320		320	333	8	6	21	64	99	432	97	529	16	448	544
NBR	4		4	4			21		21	25	19	44		25	44
SBL	106		106	110			63		63	173		173		173	173
SBT	400		400	416	6	4	12	98	120	537	67	604	28	565	631
SBR	0		0	0					0	0		0		0	0
Total	909	0	909	946	14	10	166	162	352	1298	196	1494			

300

NC 119 at Kimrey Road

AM Peak	2018 TMC	Balancing	2018 Base	2023 Projected	The Meadows	Magnolia Glen	Cambridge Park	Hawfiled Develp	Appd Dev Total	Scenario 1 - 2023 Future No Build	Site Trips	Scenario 1 - 2023 Future Build	Desco 119 Development	Scenario 2 - 2023 Future No Build	Scenario 2 - 2023 Future Build
EBL	37		37	39					0	39		39		39	39
EBT	0		0	0				1	1	1		1		1	1
EBR	0	4	4	4					0	4	5	9	0	4	9
WBL	0		0	0				79	79	79		79		79	79
WBT	0		0	0				3	3	3		3		3	3
WBR	0		0	0				89	89	89		89		89	89
NBL	0	4	4	4					0	4	4	8	1	5	9
NBT	426	77	503	529	3	2	12		17	545	118	663	24	569	687
NBR	0		0	0				33	33	33		33		33	33
SBL	0		0	0				37	37	37		37		37	37
SBT	216	97	313	329	5	6	38		49	378	151	529	8	386	537
SBR	43		43	45					0	45		45		45	45
Total	722	182	904	950	8	8	50	242	308	1258	278	1535			

400

NC 119 at Jim Minor Road

AM Peak	2018 TMC	Balancing	2018 Base	2023 Projected	The Meadows	Magnolia Glen	Cambridge Park	Hawfiled Develp	Appd Dev Total	Scenario 1 - 2023 Future No Build	Site Trips	Scenario 1 - 2023 Future Build	Desco 119 Development	Scenario 2 - 2023 Future No Build	Scenario 2 - 2023 Future Build
EBL	7		7	7	1	0	2	20	23	31	45	76	4	35	80
EBT	14	25	39	41					0	41		41		41	41
EBR	19		19	20					0	20		20		20	20
WBL	15		15	16					0	16		16		16	16
WBT	98	24	122	128					0	128		128		128	128
WBR	50		50	53				2	2	55	13	68	0	55	67
NBL	31		31	33					0	33		33		33	33
NBT	351	95	446	469	2	2	10	11	24	493	38	531	2	495	532
NBR	7		7	7					0	7		7		7	7
SBL	12		12	13				48	48	60	10	70	1	61	71
SBT	192	98	290	305	4	5	30	26	65	370	30	400	7	377	406
SBR	11		11	12	1	1	8	5	15	27	35	62	13	40	75
Total	807	242	1049	1103	8	8	50	111	177	1280	171	1452			

500

NC 54 at Jim Minor Road / Reatkin Lane

AM Peak	2018 TMC	Balancing	2018 Base	2023 Projected	The Meadows	Magnolia Glen	Cambridge Park	Hawfiled Develp	Appd Dev Total	Scenario 1 - 2023 Future No Build	Site Trips	Scenario 1 - 2023 Future Build	Desco 119 Development	Scenario 2 - 2023 Future No Build	Scenario 2 - 2023 Future Build
EBL	0		0	0					0	0		0		0	0
EBT	0		0	0					0	0		0		0	0
EBR	0		0	0					0	0		0		0	0
WBL	18		18	19					0	19		19		19	19
WBT	0		0	0					0	0		0		0	0
WBR	146		146	153	1	1	8	48	58	211	35	246	13	224	260
NBL	0		0	0					0	0		0		0	0
NBT	747		747	785					0	785		785		785	785
NBR	19		19	20					0	20		20		20	20
SBL	46		46	48	1	0	2	20	23	72	45	117	4	76	121
SBT	755		755	794					0	794		794		794	794
SBR	0		0	0					0	0		0		0	0
Total	1731	0	1731	1819	2	2	10	68	81	1900	81	1981			

300

NC 119 at Kimrey Road

Dismissal Peak	2018 TMC	Balancing	2018 Base	2023 Projected	The Meadows	Magnolia Glen	Cambridge Park	Hawfiled Develp	Appd Dev Total	Scenario 1 - 2023 Future No Build	Site Trips	Scenario 1 - 2023 Future Build	Desco 119 Development	Scenario 2 - 2023 Future No Build	Scenario 2 - 2023 Future Build
EBL	24		24	25					0	25		25		25	25
EBT	0		0	0				4	4	4		4		4	4
EBR	0	4	4	4					0	4	3	7	1	5	8
WBL	0		0	0				57	57	57		57		57	57
WBT	0		0	0				2	2	2		2		2	2
WBR	0		0	0				64	64	64		64		64	64
NBL	2	2	4	4					0	4	4	8	1	5	9
NBT	236	64	300	315	8	6	42		56	371	116	487	16	387	503
NBR	0		0	0				87	87	87		87		87	87
SBL	0		0	0				98	98	98		98		98	98
SBT	294	67	361	379	6	4	24		34	413	80	493	28	441	521
SBR	43		43	45					0	45		45		45	45
Total	599	137	736	774	14	10	66	312	402	1176	202	1377			

400

NC 119 at Jim Minor Road

Dismissal Peak	2018 TMC	Balancing	2018 Base	2023 Projected	The Meadows	Magnolia Glen	Cambridge Park	Hawfiled Develp	Appd Dev Total	Scenario 1 - 2023 Future No Build	Site Trips	Scenario 1 - 2023 Future Build	Desco 119 Development	Scenario 2 - 2023 Future No Build	Scenario 2 - 2023 Future Build
EBL	12		12	13	2	1	8	53	64	77	24	101	15	92	116
EBT	52	7	59	62					0	62		62		62	62
EBR	27		27	28					0	28		28		28	28
WBL	23		23	24					0	24		24		24	24
WBT	33	23	56	59					0	59		59		59	59
WBR	9		9	9				6	6	15	7	22	2	17	24
NBL	13		13	14					0	14		14		14	14
NBT	194	87	281	295	6	5	34	28	73	368	20	388	8	376	396
NBR	18		18	19					0	19		19		19	19
SBL	36		36	38				34	34	72	10	82	1	73	83
SBT	241	48	289	304	5	3	19	18	46	349	29	378	5	354	383
SBR	36		36	38	1	1	5	4	10	48	35	83	9	57	92
Total	694	165	859	903	14	10	66	144	233	1136	124	1260			

500

NC 54 at Jim Minor Road / Reatkin Lane

Dismissal Peak	2018 TMC	Balancing	2018 Base	2023 Projected	The Meadows	Magnolia Glen	Cambridge Park	Hawfiled Develp	Appd Dev Total	Scenario 1 - 2023 Future No Build	Site Trips	Scenario 1 - 2023 Future Build	Desco 119 Development	Scenario 2 - 2023 Future No Build	Scenario 2 - 2023 Future Build
EBL	0		0	0					0	0		0		0	0
EBT	0		0	0					0	0		0		0	0
EBR	0		0	0					0	0		0		0	0
WBL	21		21	22					0	22		22		22	22
WBT	1		1	1					0	1		1		1	1
WBR	84		84	88	1	1	5	34	41	130	35	165	9	139	173
NBL	0		0	0					0	0		0		0	0
NBT	569		569	598					0	598		598		598	598
NBR	8		8	8					0	8		8		8	8
SBL	90		90	95	2	1	8	53	64	159	24	183	15	174	198
SBT	484		484	509					0	509		509		509	509
SBR	0		0	0					0	0		0		0	0
Total	1257	0	1257	1321	3	2	13	87	105	1426	59	1486			

600

NC 119 at Site Access															
AM Peak	2018 TMC	Balancing	2018 Base	2023 Projected	The Meadows	Magnolia Glen	Cambridge Park	Hawfiled Develp	Appd Dev Total	Scenario 1 - 2023 Future No Build	Site Trips	Scenario 1 - 2023 Future Build	Desco 119 Development	Scenario 2 - 2023 Future No Build	Scenario 2 - 2023 Future Build
EBL	0		0	0					0	0		0		0	0
EBT	0		0	0					0	0		0		0	0
EBR	0		0	0					0	0		0		0	0
WBL	0		0	0					0	0		0	10	10	10
WBT	0		0	0					0	0		0		0	0
WBR	0		0	0					0	0		0	14	14	14
NBL	0		0	0					0	0		0		0	0
NBT	408	95	503	529	3	2	12	33	49	578		578	11	589	589
NBR	0		0	0					0	0	96	96	3	3	99
SBL	0		0	0					0	0	156	156	5	5	161
SBT	216	101	317	333	5	6	38	79	128	461	75	536	4	465	540
SBR	0		0	0					0	0		0		0	0
Total	624	196	820	862	8	8	50	111	177	1039	327	1366			

700

NC 119 at Site Access 2 (exit only															
AM Peak	2018 TMC	Balancing	2018 Base	2023 Projected	The Meadows	Magnolia Glen	Cambridge Park	Hawfiled Develp	Appd Dev Total	2023 Future No Build	Site Trips	2023 Future Build	Desco 119 Development	2023 Future No Build	2023 Future Build
EBL	0		0	0					0	0		0		0	0
EBT	0		0	0					0	0		0		0	0
EBR	0		0	0					0	0		0		0	0
WBL	0		0	0					0	0	75	75		0	75
WBT	0		0	0					0	0		0		0	0
WBR	0		0	0					0	0	122	122		0	122
NBL	0		0	0					0	0		0		0	0
NBT	408	95	503	529	3	2	12	33	50	578		578	25	603	603
NBR	0		0	0					0	0		0		0	0
SBL	0		0	0					0	0		0		0	0
SBT	216	101	317	333	5	6	38	79	128	461	156	617	9	470	627
SBR	0		0	0					0	0		0		0	0
Total	624	196	820	862	8	8	50		178	1040	353	1392			

600

NC 119 at Site Access															
Dismissal Peak	2018 TMC	Balancing	2018 Base	2023 Projected	The Meadows	Magnolia Glen	Cambridge Park	Hawfiled Develp	Appd Dev Total	Scenario 1 - 2023 Future No Build	Site Trips	Scenario 1 - 2023 Future Build	Desco 119 Development	Scenario 2 - 2023 Future No Build	Scenario 2 - 2023 Future Build
EBL	0		0	0					0	0		0		0	0
EBT	0		0	0					0	0		0		0	0
EBR	0		0	0					0	0		0		0	0
WBL	0		0	0					0	0		0	7	7	7
WBT	0		0	0					0	0		0		0	0
WBR	0		0	0					0	0		0	10	10	10
NBL	0		0	0					0	0		0		0	0
NBT	215	87	302	317	8	6	42	87	143	460		460	8	468	468
NBR	0		0	0					0	0	51	51	11	11	62
SBL	0		0	0					0	0	82	82	16	16	98
SBT	294	71	365	384	6	4	24	57	91	474	73	547	13	487	561
SBR	0		0	0					0	0		0		0	0
Total	509	158	667	701	14	10	66	144	234	935	206	1140			

700

NC 119 at Site Access 2 (exit only															
Dismissal Peak	2018 TMC	Balancing	2018 Base	2023 Projected	The Meadows	Magnolia Glen	Cambridge Park	Hawfiled Develp	Appd Dev Total	2023 Future No Build	Site Trips	2023 Future Build	Desco 119 Development	2023 Future No Build	2023 Future Build
EBL	0		0	0					0	0		0		0	0
EBT	0		0	0					0	0		0		0	0
EBR	0		0	0					0	0		0		0	0
WBL	0		0	0					0	0	73	73		0	73
WBT	0		0	0					0	0		0		0	0
WBR	0		0	0					0	0	120	120		0	120
NBL	0		0	0					0	0		0		0	0
NBT	215	87	302	317	8	6	42	87	143	460		460	18	478	478
NBR	0		0	0					0	0		0		0	0
SBL	0		0	0					0	0		0		0	0
SBT	294	71	365	384	6	4	24	57	91	475	82	557	29	504	586
SBR	0		0	0					0	0		0		0	0
Total	509	158	667	701	14	10	66		234	935	275	1210			

800

Internal Roundabout															
AM Peak	TMC	Balancing	2018 Base	2023 Projected	The Meadows	Magnolia Glen	Cambridge Park	Hawfiled Develp	Appd Dev Total	2023 Future No Build	Site Trips	2023 Future Build	Desco 119 Development	2023 Future No Build	2023 Future Build
EBL			0	0					0	0	252	252		0	252
EBT	0	0	0	0	0	0	0	0	0	0		0	8	8	8
EBR			0	0					0	0		0	4	4	4
WBL			0	0					0	0		0	4	4	4
WBT	0	0	0	0	0	0	0	0	0	0		0	24	24	24
WBR			0	0					0	0		0		0	0
NBL			0	0					0	0		0	4	4	4
NBT			0	0					0	0		0		0	0
NBR			0	0					0	0		0	4	4	4
SBL			0	0					0	0		0		0	0
SBT			0	0					0	0		0		0	0
SBR			0	0					0	0		0		0	0
Total	0	0	0	0			0				252	252			

800

Internal Roundabout															
Dismissal Peak	TMC	Balancing	2018 Base	2023 Projected	The Meadows	Magnolia Glen	Cambridge Park	Hawfiled Develp	Appd Dev Total	2023 Future No Build	Site Trips	2023 Future Build	Desco 119 Development	2023 Future No Build	2023 Future Build
EBL			0	0					0	0	133	133		0	133
EBT	0	0	0	0	0	0	0	0	0	0		0	27	27	27
EBR			0	0					0	0		0	4	4	4
WBL			0	0					0	0		0	4	4	4
WBT	0	0	0	0	0	0	0	0	0	0		0	17	17	17
WBR			0	0					0	0		0		0	0
NBL			0	0					0	0		0	4	4	4
NBT			0	0					0	0		0		0	0
NBR			0	0					0	0		0	4	4	4
SBL			0	0					0	0		0		0	0
SBT			0	0					0	0		0		0	0
SBR			0	0					0	0		0		0	0
Total	0	0	0	0					0	0	133	133			

Queue Reports

Intersection: 100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	TR	L	TR
Maximum Queue (ft)	275	537	249	531	250	200	1045	300	368
Average Queue (ft)	202	298	166	328	199	170	1033	167	254
95th Queue (ft)	290	454	248	481	290	232	1054	286	355
Link Distance (ft)		1194		989			1030		1105
Upstream Blk Time (%)							24		
Queuing Penalty (veh)							245		
Storage Bay Dist (ft)	175		150		150	150		225	
Storage Blk Time (%)	18	37	21	29	19	39	52		12
Queuing Penalty (veh)	58	41	126	107	94	318	110		16

Intersection: 200: NC 119 & Turner Road

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	806	150	987	125
Average Queue (ft)	597	129	561	49
95th Queue (ft)	1101	168	1022	102
Link Distance (ft)	791		1909	
Upstream Blk Time (%)	64			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)		50		125
Storage Blk Time (%)	0	92		0
Queuing Penalty (veh)	1	26		1

Intersection: 300: NC 119 & Kimrey Road

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	43	194	152
Average Queue (ft)	19	110	22
95th Queue (ft)	40	182	89
Link Distance (ft)	1656	585	1339
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 400: NC 119 & Jim Minor Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	113	165	24	164
Average Queue (ft)	50	91	7	41
95th Queue (ft)	96	151	23	115
Link Distance (ft)	3454	1457	3179	1888
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 500: NC 54 & Jim Minor Road

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	37	156	138	118	73	72	53
Average Queue (ft)	8	72	84	69	41	26	22
95th Queue (ft)	25	134	122	107	69	70	58
Link Distance (ft)		3222	2576	2576		1803	1803
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	75				125		
Storage Blk Time (%)		11					
Queuing Penalty (veh)		2					

Network Summary

Network wide Queuing Penalty: 1144

Intersection: 20:

Movement	NB	NB	B13	B13	B17	B17
Directions Served	L	LR	T	T	T	T
Maximum Queue (ft)	194	207	196	176	112	78
Average Queue (ft)	144	156	137	123	65	46
95th Queue (ft)	267	288	278	250	141	99
Link Distance (ft)	144	144	128	128	79	79
Upstream Blk Time (%)	73	73	66	66	61	61
Queuing Penalty (veh)	183	185	166	166	153	153
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 25:

Movement	WB	WB	SB
Directions Served	T	T	R
Maximum Queue (ft)	202	226	26
Average Queue (ft)	179	189	11
95th Queue (ft)	249	280	23
Link Distance (ft)	197	197	163
Upstream Blk Time (%)	79	78	
Queuing Penalty (veh)	154	154	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 27:

Movement	WB	SB
Directions Served	T	R
Maximum Queue (ft)	120	74
Average Queue (ft)	109	24
95th Queue (ft)	117	67
Link Distance (ft)	106	216
Upstream Blk Time (%)	91	
Queuing Penalty (veh)	359	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	TR	L	TR
Maximum Queue (ft)	275	631	250	1004	250	200	1046	300	1120
Average Queue (ft)	190	465	232	444	195	184	999	220	874
95th Queue (ft)	313	609	269	824	296	229	1208	352	1103
Link Distance (ft)		1194		989			1030		1105
Upstream Blk Time (%)				3			29		1
Queuing Penalty (veh)				0			379		0
Storage Bay Dist (ft)	175		150		150	150		225	
Storage Blk Time (%)	20	60	58	35	19	43	28	4	67
Queuing Penalty (veh)	72	67	348	152	110	468	78	26	85

Intersection: 200: NC 119 & Turner Road

Movement	WB	WB	NB	SB	SB
Directions Served	L	R	TR	L	T
Maximum Queue (ft)	843	150	1722	69	1030
Average Queue (ft)	786	137	767	22	175
95th Queue (ft)	905	198	1812	60	776
Link Distance (ft)	791		1909		1030
Upstream Blk Time (%)	87				9
Queuing Penalty (veh)	0				71
Storage Bay Dist (ft)		50		125	
Storage Blk Time (%)	16	91			17
Queuing Penalty (veh)	44	61			11

Intersection: 300: NC 119 & Kimrey Road

Movement	EB	WB	NB	SB	B11
Directions Served	LTR	LTR	LTR	LTR	T
Maximum Queue (ft)	365	516	179	1407	1923
Average Queue (ft)	113	429	17	736	617
95th Queue (ft)	310	597	92	1795	1989
Link Distance (ft)	1667	482	544	1337	1909
Upstream Blk Time (%)		70		41	18
Queuing Penalty (veh)		0		328	145
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 400: NC 119 & Jim Minor Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	292	793	1382	114
Average Queue (ft)	146	610	172	30
95th Queue (ft)	285	741	815	98
Link Distance (ft)	3454	1457	3179	1888
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 500: NC 54 & Jim Minor Road

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	37	150	124	138	75	75	72
Average Queue (ft)	12	83	84	70	48	20	19
95th Queue (ft)	31	148	131	125	77	70	57
Link Distance (ft)		3222	2576	2576		1803	1803
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	75				125		
Storage Blk Time (%)		10					
Queuing Penalty (veh)		2					

Intersection: 600: NC 119 & Site Access

Movement	NB	B12	B7	SB
Directions Served	TR	T	T	LT
Maximum Queue (ft)	529	2608	1899	514
Average Queue (ft)	294	1178	531	487
95th Queue (ft)	695	3156	1841	599
Link Distance (ft)	463	2537	1888	510
Upstream Blk Time (%)	52	32	17	67
Queuing Penalty (veh)	467	291	157	643
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 700: NC 119

Movement	WB	B23	B22	SB
Directions Served	LR	T	T	T
Maximum Queue (ft)	68	269	51	552
Average Queue (ft)	57	262	35	433
95th Queue (ft)	66	269	53	757
Link Distance (ft)	17	209	-11	544
Upstream Blk Time (%)	100	99	28	53
Queuing Penalty (veh)	392	390	109	425
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 800: Site Access

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	138
Average Queue (ft)	80
95th Queue (ft)	175
Link Distance (ft)	125
Upstream Blk Time (%)	56
Queuing Penalty (veh)	283
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 7276

Intersection: 20:

Movement			
Directions Served			
Maximum Queue (ft)			
Average Queue (ft)			
95th Queue (ft)			
Link Distance (ft)			
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 25:

Movement	WB	WB	SB
Directions Served	T	T	R
Maximum Queue (ft)	121	125	26
Average Queue (ft)	53	49	3
95th Queue (ft)	87	94	18
Link Distance (ft)	197	197	163
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 27:

Movement	WB	SB
Directions Served	T	R
Maximum Queue (ft)	127	31
Average Queue (ft)	97	2
95th Queue (ft)	139	15
Link Distance (ft)	106	216
Upstream Blk Time (%)	12	
Queuing Penalty (veh)	45	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	275	1210	250	1002	250	249	1045	250	300	803
Average Queue (ft)	177	1004	240	829	157	215	1032	123	221	497
95th Queue (ft)	353	1485	271	1219	319	281	1051	318	366	775
Link Distance (ft)		1194		987			1030			1105
Upstream Blk Time (%)		21		22			14			
Queuing Penalty (veh)		0		0			187			
Storage Bay Dist (ft)	175		150		150	150		150	225	
Storage Blk Time (%)	11	79	72	32	8	43	48		17	35
Queuing Penalty (veh)	40	88	429	140	47	465	228		99	44

Intersection: 200: NC 119 & Turner Road

Movement	WB	WB	NB	SB	SB
Directions Served	L	R	TR	L	T
Maximum Queue (ft)	806	150	606	115	162
Average Queue (ft)	761	147	299	56	11
95th Queue (ft)	930	153	633	108	77
Link Distance (ft)	791		1909		1030
Upstream Blk Time (%)	85				
Queuing Penalty (veh)	0				
Storage Bay Dist (ft)		50		125	
Storage Blk Time (%)	0	100		0	0
Queuing Penalty (veh)	0	67		1	0

Intersection: 300: NC 119 & Kimrey Road

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	LT	L
Maximum Queue (ft)	301	478	200	191	40
Average Queue (ft)	171	268	126	39	9
95th Queue (ft)	295	488	258	147	27
Link Distance (ft)	1659	463		525	
Upstream Blk Time (%)		9			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)			100		100
Storage Blk Time (%)		83	1	3	
Queuing Penalty (veh)		83	1	1	

Intersection: 400: NC 119 & Jim Minor Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	140	207	574	1018
Average Queue (ft)	85	103	304	455
95th Queue (ft)	138	179	534	815
Link Distance (ft)	3454	1457	3179	1888
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 500: NC 54 & Jim Minor Road

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	174	178	175	165	190	208	94
Average Queue (ft)	21	105	96	91	101	41	23
95th Queue (ft)	92	173	150	164	180	145	69
Link Distance (ft)		3222	2576	2576		1803	1803
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	75				125		
Storage Blk Time (%)		18			7	0	
Queuing Penalty (veh)		4			33	0	

Intersection: 600: NC 119 & Site Access

Movement	NB	SB
Directions Served	R	L
Maximum Queue (ft)	40	142
Average Queue (ft)	5	64
95th Queue (ft)	24	116
Link Distance (ft)		
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	100	150
Storage Blk Time (%)		0
Queuing Penalty (veh)		1

Intersection: 700: NC 119

Movement	WB	WB	B22
Directions Served	L	R	T
Maximum Queue (ft)	152	114	51
Average Queue (ft)	85	64	3
95th Queue (ft)	154	107	25
Link Distance (ft)		208	1
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	100		
Storage Blk Time (%)	14	1	
Queuing Penalty (veh)	34	1	

Intersection: 800: Site Access

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	31
Average Queue (ft)	4
95th Queue (ft)	21
Link Distance (ft)	105
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 2037

Intersection: 100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	TR	L	TR
Maximum Queue (ft)	274	1209	249	595	250	200	624	300	1168
Average Queue (ft)	130	998	219	433	167	157	457	250	1095
95th Queue (ft)	306	1265	276	658	311	251	644	378	1223
Link Distance (ft)		1194		989			1030		1105
Upstream Blk Time (%)		16							46
Queuing Penalty (veh)		0							0
Storage Bay Dist (ft)	175		150		150	150		225	
Storage Blk Time (%)	0	71	52	48	0	34	44	30	56
Queuing Penalty (veh)	0	58	270	126	0	156	69	205	109

Intersection: 200: NC 119 & Turner Road

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	15	51	96
Average Queue (ft)	7	12	46
95th Queue (ft)	17	36	87
Link Distance (ft)	791		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		50	125
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Intersection: 300: NC 119 & Kimrey Road

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	75	111	182
Average Queue (ft)	33	51	43
95th Queue (ft)	65	90	126
Link Distance (ft)	1671	993	1307
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 400: NC 119 & Jim Minor Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	155	96	87	69
Average Queue (ft)	79	54	10	22
95th Queue (ft)	127	94	54	61
Link Distance (ft)	3454	1457	3179	1888
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 500: NC 54 & Jim Minor Road

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	37	70	167	108	96	74	53
Average Queue (ft)	10	35	76	55	65	11	18
95th Queue (ft)	26	72	126	99	93	48	52
Link Distance (ft)		3222	2576	2576		1803	1803
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	75				125		
Storage Blk Time (%)		0					
Queuing Penalty (veh)		0					

Network Summary

Network wide Queuing Penalty: 994

Intersection: 20:

Movement	WB	NB	NB
Directions Served	T	L	LR
Maximum Queue (ft)	52	28	22
Average Queue (ft)	33	6	1
95th Queue (ft)	53	24	10
Link Distance (ft)	215	144	144
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 25:

Movement	WB	WB	SB
Directions Served	T	T	R
Maximum Queue (ft)	58	76	24
Average Queue (ft)	47	43	2
95th Queue (ft)	66	67	12
Link Distance (ft)	197	197	163
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 27:

Movement	WB	SB
Directions Served	T	R
Maximum Queue (ft)	122	30
Average Queue (ft)	112	2
95th Queue (ft)	128	14
Link Distance (ft)	106	216
Upstream Blk Time (%)	12	
Queuing Penalty (veh)	47	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	TR	L	TR
Maximum Queue (ft)	275	1233	250	488	250	200	1038	300	1157
Average Queue (ft)	99	1215	198	282	151	193	897	216	1127
95th Queue (ft)	256	1230	277	445	296	218	1118	330	1147
Link Distance (ft)		1194		989			1030		1105
Upstream Blk Time (%)		86					3		68
Queuing Penalty (veh)		0					22		0
Storage Bay Dist (ft)	175		150		150	150		225	
Storage Blk Time (%)		74	29	35	0	56	23	19	67
Queuing Penalty (veh)		60	150	108	3	366	47	162	129

Intersection: 200: NC 119 & Turner Road

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	59	66	153	95
Average Queue (ft)	21	20	26	50
95th Queue (ft)	47	54	96	81
Link Distance (ft)	791		1909	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		50		125
Storage Blk Time (%)	2	6		
Queuing Penalty (veh)	2	2		

Intersection: 300: NC 119 & Kimrey Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	23	90	101	195
Average Queue (ft)	8	50	12	64
95th Queue (ft)	23	82	58	177
Link Distance (ft)	1667	482	544	1337
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 400: NC 119 & Jim Minor Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	286	118	45	119
Average Queue (ft)	126	67	6	54
95th Queue (ft)	233	109	27	104
Link Distance (ft)	3454	1457	3179	1888
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 500: NC 54 & Jim Minor Road

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	15	71	93	74	199	94	52
Average Queue (ft)	4	37	56	38	100	10	11
95th Queue (ft)	15	73	79	71	168	51	39
Link Distance (ft)		3222	2576	2576		1803	1803
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	75				125		
Storage Blk Time (%)		0			9		
Queuing Penalty (veh)		0			24		

Intersection: 600: NC 119 & Site Access

Movement	SB
Directions Served	LT
Maximum Queue (ft)	116
Average Queue (ft)	59
95th Queue (ft)	114
Link Distance (ft)	510
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 700: NC 119

Movement	WB	B23	B22
Directions Served	LR	T	T
Maximum Queue (ft)	68	199	51
Average Queue (ft)	68	105	51
95th Queue (ft)	68	184	51
Link Distance (ft)	17	209	-11
Upstream Blk Time (%)	82	0	0
Queuing Penalty (veh)	319	0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 800: Site Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 1442

Intersection: 20:

Movement	WB	NB	NB
Directions Served	T	L	LR
Maximum Queue (ft)	70	28	13
Average Queue (ft)	45	9	1
95th Queue (ft)	68	30	6
Link Distance (ft)	215	144	144
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 25:

Movement	WB	WB
Directions Served	T	T
Maximum Queue (ft)	112	131
Average Queue (ft)	56	53
95th Queue (ft)	94	102
Link Distance (ft)	197	197
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 27:

Movement	WB
Directions Served	T
Maximum Queue (ft)	126
Average Queue (ft)	112
95th Queue (ft)	136
Link Distance (ft)	106
Upstream Blk Time (%)	23
Queuing Penalty (veh)	88
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	275	1233	250	643	250	250	734	250	300	1139
Average Queue (ft)	135	1176	225	472	154	212	365	122	213	1125
95th Queue (ft)	327	1359	283	681	327	295	640	272	355	1138
Link Distance (ft)		1194		987			1030			1105
Upstream Blk Time (%)		74								69
Queuing Penalty (veh)		0								0
Storage Bay Dist (ft)	175		150		150	150		150	225	
Storage Blk Time (%)		81	35	55		29	24	2	3	62
Queuing Penalty (veh)		66	183	172		187	108	15	28	119

Intersection: 200: NC 119 & Turner Road

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	103	89	22	102
Average Queue (ft)	30	33	1	56
95th Queue (ft)	85	75	11	99
Link Distance (ft)	791		1909	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		50		125
Storage Blk Time (%)	13	5		
Queuing Penalty (veh)	16	2		

Intersection: 300: NC 119 & Kimrey Road

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	LT	L
Maximum Queue (ft)	45	152	71	59	42
Average Queue (ft)	19	67	26	4	18
95th Queue (ft)	43	142	49	28	36
Link Distance (ft)	1659	463		525	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		100
Storage Blk Time (%)		8			
Queuing Penalty (veh)		5			

Intersection: 400: NC 119 & Jim Minor Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	181	119	265	447
Average Queue (ft)	98	60	134	255
95th Queue (ft)	161	95	223	430
Link Distance (ft)	3454	1457	3179	1888
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 500: NC 54 & Jim Minor Road

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	36	132	134	126	198	53	74
Average Queue (ft)	11	54	73	66	108	17	14
95th Queue (ft)	30	111	120	115	182	49	48
Link Distance (ft)		3222	2576	2576		1803	1803
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	75				125		
Storage Blk Time (%)		4			8		
Queuing Penalty (veh)		1			23		

Intersection: 600: NC 119 & Site Access

Movement	NB	SB
Directions Served	R	L
Maximum Queue (ft)	22	71
Average Queue (ft)	1	32
95th Queue (ft)	10	58
Link Distance (ft)		
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	100	150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 700: NC 119

Movement	WB	WB
Directions Served	L	R
Maximum Queue (ft)	162	176
Average Queue (ft)	67	95
95th Queue (ft)	124	146
Link Distance (ft)		208
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	100	
Storage Blk Time (%)	4	6
Queuing Penalty (veh)	9	9

Intersection: 800: Site Access

Movement	EB
Directions Served	LTR
Maximum Queue (ft)	31
Average Queue (ft)	2
95th Queue (ft)	15
Link Distance (ft)	105
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 1031

Intersection: 20:

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 25:

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 27:

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	TR	L	TR
Maximum Queue (ft)	275	420	250	720	250	200	1045	299	725
Average Queue (ft)	214	290	134	335	206	175	1035	248	379
95th Queue (ft)	311	392	228	624	275	222	1054	334	564
Link Distance (ft)		1194		989			1030		1105
Upstream Blk Time (%)							28		
Queuing Penalty (veh)							286		
Storage Bay Dist (ft)	175		150		150	150		225	
Storage Blk Time (%)	37	29	7	30	20	29	45	32	21
Queuing Penalty (veh)	118	33	41	111	100	241	99	134	27

Intersection: 200: NC 119 & Turner Road

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	806	150	1078	72
Average Queue (ft)	616	145	768	34
95th Queue (ft)	980	154	1172	67
Link Distance (ft)	791		1909	
Upstream Blk Time (%)	32			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)		50		125
Storage Blk Time (%)	0	98		
Queuing Penalty (veh)	0	28		

Intersection: 300: NC 119 & Kimrey Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	69	151	15	86
Average Queue (ft)	32	88	1	27
95th Queue (ft)	63	143	7	76
Link Distance (ft)	1666	481	542	1337
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 400: NC 119 & Jim Minor Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	115	321	221	113
Average Queue (ft)	66	166	28	52
95th Queue (ft)	108	298	119	111
Link Distance (ft)	3454	1457	3179	1888
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 500: NC 54 & Jim Minor Road

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	15	176	118	95	75	93	31
Average Queue (ft)	7	89	72	57	43	22	4
95th Queue (ft)	19	160	110	91	78	71	21
Link Distance (ft)		3222	2576	2576		1803	1803
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	75				125		
Storage Blk Time (%)		20					
Queuing Penalty (veh)		4					

Intersection: 600: NC 119 & Site Access

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	22	27
Average Queue (ft)	13	3
95th Queue (ft)	31	16
Link Distance (ft)	105	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 700: NC 119

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 800: Site Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 1222

Intersection: 20:

Movement	NB	NB
Directions Served	L	LR
Maximum Queue (ft)	193	181
Average Queue (ft)	44	42
95th Queue (ft)	153	150
Link Distance (ft)	144	144
Upstream Blk Time (%)	3	3
Queuing Penalty (veh)	8	9
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 25:

Movement	WB	WB
Directions Served	T	T
Maximum Queue (ft)	224	227
Average Queue (ft)	130	137
95th Queue (ft)	256	272
Link Distance (ft)	197	197
Upstream Blk Time (%)	28	31
Queuing Penalty (veh)	55	61
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 27:

Movement	WB
Directions Served	T
Maximum Queue (ft)	128
Average Queue (ft)	119
95th Queue (ft)	128
Link Distance (ft)	106
Upstream Blk Time (%)	48
Queuing Penalty (veh)	190
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	TR	L	TR
Maximum Queue (ft)	274	601	250	1013	250	200	1045	300	1157
Average Queue (ft)	168	425	243	849	125	178	1037	239	1042
95th Queue (ft)	307	608	267	1206	274	228	1046	336	1396
Link Distance (ft)		1194		989			1030		1105
Upstream Blk Time (%)				34			36		55
Queuing Penalty (veh)				0			476		0
Storage Bay Dist (ft)	175		150		150	150		225	
Storage Blk Time (%)	18	49	72	26	0	31	53	8	62
Queuing Penalty (veh)	65	55	434	115	0	342	150	44	78

Intersection: 200: NC 119 & Turner Road

Movement	WB	WB	NB	B11	SB	SB
Directions Served	L	R	TR	T	L	T
Maximum Queue (ft)	806	150	2004	1339	81	161
Average Queue (ft)	796	141	1845	624	46	18
95th Queue (ft)	814	159	2291	1509	86	94
Link Distance (ft)	791		1909	1337		1030
Upstream Blk Time (%)	98		62	3		
Queuing Penalty (veh)	0		659	32		
Storage Bay Dist (ft)		50			125	
Storage Blk Time (%)		100				0
Queuing Penalty (veh)		67				0

Intersection: 300: NC 119 & Kimrey Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	123	496	435	302
Average Queue (ft)	57	364	91	75
95th Queue (ft)	112	532	341	240
Link Distance (ft)	1666	481	542	1337
Upstream Blk Time (%)		24		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 400: NC 119 & Jim Minor Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	549	1238	86	136
Average Queue (ft)	434	925	13	52
95th Queue (ft)	598	1454	52	112
Link Distance (ft)	3454	1457	3179	1888
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 500: NC 54 & Jim Minor Road

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	41	196	133	76	113	74	54
Average Queue (ft)	7	68	70	57	64	17	18
95th Queue (ft)	25	142	116	77	105	54	53
Link Distance (ft)		3222	2576	2576		1803	1803
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	75				125		
Storage Blk Time (%)		10			0		
Queuing Penalty (veh)		2			0		

Intersection: 600: NC 119 & Site Access

Movement	WB	NB	SB	SB
Directions Served	LR	R	L	T
Maximum Queue (ft)	88	22	162	128
Average Queue (ft)	37	4	74	14
95th Queue (ft)	75	19	141	77
Link Distance (ft)	105			511
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)		100	100	
Storage Blk Time (%)			4	0
Queuing Penalty (veh)			30	1

Intersection: 700: NC 119

Movement	WB	B23	B22
Directions Served	LR	T	T
Maximum Queue (ft)	62	270	51
Average Queue (ft)	62	263	51
95th Queue (ft)	62	298	52
Link Distance (ft)	11	209	-11
Upstream Blk Time (%)	91	82	11
Queuing Penalty (veh)	360	323	42
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 800: Site Access

Movement	EB	WB
Directions Served	LTR	LTR
Maximum Queue (ft)	52	52
Average Queue (ft)	8	16
95th Queue (ft)	34	46
Link Distance (ft)	105	182
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 3598

Intersection: 20:

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 25:

Movement	WB	WB	SB
Directions Served	T	T	R
Maximum Queue (ft)	137	169	26
Average Queue (ft)	75	75	2
95th Queue (ft)	134	154	13
Link Distance (ft)	197	197	163
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 27:

Movement	WB	SB
Directions Served	T	R
Maximum Queue (ft)	127	30
Average Queue (ft)	114	2
95th Queue (ft)	136	14
Link Distance (ft)	106	216
Upstream Blk Time (%)	34	
Queuing Penalty (veh)	134	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	275	1209	250	1002	250	249	1044	250	300	774
Average Queue (ft)	187	1072	227	809	171	225	1027	129	168	529
95th Queue (ft)	364	1402	280	1147	310	274	1050	316	320	825
Link Distance (ft)		1194		987			1030			1105
Upstream Blk Time (%)		57		19			8			
Queuing Penalty (veh)		0		0			105			
Storage Bay Dist (ft)	175		150		150	150		150	225	
Storage Blk Time (%)		82	53	57	5	46	46		1	41
Queuing Penalty (veh)		91	316	249	28	504	222		4	51

Intersection: 200: NC 119 & Turner Road

Movement	WB	WB	NB	SB	SB
Directions Served	L	R	TR	L	T
Maximum Queue (ft)	806	150	591	79	104
Average Queue (ft)	716	145	237	38	7
95th Queue (ft)	1011	155	518	77	50
Link Distance (ft)	791		1909		1030
Upstream Blk Time (%)	74				
Queuing Penalty (veh)	0				
Storage Bay Dist (ft)		50		125	
Storage Blk Time (%)	0	99			
Queuing Penalty (veh)	0	66			

Intersection: 300: NC 119 & Kimrey Road

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	LT	L
Maximum Queue (ft)	88	178	195	39	19
Average Queue (ft)	42	104	49	5	11
95th Queue (ft)	81	182	118	26	25
Link Distance (ft)	1659	463		525	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		100
Storage Blk Time (%)		30			
Queuing Penalty (veh)		29			

Intersection: 400: NC 119 & Jim Minor Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	159	126	1691	1276
Average Queue (ft)	95	74	1009	728
95th Queue (ft)	156	117	1553	1172
Link Distance (ft)	3454	1457	3179	1888
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 500: NC 54 & Jim Minor Road

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	36	179	142	115	96	74	55
Average Queue (ft)	8	97	80	63	72	27	20
95th Queue (ft)	25	174	122	104	109	73	60
Link Distance (ft)		3222	2576	2576		1803	1803
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	75				125		
Storage Blk Time (%)		19					
Queuing Penalty (veh)		4					

Intersection: 600: NC 119 & Site Access

Movement	WB	NB	SB
Directions Served	LR	R	L
Maximum Queue (ft)	44	22	177
Average Queue (ft)	18	6	96
95th Queue (ft)	45	22	164
Link Distance (ft)	105		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		100	150
Storage Blk Time (%)			2
Queuing Penalty (veh)			14

Intersection: 700: NC 119

Movement	WB	WB	B22
Directions Served	L	R	T
Maximum Queue (ft)	200	257	60
Average Queue (ft)	151	158	16
95th Queue (ft)	236	281	58
Link Distance (ft)		208	1
Upstream Blk Time (%)	18	15	2
Queuing Penalty (veh)	0	57	9
Storage Bay Dist (ft)	100		
Storage Blk Time (%)	63	3	
Queuing Penalty (veh)	153	5	

Intersection: 800: Site Access

Movement	EB	WB
Directions Served	LTR	LTR
Maximum Queue (ft)	31	31
Average Queue (ft)	8	4
95th Queue (ft)	30	21
Link Distance (ft)	105	182
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 2042

Intersection: 20:

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 25:

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 27:

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	TR	L	TR
Maximum Queue (ft)	275	1209	249	413	250	200	580	299	1157
Average Queue (ft)	140	943	172	234	123	169	425	249	1100
95th Queue (ft)	323	1445	258	378	238	243	615	379	1252
Link Distance (ft)		1194		989			1030		1105
Upstream Blk Time (%)		36							70
Queuing Penalty (veh)		0							0
Storage Bay Dist (ft)	175		150		150	150		225	
Storage Blk Time (%)		72	21	21	1	22	30	33	47
Queuing Penalty (veh)		59	106	55	4	104	48	237	92

Intersection: 200: NC 119 & Turner Road

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	37	47	75
Average Queue (ft)	7	10	45
95th Queue (ft)	25	32	75
Link Distance (ft)	791		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		50	125
Storage Blk Time (%)	0	1	
Queuing Penalty (veh)	0	0	

Intersection: 300: NC 119 & Kimrey Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	18	133	35	169
Average Queue (ft)	9	65	3	53
95th Queue (ft)	22	120	19	124
Link Distance (ft)	1666	481	542	1337
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 400: NC 119 & Jim Minor Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	174	135	23	74
Average Queue (ft)	115	68	5	30
95th Queue (ft)	167	111	19	73
Link Distance (ft)	3454	1457	3179	1888
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 500: NC 54 & Jim Minor Road

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	35	112	174	138	116	53	54
Average Queue (ft)	8	55	76	56	85	16	16
95th Queue (ft)	24	103	129	110	118	48	50
Link Distance (ft)		3222	2576	2576		1803	1803
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	75				125		
Storage Blk Time (%)		3			0		
Queuing Penalty (veh)		1			1		

Intersection: 600: NC 119 & Site Access

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	23	27
Average Queue (ft)	12	9
95th Queue (ft)	30	29
Link Distance (ft)	105	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 700: NC 119

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 800: Site Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 706

Intersection: 20:

Movement			
Directions Served			
Maximum Queue (ft)			
Average Queue (ft)			
95th Queue (ft)			
Link Distance (ft)			
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 25:

Movement	WB	WB	SB
Directions Served	T	T	R
Maximum Queue (ft)	172	168	26
Average Queue (ft)	70	63	3
95th Queue (ft)	136	137	18
Link Distance (ft)	197	197	163
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 27:

Movement	WB	SB
Directions Served	T	R
Maximum Queue (ft)	125	28
Average Queue (ft)	108	2
95th Queue (ft)	138	14
Link Distance (ft)	106	216
Upstream Blk Time (%)	19	
Queuing Penalty (veh)	75	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	TR	L	TR
Maximum Queue (ft)	275	1233	250	535	250	200	1045	300	1168
Average Queue (ft)	158	1070	182	307	137	181	971	227	1127
95th Queue (ft)	316	1436	258	539	271	220	1118	357	1149
Link Distance (ft)		1194		989			1030		1105
Upstream Blk Time (%)		56					8		72
Queuing Penalty (veh)		0					66		0
Storage Bay Dist (ft)	175		150		150	150		225	
Storage Blk Time (%)		73	23	31	1	54	34	19	67
Queuing Penalty (veh)		60	120	99	5	362	72	166	130

Intersection: 200: NC 119 & Turner Road

Movement	WB	WB	NB	SB	SB
Directions Served	L	R	TR	L	T
Maximum Queue (ft)	150	108	396	111	108
Average Queue (ft)	19	35	75	62	7
95th Queue (ft)	78	84	291	112	52
Link Distance (ft)	791		1909		1030
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		50		125	
Storage Blk Time (%)	0	15		0	0
Queuing Penalty (veh)	0	6		0	0

Intersection: 300: NC 119 & Kimrey Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	66	215	78	130
Average Queue (ft)	28	93	6	36
95th Queue (ft)	59	177	39	109
Link Distance (ft)	1666	481	542	1337
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 400: NC 119 & Jim Minor Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	589	136	45	160
Average Queue (ft)	225	64	7	49
95th Queue (ft)	478	119	32	120
Link Distance (ft)	3454	1457	3179	1888
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 500: NC 54 & Jim Minor Road

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	15	71	120	135	157	147	152
Average Queue (ft)	6	43	71	57	121	28	20
95th Queue (ft)	17	74	112	115	172	104	92
Link Distance (ft)		3222	2576	2576		1803	1803
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	75				125		
Storage Blk Time (%)		1			9	0	
Queuing Penalty (veh)		0			26	0	

Intersection: 600: NC 119 & Site Access

Movement	WB	NB	SB
Directions Served	LR	R	L
Maximum Queue (ft)	62	20	76
Average Queue (ft)	18	1	34
95th Queue (ft)	46	9	73
Link Distance (ft)	105		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		100	100
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 700: NC 119

Movement	WB	B23	B22
Directions Served	LR	T	T
Maximum Queue (ft)	62	270	51
Average Queue (ft)	62	134	51
95th Queue (ft)	63	268	52
Link Distance (ft)	11	209	-11
Upstream Blk Time (%)	70	12	1
Queuing Penalty (veh)	275	46	2
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 800: Site Access

Movement	EB	WB
Directions Served	LTR	LTR
Maximum Queue (ft)	30	31
Average Queue (ft)	2	4
95th Queue (ft)	14	21
Link Distance (ft)	105	182
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 1511

Intersection: 20:

Movement	WB	NB
Directions Served	T	L
Maximum Queue (ft)	96	53
Average Queue (ft)	47	11
95th Queue (ft)	85	42
Link Distance (ft)	215	144
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 25:

Movement	WB	WB
Directions Served	T	T
Maximum Queue (ft)	92	112
Average Queue (ft)	53	61
95th Queue (ft)	83	104
Link Distance (ft)	197	197
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 27:

Movement	WB
Directions Served	T
Maximum Queue (ft)	125
Average Queue (ft)	112
95th Queue (ft)	137
Link Distance (ft)	106
Upstream Blk Time (%)	18
Queuing Penalty (veh)	69
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 100: NC 119 & Trollingwood Hawfields Road/Old Hillsborough Road

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	274	1246	250	943	250	250	521	250	300	1144
Average Queue (ft)	157	1181	194	570	162	220	300	149	280	1126
95th Queue (ft)	341	1302	285	1053	306	266	478	307	358	1142
Link Distance (ft)		1194		987			1030			1105
Upstream Blk Time (%)		75								72
Queuing Penalty (veh)		0								0
Storage Bay Dist (ft)	175		150		150	150		150	225	
Storage Blk Time (%)		82	36	45	5	37	26	2	63	33
Queuing Penalty (veh)		67	188	143	29	251	118	14	552	63

Intersection: 200: NC 119 & Turner Road

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	15	74	132
Average Queue (ft)	8	22	58
95th Queue (ft)	18	61	112
Link Distance (ft)	791		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		50	125
Storage Blk Time (%)		2	0
Queuing Penalty (veh)		1	3

Intersection: 300: NC 119 & Kimrey Road

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	LT	L
Maximum Queue (ft)	67	153	45	112	40
Average Queue (ft)	16	44	24	11	14
95th Queue (ft)	46	115	39	58	30
Link Distance (ft)	1659	463		525	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		100
Storage Blk Time (%)		4		0	
Queuing Penalty (veh)		3		0	

Intersection: 400: NC 119 & Jim Minor Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	175	184	335	605
Average Queue (ft)	104	66	148	446
95th Queue (ft)	166	135	274	616
Link Distance (ft)	3454	1457	3179	1888
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 500: NC 54 & Jim Minor Road

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	37	106	94	113	238	53	53
Average Queue (ft)	10	43	70	49	102	13	22
95th Queue (ft)	26	100	99	89	170	44	58
Link Distance (ft)		3222	2576	2576		1803	1803
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	75				125		
Storage Blk Time (%)		3			5		
Queuing Penalty (veh)		1			14		

Intersection: 600: NC 119 & Site Access

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	64	54
Average Queue (ft)	15	40
95th Queue (ft)	42	65
Link Distance (ft)	105	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 700: NC 119

Movement	WB	WB
Directions Served	L	R
Maximum Queue (ft)	120	200
Average Queue (ft)	61	92
95th Queue (ft)	111	157
Link Distance (ft)		208
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)	100	
Storage Blk Time (%)	1	7
Queuing Penalty (veh)	3	11

Intersection: 800: Site Access

Movement	WB
Directions Served	LTR
Maximum Queue (ft)	29
Average Queue (ft)	4
95th Queue (ft)	20
Link Distance (ft)	182
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 1530

QUEUE DISTANCE (AVER)

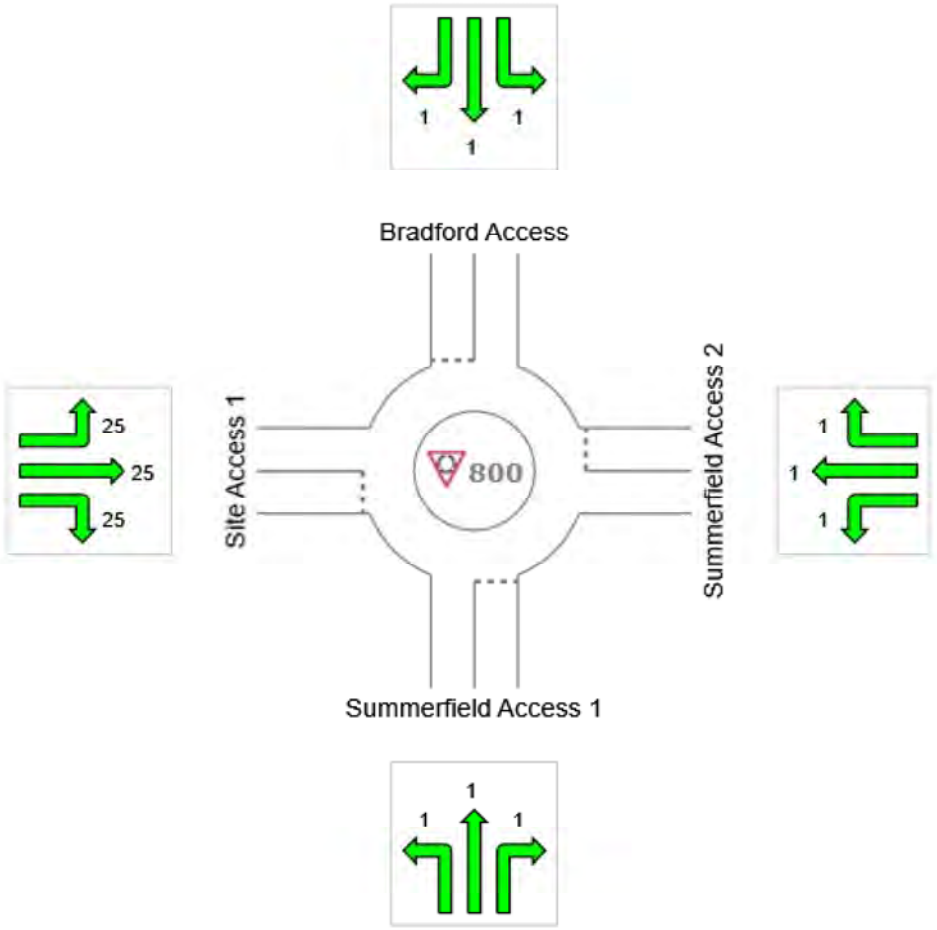
Average Back of Queue Distance for any lane used by vehicle movement (feet)

Site: 800 [AM Peak Scenario 1]

Bradford Academy
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Queue Distance (Aver)	1	1	1	25	25



Colour code based on Queue Storage Ratio

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QUEUE DISTANCE (AVER)

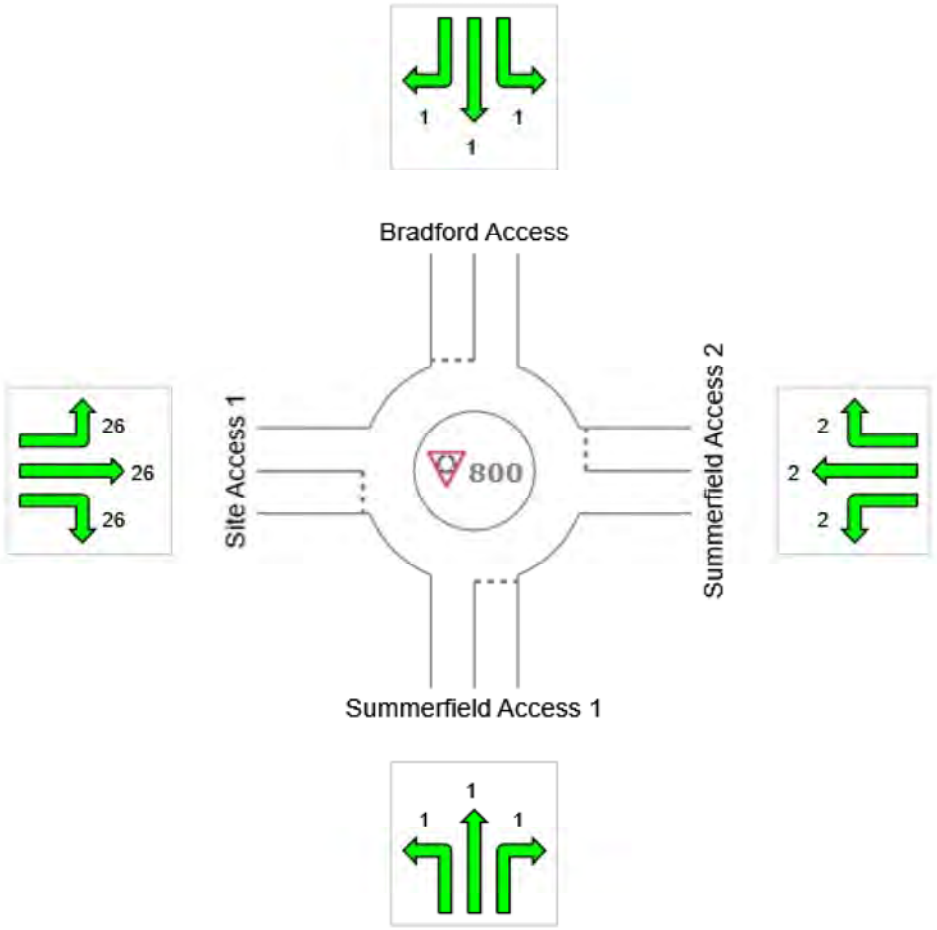
Average Back of Queue Distance for any lane used by vehicle movement (feet)

Site: 800 [AM Peak Scenario 2]

Bradford Academy
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Queue Distance (Aver)	1	2	1	26	26



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0]

QUEUE DISTANCE (AVER)

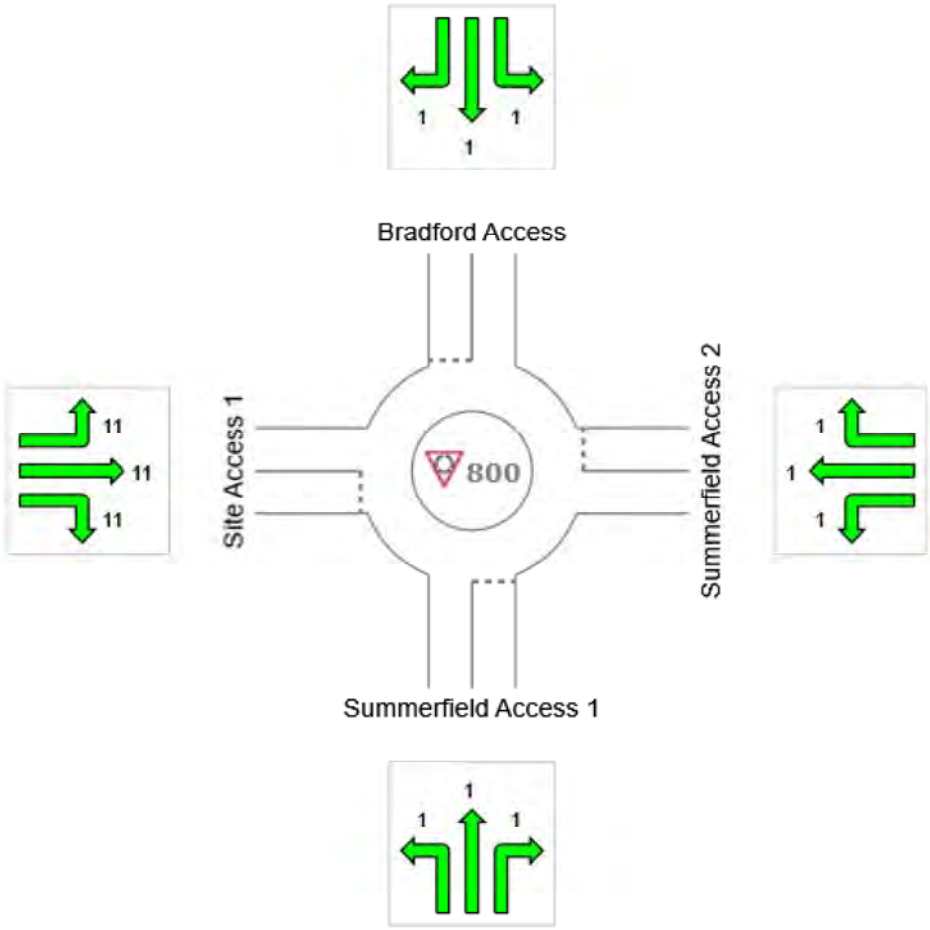
Average Back of Queue Distance for any lane used by vehicle movement (feet)

Site: 800 [PM Peak Scenario 1]

Bradford Academy
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Queue Distance (Aver)	1	1	1	11	11



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0]

QUEUE DISTANCE (AVER)

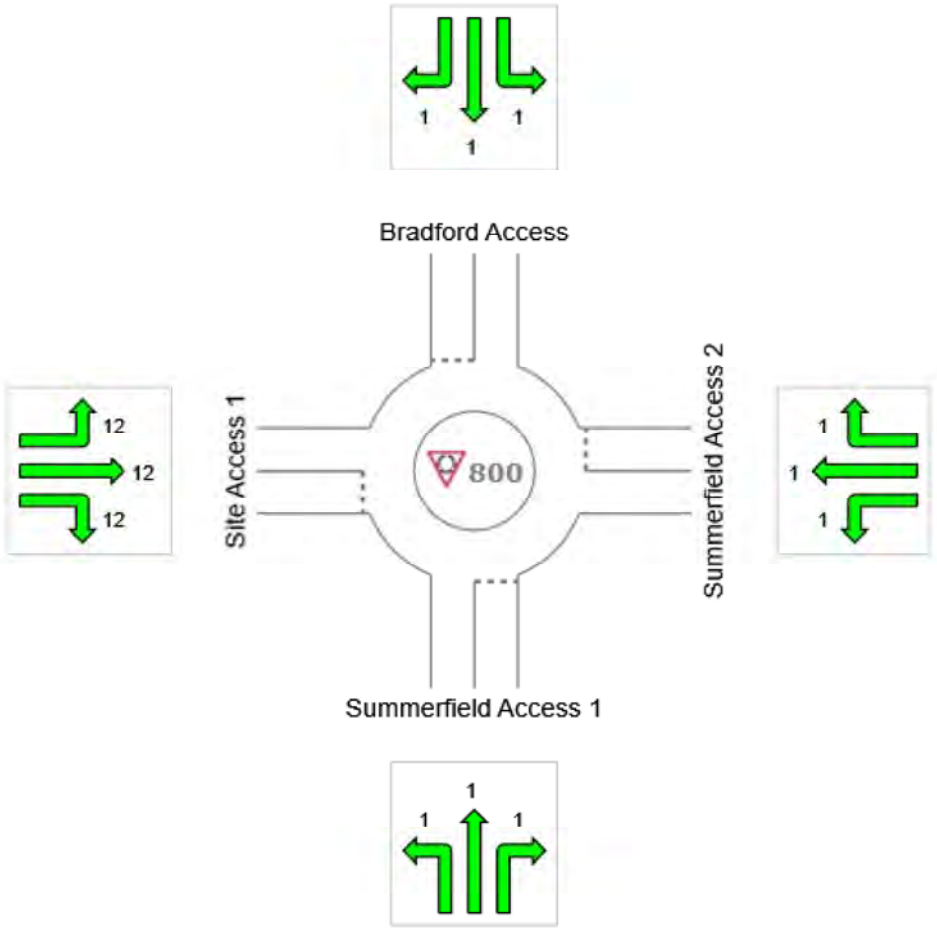
Average Back of Queue Distance for any lane used by vehicle movement (feet)

Site: 800 [PM Peak Scenario 2]

Bradford Academy
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Queue Distance (Aver)	1	1	1	12	12



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0]

Supporting Documentation

Dionne Brown

From: Edwards, Charles N <cnedwards@ncdot.gov>
Sent: Monday, April 22, 2019 3:00 PM
To: Dionne Brown; Cy Stober; Montrena W. Hadley; fholt@awck.com; Franz Holt
Cc: Frank Amenya; Desiree Tillman; Hinton, Kimberly D; Keith@civildesignspa.com
Subject: RE: [External] Bradford Academy Mebane
Attachments: Information Needed when Requesting NCDOT Prepare School Traffic Study 4192018.pdf

Dionne,

Thank you for the requested information. I recommend that the Applicant proceed with the TIA in accordance with NCDOT Congestion Management and MSTA guidelines to include the intersection listed below and to evaluate and to clearly differentiate impacts and needed improvements exclusively attributable to the two distinct land uses.

1) NC 119 at Trollingwood Hawfields Road/ Old Hillsborough Road
2) NC 119 at Kimrey Road
3) NC 119 at Jim Minor Road
4) NC 54 and Jim Minor Road/ Reatkin Lane
5) NC 119 and Turner Road

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: Dionne Brown <DBrown@davenportworld.com>
Sent: Wednesday, April 17, 2019 1:36 PM
To: Edwards, Charles N <cnedwards@ncdot.gov>; Cy Stober <cstober@cityofmebane.com>; Montrena W. Hadley <mhadley@cityofmebane.com>; fholt@awck.com; Franz Holt <fholt@cityofmebane.com>
Cc: Frank Amenya <famenya@davenportworld.com>; Desiree Tillman <DTillman@davenportworld.com>; Hinton, Kimberly D <kdhinton@ncdot.gov>; Keith@civildesignspa.com
Subject: RE: [External] Bradford Academy Mebane

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Hello Everyone,

Attached you will find the form filled out by the school representative. I have cc'd the site civil on the e-mail as well if you have any questions. The client has "n/a" for loading bays but I'm sure he may not understand what that is as there will need to be a carpool loading zone.

Dionne C. Brown, PE | Project Manager
DAVENPORT
4600 Marriott Drive Suite 350 | Raleigh, NC 27612
t (919) 324-1665 ext: 24402 | d (919) 948-3289
website | map | email

From: Edwards, Charles N <cnedwards@ncdot.gov>
Sent: Monday, April 15, 2019 1:04 PM
To: Dionne Brown <DBrown@davenportworld.com>; Cy Stober <cstober@cityofmebane.com>; Montrena W. Hadley <mhadley@cityofmebane.com>; fholt@awck.com; Franz Holt <fholt@cityofmebane.com>
Cc: Frank Amenya <famenya@davenportworld.com>; Nina Baez <NBaez@davenportworld.com>; Hinton, Kimberly D <kdhinton@ncdot.gov>
Subject: RE: [External] Bradford Academy Mebane

Dionne,

I believe that the intersections listed would be sufficient to study and assess impacts attributable to the development. However, before moving forward too quickly, the information on the MSTA information form that you previously referenced is critical. When can we expect this to be available? Also, please note that the study not only needs to evaluate the school traffic but also, the traffic associated with the residential component and to clearly differentiate impacts and needed improvements exclusively attributable to the two distinct uses. I also noted that the site plan you provided with the school site overlayed is distinctly different from that which was recently submitted to the City of Mebane TRC. Of particular interest is it appears that the northern access to NC 119 and internal roundabout now only serves the school site rather than also serving the residential component as was previously shown. Can you advise if this is the Applicant's intent?

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: Dionne Brown <DBrown@davenportworld.com>
Sent: Monday, April 15, 2019 9:33 AM
To: Cy Stober <cstober@cityofmebane.com>; Edwards, Charles N <cnedwards@ncdot.gov>; Montrena W. Hadley <mhadley@cityofmebane.com>; fholt@awck.com; Franz Holt <fholt@cityofmebane.com>
Cc: Frank Amenya <famenya@davenportworld.com>; Nina Baez <NBaez@davenportworld.com>; Hinton, Kimberly D <kdhinton@ncdot.gov>
Subject: RE: [External] Bradford Academy Mebane

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Morning All,

Since the client is under a tight deadline, I don't think a meeting in May will work.

Based on the site plan and the previous TIA, is it safe to say that we can assume the same intersections and use the counts from Oct?

1) NC 119 at Trollingwood Hawfields Road/ Old Hillsborough Road
2) NC 119 at Kimrey Road
3) NC 119 at Jim Minor Road
4) NC 54 and Jim Minor Road/ Reatkin Lane
5) NC 119 and Turner Road

At the moment, they are predicting 425 students. We will use the MSTA calculator to determine the queue and trips for the future build/new school.

When we get a better site plan, we will share that and any information.

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4600 Marriott Drive Suite 350 | Raleigh, NC 27612
t (919) 324-1665 ext: 24402 | d (919) 948-3289
website | map | email

From: Cy Stober <cstober@cityofmebane.com>
Sent: Monday, April 15, 2019 8:28 AM
To: Dionne Brown <DBrown@davenportworld.com>; Edwards, Charles N <cnedwards@ncdot.gov>; Montrena W. Hadley <mhadley@cityofmebane.com>; fholt@awck.com; Franz Holt <fholt@cityofmebane.com>
Cc: Frank Amenya <famenya@davenportworld.com>; Nina Baez <NBaez@davenportworld.com>; Hinton, Kimberly D <kdhinton@ncdot.gov>
Subject: RE: [External] Bradford Academy Mebane

Hi all,

I am happy to make myself available at any of the times Chuck is free with the exception of the afternoon of 4/17 and 11 11- 2 on 4/18. I can do my best to be free the following week, but it is unlikely due to the NCAMPO Conference. If you would like to discuss the sketch at the 5/14 Mebane TRC meeting, that may be the most appropriate and convenient time and place for all parties. If necessary, we could host a video conference from the TRC meeting room.

Thanks,

Cy Stober, AICP
Development Director
Mebane
Positively Charming
106 East Washington Street
Mebane, NC 27302
919 563-9990
www.cityofmebane.com

From: Dionne Brown <DBrown@davenportworld.com>
Sent: Friday, April 12, 2019 9:34 AM
To: Edwards, Charles N <cnedwards@ncdot.gov>; Montrena W. Hadley <mhadley@cityofmebane.com>; Cy Stober <cstober@cityofmebane.com>; fholt@awck.com; Franz Holt <fholt@cityofmebane.com>
Cc: Frank Amenya <famenya@davenportworld.com>; Nina Baez <NBaez@davenportworld.com>; Hinton, Kimberly D <kdhinton@ncdot.gov>
Subject: RE: [External] Bradford Academy Mebane

Morning All,

I spoke with the client this morning. He will be getting back with me on the questions to the scoping form that MSTA goes by.
Attached you will see a sketch of the school. It is in the very preliminary phase so they do not have all the details. It is the shaded part above the subdivision.
Their current school is located at 939 S. Third Street, so this will be a relocation to max capacity.

I think a video conference would probably be best as everyone's schedules are busy and traveling could take us away from other things.

MSTA and City if you could let me know which of those times/dates work well for you I'll send a zoom meeting. If not next week, let's try and get it for the following.

Dionne C. Brown, PE | Project Manager
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4600 Marriott Drive Suite 350 | Raleigh, NC 27612
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website | map | email

From: Edwards, Charles N <cnedwards@ncdot.gov>
Sent: Thursday, April 11, 2019 1:59 PM
To: Dionne Brown <DBrown@davenportworld.com>; mhadley@cityofmebane.com
Cc: Frank Amenya <famenya@davenportworld.com>; Nina Baez <NBaez@davenportworld.com>; Hinton, Kimberly D <kdhinton@ncdot.gov>
Subject: RE: [External] Bradford Academy Mebane

My current availably in the immediate future is indicated below. I have copied Kim Hinton with MSTA in the event that the school is subject to the requirements of NCGS 136-18(29a). Hopefully a conference call will meet your needs.

04/15 8-11
04/16 2-5
04/17 8-4
04/18 8-4

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: Dionne Brown <DBrown@davenportworld.com>
Sent: Monday, April 8, 2019 11:21 AM
To: Edwards, Charles N <cnedwards@ncdot.gov>; mhadley@cityofmebane.com
Cc: Frank Amenya <famenya@davenportworld.com>; Nina Baez <NBaez@davenportworld.com>
Subject: [External] Bradford Academy Mebane

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Hello Everyone,

We have been contacted by Bradford Academy on producing a TIA for their new school. It is our understanding that the school will be in the vicinity of the previous TIA we completed, Desco Highway 119, off of NC 119 and Kimrey Road.

I have asked the school to provide some information in regards to the future school as well as a site plan. I wanted to know your availability to conduct a scoping meeting for this project?

If you can provide that information, it would be greatly appreciated. When I receive the scoping information from the client I will provide so we are all informed prior to the meeting.

Dionne C. Brown, PE | Project Manager
DAVENPORT
4600 Marriott Drive Suite 350 | Raleigh, NC 27612
t (919) 324-1665 ext: 24402 | d (919) 948-3289
website | map | email

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Information Needed when Requesting NCDOT Prepare School Traffic Study

www.ncdot.gov/~msta

Name of School: Bradford Academy **Division/County:** Alamance

1. School Traffic Study Type: ☐ New ■ Relocating ☐ Expanding Existing
2. School Type: ☐ Public ■ Private ☐ Non-urban Charter ☐ Urban Charter
   If Charter, Final Approval of Application date: Date
3. Grade Levels: Enter grade level and number of students in each grade:

(Pre-K	K	1	2	3	4	5	6	7	8	9	10	11	12)
32	32	32	32	32	32	32	32	32	32	32	32	32	32

4. School Physical location: Proposed or Existing (indicate both, if applicable)
   Proposed Address: Address Hwy 119, Mebane, NC
   Existing Address: Address 919 S Third St. Mebane, NC
5. Is the Physical location for the School Traffic Study: ■ Permanent ☐ Temporary
   If temporary when are your plans to move to Permanent location: Months / Years
6. Is there Joint use of property, between two or more schools? ☐ Yes ☒ No
   Will they operate at the same time or be offset? Provide Bell Schedules:
7. Program Type: ☒ Traditional ☐ Year Round
8. Will a Day Care be on the same site? ☐ Yes ☒ No
9. Is there a decided Handicap program on site? ☐ Yes ☒ No
10. Does this school have a non-traditional instructional focus? ☒ Yes ☒ No
    (i.e., At Risk Teens, College Prep, Leadership and Trade Careers)
    If so, explain the program; also explain how travel patterns will be different.
    College Prep - no affect on traffic
11. School hours of operation (include any staggered times, pre-school and/or after-school programs)
    TK: 8am-12pm, K-5th: 8am-2:45pm, 6th-12th: 7:45am - 3pm
12. Maximum Student population: 450
13. Plans to increase the student population (i.e., future construction/install mobile units)?
    ☐ Yes ☒ No If so, when: Date
14. Student drivers: ☒ Yes ☐ No
    If so, how many Student Drivers/Parking Permits assigned: 25
    How many total student parking spaces/parking permits allotted? 25
15. Number of faculty/staff: 35
16. Faculty arrive same time as the students? ☐ Yes ☒ No
17. Number of Students that ride the bus: 0
18. Buses: ☐ Yes ☒ No Number of buses:
    Housed on the campus: ☐ Yes ☐ No All Standard Size: ☐ Yes ☐ No
    Shuttle Bus: ☐ Yes ☐ No Shared with another school: ☐ Yes ☐ No
19. Does the site promote walkable communities/Bicycle (sidewalks/paths) and/or take advantage of existing transit systems? ☒ Yes ☐ No If so, what type: mixed use How many:
20. Are any grades required to Park & Walk in? (i.e., Pre-K) ☒ Yes ☐ No
    List the number of students in each grade: 32

Site Plan

21. Provide a scalable electronic copy of the site plan.

22. Show proposed traffic routes/patterns for Parents, Student drivers, buses, and staff.

23. Indicate location of the Parent Loading Zone for student pickup/drop-off.

24. Number of loading bays in the parent loading zone? na

25. Indicate location of the Bus loading Zone for student pickup/drop-off.

26. Number of loading bays in the Bus loading zone na

27. Indicate Short Term/Visitor Parking location.

28. Number of parking spaces dedicated to Short Term/Visitor parking?

29. Enough parking for faculty, staff, student drivers and buses? ☐ Yes ☒ No

30. Will Day Care buses/shuttles be transporting on/off the campus? ☐ Yes ☒ No
    If yes, show proposed traffic route/pattern and loading zone.

31. Will Handicap buses be transporting on/off the campus? ☐ Yes ☒ No
    If yes, show proposed traffic route/pattern and loading zone.

32. Provide number of parents entering and exiting:
    In what direction will your school traffic be coming from, what percentages?
    North 60% South 40% East West

33. Provide a brief description of the parent/student-loading zone process

34. Describe the bus loading/parking process

Developments Planned

35. School located in or adjacent to a planned development? ☒ Yes ☒ No
    If yes, explain. Summerhaven

36. Any businesses or housing developments in the area that may affect school operations? ☐ Yes ☒ No
    If yes, explain.

37. Any business or developments planned for the area that may affect school-related traffic? ☒ Yes ☐ No
    If yes, explain. Summerhaven shared entra

38. List any concerns that need to be addressed

Submitted and Completed by:

Name (Responsible Party): Tony Fairchild
Signature: Tony Fairchild Digitally signed by Tony Fairchild Date: 2019.04.16 09:41:25 -04'00'
Address: 939 S Third St, Mebane, NC
Email: tony.fairchild@bldr.com
Phone: 919-669-5069
Date: 4/16/19

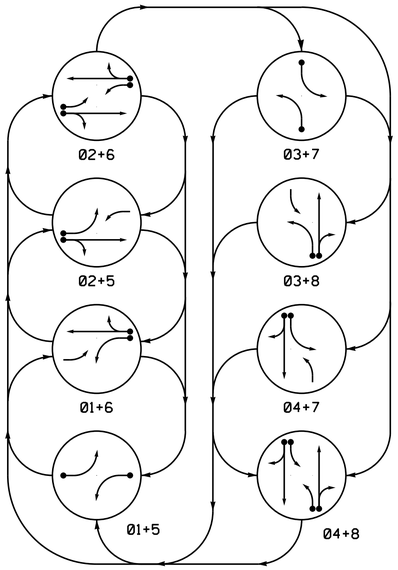
Approved by (Board Chairman or Superintendent)**:**

Name:
Signature:
Address:
Email:
Phone:
Date:

DocuSign Envelope ID: 9FB8057F-62B5-40ED-9AFC-B73F22E3B61D

PROJECT REFERENCE NO.	SHEET NO.
U-5538C	Sig. 3.0

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

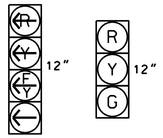
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE 01+5	01+6	02+5	02+6	03+7	03+8	04+7	04+8	FLASH
11	←	←	F Y	F Y	R	R	R	R	Y
21,22	R	R	G	G	R	R	R	R	Y
31	R	R	R	R	←	←	F Y	F Y	R
41,42	R	R	R	R	R	R	G	G	R
51	←	F Y	←	F Y	R	R	R	R	Y
61,62	R	G	R	G	R	R	R	R	Y
71	R	R	R	R	←	F Y	←	F Y	R
81,82	R	R	R	R	R	G	R	G	R

SIGNAL FACE I.D.

All Heads L.E.D.



11 21,22
31 41,42
51 61,62
71 81,82

OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X40	0	2-4-2	Y	1	Y	Y	-	-	15	-	Y
					6	Y	Y	Y	-	3	-	Y
2A	6X6	300	5	Y	2	Y	Y	-	-	-	-	-
3A	6X40	0	2-4-2	Y	3	Y	Y	-	-	15	-	Y
					8	Y	Y	-	-	3	-	Y
4A	6X6	300	5	Y	4	-	Y	-	2.4	-	-	Y
4B	6X40	0	2-4-2	Y	4	Y	Y	-	-	10	-	-
4C	6X15	0	3	Y	4	Y	Y	-	-	15	-	Y
5A	6X40	0	2-4-2	Y	5	Y	Y	-	-	15	-	Y
					2	Y	Y	Y	-	3	-	Y
6A	6X6	300	4	Y	6	Y	Y	-	-	-	-	-
7A	6X40	0	2-4-2	Y	7	Y	Y	-	-	15	-	Y
					4	Y	Y	-	-	3	-	Y
8A	6X6	300	5	Y	8	-	Y	-	2.4	-	-	Y
8B	6X40	0	2-4-2	Y	8	Y	Y	-	-	10	-	-
8C	6X15	0	3	Y	8	Y	Y	-	-	15	-	Y

8 Phase
Fully Actuated
(Isolated)

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012, "Standard Specifications for Roads and Structures" dated January 2012.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 and/or phase 5 may be lagged.
4. Phase 3 and/or phase 7 may be lagged.
5. Reposition all existing signal heads as shown.
6. Set all detector units to presence mode.

OASIS 2070 TIMING CHART

FEATURE	PHASE 1	2	3	4	5	6	7	8
Min Green 1 *	7	12	7	7	7	12	7	7
Extension 1 *	2.0	6.0	2.0	2.0	2.0	6.0	2.0	2.0
Max Green 1 *	20	90	15	45	20	90	15	45
Yellow Clearance	3.0	4.6	3.0	4.4	3.0	4.6	3.0	4.4
Red Clearance	2.1	1.0	2.4	1.0	2.1	1.0	2.1	1.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk 1 *	-	-	-	-	-	-	-	-
Don't Walk 1	-	-	-	-	-	-	-	-
Seconds Per Actuation *	-	2.0	-	-	-	2.0	-	-
Max Variable Initial *	-	34	-	-	-	34	-	-
Time Before Reduction *	-	15	-	-	-	15	-	-
Time To Reduce *	-	30	-	-	-	30	-	-
Minimum Gap	-	3.0	-	-	-	3.0	-	-
Recall Mode	-	MIN RECALL	-	-	-	MIN RECALL	-	-
Vehicle Call Memory	-	YELLOW	-	-	-	YELLOW	-	-
Dual Entry	-	-	-	ON	-	-	-	ON
Simultaneous Gap	ON	ON	ON	ON	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Signal Pole with Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	

NC Dept of Transportation
Division of Highways
Final Drawing Date: 3/15/2017
DocuSigned by: [signature]
ITS & Signals Unit

AECOM
NC Firm License No.: F-0342
701 Corporate Center Drive
Suite 475 Raleigh, NC 27607
Phone: 919-854-6200

Signal Upgrade - Final Design

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Design Section
750 N.Greenfield Pkwy.Garner,NC 27529

NC 119
at
SR 1981 (Trollingwood-Hawfields Rd)/
SR 2126 (Old Hillsborough Rd)
Division 7 Alamance County S. of Mebane

PLAN DATE: October 2016 | REVIEWED BY: C. L. Kalencik
PREPARED BY: S. W. Cox | REVIEWED BY:

SCALE 0 40' 1"=40'

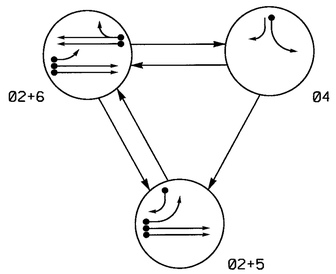
REVISIONS	INIT.	DATE

NORTH CAROLINA PROFESSIONAL SEAL 040715 ENGINEER COURTNEY L. KALENCIK
DocuSigned by: Courtney L. Kalencik 3/13/2017
SIG. INVENTORY NO. 07-0397

3/10/2017
P:\#60500621 U-5538C\#900_Work\#910_CAD\#70_NCDOT_TIP\Traffic\Signals\Design\Signals\#070397_sig_dsn_20170310.dgn
coxsi

PROJECT REFERENCE NO.	SHEET NO.
Alamance Co. FYA	Sig. 14D

PHASING DIAGRAM



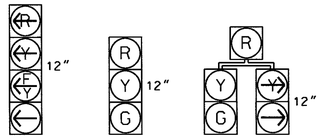
PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION				
SIGNAL FACE	PHASE 02+5	PHASE 02+6	PHASE 04	FLASH
21, 22	G	G	R	Y
41	R	R	G	R
42	R→	R	G	R
51	←	F Y	~~R~~	~~Y~~
61, 62	R	G	R	Y

SIGNAL FACE I.D.

All Heads L.E.D.



SE-PAC 2070 LOOP & DETECTOR UNIT INSTALLATION CHART

INDUCTIVE LOOPS						DETECTOR PROGRAMMING																
							TIMING		OPERATION MODE											STATUS	
									0	1	2	3	4	5	6	7					
LOOP NO.	SIZE (ft)	TURNS	DIST. FROM STOPBAR (ft)	NEW	EXISTING	ASSIGNED PHASE	DELAY	EXTEND (STRETCH)	VEHICLE	PEDESTRIAN	1 CALL	STOP A	STOP B	PROTPER LEFT	PROTPER THROUGH	AND	SWITCH	SYSTEM LOOPS	NEW	EXISTING
2A, 2B	6X6	EXIST	360	-	X	2	- SEC.	2.0 SEC.	X	-	-	-	-	-	-	-	-	-	-	X
2C, 2D	6X6	EXIST	100	-	X	2	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	-	X
4A	6X60	2-4-2	0	-	X	4	3 SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	-	X
5A	6X60	2-4-2	0	-	X	5	15 SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	-	X
						2	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	-	X
5B	6X60	2-4-2	0	-	X	5	15 SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	-	X
6A, 6B	6X6	EXIST	360	-	X	6	- SEC.	2.0 SEC.	X	-	-	-	-	-	-	-	-	-	-	X
6C, 6D	6X6	EXIST	100	-	X	6	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	-	X

SE-PAC 2070 TIMING CHART

FEATURE	PHASE 2	PHASE 4	PHASE 5	PHASE 6
Min Green *	14	7	7	14
Passage Gap *	2.0	1.0	1.0	2.0
Maximum Green *	45	25	15	45
Yellow Change	5.0	3.0	3.0	5.0
Red Clear	1.6	1.9	2.6	1.6
Walk *	-	-	-	-
Pedestrian Clear	-	-	-	-
Added Initial *	-	-	-	-
Maximum Initial *	-	-	-	-
Time Before Reduction *	-	-	-	-
Time To Reduce *	-	-	-	-
Minimum Gap	-	-	-	-
Recall Mode	MIN RECALL	-	-	MIN RECALL
Vehicle Call Memory	LOCK	NON-LOCK	NON-LOCK	LOCK
Dual Entry	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

3 Phase
Fully Actuated
(Burlington-Graham Signal System)

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Remove existing backup protection.
4. Phase 5 may be lagged.
5. Reposition existing signal head number 22.
6. Set all detector units to presence mode.
7. In the event of loop replacement, refer to the current ITS and Signals Design Manual and submit a Plan of Record to the Signal Design Section.
8. Install Auxiliary Output file into existing cabinet.
9. Pavement markings are existing.
10. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

LEGEND

PROPOSED		EXISTING
○→	Traffic Signal Head	●→
◐→	Modified Signal Head	N/A
⊣	Sign	⊣
▭↓	Pedestrian Signal Head With Push Button & Sign	■↓
○	Signal Pole with Guy	●
○ ◡	Signal Pole with Sidewalk Guy	● ◡
▭	Inductive Loop Detector	▭
⊠	Controller & Cabinet	⊠
□	Junction Box	■
----------	2-in Underground Conduit	----------
N/A	Right of Way	----------
→	Directional Arrow	→

Signal Upgrade

Prepared in the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Design Section
750 N.Greenfield Pkwy.Garner,NC 27529

NC 54 (E. Harden Street)
at
SR 2135 (N. Jim Minor Road)

Division 7 Alamance County Graham

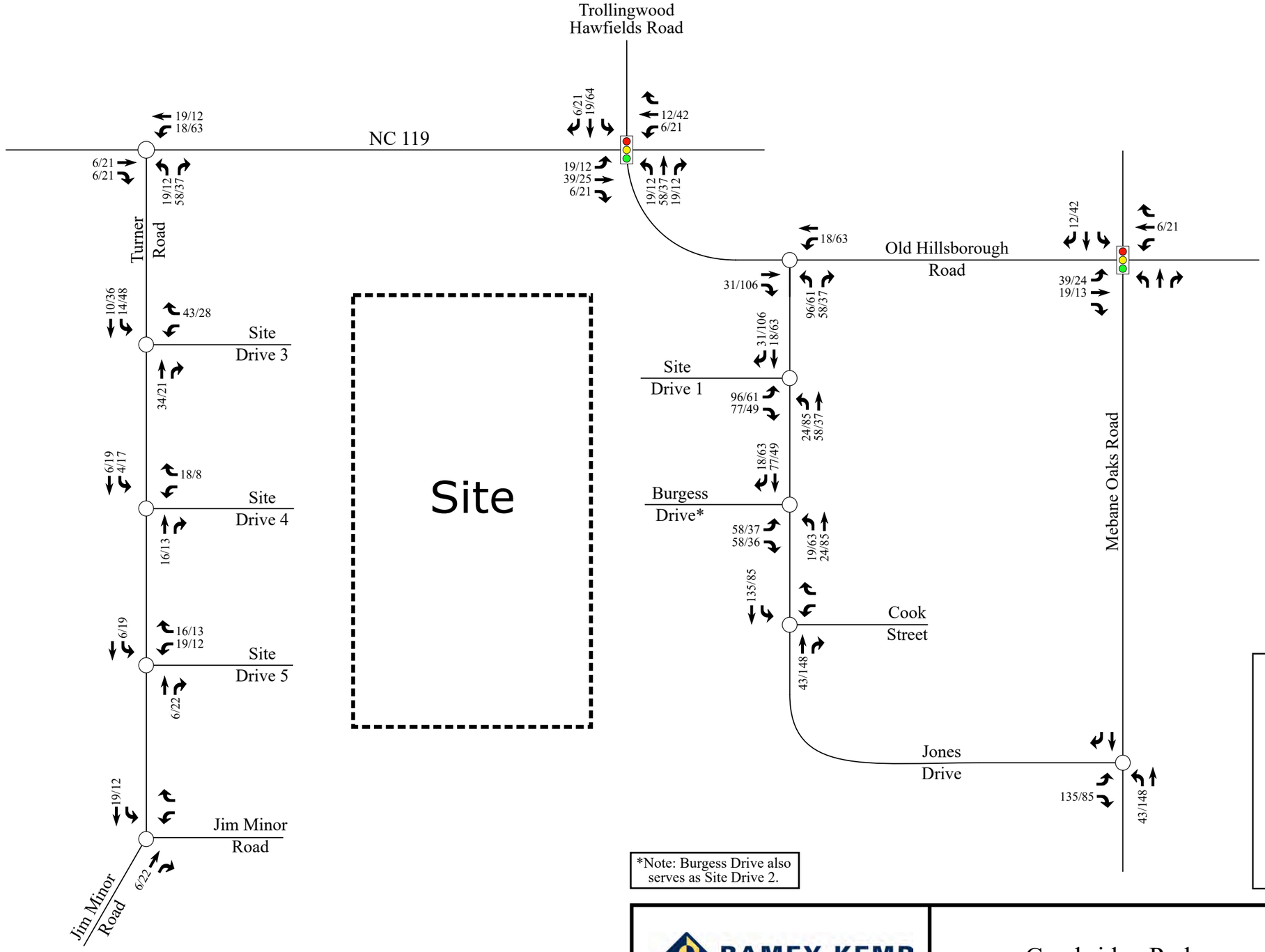
PLAN DATE: November 2013 REVIEWED BY:
PREPARED BY: N. Zinser REVIEWED BY:

SCALE 0 40 1"=40'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 026486 ENGINEER ROBERT J. ZIEMBA
SIGNATURE DATE 12/10/13
SIG. INVENTORY NO. 07-1719

10-DEC-2013 12:37
S:\#TISGSUM#ITS\Signals\Signal Design Section\Central Region\Div 7\07-1719\07179_sig_dsn_20131210.dgn
rziemba



*Note: Burgess Drive also serves as Site Drive 2.

LEGEND

- Unsignalized Intersection
- Signalized Intersection
- X% → Entering Trip Distribution
- (Y%) → Exiting Trip Distribution
- XX% Regional Trip Distribution

RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

Cambridge Park
Mebane, NC

Site Trip Assignment - Full Build-Out

Scale: Not to Scale

Figure 9C

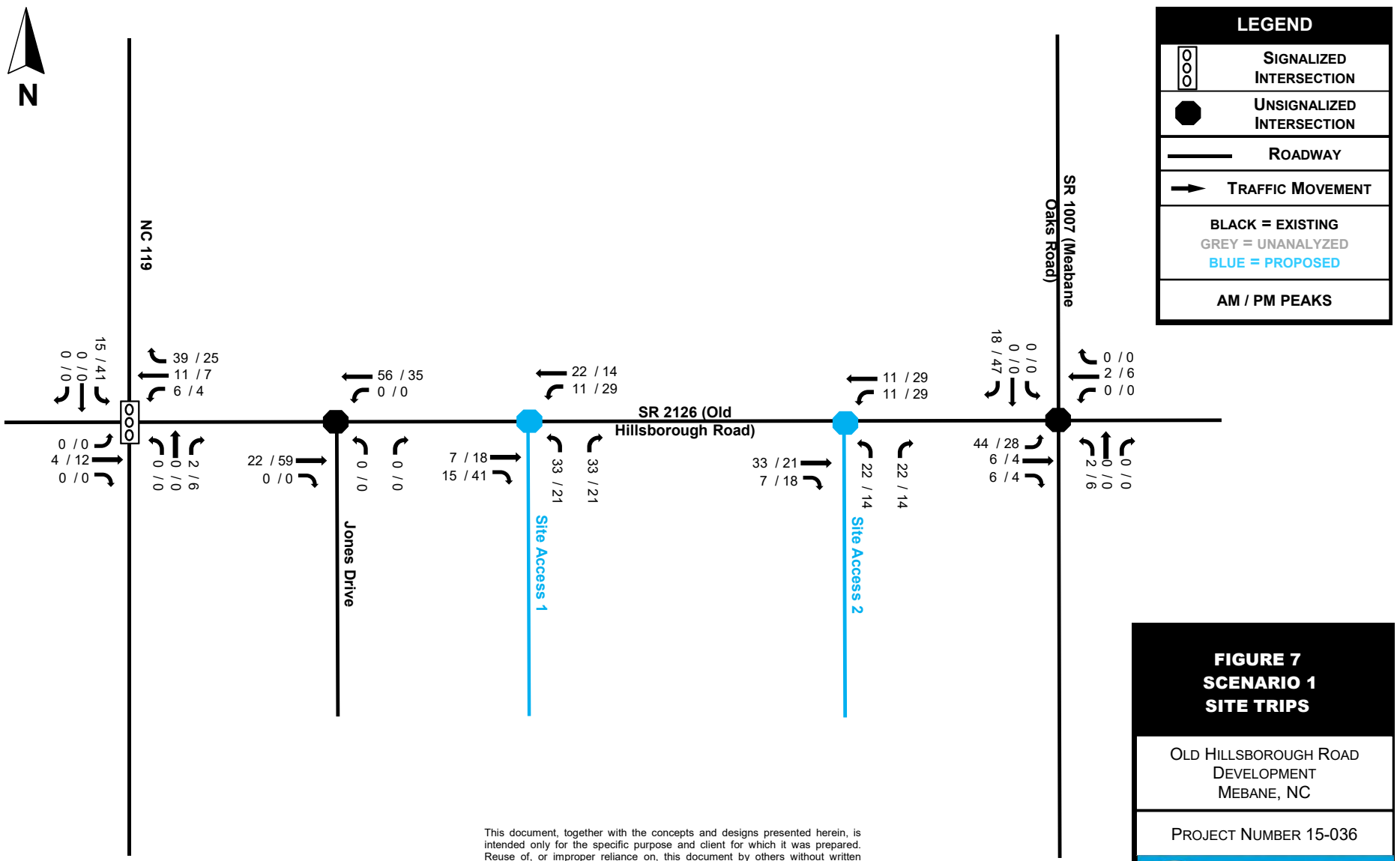


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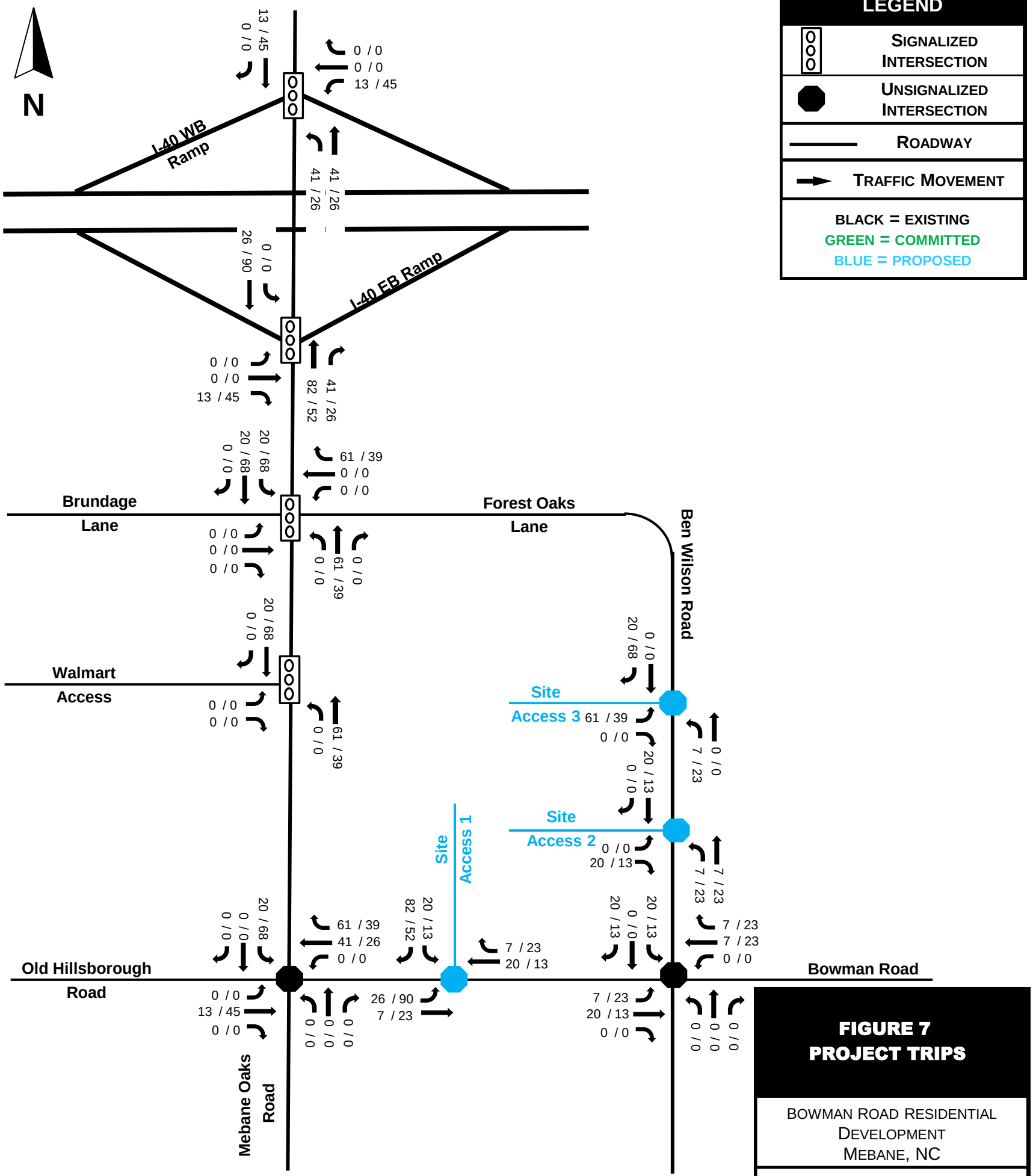
FIGURE 7
SCENARIO 1
SITE TRIPS

OLD HILLSBOROUGH ROAD DEVELOPMENT
MEBANE, NC

PROJECT NUMBER 15-036

DAVENPORT



LEGEND

- SIGNALIZED INTERSECTION
- UNSIGNALIZED INTERSECTION
- ROADWAY
- TRAFFIC MOVEMENT

BLACK = EXISTING
GREEN = COMMITTED
BLUE = PROPOSED

FIGURE 7
PROJECT TRIPS

BOWMAN ROAD RESIDENTIAL DEVELOPMENT
MEBANE, NC

PROJECT NUMBER 15-066

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Trip Generation Summary

Alternative: Alternative 1
Phase:
Project: 190020

Open Date: 9/18/2019
Analysis Date: 9/18/2019

ITE	Land Use	*	Weekday Average Daily Trips Enter	Exit	Total	*	Weekday AM Peak Hour of Adjacent Street Traffic Enter	Exit	Total	*	Weekday PM Peak Hour of Adjacent Street Traffic Enter	Exit	Total
210	SFHOUSE 1		834	833	1667		31	92	123		105	61	166
	167 Dwelling Units												
221	MID-RISE 1		92	92	184		3	9	12		10	6	16
	34 Dwelling Units												
251	SENIORDETACHED 1		316	315	631		15	30	45		32	21	53
	114 Dwelling Units												
252	SENIORATTACHED 1		611	610	1221		22	40	62		42	35	77
	310 Dwelling Units												
Unadjusted Volume			1853	1850	3703		71	171	242		189	123	312
Internal Capture Trips			0	0	0		0	0	0		0	0	0
Pass-By Trips			0	0	0		0	0	0		0	0	0
Volume Added to Adjacent Streets			1853	1850	3703		71	171	242		189	123	312

Total Weekday Average Daily Trips Internal Capture = 0 Percent
Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent
Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

* - Custom rate used for selected time period.

Source: Institute of Transportation Engineers, Trip Generation Manual 10th Edition

EXISTING VOLUMES															
	NB				SB				EB				WB		
Start Time	Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right
6:00 AM	2	41	0		5	11	1		1	0	2		0	9	4
6:15 AM	7	65	0		1	17	1		3	0	1		3	5	7
6:30 AM	11	91	0		2	27	1		3	2	4		0	17	14
6:45 AM	5	94	3		3	46	2		1	3	3		2	14	6
	0	0	0		0	0	0		0	0	0		0	0	0
07:00 AM	4	68	0		1	52	2		0	4	3		3	25	9
07:15 AM	11	110	2		4	43	3		4	5	7		7	24	18
07:30 AM	5	91	3		6	55	2		2	2	6		4	28	9
07:45 AM	11	84	1		1	45	4		1	4	3		1	21	11
	0	0	0		0	0	0		0	0	0		0	0	0
08:00 AM	5	71	2		5	42	5		1	6	3		1	14	6
08:15 AM	1	40	2		3	38	2		3	8	5		0	11	8
08:30 AM	4	48	1		4	34	2		0	4	5		0	11	5
08:45 AM	9	49	1		5	11	0		4	5	0		0	14	8
	0	0	0		0	0	0		0	0	0		0	0	0
09:00 AM	5	32	0		3	21	1		4	11	2		0	13	9
09:15 AM	2	33	3		5	30	2		1	5	3		2	11	5
09:30 AM	5	29	1		4	34	5		0	9	3		2	11	3
09:45 AM	4	43	1		4	25	3		0	1	1		2	6	3
	0	0	0		0	0	0		0	0	0		0	0	0
10:00 AM	3	42	0		4	25	1		1	6	1		1	9	5
10:15 AM	0	31	1		3	22	1		2	10	7		0	7	8
10:30 AM	1	32	1		5	23	3		2	5	1		1	6	4
10:45 AM	1	27	7		2	30	2		3	5	7		1	9	4
	0	0	0		0	0	0		0	0	0		0	0	0
11:00 AM	2	42	1		2	39	1		0	4	3		4	6	4
11:15 AM	1	43	2		4	26	4		2	7	1		0	9	4
11:30 AM	3	50	0		5	38	2		3	7	3		1	12	8
11:45 AM	3	40	2		6	30	2		0	5	3		1	7	3
	0	0	0		0	0	0		0	0	0		0	0	0
12:00 PM	2	37	3		4	38	2		4	8	6		0	7	5
12:15 PM	7	42	3		6	39	2		4	9	7		3	11	6
12:30 PM	2	37	2		6	46	0		3	9	3		2	10	7
12:45 PM	1	26	2		4	40	1		3	5	3		1	9	7
	0	0	0		0	0	0		0	0	0		0	0	0
01:00 PM	1	27	1		6	40	1		2	5	3		1	13	6
01:15 PM	2	32	0		2	45	0		0	10	3		0	13	5
01:30 PM	1	35	1		4	49	2		3	6	0		1	10	5
01:45 PM	1	38	2		7	52	0		1	4	1		2	12	6
	0	0	0		0	0	0		0	0	0		0	0	0
02:00 PM	2	44	2		13	51	2		2	6	2		0	14	6
02:15 PM	5	52	0		11	60	1		5	7	1		2	7	4
02:30 PM	5	61	3		10	49	1		2	18	6		3	2	9
02:45 PM	7	45	6		11	61	6		5	13	5		1	5	6
	0	0	0		0	0	0		0	0	0		0	0	0
03:00 PM	6	42	4		7	52	1		1	8	7		3	12	2
03:15 PM	2	40	3		6	51	2		3	9	5		1	8	7
03:30 PM	2	61	4		11	70	3		3	14	9		4	7	8
03:45 PM	1	45	3		7	83	4		3	17	5		2	10	5
	0	0	0		0	0	0		0	0	0		0	0	0
04:00 PM	27	73	6		12	78	4		4	18	7		2	6	1
04:15 PM	6	65	6		10	71	5		4	19	6		1	9	6
04:30 PM	2	47	6		5	72	0		5	13	8		1	3	8
04:45 PM	2	34	3		6	90	3		3	13	4		4	8	1
	0	0	0		0	0	0		0	0	0		0	0	0
05:00 PM	5	60	1		9	95	3		2	12	3		3	13	7
05:15 PM	0	60	4		11	87	1		2	17	8		1	11	3
05:30 PM	6	55	4		9	82	1		5	30	5		3	13	4
05:45 PM	5	56	5		10	68	0		1	12	8		4	14	6
	0	0	0		0	0	0		0	0	0		0	0	0
06:00 PM	4	42	2		9	79	6		3	18	1		2	12	3
06:15 PM	6	38	1		10	68	1		2	12	7		2	9	5
06:30 PM	4	48	3		5	55	2		1	10	6		3	6	7
06:45 PM	2	44	1		11	60	1		4	6	9		6	8	4

DAVENPORT

190020 Bradford Academy Signal Warrant

Existing Conditions

Study Name **: Existing Signal Warrant_2019.10.21**

Signal Warrants - Summary

Major Street Approaches

Northbound: **NC 119**
Number of Lanes: **1**
85% Speed > 40 MPH.
Total Approach Volume: **2,918**

Southbound: **NC 119**
Number of Lanes: **1**
85% Speed > 40 MPH.
Total Approach Volume: **2,911**

Minor Street Approaches

Eastbound: **Jim Minor Rd**
Number of Lanes: **1**
Total Approach Volume: **782**

Westbound: **Jim Minor Rd**
Number of Lanes: **1**
Total Approach Volume: **969**

Warrant Summary **(Rural values apply.)**

Warrant 1 - Eight Hour Vehicular Volumes ..... **Not Satisfied**

Warrant 1A - Minimum Vehicular Volume .....**Not Satisfied**
Required volumes reached for 4 hours, 8 are needed

Warrant 1B - Interruption of Continuous Traffic .....**Not Satisfied**
Required volumes reached for 4 hours, 8 are needed

Warrant 1C - Combination of Warrants .....**Not Satisfied**
Required 1A volumes reached for 4 hours, 8 are needed
Required 1B volumes reached for 7 hours, 8 are needed

Warrant 2 - Four Hour Volumes ..... **Satisfied**
Number of hours (4) volumes exceed minimum >= minimum required (4).

Warrant 3 - Peak Hour ..... **Satisfied**

Warrant 3A - Peak Hour Delay .....**Satisfied**
Number of hours (2) volumes exceed minimum >= required (1). Delay data not evaluated.

Warrant 3B - Peak Hour Volumes .....**Not Satisfied**
Volumes do not exceed minimums for any hour.

Warrant 4 - Pedestrian Volumes ..... **Not Evaluated**

Warrant 5 - School Crossing ..... **Not Evaluated**

Warrant 6 - Coordinated Signal System ..... **Not Evaluated**

Warrant 7 - Crash Experience ..... **Not Evaluated**

Warrant 8 - Roadway Network ..... **Not Evaluated**

Warrant 9 - Intersection Near a Grade Crossing ..... **Not Evaluated**

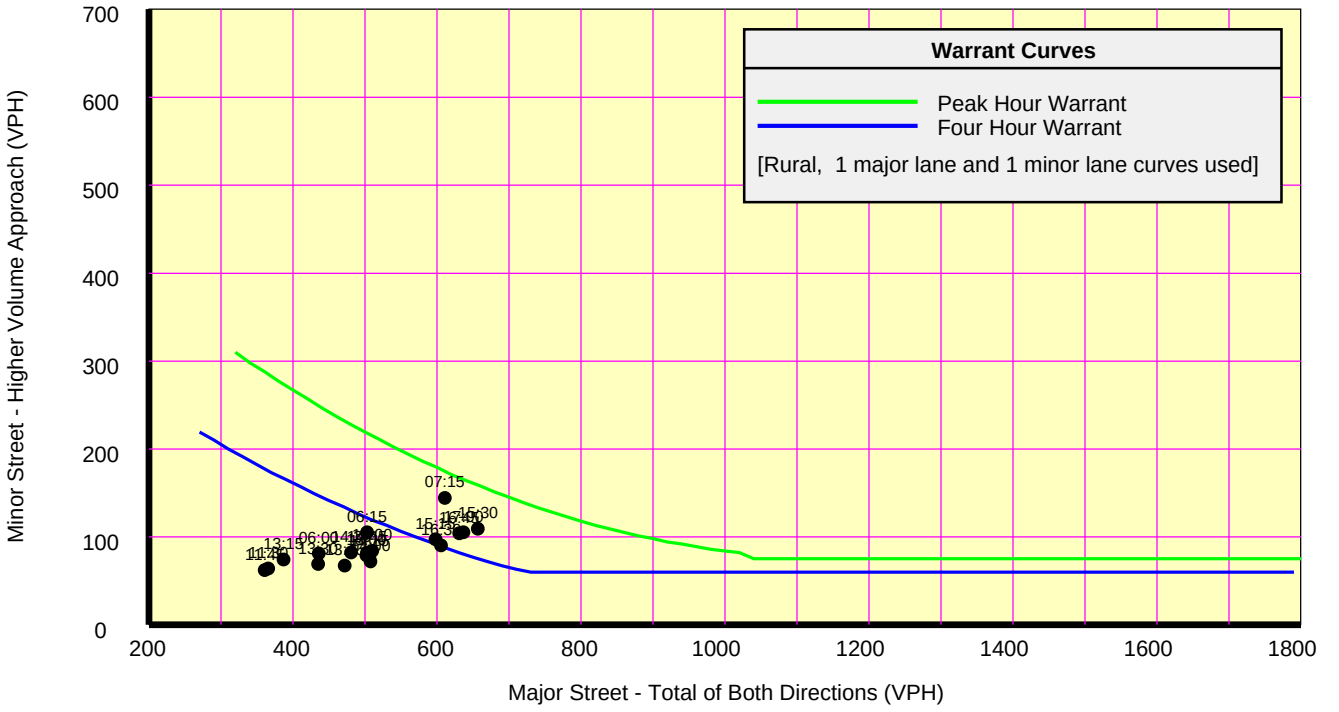
DAVENPORT

190020 Bradford Academy Signal Warrant

Existing Conditions

Study Name **: Existing Signal Warrant_2019.10.21**

Signal Warrants - Summary



Analysis of 8-Hour Volume Warrants:

War 1A-Minimum Volume

Hour Begin	Major Total	Minor Vol	Minor Dir	Maj 350	Min 105
15:30	657	109	EB	Yes	Yes
17:00	637	105	EB	Yes	Yes
07:15	611	144	W	Yes	Yes
06:15	503	105	W	Yes	Yes
16:45	631	104	EB	Yes	No
16:30	606	90	EB	Yes	No
15:15	598	97	EB	Yes	No
15:00	510	84	EB	Yes	No
14:00	508	72	EB	Yes	No
14:15	506	78	EB	Yes	No
14:45	503	82	EB	Yes	No
18:00	502	79	EB	Yes	No
14:30	481	82	EB	Yes	No
13:45	472	67	W	Yes	No
06:00	436	81	W	Yes	No
13:30	435	69	W	Yes	No
13:15	387	74	W	Yes	No
11:30	366	64	W	Yes	No
11:45	361	62	W	Yes	No
18:15	360	57	EB	Yes	No
12:00	352	68	W	Yes	No
13:00	349	74	W	No	No
11:00	348	59	W	No	No
11:15	347	57	W	No	No

War 1B-Interruption of Traffic

Hour Begin	Major Total	Minor Vol	Minor Dir	Maj 525	Min 53
17:15	606	110	EB	Yes	Yes
16:15	606	92	EB	Yes	Yes
15:15	598	97	EB	Yes	Yes
06:30	585	139	W	Yes	Yes
07:30	524	114	W	No	Yes
15:00	510	84	EB	No	Yes
14:00	508	72	EB	No	Yes
14:15	506	78	EB	No	Yes
14:45	503	82	EB	No	Yes
06:15	503	105	W	No	Yes
14:30	481	82	EB	No	Yes
13:45	472	67	W	No	Yes
07:45	455	89	W	No	Yes
06:00	436	81	W	No	Yes
13:30	435	69	W	No	Yes
13:15	387	74	W	No	Yes
08:00	384	78	W	No	Yes
11:30	366	64	W	No	Yes
11:45	361	62	W	No	Yes
18:15	360	57	EB	No	Yes
12:00	352	68	W	No	Yes
13:00	349	74	W	No	Yes
11:00	348	59	W	No	Yes
11:15	347	57	W	No	Yes

War 1C-Combination of Warrants

Hour Begin	Major Total	Minor Vol	Minor Dir	1A Met	1B Met
15:30	657	109	EB	-	Yes
17:00	637	105	EB	Yes	-
16:00	633	104	EB	Yes	-
07:15	611	144	W	Yes	-
07:00	608	160	W	-	Yes
16:30	606	90	EB	-	Yes
17:30	567	104	EB	-	Yes
15:00	510	84	EB	Yes	-
06:15	503	105	W	Yes	-
14:30	481	82	EB	No	Yes
06:00	436	81	W	No	Yes
13:30	435	69	W	No	Yes
14:00	508	72	EB	No	-
14:15	506	78	EB	No	-
14:45	503	82	EB	No	-
18:00	502	79	EB	No	-
13:45	472	67	W	No	-
13:15	387	74	W	No	No
08:00	384	78	W	-	No
11:30	366	64	W	No	No
11:45	361	62	W	No	No
18:15	360	57	EB	No	-
12:00	352	68	W	No	No
13:00	349	74	W	No	No

2023 NO-BUILD VOLUMES															
	NB				SB				EB				WB		
Start Time	Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right
6:00 AM	2	49	0		7	14	2		7	0	2		0	9	7
6:15 AM	7	75	0		3	20	2		9	0	1		3	5	10
6:30 AM	12	102	0		4	31	2		9	2	4		0	18	17
6:45 AM	5	105	3		5	51	3		7	3	3		2	15	9
07:00 AM	4	77	0		13	71	6		6	4	3		3	26	10
07:15 AM	12	122	2		16	61	7		10	5	7		7	25	20
07:30 AM	5	102	3		18	74	6		8	2	6		4	29	10
07:45 AM	12	94	1		13	63	8		7	4	3		1	22	13
08:00 AM	5	80	2		8	47	6		5	6	3		1	15	8
08:15 AM	1	47	2		6	43	3		7	8	5		0	12	11
08:30 AM	4	55	1		7	39	3		4	4	5		0	12	7
08:45 AM	9	57	1		8	15	1		9	5	0		0	15	11
09:00 AM	5	38	0		6	26	2		8	12	2		0	14	11
09:15 AM	2	39	3		8	35	3		5	5	3		2	12	7
09:30 AM	5	35	1		7	39	6		4	9	3		2	12	5
09:45 AM	4	49	1		7	30	4		4	1	1		2	6	5
10:00 AM	3	49	0		7	30	2		5	6	1		1	9	7
10:15 AM	0	37	1		6	27	2		6	11	7		0	7	10
10:30 AM	1	38	1		8	28	4		6	5	1		1	6	6
10:45 AM	1	33	7		5	35	3		7	5	7		1	9	6
11:00 AM	2	49	1		5	45	2		4	4	3		4	6	6
11:15 AM	1	50	2		7	31	5		6	7	1		0	9	6
11:30 AM	3	57	0		8	44	3		7	7	3		1	13	10
11:45 AM	3	47	2		10	35	3		4	5	3		1	7	5
12:00 PM	2	43	3		8	44	3		8	8	6		0	7	7
12:15 PM	7	48	3		10	45	3		8	9	7		3	12	8
12:30 PM	2	43	2		10	52	1		7	9	3		2	11	9
12:45 PM	1	31	2		8	46	2		7	5	3		1	9	9
01:00 PM	1	32	1		10	47	2		5	5	3		1	14	8
01:15 PM	2	37	0		6	52	1		3	11	3		0	14	7
01:30 PM	1	40	1		8	56	3		6	6	0		1	11	7
01:45 PM	1	44	2		11	59	1		4	4	1		2	13	8
02:00 PM	2	50	2		18	58	3		5	6	2		0	15	8
02:15 PM	5	59	0		15	68	2		9	7	1		2	7	6
02:30 PM	5	68	3		14	56	2		5	19	6		3	2	11
02:45 PM	7	51	6		15	69	8		9	14	5		1	5	8
03:00 PM	6	62	4		16	67	4		17	8	7		3	13	4
03:15 PM	2	60	3		15	66	5		19	9	5		1	8	9
03:30 PM	2	82	4		21	86	6		19	15	9		4	7	10
03:45 PM	1	65	3		16	99	7		19	18	5		2	11	7
04:00 PM	28	80	6		17	87	6		7	19	7		2	6	2
04:15 PM	6	72	6		15	79	7		7	20	6		1	9	8
04:30 PM	2	53	6		9	80	1		8	14	8		1	3	10
04:45 PM	2	39	3		10	99	5		6	14	4		4	8	2
05:00 PM	5	66	1		14	105	5		5	13	3		3	14	9
05:15 PM	0	66	4		16	96	2		5	18	8		1	12	5
05:30 PM	6	61	4		14	91	2		8	32	5		3	14	6
05:45 PM	5	62	5		15	76	1		4	13	8		4	15	8
06:00 PM	4	47	2		14	88	8		6	19	1		2	13	5
06:15 PM	6	43	1		15	76	2		5	13	7		2	9	7
06:30 PM	4	54	3		10	63	4		4	11	6		3	6	9
06:45 PM	2	49	1		16	68	2		7	6	9		6	8	6

DAVENPORT

190020 Bradford Academy Signal Warrant

No Build Conditions

Study Name **: No Build Signal Warrant_2019.10.21**

Signal Warrants - Summary

Major Street Approaches

Northbound: **NC 119**

Number of Lanes: **1**

85% Speed > 40 MPH.

Total Approach Volume: **3,333**

Southbound: **NC 119**

Number of Lanes: **1**

85% Speed > 40 MPH.

Total Approach Volume: **3,656**

Minor Street Approaches

Eastbound: **Jim Minor Rd**

Number of Lanes: **1**

Total Approach Volume: **1,056**

Westbound: **Jim Minor Rd**

Number of Lanes: **1**

Total Approach Volume: **1,103**

Warrant Summary **(Rural values apply.)**

Warrant 1 - Eight Hour Vehicular Volumes ..... **Satisfied**

Warrant 1A - Minimum Vehicular Volume .....**Not Satisfied**

Required volumes reached for 6 hours, 8 are needed

Warrant 1B - Interruption of Continuous Traffic .....**Not Satisfied**

Required volumes reached for 7 hours, 8 are needed

Warrant 1C - Combination of Warrants .....**Satisfied**

Required 1A volumes reached for 9 hours, 8 are needed

Required 1B volumes reached for 8 hours, 8 are needed

Warrant 2 - Four Hour Volumes ..... **Satisfied**

Number of hours (6) volumes exceed minimum >= minimum required (4).

Warrant 3 - Peak Hour ..... **Satisfied**

Warrant 3A - Peak Hour Delay .....**Satisfied**

Number of hours (13) volumes exceed minimum >= required (1). Delay data not evaluated.

Warrant 3B - Peak Hour Volumes .....**Satisfied**

Volumes exceed minimums for at least one hour.

Warrant 4 - Pedestrian Volumes ..... **Not Evaluated**

Warrant 5 - School Crossing ..... **Not Evaluated**

Warrant 6 - Coordinated Signal System ..... **Not Evaluated**

Warrant 7 - Crash Experience ..... **Not Evaluated**

Warrant 8 - Roadway Network ..... **Not Evaluated**

Warrant 9 - Intersection Near a Grade Crossing ..... **Not Evaluated**

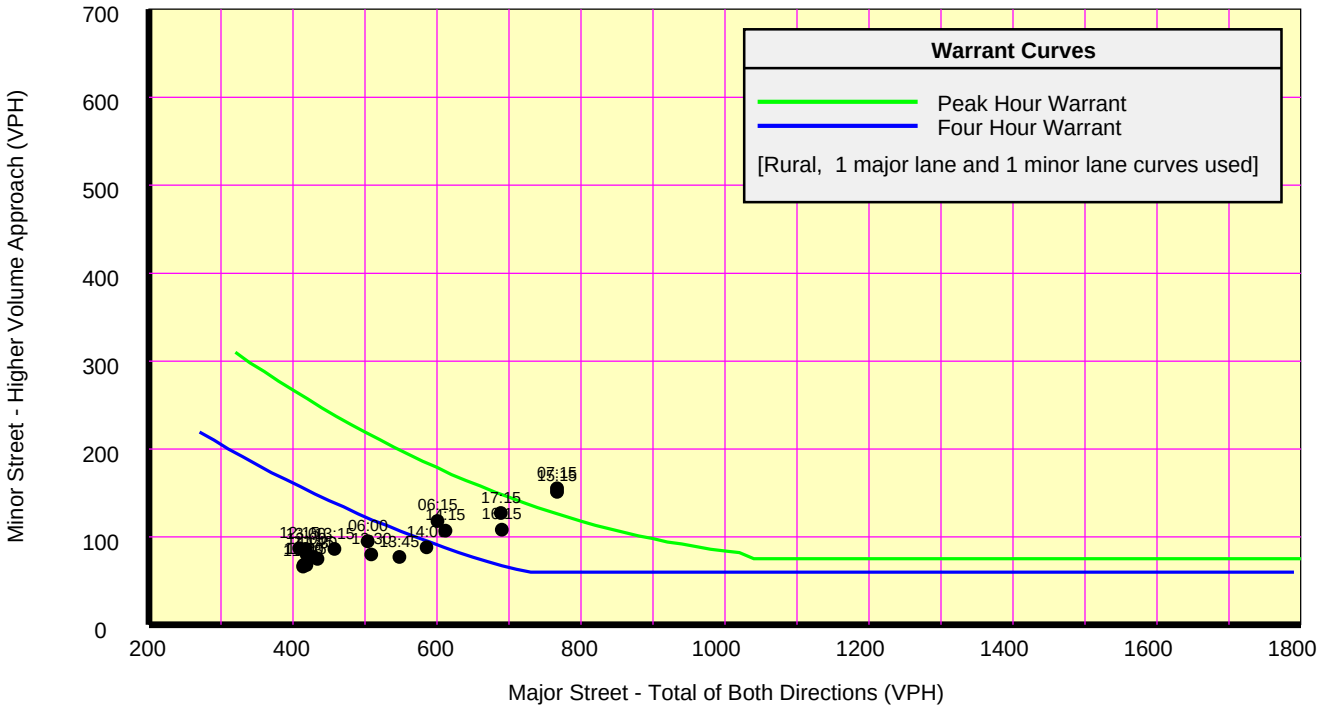
DAVENPORT

190020 Bradford Academy Signal Warrant

No Build Conditions

Study Name **: No Build Signal Warrant_2019.10.21**

Signal Warrants - Summary



Analysis of 8-Hour Volume Warrants:

War 1A-Minimum Volume

Hour Begin	Major Total	Minor Vol	Minor Dir	Maj 350	Min 105
15:15	767	151	EB	Yes	Yes
07:15	767	155	W	Yes	Yes
16:15	690	108	EB	Yes	Yes
17:15	689	127	EB	Yes	Yes
14:15	612	107	EB	Yes	Yes
06:15	601	118	W	Yes	Yes
14:00	586	88	EB	Yes	No
13:45	548	77	W	Yes	No
13:30	509	80	W	Yes	No
06:00	504	95	W	Yes	No
13:15	458	86	W	Yes	No
11:30	434	75	EB	Yes	No
11:45	429	77	EB	Yes	No
18:15	419	68	EB	Yes	No
12:00	419	80	EB	Yes	No
13:00	418	86	W	Yes	No
11:00	415	68	W	Yes	No
11:15	414	66	W	Yes	No
12:15	409	87	W	Yes	No
10:45	399	71	W	Yes	No
12:30	391	85	W	Yes	No
12:45	390	82	W	Yes	No
08:15	379	93	W	Yes	No
09:15	369	70	W	Yes	No

War 1B-Interruption of Traffic

Hour Begin	Major Total	Minor Vol	Minor Dir	Maj 525	Min 53
07:15	767	155	W	Yes	Yes
15:45	751	138	EB	Yes	Yes
16:45	716	121	EB	Yes	Yes
14:45	667	136	EB	Yes	Yes
17:45	608	97	EB	Yes	Yes
06:15	601	118	W	Yes	Yes
13:45	548	77	W	Yes	Yes
13:30	509	80	W	No	Yes
06:00	504	95	W	No	Yes
13:15	458	86	W	No	Yes
11:30	434	75	EB	No	Yes
11:45	429	77	EB	No	Yes
12:00	419	80	EB	No	Yes
13:00	418	86	W	No	Yes
11:00	415	68	W	No	Yes
11:15	414	66	W	No	Yes
12:15	409	87	W	No	Yes
10:45	399	71	W	No	Yes
12:30	391	85	W	No	Yes
12:45	390	82	W	No	Yes
08:15	379	93	W	No	Yes
09:15	369	70	W	No	Yes
10:30	364	60	W	No	Yes

War 1C-Combination of Warrants

Hour Begin	Major Total	Minor Vol	Minor Dir	1A Met	1B Met
07:00	790	170	W	Yes	Yes
15:15	767	151	EB	Yes	Yes
16:15	690	108	EB	Yes	Yes
17:15	689	127	EB	Yes	Yes
14:15	612	107	EB	Yes	Yes
06:00	504	95	W	Yes	Yes
13:15	458	86	W	Yes	Yes
08:00	450	92	W	Yes	Yes
11:30	434	75	EB	No	Yes
12:15	409	87	W	Yes	-
11:45	429	77	EB	No	-
18:15	419	68	EB	No	No
12:00	419	80	EB	No	-
13:00	418	86	W	-	No
11:00	415	68	W	No	No
11:15	414	66	W	No	No
10:45	399	71	W	No	No
12:30	391	85	W	-	No
12:45	390	82	W	-	No
09:15	369	70	W	No	No
10:30	364	60	W	No	No
09:00	355	78	W	No	No
09:30	352	66	W	No	No
10:15	341	66	EB	No	No

2023 BUILD VOLUMES															
	NB				SB				EB				WB		
Start Time	Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right
6:00 AM	2	49	0		7	14	2		7	0	2		0	9	7
6:15 AM	7	75	0		3	20	2		9	0	1		3	5	10
6:30 AM	12	102	0		4	31	2		9	2	4		0	18	17
6:45 AM	5	105	3		5	51	3		7	3	3		2	15	9
07:00 AM	4	87	0		15	78	15		18	4	3		3	26	13
07:15 AM	12	132	2		18	68	16		22	5	7		7	25	23
07:30 AM	5	112	3		20	81	15		20	2	6		4	29	13
07:45 AM	12	104	1		15	70	17		19	4	3		1	22	16
08:00 AM	5	80	2		8	47	6		5	6	3		1	15	8
08:15 AM	1	47	2		6	43	3		7	8	5		0	12	11
08:30 AM	4	55	1		7	39	3		4	4	5		0	12	7
08:45 AM	9	57	1		8	15	1		9	5	0		0	15	11
09:00 AM	5	38	0		6	26	2		8	12	2		0	14	11
09:15 AM	2	39	3		8	35	3		5	5	3		2	12	7
09:30 AM	5	35	1		7	39	6		4	9	3		2	12	5
09:45 AM	4	49	1		7	30	4		4	1	1		2	6	5
10:00 AM	3	49	0		7	30	2		5	6	1		1	9	7
10:15 AM	0	37	1		6	27	2		6	11	7		0	7	10
10:30 AM	1	38	1		8	28	4		6	5	1		1	6	6
10:45 AM	1	33	7		5	35	3		7	5	7		1	9	6
11:00 AM	2	49	1		5	45	2		4	4	3		4	6	6
11:15 AM	1	50	2		7	31	5		6	7	1		0	9	6
11:30 AM	3	57	0		8	44	3		7	7	3		1	13	10
11:45 AM	3	47	2		10	35	3		4	5	3		1	7	5
12:00 PM	2	43	3		8	44	3		8	8	6		0	7	7
12:15 PM	7	48	3		10	45	3		8	9	7		3	12	8
12:30 PM	2	43	2		10	52	1		7	9	3		2	11	9
12:45 PM	1	31	2		8	46	2		7	5	3		1	9	9
01:00 PM	1	32	1		10	47	2		5	5	3		1	14	8
01:15 PM	2	37	0		6	52	1		3	11	3		0	14	7
01:30 PM	1	40	1		8	56	3		6	6	0		1	11	7
01:45 PM	1	44	2		11	59	1		4	4	1		2	13	8
02:00 PM	2	50	2		18	58	3		5	6	2		0	15	8
02:15 PM	5	59	0		15	68	2		9	7	1		2	7	6
02:30 PM	5	68	3		14	56	2		5	19	6		3	2	11
02:45 PM	7	51	6		15	69	8		9	14	5		1	5	8
03:00 PM	6	67	4		18	74	13		23	8	7		3	13	6
03:15 PM	2	65	3		17	73	14		25	9	5		1	8	11
03:30 PM	2	87	4		23	93	15		25	15	9		4	7	12
03:45 PM	1	70	3		18	106	16		25	18	5		2	11	9
04:00 PM	28	80	6		17	87	6		7	19	7		2	6	2
04:15 PM	6	72	6		15	79	7		7	20	6		1	9	8
04:30 PM	2	53	6		9	80	1		8	14	8		1	3	10
04:45 PM	2	39	3		10	99	5		6	14	4		4	8	2
05:00 PM	5	66	1		14	105	5		5	13	3		3	14	9
05:15 PM	0	66	4		16	96	2		5	18	8		1	12	5
05:30 PM	6	61	4		14	91	2		8	32	5		3	14	6
05:45 PM	5	62	5		15	76	1		4	13	8		4	15	8
06:00 PM	4	47	2		14	88	8		6	20	1		2	14	5
06:15 PM	6	43	1		15	76	2		5	14	7		2	10	7
06:30 PM	4	54	3		10	63	4		4	12	6		3	7	9
06:45 PM	2	49	1		16	68	2		7	7	9		6	9	6

DAVENPORT

190020 Bradford Academy Signal Warrant

Build Conditions

Study Name **: Build Signal Warrant_2019.10.21**

Signal Warrants - Summary

Major Street Approaches

Northbound: **NC 119**
Number of Lanes: **1**
85% Speed > 40 MPH.
Total Approach Volume: **3,393**

Southbound: **NC 119**
Number of Lanes: **1**
85% Speed > 40 MPH.
Total Approach Volume: **3,800**

Minor Street Approaches

Eastbound: **Jim Minor Rd**
Number of Lanes: **1**
Total Approach Volume: **1,132**

Westbound: **Jim Minor Rd**
Number of Lanes: **1**
Total Approach Volume: **1,127**

Warrant Summary **(Rural values apply.)**

Warrant 1 - Eight Hour Vehicular Volumes ..... **Satisfied**

Warrant 1A - Minimum Vehicular Volume .....**Not Satisfied**
Required volumes reached for 6 hours, 8 are needed

Warrant 1B - Interruption of Continuous Traffic .....**Not Satisfied**
Required volumes reached for 7 hours, 8 are needed

Warrant 1C - Combination of Warrants .....**Satisfied**
Required 1A volumes reached for 9 hours, 8 are needed
Required 1B volumes reached for 8 hours, 8 are needed

Warrant 2 - Four Hour Volumes ..... **Satisfied**
Number of hours (6) volumes exceed minimum >= minimum required (4).

Warrant 3 - Peak Hour ..... **Satisfied**

Warrant 3A - Peak Hour Delay .....**Satisfied**
Number of hours (17) volumes exceed minimum >= required (1). Delay data not evaluated.

Warrant 3B - Peak Hour Volumes .....**Satisfied**
Volumes exceed minimums for at least one hour.

Warrant 4 - Pedestrian Volumes ..... **Not Evaluated**

Warrant 5 - School Crossing ..... **Not Evaluated**

Warrant 6 - Coordinated Signal System ..... **Not Evaluated**

Warrant 7 - Crash Experience ..... **Not Evaluated**

Warrant 8 - Roadway Network ..... **Not Evaluated**

Warrant 9 - Intersection Near a Grade Crossing ..... **Not Evaluated**

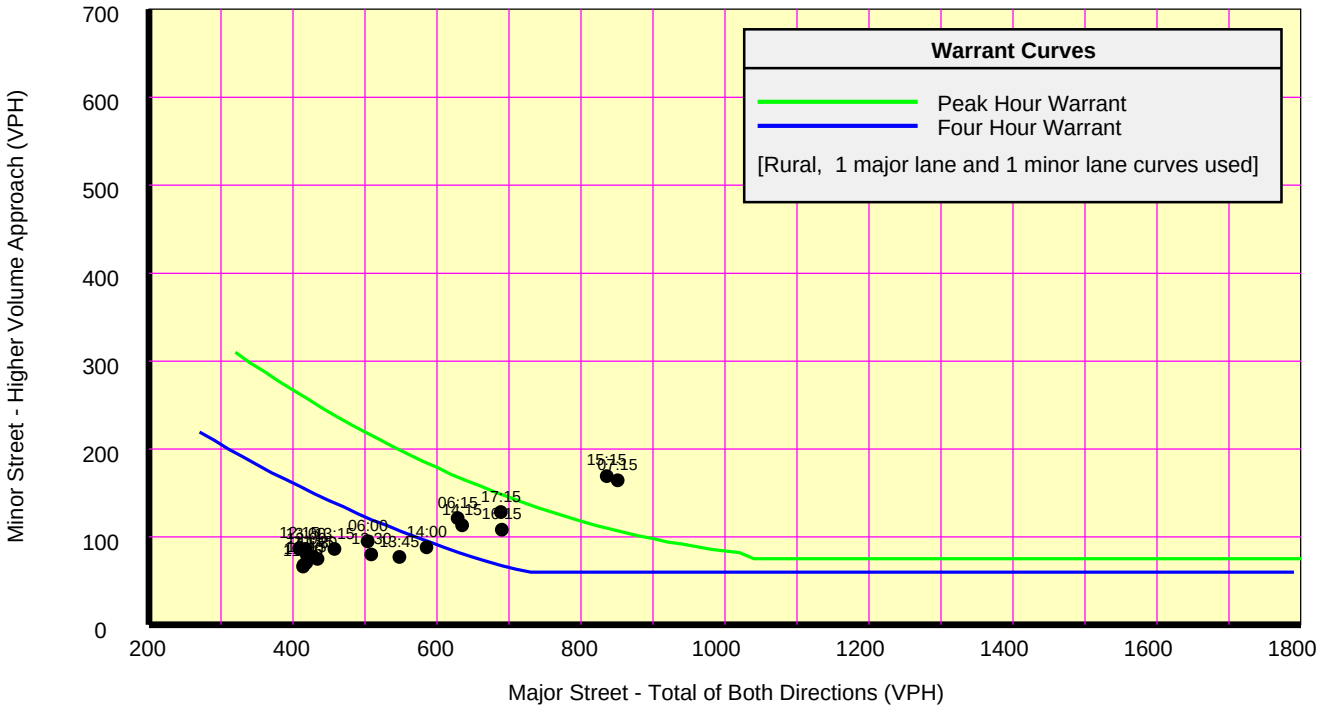
DAVENPORT

190020 Bradford Academy Signal Warrant

Build Conditions

Study Name **: Build Signal Warrant_2019.10.21**

Signal Warrants - Summary



Analysis of 8-Hour Volume Warrants:

War 1A-Minimum Volume

Hour Begin	Major Total	Minor Vol	Minor Dir	Maj 350	Min 105
07:15	851	164	W	Yes	Yes
15:15	836	169	EB	Yes	Yes
16:15	690	108	EB	Yes	Yes
17:15	689	128	EB	Yes	Yes
14:15	635	113	EB	Yes	Yes
06:15	629	121	W	Yes	Yes
14:00	586	88	EB	Yes	No
13:45	548	77	W	Yes	No
13:30	509	80	W	Yes	No
06:00	504	95	W	Yes	No
13:15	458	86	W	Yes	No
11:30	434	75	EB	Yes	No
11:45	429	77	EB	Yes	No
18:15	419	71	EB	Yes	No
12:00	419	80	EB	Yes	No
13:00	418	86	W	Yes	No
11:00	415	68	W	Yes	No
11:15	414	66	W	Yes	No
12:15	409	87	W	Yes	No
10:45	399	71	W	Yes	No
12:30	391	85	W	Yes	No
12:45	390	82	W	Yes	No
08:15	379	93	W	Yes	No
09:15	369	70	W	Yes	No

War 1B-Interruption of Traffic

Hour Begin	Major Total	Minor Vol	Minor Dir	Maj 525	Min 53
07:15	851	164	W	Yes	Yes
15:45	774	144	EB	Yes	Yes
14:45	736	154	EB	Yes	Yes
16:45	716	121	EB	Yes	Yes
06:15	629	121	W	Yes	Yes
17:45	608	100	EB	Yes	Yes
13:45	548	77	W	Yes	Yes
13:30	509	80	W	No	Yes
06:00	504	95	W	No	Yes
13:15	458	86	W	No	Yes
11:30	434	75	EB	No	Yes
11:45	429	77	EB	No	Yes
12:00	419	80	EB	No	Yes
13:00	418	86	W	No	Yes
11:00	415	68	W	No	Yes
11:15	414	66	W	No	Yes
12:15	409	87	W	No	Yes
10:45	399	71	W	No	Yes
12:30	391	85	W	No	Yes
12:45	390	82	W	No	Yes
08:15	379	93	W	No	Yes
09:15	369	70	W	No	Yes
10:30	364	60	W	No	Yes

War 1C-Combination of Warrants

Hour Begin	Major Total	Minor Vol	Minor Dir	1A Met	1B Met
07:00	902	182	W	Yes	Yes
15:15	836	169	EB	Yes	Yes
16:15	690	108	EB	Yes	Yes
17:15	689	128	EB	Yes	Yes
14:15	635	113	EB	Yes	Yes
06:00	504	95	W	Yes	Yes
13:15	458	86	W	Yes	Yes
08:00	450	92	W	Yes	Yes
11:30	434	75	EB	No	Yes
12:15	409	87	W	Yes	-
11:45	429	77	EB	No	-
18:15	419	71	EB	No	No
12:00	419	80	EB	No	-
13:00	418	86	W	-	No
11:00	415	68	W	No	No
11:15	414	66	W	No	No
10:45	399	71	W	No	No
12:30	391	85	W	-	No
12:45	390	82	W	-	No
09:15	369	70	W	No	No
10:30	364	60	W	No	No
09:00	355	78	W	No	No
09:30	352	66	W	No	No
10:15	341	66	EB	No	No

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

September 5, 2019

Mr. David Cheek
City Manager
City of Mebane
106 E. Washington Street
Mebane, NC 27302

Subject: Proposed Summerhaven Development Located on NC 119
Review of Preliminary Plan

Dear Mr. Cheek,

District staff has reviewed the plan submittal received on August 29, 2019. We offer the following comments.

Trip Generation and Traffic Impacts:
The development, as currently proposed, consists of a 78-lot single family residential subdivision and a future school site. The site directly accesses NC 119 via two proposed subdivision street connections served by exclusive left and right turn lanes on NC 119 at each of the accesses. Based upon information provided in the plan and the traffic study dated November 21, 2018, the proposed access configuration is expected to adequately accommodate the trips generated by the residential component of the development and is expected to operate acceptably with installation of the proposed turn lanes. The submittal received does not provide detailed information on the proposed school and it is presumed that this component will be developed at a future time yet to be determined. Pursuant to NCGS 136-18(29a), and in accordance with 19A NCAC 02C.0116 Reimbursement of Schools for Transportation Improvements Completed on the State Highway System, a traffic study will be required prior to development of the school to assess traffic operations and determine any additional improvements required to ensure safe access.

Internal Subdivision Streets:
It is our understanding that the proposed development will remain outside of the City of Mebane Corporate limits and that the Applicant intends to pursue addition of the proposed streets to the State Highway System. Based upon review of the information provided, the streets as configured, would be eligible for addition to the State Highway System for maintenance subject to compliance with all requirements of the current

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

edition of the NCDOT Subdivision Roads Minimum Construction Standards publication. As an exception, to the above, the proposed unnamed street terminating at the shared property line to the southwest of the development is not eligible for addition as configured due to an insufficient number of lots served. A minimum of 4 lots with frontage on the road are required. The road can be considered for future addition upon further extension and sufficient lot count to meet minimum requirements. We are amenable to the proposed street typical section provide in the plan which indicates 26' pavement width, and 8" ABC, 3" of Asphalt pavement design as stipulated by the City of Mebane

Required Permitting and Approvals:
Prior to beginning work, the Applicant will need to obtain the following:

- Approved NCDOT Driveway Permit
- Approved NCDOT Three-Party Encroachment Agreement with City of Mebane for proposed/stipulated sidewalk and appurtenances
- Approved NCDOT Three-Party Encroachment Agreement with Orange-Alamance Water System for water extension and connections
- NCDOT approval of final subdivision street design

Prior to issuance of the above, the Applicant will need to submit complete and detailed plans meeting NCDOT and City of Mebane requirements as applicable.

Feel free to contact me if you have any questions or if we can be of further assistance.

Sincerely,

C. N. Edwards Jr., PE
District Engineer

Cc: J. M. Mills, PE, Division Engineer
Bob Dischinger, PE, Evans Engineering, Inc.

RAMEY KEMP & ASSOCIATES, INC.
5808 Faringdon Place
Raleigh, NC 27609
Phone: 919-872-5115
www.rameykemp.com

January 23, 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: **Bradford Academy TIA Review Comments**

Mr. Stober:

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

Study Summary

The subject development is a relocation of the existing Bradford Academy (919 South Third St, Mebane, NC) to NC 119 south of Kimrey Road. The maximum enrollment of the school (Pre-K to 12th grade) will be approximately 450 students by 2023. Access is provided via a shared driveway with the Summerhaven residential development on NC 119 and an exit-only driveway on NC 119. Two analysis scenarios were considered – Scenario 1: without Summerhaven traffic; Scenario 2: with Summerhaven traffic; to determine impacts specific to the school development.

A roundabout is proposed at the school driveway on the shared access with Summerhaven. The roundabout is anticipated to operate without significant queueing or delay based on conservative traffic assumptions reviewed by RKA. Egress from the school is allowed at the roundabout based on the site plan in the traffic study. However, preferred operations during the school AM and dismissal peak hours is that no traffic uses this egress point. Steps should be taken to reinforce this during school operations (cones restricting access to the parking lot, etc.).

Significant queuing and delay are present at several study area intersection, regardless of the construction of the school or Summerhaven development. The TIA indicates improvements that would be needed to address these issues. NCDOT is reviewing the feasibility of improvements at NC 119 and Trollingwood Hawfields Rd due to existing historic properties and Hawfields Cemetery.

The Summerhaven residential development is required to construct a 100’ southbound left-turn lane on NC 119 and 100’ northbound right-turn lane on NC 119 at the shared access. **Based on the review of the Bradford Academy TIA, no additional improvements within the study area are required to accommodate anticipated school traffic.**

The following comments relate to deviations from various NCDOT and/or City analysis guidelines. However, these variations have either been approved by NCDOT or are not anticipated to significantly impact the analysis results. A revised TIA based on these comments is <u>not</u> requested.

<u>MSTA Guidelines / Internal Analysis Review</u>
Per a conference call held between MSTA, NCDOT District, and RKA staff on 1/15/2020, the following deviations from typical MSTA guidelines were noted as approved and allowable by MSTA staff for this study.

1. Zero (0) volume movements were modelled within the site in Synchro on allowable movements. Typically, zero (0) volume movements are modelled with a volume of '4' per NCDOT CM guidelines.

2. Site plan shows both ingress and egress at the school's driveway from the roundabout, but egress was not modelled in Synchro or SIDRA. Recommended lane configurations also show egress at this location. RKA reviewed the operations of the roundabout with consideration for exiting traffic at this location and anticipate the roundabout will function acceptably under future build conditions.

3. Synchro shows ~1,650' of available stacking length whereas the site plan and report show 1,300'. Per the internal stacking analysis, 1,300' of stacking is sufficient.

4. Loading/Unloading zone is modelled with 152' in length resulting in 5 or 6 vehicles to load/unload per cycle (typically 130' for 5 loading bays per NCDOT MSTA Guidelines).

5. TIA report indicates the proposed Bradford Academy will consist of approximately 450 students and the analysis was prepared for a total of 448 students. This difference is not anticipated to significantly impact the analysis results.

6. Number of staff and student trips utilized for analysis purposes does not match the output from the MSTA School Traffic Calculator based on the proposed student population. The TIA assumes lower numbers of staff members and student drivers, as provided in the school information sheet in the Appendix.

7. Total number of parents utilizing the unloading zone during the AM peak scenarios in Synchro (196 vph) does not match Table 4.2 in the TIA for number of entering/exiting parent trips during the AM peak (197 vph). This difference is not anticipated to significantly impact the analysis results.

8. Total number of staff and student trips entering the designated parking lot during the AM peak scenarios in Synchro (56 vph) does not match Table 4.2 in the TIA for the number of staff and student entering AM peak hour trips (60 vph). This difference is not anticipated to significantly impact the analysis results.

9. Staff and student trips leaving the site should have a bypass lane or alternative access to/from the parking lot so that they do not need to traverse through the designated loading/unloading zone with parent vehicles. This assumption during the dismissal peak scenarios provides for conservative analysis of dismissal loading operations.

10. Peak hour traffic volumes in Synchro show pre-K/K traffic utilizing the loading/unloading zone whereas the TIA explains there will be parking provided for parents of pre-K/K students to park and walk into the

building with their students. This assumption provides for conservative analysis of loading/unloading operations.

11. Table 4.1 indicates that a PHF of 0.75 was utilized for movements affected by both school and background traffic. It may be more appropriate to calculate a weighted average of school and non-school trips to determine an adjusted PHF for the specific movements that have a combination of school and non-school trips.

TIA Report

12. The trip distribution is reasonable. The percentages listed on Pages 12 and 13 for Trollingwood Hawfields and Old Hillsborough Road should be switched. The analysis considers 12% of the trips to/from the east on Old Hillsborough Road and 8% to/from the west on Trollingwood Hawfields Road.

13. Figure 7 School Trips – the entering and exiting trips into the analysis network are imbalanced by one trip. This is likely due to rounding in a spreadsheet used to distribute the trips. This will not significantly impact the results of the analysis as the number of trips entering / exiting the school site itself are correct.

14. Figure 4 Existing Traffic Volumes – a volume of 4 vehicles is shown for movements at which no vehicles or a volume less than 4 was counted. Though Congestion Management requires a minimum volume of 4 on any allowable movement in the analysis, the count values should be shown on the Figures. This is not expected to significantly impact the analysis results.

15. The trip generation for the Summerhaven development is unclear as the trips generated are not consistent with the single-family unit count per TRC plans (78 units) nor the unit count described in the original TIA for Summerhaven. However, the volumes generated by the Summerhaven development are anticipated to be low enough that moderate changes in volume are not anticipated to significantly impact the analysis results.

Synchro Analyses

16. Southbound left-turn storage on NC 119 at the intersection of NC 119 & Trollingwood Hawfields Rd / Old Hillsborough Rd modelled in Synchro (125') does not match the Existing Lane Configurations Figure (100') under AM and dismissal existing conditions. Under future conditions, this turn lane is proposed to be extended by the Cambridge Park development and is modeled at a correct extended length in those files.

17. The provided signal plan at the intersection of NC 119 & Trollingwood Hawfields Rd / Old Hillsborough Rd shows Dallas protected + permitted left-turn phasing whereas this intersection in Synchro was modelled with protected + permitted left-turn phasing under AM and dismissal existing conditions. Protected + permitted left-turn phasing provides for a more conservative analysis.

18. The provided signal plan at the intersection of NC 54 and Jim Minor Rd shows this intersection being a part of the Burlington-Graham signal system. Signal timings from the signal plan were modelled in Synchro under all analysis scenarios. Actual timings operating in the field as part of the signal system

may differ slightly from those modelled in Synchro; however, this is not expected to significantly change the capacity analysis results at this intersection.

19. There are inconsistencies regarding lost time adjustment factors between analysis scenarios / peak hours for the following movements at the study intersections (not expected to significantly change capacity analysis results):

    - Westbound right-turn movement at NC 119 & Trollingwood Hawfields Rd / Old Hillsborough Rd
    - Westbound right-turn movement at NC 54 and Jim Minor Rd

20. Improvements associated with the Cambridge Park Residential Development were analyzed under FNB, FB, and FB+imp analysis scenarios (shown in green on Figure 12 – Recommended Improvements); however, potential improvements associated with the Hawfield Development were only analyzed under the FB+imp analysis scenario (also shown in green on Figure 12). The Hawfield Development has not yet been approved and improvements will be recommended based on a traffic study for that development.

21. The exclusive westbound right-turn lane improvement at the intersection of NC 119 & Trollingwood Hawfields Rd / Old Hillsborough Rd associated with Cambridge Park was analyzed under FNB, FB, and FB+imp analysis scenarios but a right-turn overlap phase was only considered under FB+imp conditions. It should be noted that with the addition of an exclusive northbound right-turn lane at this intersection under FB+imp conditions, a right-turn overlap phase was also considered under FB+imp conditions. NCDOT is currently reviewing the feasibility of several improvements at this intersection.

22. There are two improvements identified as "Improvements needed due to background traffic" in the TIA: 150' northbound right-turn lane on NC 119 at Trollingwood Hawfields Rd / Old Hillsborough Rd and the installation of a signal at NC 119 and Jim Minor Rd (shown in purple in Figure 12). Per NCDOT Congestion Management Guidelines, "Mitigation dependent on unfunded or uncommitted improvements provided by others are not acceptable" and typically not allowable in analysis scenarios. NCDOT is currently reviewing the feasibility of several improvements at these intersections.

<u>General</u>

23. Two NCDOT TIP Projects are in the study area. U-5538C consists of adding turn lanes at NC 119 and Trollingwood Hawfields Rd and is under evaluation. U-6013 consists of widening NC 119 from Trollingwood Hawfields Rd to Lowes Blvd – right-of-way is scheduled for 2021 and construction in 2023. These improvements will help address queueing and delays expected in the network regardless of the proposed development.

24. The development is generally consistent with City of Mebane long-range plans.

ORANGE-ALAMANCE WATER SYSTEM, INC.

POST OFFICE BOX 187 MEBANE, NORTH CAROLINA 27302 TELEPHONE: (919) 563-6212

July 28, 2020

Triad Design Group
4807-C Koger Boulevard
Greensboro, North Carolina 27407

Attn: Mr. L. Allan Hill

Re: Bradford Academy

Dear Mr. Hill:

Please be advised that Orange-Alamance Water System, Inc. can provide adequate water service (domestic and fire) to the Bradford Academy Project located on the east side of NC 119S, Mebane, North Carolina. This project is located across the street from our Kimrey water tank.

We appreciate the opportunity to serve water to your project and look forward to working with you in the near future.

Sincerely,

ORANGE-ALAMANCE WATER SYSTEM, INC.

George Workman, Jr.

George Workman, Jr.
Interim Manager

ALAMANCE COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH SECTION
Improvement Permit- New

IP

A Construction Authorization must be purchased to obtain a building permit (This is not a Construction Authorization)

Tax Map Number	GPIN	Application Date	Permit Number
10-16-209	9803578217	4/22/2020	5690IMPR20

Site Address 0 S NC 119 HWY. MEBANE, NC 27302

Directions I-40E/I-85N EXIT 148 FOR NC-54, RT ON 54 LT ON JIM MINOR RD LEFT ON KIMREY RD

Requestee	HUGH CREED ASSOCIATES 1306 WEST WENDOVER AVE GREENSBORO , NC 27408	**Owner**	KIMREY REDLANDS LLC 2425 KIMREY RD. MEBANE, NC 27302
Phone	(336) 669-9190	**Phone**	(336) 269-2709
Fax		**Fax**	
Other		**Other**	(336) 578-2141
Email	HCA@HUGHCREEDASOOCIATES.COM	**Email**	LEETVERNON@GMAIL.COM

Type of Structure	BUSINESS	**Business Type**	Schools
Pump Required	No	**Business Sub-Type**	Day School - with neither Cafeteria nor showers
Grease Trap Required	No	**Number of students**	450
Projected Daily Flow	4500 GPD		
Permit Valid For	Expires 7/1/2025	**Type of Water Supply**	Well

Wastewater System Type	Type V
System Description	Flow Equalization / Conventional Septic System
System Distribution	PRESSURE MANIFOLD
Repair System Type	Type V
Repair Description	Flow Equalization / Conventional Septic System
Repair System Distribution	SERIAL

Permit Conditions:
Other: DO NOT CUT OR FILL PERMITTED SEPTIC SYSTEM AREA DURING SITE GRADING.

See Attached Site Sketch

The issuance of this permit by the Health Department in no way guarantees the issuance of other permits. The permit holder is responsible for checking with appropriate governing bodies in meeting their requirements. This permit is subject to revocation if the site plan, plat, or the intended use changes. The Improvement Permit shall not be affected by a change in ownership of the site. This permit is subject to compliance with the provisions of the Laws and Rules for Sanitary Sewage Collection, Treatment and Disposal of the North Carolina Administrative Code and to conditions of this permit.

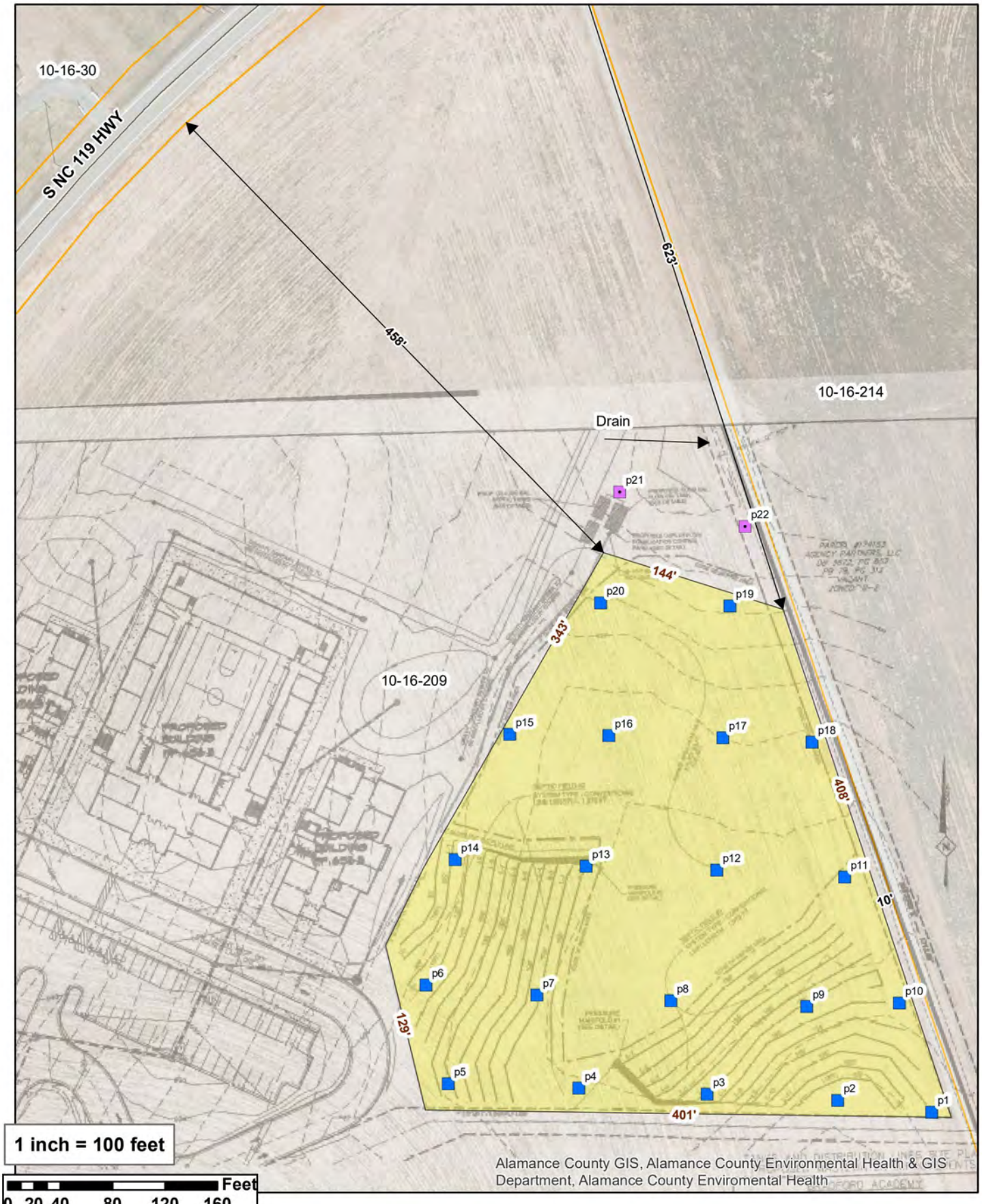
Authorized State Agent Rob Snow Date 7/1/2020

Environmental Health Section
Alamance County Health Department
(336) 570-6367

New Septic System - IP Site Sketch

Name: Bradford Academy **Tax Map: 10-16-209**

E.H.S.: Rob Snow, EHS **Date:7/1/2020**



Scale is approximate and may not be accurate on emailed, scanned, and faxed copies of this drawing.

Drawn By: RES

This Map is the best representation of field data based on information supplied to ACHD and is accurate within the limits of our equipment. This is not a survey map. Property Lines must be clearly marked in the field by the property owner prior to work on the well and septic system.

Date Printed: 7/1/2020

September 3, 2020

Mr. L. Allan Hill, PE
Triad Design Group
4807-C Koger Boulevard
Greensboro, NC 27407

Subject: Bradford Academy – Water and Sewer System Improvements

Dear Mr. Hill:

In accordance with paragraph 7-4.3 A.3.a. in the UDO, this letter is provided to indicate that I have reviewed the preliminary water and sewer system layout for the subject project and find that it meets City standards based on the following:

1. Water system – The School will connect to an 8 inch developer installed water extension from Orange-Alamance Water System's 12 inch water main in NC 119. Bradford Academy has obtained a letter (enclosed) from Orange-Alamance Water System, Inc. indicating that they will provide adequate water service (fire and domestic) to the school.

2. Sanitary Sewer system – The school has obtained an Alamance County Environmental Health Improvement Permit (enclosed) for an on-site subsurface treatment system (flow equalization/with conventional septic system) with sufficient repair area for a projected daily flow of 4,500 gallons per day.

Should you have any questions, please let me know.
Sincerely,

Franz K. Holt, P.E. City Engineer

CC: Ashley Hadley, Planner
Cy Stober, Development Director
Kyle Smith, Utilities Director
Chris Rollins, Assistant City Manager

ORANGE-ALAMANCE WATER SYSTEM, INC.

POST OFFICE BOX 187 MEBANE, NORTH CAROLINA 27302 TELEPHONE: (919) 563-6212

July 28, 2020

Triad Design Group
4807-C Koger Boulevard
Greensboro, North Carolina 27407

Attn: Mr. L. Allan Hill

Re: Bradford Academy

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We appreciate the opportunity to serve water to your project and look forward to working with you in the near future.

Sincerely,

ORANGE-ALAMANCE WATER SYSTEM, INC.

George Workman, Jr.

George Workman, Jr.
Interim Manager

ALAMANCE COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH SECTION
Improvement Permit- New

IP

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Other		**Other**	(336) 578-2141
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Type of Structure	BUSINESS	**Business Type**	Schools
Pump Required	No	**Business Sub-Type**	Day School - with neither Cafeteria nor showers
Grease Trap Required	No	**Number of students**	450
Projected Daily Flow	4500 GPD		
Permit Valid For	Expires 7/1/2025	**Type of Water Supply**	Well

Wastewater System Type	Type V
System Description	Flow Equalization / Conventional Septic System
System Distribution	PRESSURE MANIFOLD
Repair System Type	Type V
Repair Description	Flow Equalization / Conventional Septic System
Repair System Distribution	SERIAL

Permit Conditions:
Other: DO NOT CUT OR FILL PERMITTED SEPTIC SYSTEM AREA DURING SITE GRADING.

See Attached Site Sketch

The issuance of this permit by the Health Department in no way guarantees the issuance of other permits. The permit holder is responsible for checking with appropriate governing bodies in meeting their requirements. This permit is subject to revocation if the site plan, plat, or the intended use changes. The Improvement Permit shall not be affected by a change in ownership of the site. This permit is subject to compliance with the provisions of the Laws and Rules for Sanitary Sewage Collection, Treatment and Disposal of the North Carolina Administrative Code and to conditions of this permit.

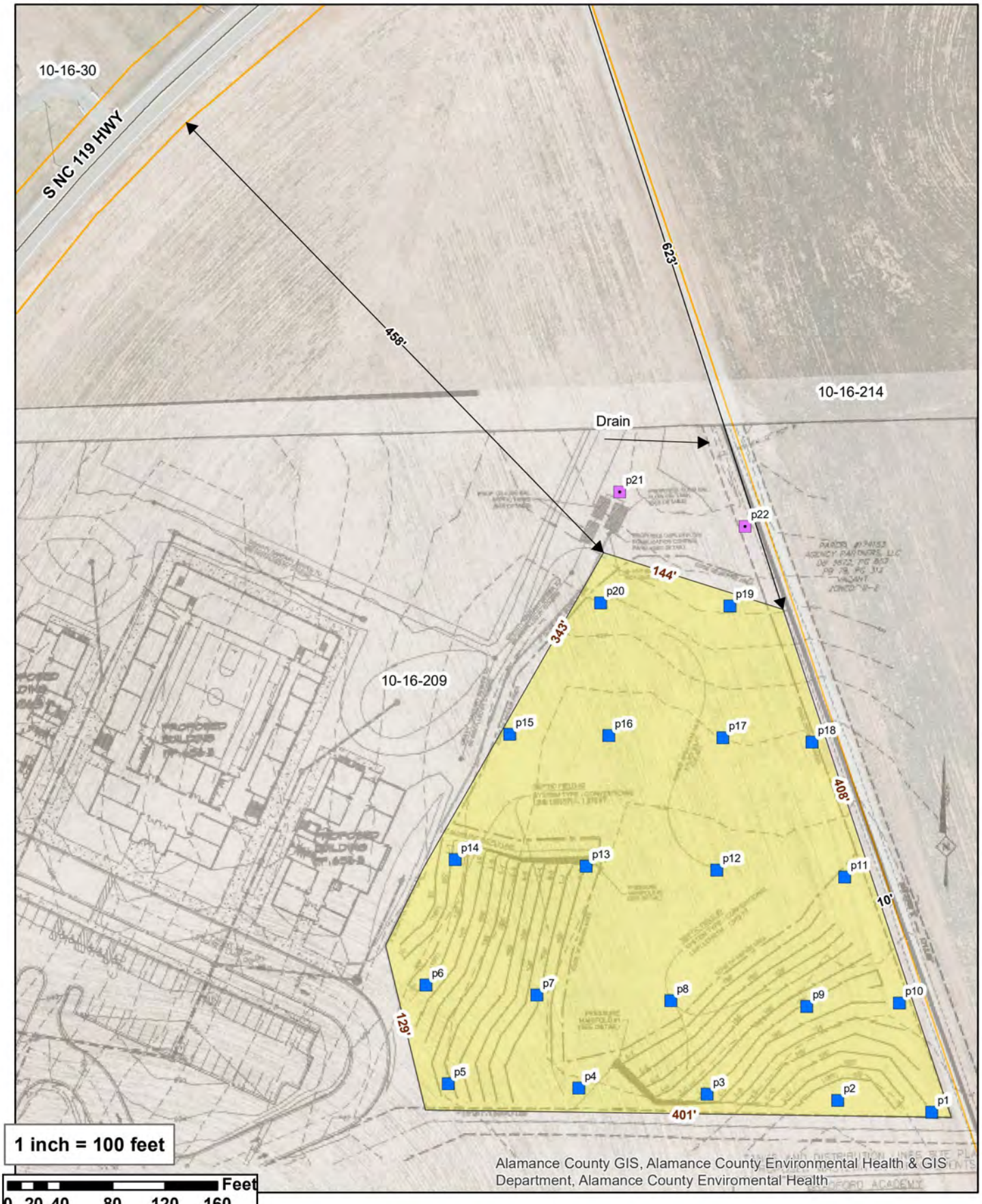
Authorized State Agent Rob Snow Date 7/1/2020

Environmental Health Section
Alamance County Health Department
(336) 570-6367

New Septic System - IP Site Sketch

Name: Bradford Academy **Tax Map: 10-16-209**

E.H.S.: Rob Snow, EHS **Date:7/1/2020**



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Drawn By: RES

This Map is the best representation of field data based on information supplied to ACHD and is accurate within the limits of our equipment. This is not a survey map. Property Lines must be clearly marked in the field by the property owner prior to work on the well and septic system.

Date Printed: 7/1/2020

Technical Memorandum

Date: September 3, 2020

To: Ashley Ownbey, Planner

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

Subject: Bradford Academy – City Engineering review

City Engineering has reviewed the site plans for Bradford Academy received August 20th, 2020 prepared by L. Allan Hill, P.E. Chief Civil Engineer with Triad Design Group, P.C. and has the following comments.

A. General Summary

1. Bradford Academy Private School (450 students Pre-K thru grade 12) is proposed to be located along the frontage of NC 119 on approximately 14 acres.
2. No permanent stormwater quality control measures are required due to the impervious surface being less than 24%. However, a fenced dry detention basin is provided that can be converted to a water quality pond with future expansion of the school.
3. Water service (domestic and fire) is to be provided by Orange-Alamance Water System, Inc. per letter.
4. Sewer service is on-site subsurface treatment as permitted by the Alamance County Health Department Environmental Health Section.
5. A traffic impact analysis was completed for the proposed school and reviewed by the City's traffic consultant. In addition, NDCOT has reviewed the TIA and provided their requirements internal and external to the site. External improvements include right and left turn lanes with 100' of storage along NC 119 at the main private road entrance. A second connection to NC 119 is exit only.
6. The developer of Summerhaven will construct the related NC 119 right/left turn lanes and main private access drive with roudabout serving the proposed school.
7. The site is located in Swepsonville Fire District.

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 water and sewer system layout and find that it adequately meets the proposed use as follows:

1. Water system – The School will connect to an 8 inch developer installed water extension from Orange-Alamance Water System's 12 inch water main in NC 119. Bradford Academy has obtained a letter from Orange-Alamance Water System, Inc. indicating that they will provide adequate water service (fire and domestic) to the school.

2. Sanitary Sewer system – The school has obtained an Alamance County Environmental Health Improvement Permit for an on-site subsurface treatment system (flow equalization/with conventional septic system) with sufficient repair area for a projected daily flow of 4,500 gallons per day.

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 impervious surface (24%) exempts the project for any new stormwater quality control requirements and is considered low density.

D. Storm Drainage System

Sec. 5-4. D. in the UDO provides requirements for storm drainage systems. Drainage improvements are proposed which drain the site buildings and parking lots to a proposed dry detention basin before it discharges off-site.

E. Street Access and Traffic Analysis

A traffic impact analysis was completed for the proposed school and reviewed by the City's traffic consultant. In addition, NDCOT has reviewed the TIA and provided a letter with their requirements internal and external to the site. External improvements include right and left turn lanes with 100' of storage along NC 119 at the main private road entrance. A second connection to Hwy. 119 is exit only. The developer of Summerhaven will construct the related right/left turn lanes and main private access drive with a roundabout serving the proposed school. The main access drive and roundabout is shared with the Summerhaven development and will remain private until the subdivision is developed further meeting NCDOT requirements for ownership/maintenance. NCDOT driveway permits will be required for both connections.

F. Construction Plan Submittal – TRC has reviewed and approved the preliminary stamped site construction drawings.

AGENDA ITEM #4D

RZ 20-10

Conditional Rezoning –

The Artisan at Mebane

Presenter

Cy Stober, Development Director

Applicant

Mebane NC TH, LLC

c/o Brett Basnight

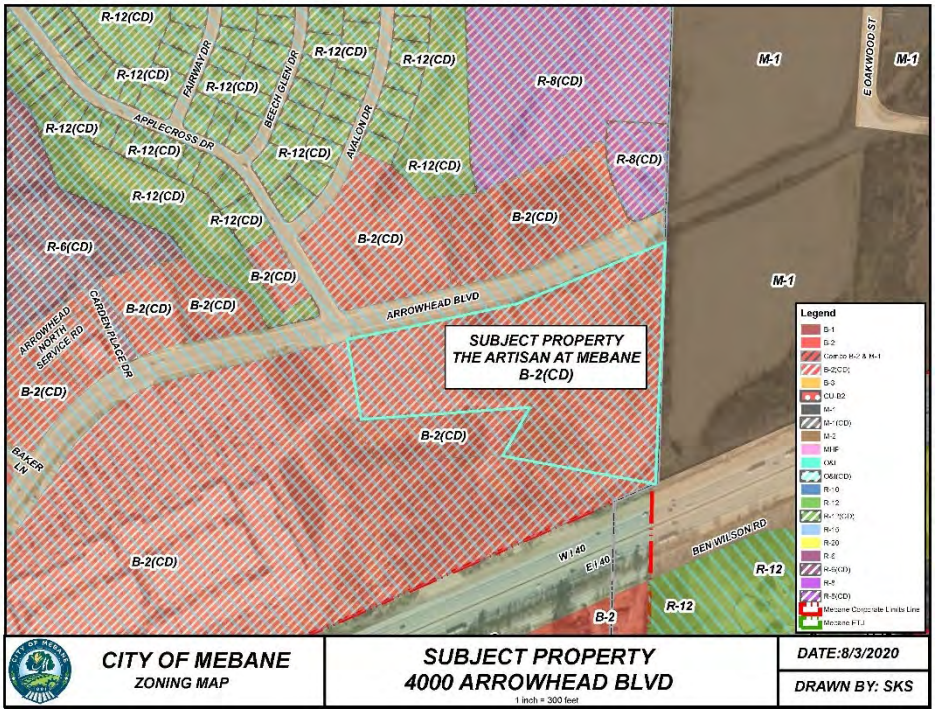
111 South Spring Street

Spartanburg, SC 29306

Public Hearing

Yes ☒ No ☐

Zoning Map



Property

4000 Arrowhead Blvd, Alamance County

GPIN #9824166394

Proposed Zoning

R-6(CD)

Current Zoning

B-2(CD)

Size

+/-12.17 acres of a +/-50.89-ac parcel

Surrounding Zoning

B-2, B-2(CD), R-12, R-12(CD)

Surrounding Land Uses

Business, Single-Family Residential, & Vacant

Utilities

To be extended at developer's expense

Floodplain

Yes

Watershed

No

City Limits

Yes

Summary

Mebane NC TH, LLC, c/o Brett Basnight, is requesting approval to conditionally rezone +/-12.17 acres of a +/-50.89 ac property located at 4000 Arrowhead Boulevard from B-2(CD) (General Business, Conditional Zoning District) to R-6(CD) (Residential Conditional Zoning District) to allow "The Artisan at Mebane" an 85-unit townhome subdivision developed as a Residential Cluster Development. All units in this proposed development are to be for rent, not sale. The property is located in Alamance County within the City limits. Mebane NC TH, LLC, has the property under contract to purchase, contingent upon approval of the conditional rezoning.

The applicant proposed to provide site-specific plan onsite amenities & dedications include the following:

- The construction of all internal roads;
- The construction of 5' sidewalks along all roads except for Roads C & D;
- The construction of an 8' gravel-surfaced privately-maintained walking trail internal to the development and connected to the City's publicly-maintained sidewalk along Arrowhead Boulevard; and
- The construction of a clubhouse and pool to exclusively serve development residents.

Requested waivers:

- A reduced municipal street right of way for Roads C & D to 35' and featuring no sidewalks, unless otherwise shown on the site plan;
- A minimum lot size of 1,900 s.f. for the proposed individual townhome lots;
- The UDO requires that this development provide 213 parking spaces total and the applicant is requesting to provide 195;
- The UDO requires a minimum lot size of 6,000 s.f. with an allowed 40% reduction to 3,600 s.f. and the applicant is requesting a minimum lot size of 1,900 s.f.;
- The UDO establishes a maximum lot coverage of 40% and the applicant is requesting to develop up to 55% of the lot area;
- The UDO requires front setbacks of 30' and the applicant is requesting that they be reduced to 25'.
- The UDO requires corner side setbacks of 18' and the applicant is requesting that they be reduced to 10' minimum, with a minimum building separation of 20';
- The UDO requires rear setbacks of 25' and the applicant is requesting that they be reduced to 15'; and
- The UDO requires a minimum lot width of 85' with a maximum reduction to 40' wide, and the applicant is requesting that they be reduced to 20'.

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 Board voted 7-2 to recommend approval of the applicant's request. The opposing votes were on the basis of concerns of the adequacy of onsite stormwater services and the introduction of higher-density, rental properties to the area.

This item will be voted on at the CONTINUED meeting to be held on Wednesday, September 16, 2020 at 6pm. 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 the R-6(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);

3. Motion to **deny** the R-6(CD) rezoning as presented due to a lack of

   a. Harmony with the surrounding zoning

   OR

   b. Consistency with the objectives and goals in the City's 2017 Comprehensive Land Development Plan *Mebane By Design* or any of the City's other adopted plans.

Attachments

1. Zoning Amendment Application
2. Zoning Map
3. Site Plan
4. Planning Project Report
5. Preliminary Water and Sewer System Approval Letter
6. Technical Memorandum – City Engineering Review
7. Letter of Support from Tanger Outlet Centers
8. Arrowhead Overall Site Plan January 2010

APPLICATION FOR A ZONING AMENDMENT

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

Name of Applicant: Mebane NC TH, LLC

Address of Applicant: 111 South Spring Street Spartanburg, SC 29306

Address and brief description of property to be rezoned: portion of 9824166394, 4000 Arrowhead Blvd, Tanger Properties

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: R-6 (CD)

Sketch attached: Yes X No _____

Reason for the requested re-zoning: Improve undeveloped land to provide an urban living experience, integrating residential with nearby walkable retail.

Signed: _____

Date: 2/11/2020

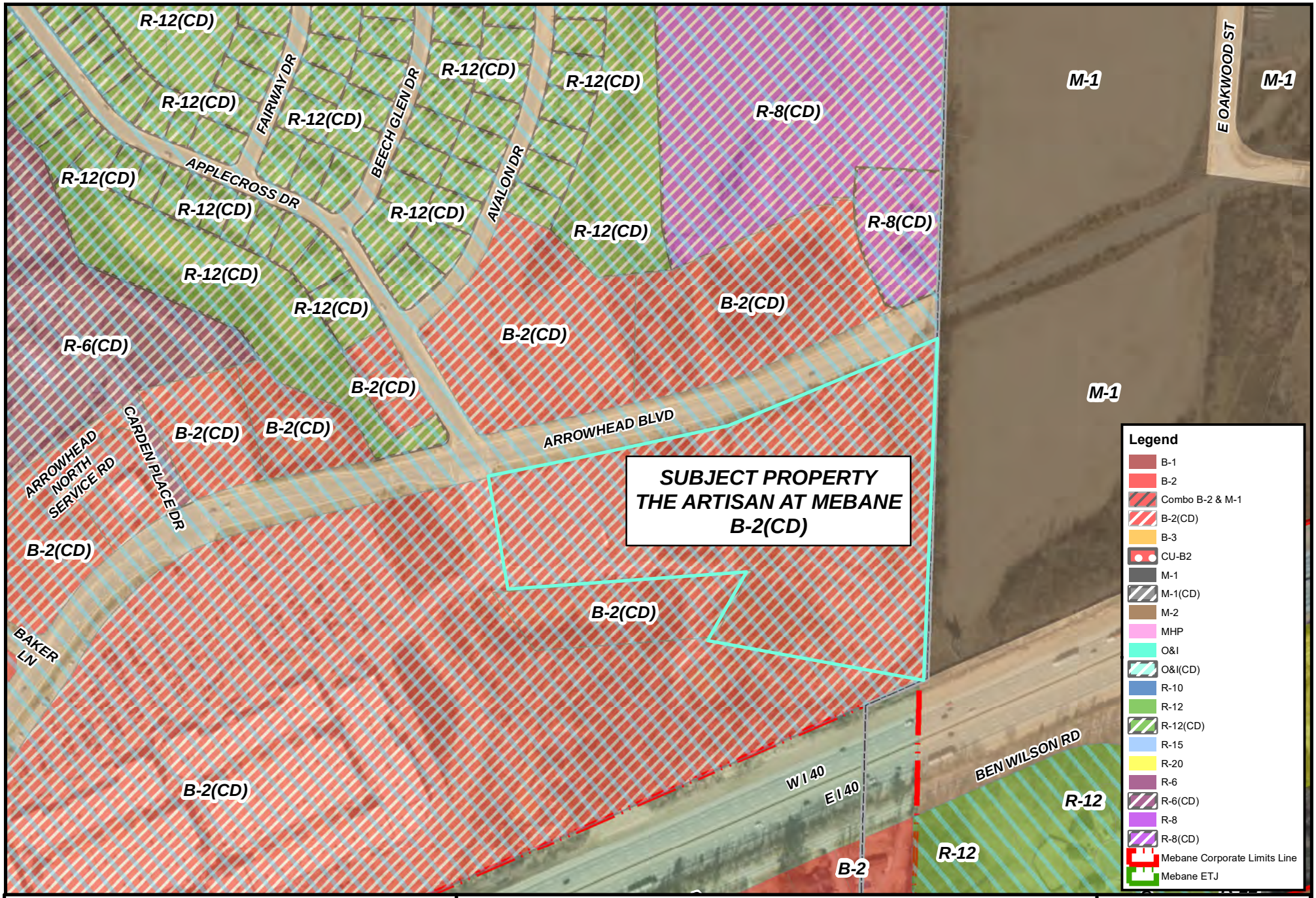
Action by Planning Board: _____

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 PROPERTY
4000 ARROWHEAD BLVD

1 inch = 300 feet

DATE:8/3/2020

DRAWN BY: SKS

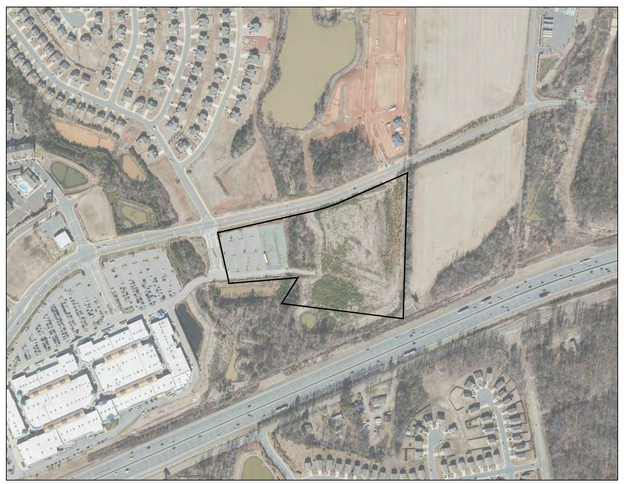
ARTISAN AT MEBANE

CONDITIONAL PRELIMINARY SUBDIVISION PLAN

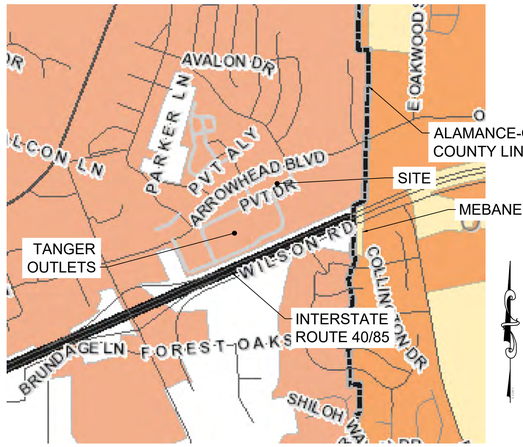
CITY OF MEBANE, ALAMANCE COUNTY, NORTH CAROLINA

SITE DATA

PROJECT:	ARTISAN AT MEBANE
ENGINEER:	TIMMONS GROUP 5410 TRINITY ROAD; SUITE 102 RALEIGH, NC 27607 PHONE: 919-866-4507 FAX: 919-859-5663 JIM CHANDLER, PE EMAIL: JIM.CHANDLER@TIMMONS.COM
DEVELOPER:	MEBANE NC TH, LLC 111 SOUTH SPRING STREET SPARTANBURG. SC 29306 PHONE: 704-724-7019 EMAIL: BBASNIGHT@LONGBRANCHDEVELOPMENT.COM
PROPERTY LOCATION:	4000 ARROWHEAD BLVD
PINS:	9824166394
EXISTING ZONING:	B2
PROPOSED ZONING:	R6 (CD)
TOWNSHIP:	MELVILLE
PROPOSED USE:	RESIDENTIAL
TOTAL TRACT AREA:	12.17 ACRES



AERIAL MAP
1":400'



VICINITY MAP
1":2000'

PROPERTY OWNER:	TANGER PROPERTIES LIMITED PARTNERSHIP 3200 NORTHLINE AVE STE 360 GREENSBORO, NC 27408

Sheet List Table

Sheet Number	Sheet Title
C0.0	COVER
C1.0	EXISTING CONDITIONS
C2.0	PRELIMINARY SITE & SUBDIVISION PLAN
C3.0	PRELIMINARY UTILITY PLAN
C4.0	PRELIMINARY GRADING & DRAINAGE PLAN
C5.0	PRELIMINARY LANDSCAPE PLAN
C7.1	FRONT LOADED ELEVATIONS
C7.2	REAR LOADED ELEVATIONS
C7.3	POOL CABANA ELEVATIONS
C7.4	HIGHWAY VISUALIZATION

FOR REVIEW ONLY

THIS DRAWING PREPARED AT THE
RALEIGH OFFICE
5410 Trinity Road, Suite 102 | Raleigh, NC 27607
TEL 919.866.4951 FAX 919.833.8124 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

REVISION DESCRIPTION

DATE

DATE 07/15/2020
DRAWN BY 331
DESIGNED BY 331
CHECKED BY J.CHANDLER
SCALE N/A

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

ARTISAN AT MEBANE
MEBANE, ALAMANCE COUNTY, NORTH CAROLINA
COVER

JOB NO. 44076
SHEET NO. C0.0

These plans and associated documents are the exclusive property of TIMMONS GROUP and may not be reproduced in whole or in part and shall not be used for any purpose whatsoever, inclusive, but not limited to construction, bidding, and/or construction staking without the express written consent of TIMMONS GROUP.

S:\331\44076-Mebane_Longbranch\DWG\Sheet\Plat\44076-C0.0-COVR.dwg | Plotted by Ryan Wadsworth

NOTES:
1. BOUNDARY TAKEN FROM SURVEY BY GSC SURVEYING DATED JANUARY 6, 2020.
2. TOPOGRAPHIC INFORMATION TAKEN FROM SURVEY BY GSC SURVEYING DATED JANUARY 6, 2020 AND ALAMANCE COUNTY GIS.
3. THE SUBJECT PROPERTY IS LIES IN ZONE X AND ZONE AE IN ACCORDANCE WITH FIRM MAP #3710982400L, WITH AN EFFECTIVE DATE OF NOVEMBER 17, 2017.

SANITARY SEWER LOCATIONS TO BE FIELD VERIFIED.

LEGEND
- PROPERTY LINE
- FLOODPLAIN
- 50' POND BUFFER

APPROX. LOCATION OF EOP & LANE MARKINGS
EXISTING PAVEMENT & LANE MARKINGS
ARROWHEAD BOULEVARD 100' PUBLIC ROW
FLATS AVE
8" WATERLINE PLUG TO BE FIELD LOCATED
CONTROL CORNER IRON PIPE FOUND N 847330.000 E 1923081.223 ELEV. 639.73
CONTROL CORNER IRON ROD SET N 846992.905 E 1922029.805 ELEV. 681.15
PARKING LOT AREA TO BE REMOVED
APPLECROSS DRIVE PUBLIC ROW
EXISTING SIGNALIZED INTERSECTION
EXISTING STREAM
EXISTING LIGHTPOLE TO BE REMOVED
EXISTING STORM DRAINAGE TO BE REMOVED
50' POND BUFFER
500 YEAR FLOODPLAIN
EXISTING VEGETATION
100 YEAR FLOODPLAIN
FLOODWAY
INTERSTATE ROUTE 40/85 VARIABLE WIDTH RIGHT OF WAY (CONTROLLED ACCESS)
MEBANE ETJ
PORTION OF GPIN 9824166394 TANGER PROPERTIES LIMITED PARTNERSHIP DB 2960 PG 497 PB 73 PG 326 530,236 SQ. FT. 12.173 ACRES
REMAINING PORTION OF GPIN 9824166394 TANGER PROPERTIES LIMITED PARTNERSHIP DB 2960 PG 497 PB 73 PG 326
GPIN 9824263637 MEBANE 8540, LLC DB 2268 PG 236 PB 73 PG 326
ARROWHEAD APARTMENTS LLC GPIN 9824276493 R-8 VACANT
MEBANE 8540 LLC GPIN 9824271309 B-2 VACANT
ARROWHEAD GREENS HOMEOWNERS GPIN 9824175451 B-2 COMM COMMON AREA
MEBANE 8540 LLC GPIN 9824271101 B-2 VACANT
MEBANE 8540 LLC GPIN 9824173115 B-2 VACANT
MEBANE 8540 LLC GPIN 9824173942 R-12 COMMON AREA
W H WILSON FAMILY INVESTMENT GROUP GPIN 9824374181 AR VACANT
GENTEX HOMES RALEIGH DIVISION GPIN 9824361153 R-12 OPEN SPACE
SOME AS SHOWN ON ORANGE COUNTY PB 118 PG 78
GRAVEL PARKING AREA
ASPHALT PARKING LOT
JURISDICTIONAL WATER
DETENTION POND
EXISTING SANITARY SEWER & STORM DRAINAGE EASEMENT
EXISTING SANITARY SEWER EASEMENT
JUNCTION BOX
BOX CULVERTS
PROBABLE CONCRETE ARCH CULVERT
TRANSFORMER
L 202.22' R=1050.00' Δ=11°03'44" Ch Brg=N71°52'50"E Chrd=202.41'
N17°24'42"E 525.20'
N82°52'06"W 684.43'
S64°31'26"W 1.90'
S07°30'07"W 232.76'
S07°30'07"W 232.76'
S07°30'07"W 232.76'
S07°14'26"W 231.06'
S07°30'07"W 232.76'
N66°20'42"E 0.21'
NAD 83
SCALE 1"=60'
0 60' 120'

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL CITY OF MEBANE AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS.

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DRAWN BY 331
DESIGNED BY 331
CHECKED BY J.CHANDLER
SCALE 1" = 60'

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

ARTISAN AT MEBANE
MEBANE, ALAMANCE COUNTY, NORTH CAROLINA
EXISTING CONDITIONS

JOB NO. 44076
SHEET NO. C1.0

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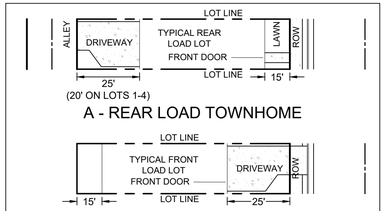
GENERAL SITE NOTES

1. IRON PIPES AT ALL PROPERTY CORNERS UNLESS SHOWN OTHERWISE.
2. WATER AND SEWER PROVIDED BY THE CITY OF MEBANE.
3. THE SUBJECT PROPERTY LIES IN ZONE X AND ZONE AE IN ACCORDANCE WITH FIRM MAP #3710982400L WITH AN EFFECTIVE DATE OF NOVEMBER 17, 2017.
4. ROADS AND DRIVEWAYS SHALL COMPLY WITH NCDOT AND CITY OF MEBANE STANDARDS.
5. THE WATER AND SEWER SYSTEMS SHALL COMPLY WITH CITY OF MEBANE STANDARDS.
6. BOUNDARY INFORMATION TAKEN FROM A SURVEY BY GSC SURVEYING DATED JANUARY 6, 2020. TOPOGRAPHIC INFORMATION TAKEN FROM A SURVEY BY GSC SURVEYING GROUP DATED JANUARY 6, 2020 AND ALAMANCE COUNTY GIS.
7. ALL STREETS WITHIN THE SUBDIVISION WILL HAVE A POSTED SPEED LIMIT OF 25 MPH.
8. A COMMON OWNER IN THE FORM OF A PROPERTY MANAGEMENT OR HOMEOWNER'S ASSOCIATION (HOA) WILL OWN AND MAINTAIN ALL OPEN SPACE PARCELS AND WILL BE RESPONSIBLE FOR MAINTAINING ALL LANDSCAPING REQUIRED BY THE CITY OF MEBANE UNIFIED DEVELOPMENT ORDINANCE (UDO).
9. TRAIL IS INTENDED FOR PEDESTRIAN ACCESS AND WILL BE STABILIZED USING GRAVEL AND EDGING.
10. PROJECT SHALL MEET APPLICABLE FHA DESIGN AND CONSTRUCTION REQUIREMENTS AS WELL AS ANY ADA REQUIREMENTS FOR AREAS OF THE DEVELOPMENT THAT ARE PLACES OF PUBLIC ACCOMMODATION.
11. STRUCTURES MAY OCCUPY GREATER THAN 40% OF LOTS. WAIVER ALLOWING STRUCTURES TO OCCUPY UP TO 55% OF LOTS IS REQUESTED.
12. LIGHTING PLAN WILL BE PROVIDED WITH CONSTRUCTION PLANS.

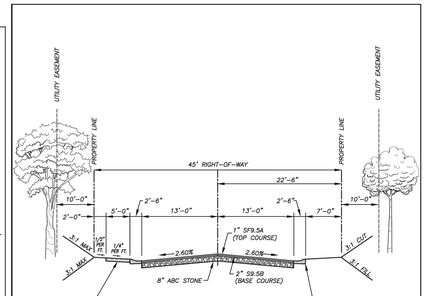


TYPICAL LOT LAYOUTS

NOT TO SCALE
*LAYOUTS AND SIZES MAY VARY

PRIVATE COMMON AREA			
OPEN SPACE 1	4,264 SF	0.10 AC	Streetscape Buffer & OS
OPEN SPACE 2	3,096 SF	0.07 AC	Streetscape Buffer & OS
OPEN SPACE 3	2,477 SF	0.06 AC	Streetscape Buffer & OS
OPEN SPACE 4	1,995 SF	0.05 AC	Drainage & OS
OPEN SPACE 5	2,827 SF	0.06 AC	Streetscape Buffer & OS
OPEN SPACE 6	2,627 SF	0.06 AC	Drainage & OS
OPEN SPACE 7	72,764 SF	1.67 AC	Drainage & Recreation
OPEN SPACE 8	2,609 SF	0.06 AC	Streetscape Buffer & OS
OPEN SPACE 9	2,306 SF	0.05 AC	Streetscape Buffer & OS
OPEN SPACE 10	3,253 SF	0.07 AC	Streetscape Buffer & OS
OPEN SPACE 11	17,136 SF	0.39 AC	Streetscape Buffer & OS
OPEN SPACE 12	74,688 SF	1.71 AC	Drainage & OS
OPEN SPACE 13	55,788 SF	1.28 AC	Amenity Area & OS
TOTAL	245,831 SF	5.64 AC	AC

PROJECT AREA		
ROW	100,129 SF	2.30 AC
LOTS	184,276 SF	4.23 AC
PRIVATE COMMON AREA	245,831 SF	5.64 AC
TOTAL AREA	530,236 SF	12.17 AC



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. CONTROL JOINTS TO BE HOT 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-2

CITY OF MEBANE STANDARD	RESIDENTIAL STREET SECTION FOR TOWNHOME DEVELOPMENTS (45' ROW – 31' B-B)	
	SCALE: N.T.S.	DATE: 2/3/2020 DRAWN BY: WDF

WAIVER DETAIL

CITY OF MEBANE STANDARD ST-2 TO BE MODIFIED VIA WAIVER TO BE 35' PUBLIC RIGHT-OF-WAY (17.5' EACH SIDE OF CENTERLINE) OVER 31' B-B ROLL CURB AND GUTTER WITH A PUBLIC SIDEWALK EASEMENT WHERE SIDEWALK IS INSTALLED FOR ROAD C AND ROAD D.

LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- PERIMETER BUFFER
- PROPOSED RIGHT-OF-WAY
- PROPOSED LOT LINE
- BUILDING SETBACK
- PROPOSED ROAD CENTER
- DRAINAGE EASEMENT
- SANITARY SEWER EASEMENT
- SIDEWALK EASEMENT
- 50' POND BUFFER
- OPEN SPACE
- PROPOSED 5' SIDEWALK
- PROPOSED 8' GRAVEL TRAIL

SITE DATA

OWNERS/SUBDIVIDER/DEVELOPER:
MEBANE NC TH, LLC
111 SOUTH SPRING STREET
SPARTANBURG, SC 29306
PHONE: 704-724-7019

ENGINEER:
TIMMONS GROUP
JIM CHANDLER, PE
5410 TRINITY ROAD, SUITE 102
RALEIGH, NC 27607
PHONE: 919-866-4507

PROPOSED SETBACKS
FRONT = 25'
REAR = 15'
CORNER SIDE = 10'
BUILDING SEPARATION = 20'

PIN # = 9824166394
FIRM MAP = #3710982400L, 11/17/2017

TOTAL TRACT ACREAGE = 12.17 AC
EXISTING ZONING = B2
PROPOSED ZONING = R6/CD
PROPOSED TOWNHOME LOTS = 85
(30 REAR LOAD & 55 FRONT LOAD)

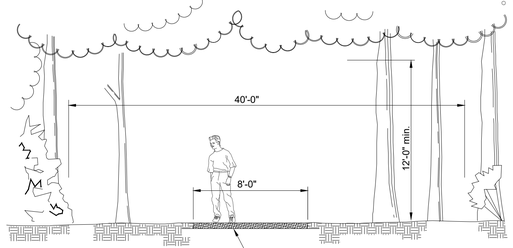
REQUIRED OPEN SPACE = 750 SF/UNIT (MF PRIVATE REC)
+ 1,000 SF/UNIT (OPEN SPACE) = 143,500 SF (3.29 AC)
PROVIDED OPEN SPACE = 5.51 AC

REQUIRED PARKING = 2 SPACES/DU + 0.5 SPACES/DU <2 BEDROOMS = 213 SPACES
PROVIDED PARKING = 195 SPACES

MIN LOT SIZE IN R6 ZONING = 6,000 SF
MIN LOT SIZE PROPOSED = 1,900 SF

STREET TABLE

ROAD NAME	TYPE	LENGTH
ROAD A	45' PUBLIC ROW	990 LF
ROAD B	45' PUBLIC ROW	540 LF
ROAD C	35' PUBLIC ROW	460 LF
ROAD D	35' PUBLIC ROW	644 LF
TOTAL		2,634 LF



VEGETATIVE CLEARING DETAIL

GENERAL NOTES:

1. CONTRACTOR SHALL CLEAR FOREST UNDER STORY AND BRUSH FOR A DISTANCE OF 20' ON EITHER SIDE OF THE TRAIL. TREES SHALL BE LIMBED UP TO A VERTICAL DISTANCE OF 12' FROM THE FOREST FLOOR IN THE 40' WIDE ZONE. BRANCHES SHALL BE CUT ABOVE AND PARALLEL TO THE BRANCH COLLAR WITH STANDARD TREE PRUNING EQUIPMENT USING 3-STEP METHOD TO REMOVE WEIGHT OF BRANCH PRIOR TO FINAL CUT.
2. CONTRACTOR SHALL USE WOOD CHIPPER TO DISPOSE OF LANDSCAPE CLEARING DEBRIS. WOOD CHIPS SHALL BE BLOWN INTO WOODS ADJACENT TO THE TRAIL. CONTRACTOR SHALL USE ALL PRACTICAL MEANS TO REDUCE AMOUNT OF WASTE SENT FROM THE JOB SITE TO THE LANDFILL.
3. IN AREAS WHERE THE TRAIL IS ROUTED ADJACENT TO THE WOODS' EDGE, UNDER STORY CLEARING SHALL EXTEND 20' INTO WOODS.
4. CONSTRUCTION MUST COMPLY WITH RIPARIAN BUFFER ORDINANCE.

GRAVEL WALKING TRAIL N.T.S.

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TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

ARTISAN AT MEBANE
MEBANE, ALAMANCE COUNTY, NORTH CAROLINA
PRELIMINARY SITE & SUBDIVISION PLAN

JOB NO. 44076
SHEET NO. C2.0

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UTILITY NOTES:

1. **ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF MEBANE STANDARDS AND SPECIFICATIONS.**
2. **MINIMUM UTILITY HORIZONTAL SEPARATION DISTANCES:**
   WATER AND SANITARY SEWER MAINS - 10 FT.
   WATER AND STORM SEWER MAINS - 5 FT.
   SANITARY SEWER AND STORM SEWER MAINS - 5 FT.
   GRAVITY SANITARY SEWER AND FORCE MAINS - 5 FT.
3. **MINIMUM UTILITY VERTICAL SEPARATION DISTANCES:**
   WATER AND SANITARY SEWER MAINS - 18 IN.
   WATER AND STORM SEWER MAINS - 18 IN.
   SANITARY SEWER AND STORM SEWER MAINS - 24 IN.

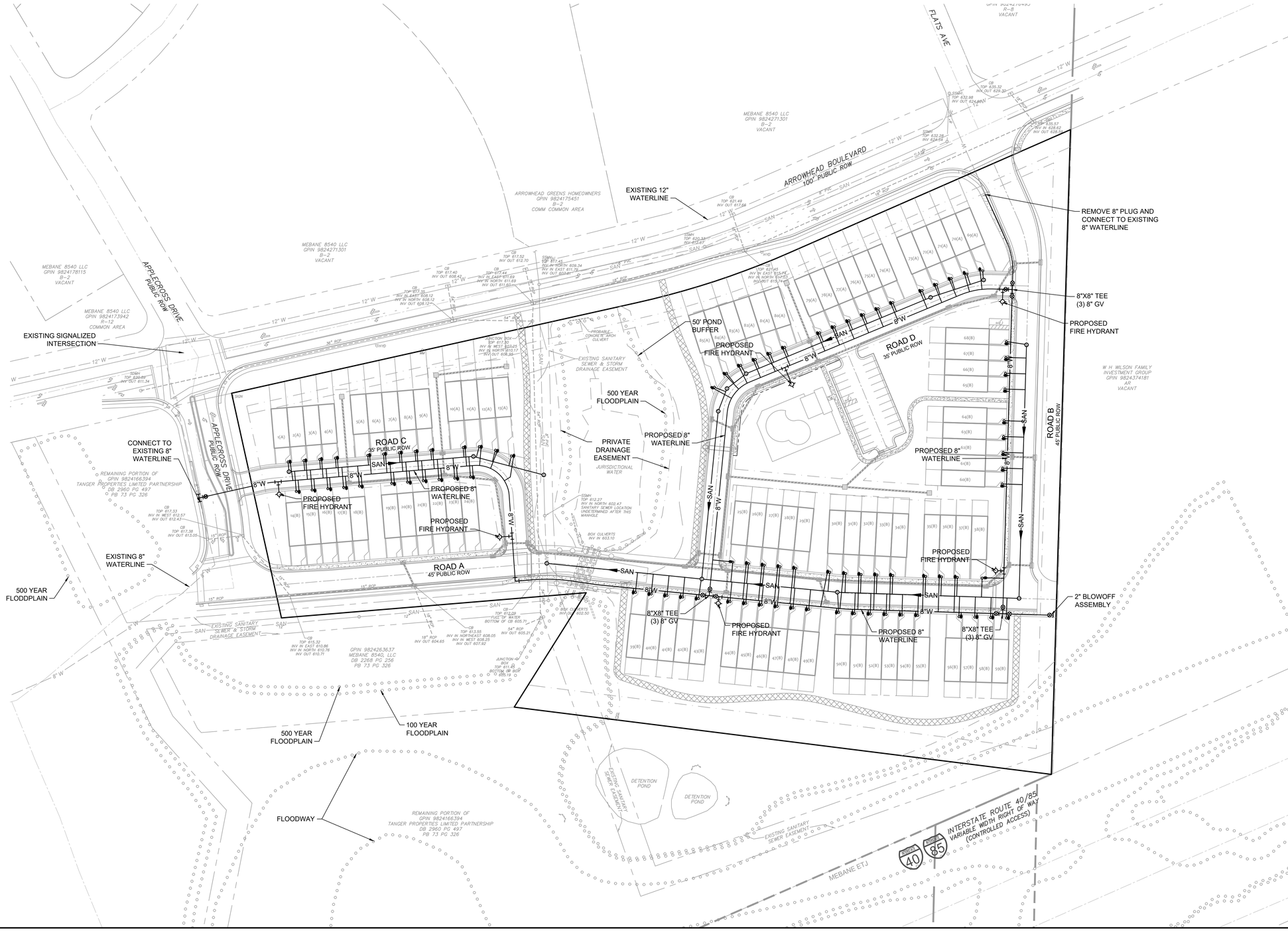
UTILITY LEGEND

- SAN — SANITARY SEWER
- SANITARY MANHOLE
- SAN — EXISTING SAN. SEWER
- EXISTING SAN. MANHOLE
- W — PROPOSED WATERMAIN
- W — EXISTING WATERMAIN
- WATER VALVE
- FIRE HYDRANT
- BLOWOFF ASSEMBLY

SITE LEGEND

- PROPERTY LINE

SANITARY SEWER LOCATIONS TO BE FIELD VERIFIED.



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ARTISAN AT MEBANE
MEBANE, ALAMANCE COUNTY, NORTH CAROLINA

PRELIMINARY UTILITY PLAN

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SHEET NO. C3.0

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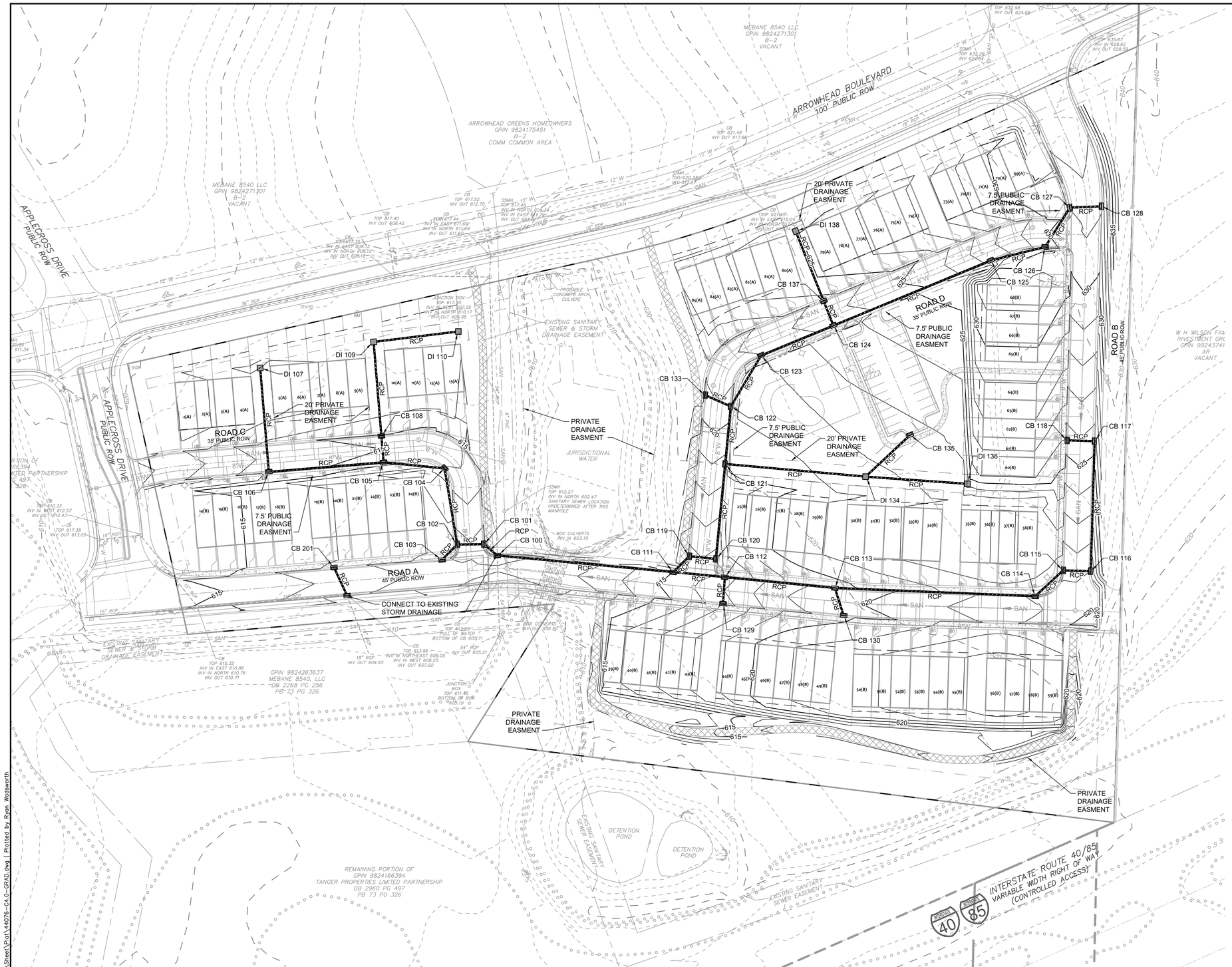

NOTE(S):

1. EXISTING DETENTION PONDS SHALL BE UTILIZED FOR STORMWATER TREATMENT.
2. PONDS SHALL BE INSPECTED AND CERTIFIED AS PART OF DEVELOPMENT.
3. POND DESIGN CALCULATIONS SHALL BE COMPLETED DURING CONSTRUCTION DRAWING APPROVAL.
4. CONSTRUCTION DRAWINGS SHALL INCLUDE A SIGNED AND SEALED STATEMENT (IF A HIGH DENSITY PROJECT) CERTIFYING THAT THE DESIGN OF ALL STORMWATER MANAGEMENT FACILITIES AND PRACTICES WILL CONTROL AND TREAT THE RUNOFF FROM THE 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 DESIGN MANUAL, AND THAT THE DESIGNS AND PLANS ENSURE COMPLIANCE WITH THE CITY'S PHASE II STORMWATER ORDINANCE.

SITE LEGEND

PROPERTY LINE

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL CITY OF MEBANE AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS.

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ARTISAN AT MEBANE

MEBANE, ALAMANCE COUNTY, NORTH CAROLINA

PRELIMINARY GRADING & DRAINAGE PLAN

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SHEET NO. C4.0

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NOTES:
1. STREET TREES SHALL BE SPACED AT 40' O.C. PER UDO REQUIREMENTS.
2. PLACEMENT OF TREES SHALL AVOID DRIVEWAYS, WATER AND SEWER SERVICES, AND OTHER UTILITIES. CHOOSE LOCATION TO MINIMIZE DISTURBANCE TO EXISTING TREE ROOTS.
3. PROPOSED TREE LOCATIONS SHALL BE EITHER STAKED OR APPROVED BY THE CITY OF MEBANE.
4. TREES SHALL BE WARRANTED FOR A PERIOD OF ONE YEAR FROM THE TIME OF ACCEPTANCE.
5. A COMMON OWNER IN THE FORM OF A PROPERTY MANAGEMENT OR HOMEOWNER'S ASSOCIATION (HOA) WILL OWN AND MAINTAIN ALL OPEN SPACE PARCELS AND WILL BE RESPONSIBLE FOR MAINTAINING ALL LANDSCAPING REQUIRED BY THE CITY OF MEBANE UNIFIED DEVELOPMENT ORDINANCE (UDO).
6. A LICENSED PROFESSIONAL WILL REVIEW ALL EXISTING LANDSCAPING TO BE UTILIZED AS PART OF THE PERIMETER BUFFER AS PART OF THE CONSTRUCTION DRAWING SUBMITTAL. EXISTING PLANTINGS WILL BE SUPPLEMENTED ACCORDINGLY IN LOCATIONS THAT DO NOT MEET THE UDO REQUIREMENTS.
7. REFER TO THE CITY OF MEBANE UDO, APPENDIX G FOR INFORMATION ON ACCEPTABLE PLANTINGS.
8. LANDSCAPING TO BE PROVIDED ALONG TRAIL AROUND JURISDICTIONAL POND.
9. EACH LOT SHALL HAVE FOUNDATION LANDSCAPING AND HVAC SCREENING.

LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- PERIMETER BUFFER
- PROPOSED RIGHT-OF-WAY
- PROPOSED LOT LINE
- BUILDING SETBACK
- PROPOSED ROAD CENTER
- DRAINAGE EASEMENT
- SANITARY SEWER EASEMENT
- OPEN SPACE
- PROPOSED 5' SIDEWALK
- PERIMETER BUFFER

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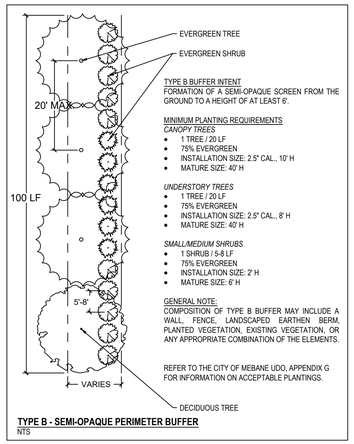


TYPE B - SEMI-OPAQUE PERIMETER BUFFER
NTS

TYPE B BUFFER INTENT
FORMATION OF A SEMI-OPAQUE SCREEN FROM THE GROUND TO A HEIGHT OF AT LEAST 6'.

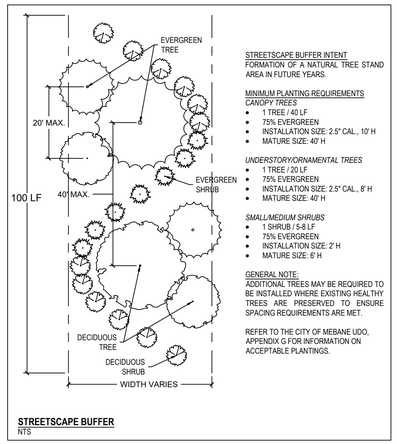
MINIMUM PLANTING REQUIREMENTS
CANOPY TREES
- 1 TREE / 20 LF
- 75% EVERGREEN
- INSTALLATION SIZE: 2.5" CAL., 10' H
- MATURE SIZE: 40' H

UNDERSTORY TREES
- 1 TREE / 20 LF
- 75% EVERGREEN
- INSTALLATION SIZE: 2.5" CAL., 8' H
- MATURE SIZE: 40' H

SMALL/MEDIUM SHRUBS
- 1 SHRUB / 5-8 LF
- 75% EVERGREEN
- INSTALLATION SIZE: 2' H
- MATURE SIZE: 6' H

GENERAL NOTE:
COMPOSITION OF TYPE B BUFFER MAY INCLUDE A WALL, FENCE, LANDSCAPED EARTHEN BERM, PLANTED VEGETATION, EXISTING VEGETATION, OR ANY APPROPRIATE COMBINATION OF THE ELEMENTS.

REFER TO THE CITY OF MEBANE UDO, APPENDIX G FOR INFORMATION ON ACCEPTABLE PLANTINGS.



STREETSCAPE BUFFER
NTS

STREETSCAPE BUFFER INTENT
FORMATION OF A NATURAL TREE STAND AREA IN FUTURE YEARS.

MINIMUM PLANTING REQUIREMENTS
CANOPY TREES
- 1 TREE / 40 LF
- 75% EVERGREEN
- INSTALLATION SIZE: 2.5" CAL., 10' H
- MATURE SIZE: 40' H

UNDERSTORY/ORNAMENTAL TREES
- 1 TREE / 20 LF
- 75% EVERGREEN
- INSTALLATION SIZE: 2.5" CAL., 8' H
- MATURE SIZE: 40' H

SMALL/MEDIUM SHRUBS
- 1 SHRUB / 5-8 LF
- 75% EVERGREEN
- INSTALLATION SIZE: 2' H
- MATURE SIZE: 6' H

GENERAL NOTE:
ADDITIONAL TREES MAY BE REQUIRED TO BE INSTALLED WHERE EXISTING HEALTHY TREES ARE PRESERVED TO ENSURE SPACING REQUIREMENTS ARE MET.

REFER TO THE CITY OF MEBANE UDO, APPENDIX G FOR INFORMATION ON ACCEPTABLE PLANTINGS.

ALLOWABLE STREET TREE PLANT LIST

PLANT NAME	SIZE
LAUREL OAK QUERCUS LAUREFOLIA	2.5" CAL 30' - 50' HT
GINKGO GINKGO BILOBA	2.5" CAL 40' - 70' HT
WILLOW OAK QUERCUS PHELLOS	2.5" CAL 60' - 80' HT
LITTLELEAF LINDEN TILIA CORDATA	2.5" CAL 30' - 70' HT
UPRIGHT HORNBEAM CARPINUS BETULUS 'FASTIGIATA'	2.5" CAL 20' - 40' HT
CHINESE PISTACHIO PISTACIA CHINENSIS	2.5" CAL 20' - 40' HT

SCALE 1"=50'
0 50' 100'
NAD 83

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ARTISAN AT MEBANE
MEBANE, ALAMANCE COUNTY, NORTH CAROLINA
PRELIMINARY LANDSCAPE PLAN

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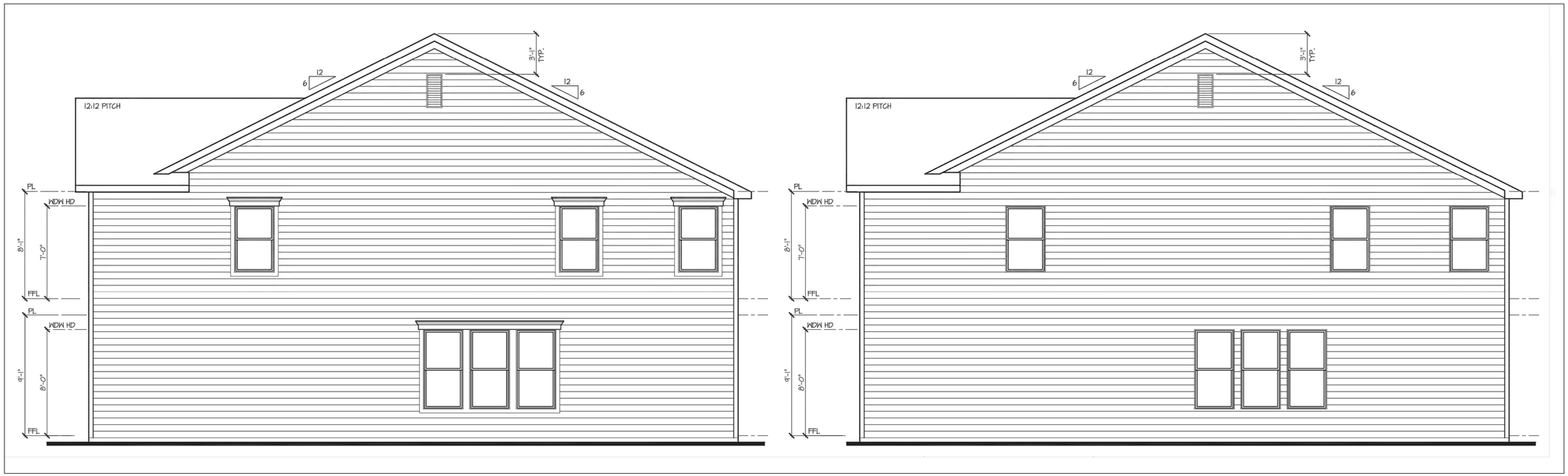
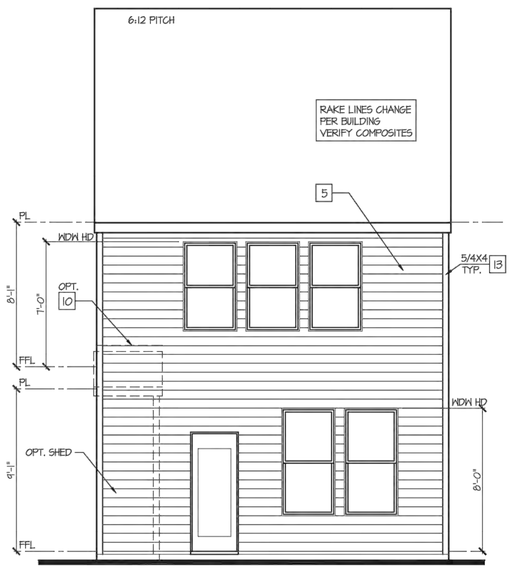


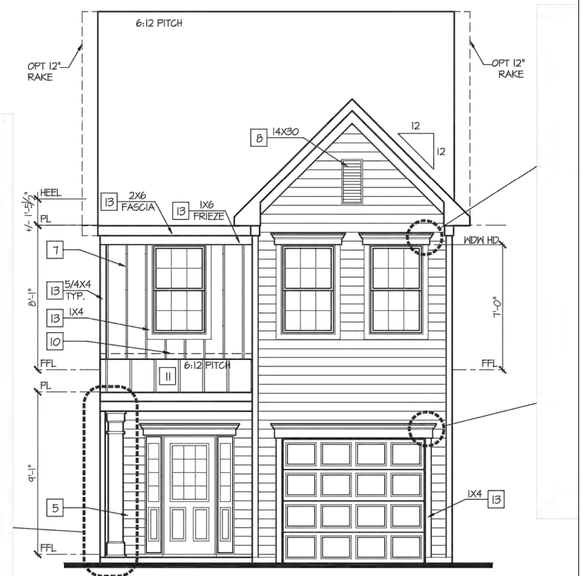
NOTE:
1. REAR ELEVATIONS AS SHOWN. MATERIALS WILL MATCH THOSE USED ON THE FRONT ELEVATIONS.
2. ALL UTILITIES MUST BE SCREENED.





Rear Elevation #1

ELEVATION OPT. #23000 SCALE: 1/4 = 1'-0" AT 22"x34" LAYOUT
1/8 = 1'-0" AT 11"X17" LAYOUT



Front Elevation #1

ELEVATION OPT. #23000 SCALE: 1/4 = 1'-0" AT 22"x34" LAYOUT
1/8 = 1'-0" AT 11"X17" LAYOUT

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TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

ARTISAN AT MEBANE

MEBANE, ALAMANCE COUNTY, NORTH CAROLINA

FRONT LOADED ELEVATIONS

REVISION DESCRIPTION	DATE

DATE 07/15/2020
DRAWN BY 331
DESIGNED BY 331
CHECKED BY J.CHANDLER
SCALE N/A
JOB NO. 44076
SHEET NO. C7.1

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Left Elevation #1

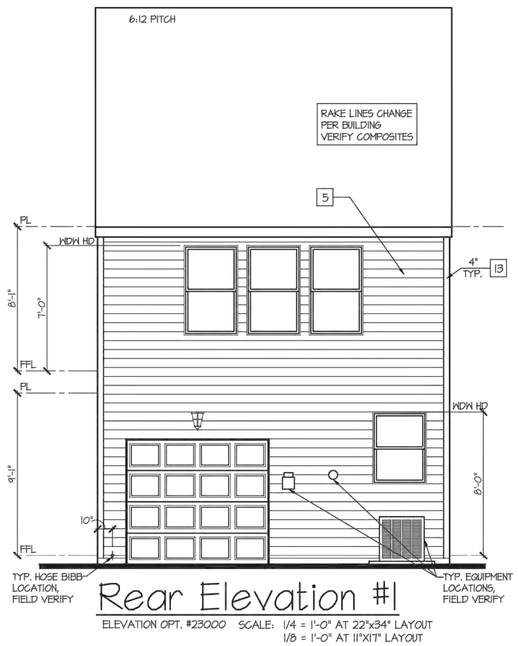
ELEVATION OPT. #23000 SCALE: 1/4 = 1'-0" AT 22"x34" LAYOUT
1/8 = 1'-0" AT 11"X17" LAYOUT



Right Elevation #1

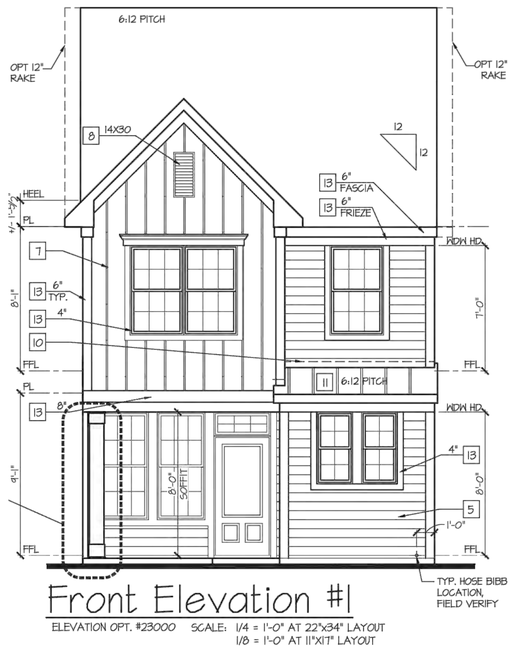
ELEVATION OPT. #23000 SCALE: 1/4 = 1'-0" AT 22"x34" LAYOUT
1/8 = 1'-0" AT 11"X17" LAYOUT

NOTE:
1. REAR ELEVATIONS AS SHOWN. MATERIALS WILL MATCH THOSE USED ON THE FRONT ELEVATIONS.
2. ALL UTILITIES MUST BE SCREENED.



Rear Elevation #1

ELEVATION OPT. #23000 SCALE: 1/4 = 1'-0" AT 22"x34" LAYOUT
1/8 = 1'-0" AT 11"X17" LAYOUT



Front Elevation #1

ELEVATION OPT. #23000 SCALE: 1/4 = 1'-0" AT 22"x34" LAYOUT
1/8 = 1'-0" AT 11"X17" LAYOUT

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NORTH CAROLINA LICENSE NO. C-1652

REVISION DESCRIPTION	DATE

DATE 07/15/2020
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DESIGNED BY 331
CHECKED BY J.CHANDLER
SCALE N/A

ARTISAN AT MEBANE

MEBANE, ALAMANCE COUNTY, NORTH CAROLINA

REAR LOADED ELEVATIONS

JOB NO. 44076
SHEET NO. C7.2

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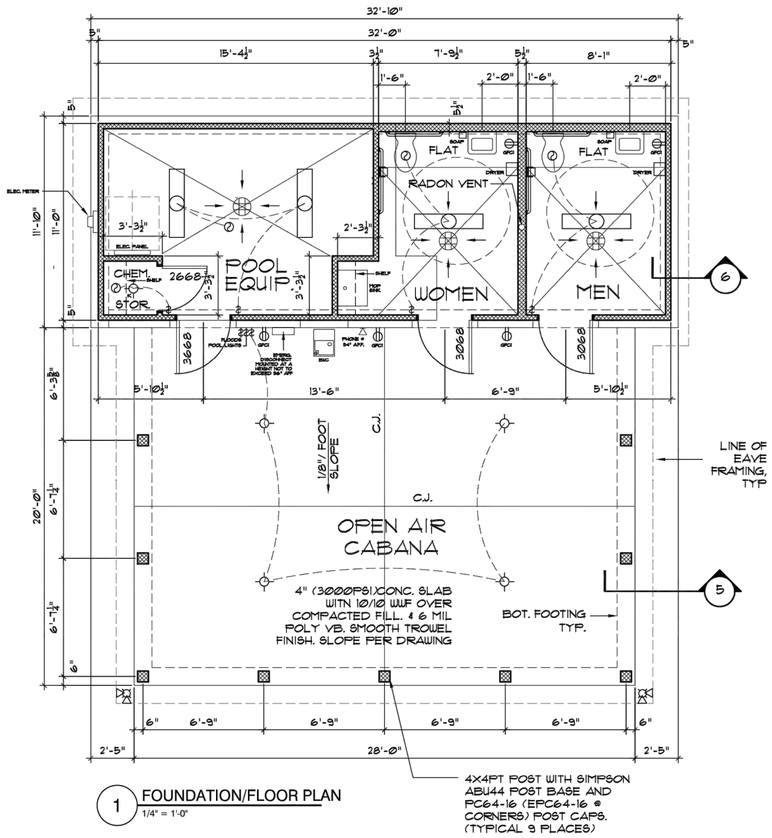
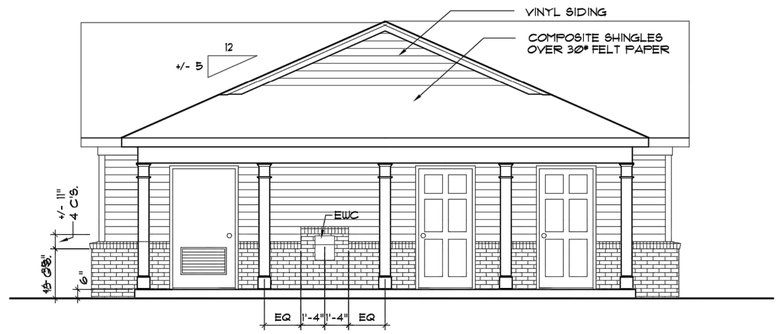
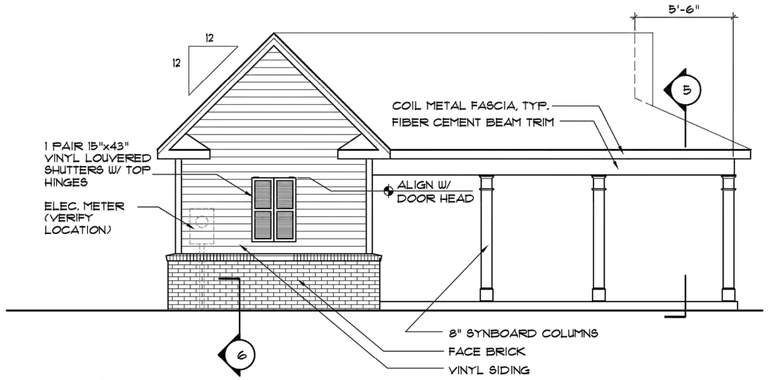


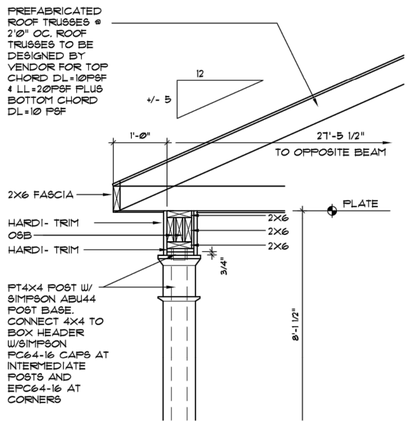
1 FOUNDATION/FLOOR PLAN
1/4" = 1'-0"



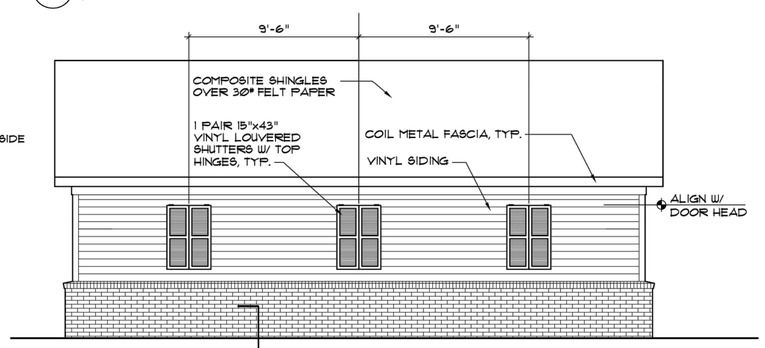
2 FRONT ELEVATION
1/4" = 1'-0"



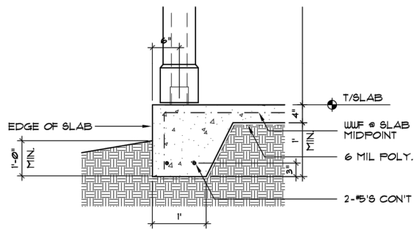
3 LEFT ELEVATION (RIGHT SIDE OPP.)
1/4" = 1'-0"



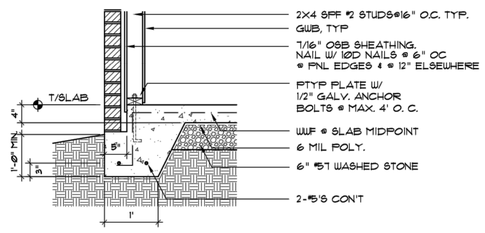
7 WASTE RISER ISOMETRIC
NTS



4 REAR ELEVATION
1/4" = 1'-0"



5 TYPICAL SECTION
3/4" = 1'-0"



6 TYP. SLAB EDGE DETAIL
3/4" = 1'-0"

ELECTRICAL PANEL SCHEMATIC

200A MAIN

1	20A GFI	MENS TOILET	16	20A GFI	STOR,CABANA, RECEPT.
2	20A GFI	WOMENS TOILET	17	20A GFI	WATER COOLER
3	20A GFI	POOL LIGHTS	18	20A 120V	WATER HEATER
4	20A 240 V	POOL PUMP	19		
5			20		
6			21		
7			22		
8			23		
9			24		
10			25		
11			26		
12			27		
13			28		
14			29		
15			30		

NEW 200 AMP SERVICE. 8 BRANCH CIRCUITS
30 CIRCUIT, 200 AMP "SQUARE D" ELECTRICAL PANEL

Construction Type: (per section 601)

VB
Mixed construction: No

Sprinkled: No

Fire District: No

Building Height: 16' Number of stories: 1

Mezzanine: No

High Rise: No

GROSS BUILDING AREA:

Floor Area:
Open Area: 560 SF
Enclosed Area: 352 SF
Total Gross Area: 912 SF

Area increase: (Per Section 506): No

Allowable area (Table 503): 6000 sf

Type of construction:

VB (per section 602.5)
Fire Resistance rating requirements of type VB construction (per table 601 And 602)
Automatic Sprinkler system – Group A – Not required (Section 903.2.1.3)

Life Safety System:

Emergency Lighting and Exist signs: No
Fire Alarm and Smoke Detection System: No
Panic Hardware: No
Manual fire alarm: No (section 907.2.1)

EXIT REQUIREMENTS:

Maximum floor area Allowances per Occupant: 15 gross sf (Table 1004.1.2)
Dead end limit-maximum condition: 20 ft (section 1016.3)
Travel distance to exit-maximum condition: 200 ft. (table 1015.1)

Number of exits: (Section 1014- Table 1014):
Total occupant load, first floor: Locker rooms – 191sf /50sf = 4
Mech room- 161sf /300 sf = 1
5 total

Number of Doors provided: Enclosed area-One per room
Open Shelter - NA

FINISH SCHEDULE

NO	ROOM	WALLS	CEILING	FLOOR
	BATHROOMS	1/2" GWB	1/2" GWB	CONCRETE
		LATEX PAINT	LATEX PAINT	LIGHT BROOM
	POOL EQUIP. & STOR.	1/2" WR-GWB	1/2" GWB/PTD	CONCRETE
		LATEX PAINT	LATEX PAINT	LIGHT BROOM
	CABANA	SEE	VINYL	CONCRETE
		ELEVATIONS		LIGHT BROOM

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TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

ARTISAN AT MEBANE
MEBANE, ALAMANCE COUNTY, NORTH CAROLINA
POOL CABANA ELEVATIONS

JOB NO. 44076
SHEET NO. C7.3

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VIEW LOOKING NORTHEAST FROM EASTBOUND 40/85
WITHOUT TOWNHOMES



VIEW LOOKING NORTHWEST FROM WESTBOUND 40/85
WITHOUT TOWNHOMES



VIEW LOOKING NORTHEAST FROM EASTBOUND 40/85
WITH TOWNHOMES



VIEW LOOKING NORTHWEST FROM WESTBOUND 40/85
WITH TOWNHOMES

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TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

ARTISAN AT MEBANE

MEBANE, ALAMANCE COUNTY, NORTH CAROLINA

HIGHWAY VISUALIZATION

JOB NO. 44076

SHEET NO. C7.4

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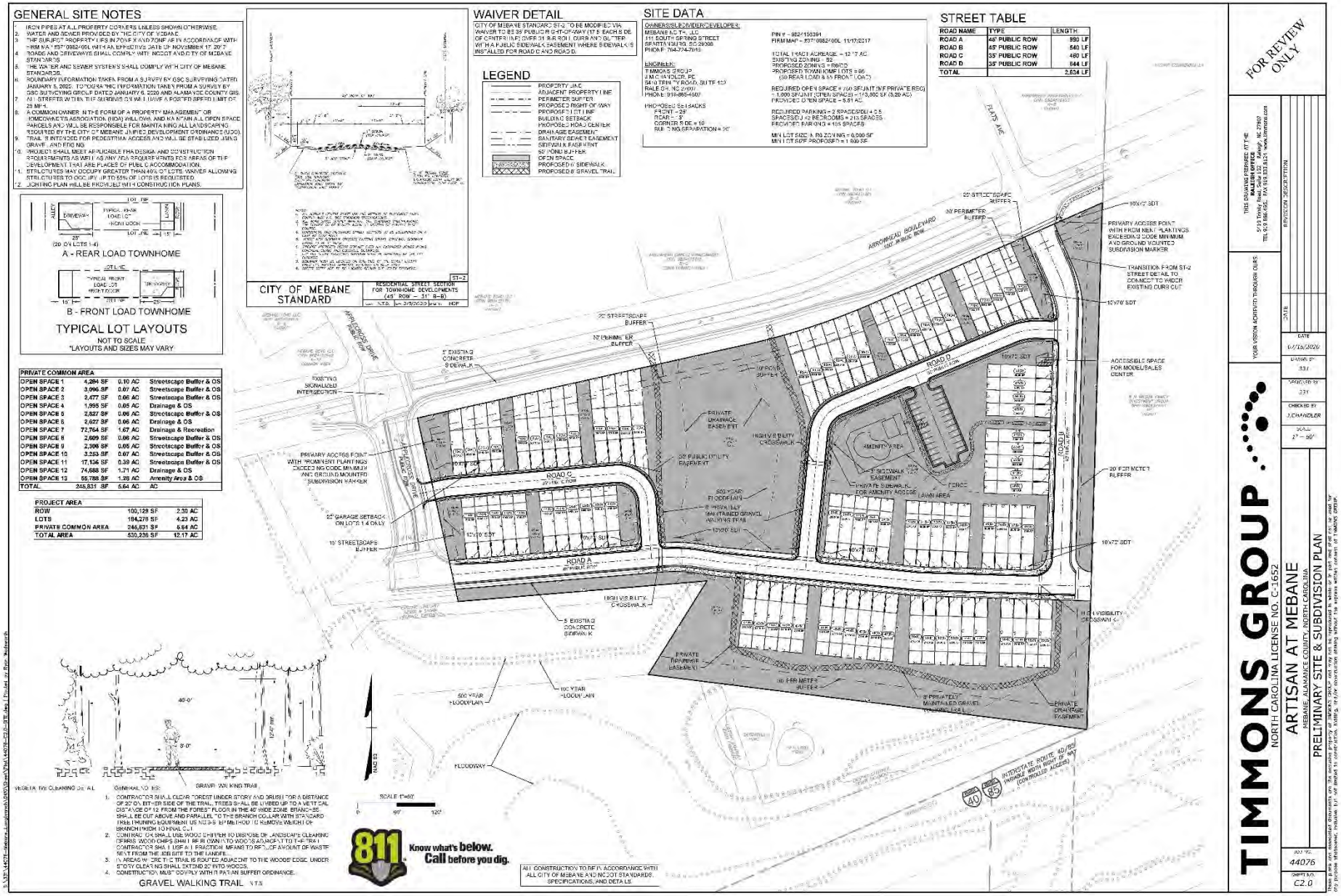
PLANNING PROJECT REPORT

DATE	07/31/20
PROJECT NUMBER	RZ 20-10
PROJECT NAME	The Artisan at Mebane
APPLICANT	Mebane NC TH, LLC c/o Brett Basnight 111 South Spring Street Spartanburg, SC 29306

CONTENTS

PROJECT NAME & APPLICANT ..... PAGE 1
ZONING REPORT ..... PAGE 4
LAND USE REPORT..... PAGE 6
UTILITIES REPORT..... PAGE 9
STAFF ZONING REQUEST RECOMMENDATION ..... PAGE 11


GENERAL SITE NOTES
1. IRON PIPES AT ALL PROPERTY CORNERS UNLESS SHOWN OTHERWISE.
2. WATER AND SEWER PROVIDED BY THE CITY OF MEBANE.
3. THE SUBJECT PROPERTY LIES IN ZONE X AND ZONE AE IN ACCORDANCE WITH FIRM MAP 3720982400L WITH AN EFFECTIVE DATE OF NOVEMBER 17, 2017.
4. ROADS AND DRIVEWAYS SHALL COMPLY WITH NCDOT AND CITY OF MEBANE STANDARDS.
5. THE WATER AND SEWER SYSTEMS SHALL COMPLY WITH CITY OF MEBANE STANDARDS.
6. BOUNDARY INFORMATION TAKEN FROM A SURVEY BY GSC SURVEYING DATED JANUARY 5, 2023. TOPOGRAPHIC INFORMATION TAKEN FROM A SURVEY BY GSC SURVEYING GROUP DATED JANUARY 5, 2020 AND ALAMANCE COUNTY GIS.
7. ALL STREETS WITHIN THE SUBDIVISION WILL HAVE A POSTED SPEED LIMIT OF 25 MPH.
8. A COMMON OWNER IN THE FORM OF A PROPERTY MANAGEMENT OR HOMEOWNER'S ASSOCIATION (HOA) WILL OWN, AND MAINTAIN ALL OPEN SPACE PARCELS AND WILL BE RESPONSIBLE FOR MAINTAINING ALL LANDSCAPING REQUIRED BY THE CITY OF MEBANE UNIFIED DEVELOPMENT ORDINANCE (UDO).
9. TRAIL IS INTENDED FOR PEDESTRIAN ACCESS AND WILL BE STABILIZED USING GRAVEL AND FENCING.
10. PROJECT SHALL MEET APPLICABLE FHA DESIGN AND CONSTRUCTION REQUIREMENTS AS WELL AS ANY ADA REQUIREMENTS FOR AREAS OF THE DEVELOPMENT THAT ARE PLACES OF PUBLIC ACCOMMODATION.
11. STRUCTURES MAY OCCUPY GREATER THAN 40% OF LOTS. WAIVER ALLOWING STRUCTURES TO OCCUPY UP TO 55% OF LOTS IS REQUESTED.
12. LIGHTING PLAN WILL BE PROVIDED WITH CONSTRUCTION PLANS.
A - REAR LOAD TOWNHOME
B - FRONT LOAD TOWNHOME
TYPICAL LOT LAYOUTS
NOT TO SCALE
*LAYOUTS AND SIZES MAY VARY
CITY OF MEBANE STANDARD
RESIDENTIAL STREET SECTION FOR TOWNHOME DEVELOPMENTS (45' ROW – 31' B-B)
ST-2
WAIVER DETAIL
CITY OF MEBANE STANDARD ST-2 TO BE MODIFIED VIA WAIVER TO BE 39' PUBLIC RIGHT-OF-WAY (17.5' EACH SIDE OF CENTERLINE) OVER 31' B-B ROD, CURB AND GUTTER WITH A PUBLIC SIDEWALK EASEMENT WHERE SIDEWALK IS INSTALLED FOR ROAD C AND ROAD D.
LEGEND
PROPERTY LINE
ADJACENT PROPERTY LINE
PERIMETER BUFFER
PROPOSED RIGHT-OF-WAY
PROPOSED LOT LINE
BUILDING SETBACK
PROPOSED ROAD CENTER
DRAINAGE EASEMENT
SANITARY SEWER EASEMENT
SIDEWALK EASEMENT
50' POND BUFFER
OPEN SPACE
PROPOSED 6' SIDEWALK
PROPOSED 8' GRAVEL TRAIL
SITE DATA
OWNER/SUBDIVIDER/DEVELOPER:
MEBANE NC TH, LLC
111 SOUTH SPRING STREET
SPARTA (SMITH), SC 29368
PHONE: 704-774-7949
ENGINEER:
TIMMONS GROUP
J. MICHAEL KOLER, PE
5410 TRINITY ROAD, SUITE 102
RALEIGH, NC 27607
PHONE: 919-866-4967
PROPOSED SETBACKS
FRONT – 25'
REAR – 5'
CORNER SIDE = 10'
BUILDING SEPARATION = 20'
PIN # – 9824153391
FIRM MAP – 3720982400L 11/17/2017
TOTAL TRACT ACREAGE – 12.17 AC
EXISTING ZONING – R2
PROPOSED ZONING – R6/CD
PROPOSED TOWNHOME LOTS = 86
(30 REAR LOAD & 56 FRONT LOAD)
REQUIRED OPEN SPACE = 150 SF/UNIT (IVF PRIVATE REQ) = 5,000 SF/UNIT (OPEN SPACE) = 13,000 SF (0.29 AC)
PROVIDED OPEN SPACE = 5.81 AC
REQUIRED PARKING = 2 SPACES/DU + 0.5 SPACES/DU X2 BEDROOMS = 215 SPACES
PROVIDED PARKING = 155 SPACES
MIN LOT SIZE IN R6 ZONING = 6,000 SF
MIN LOT SIZE PROPOSED = 1,800 SF
STREET TABLE
ROAD NAME | TYPE | LENGTH
ROAD A | 45' PUBLIC ROW | 990 LF
ROAD B | 45' PUBLIC ROW | 540 LF
ROAD C | 35' PUBLIC ROW | 480 LF
ROAD D | 35' PUBLIC ROW | 944 LF
TOTAL | | 2,634 LF
PRIVATE COMMON AREA
OPEN SPACE 1 4,284 SF 0.10 AC Streetscape Buffer & OS
OPEN SPACE 2 3,096 SF 0.07 AC Streetscape Buffer & OS
OPEN SPACE 3 2,477 SF 0.06 AC Streetscape Buffer & OS
OPEN SPACE 4 1,955 SF 0.05 AC Drainage & OS
OPEN SPACE 5 2,827 SF 0.06 AC Streetscape Buffer & OS
OPEN SPACE 6 2,627 SF 0.06 AC Drainage & OS
OPEN SPACE 7 72,764 SF 1.67 AC Drainage & Recreation
OPEN SPACE 8 2,609 SF 0.06 AC Streetscape Buffer & OS
OPEN SPACE 9 2,306 SF 0.05 AC Streetscape Buffer & OS
OPEN SPACE 10 3,253 SF 0.07 AC Streetscape Buffer & OS
OPEN SPACE 11 17,136 SF 0.39 AC Streetscape Buffer & OS
OPEN SPACE 12 74,688 SF 1.71 AC Drainage & OS
OPEN SPACE 13 55,788 SF 1.28 AC Amenity Area & OS
TOTAL 246,831 SF 5.64 AC AC
PROJECT AREA
ROW 100,129 SF 2.30 AC
LOTS 184,276 SF 4.23 AC
PRIVATE COMMON AREA 246,831 SF 5.64 AC
TOTAL AREA 530,236 SF 12.17 AC
ARROWHEAD BOULEVARD 100' PUBLIC ROW
APPLEBLOSSOM DRIVE
PEACH BLOSSOM DRIVE
ROAD A
ROAD B
ROAD C
ROAD D
FLATS AVE.
25' STREETSCAPE BUFFER
50' PERIMETER BUFFER
EXISTING SIGNALIZED INTERSECTION
5' EXISTING CONCRETE SIDEWALK
10' PROW
30' PUBLIC UTILITY EASEMENT
PRIVATE DRAINAGE EASEMENT
HIGH VISIBILITY CROSSWALK
5' SIDEWALK EASEMENT
PRIVATE SIDEWALK FOR AMENITY ACCESS
AMENITY AREA
FENCE
500 YEAR FLOODPLAIN
8' PRIVATELY MAINTAINED GRAVEL WALKING TRAIL
12'X70' SDT
10'X72' SDT
10'X72' SDT
PRIMARY ACCESS POINT WITH PROMINENT PLANTINGS EXCEED UDO CODE MINIMUM AND GROUND MOUNTED SUBDIVISION MARKER
22' GARAGE SETBACK ON LOTS 1-4 ONLY
15' STREETSCAPE BUFFER
5' EXISTING CONCRETE SIDEWALK
HIGH VISIBILITY CROSSWALK
100 YEAR FLOODPLAIN
FLOODWAY
20' PERIMETER BUFFER
ACCESSIBLE SPACE FOR MODEL/SALES CENTER
PRIMARY ACCESS POINT WITH PROMINENT PLANTINGS AND GROUND MOUNTED SUBDIVISION MARKER
TRANSITION FROM ST-2 STREET DETAIL TO CONNECT TO WIDER EXISTING CURB CUT
10'X72' SDT
10'X72' SDT
10'X72' SDT
20' PERIMETER BUFFER
PRIVATE DRAINAGE EASEMENT
8' PRIVATELY MAINTAINED GRAVEL WALKING TRAIL
60' PERIMETER BUFFER
INTERSTATE ROUTE 40/85 (MAINLINE WIDTH VARIES) (CONTROLLED ACCESS)
NORTH
SCALE 1"=60'
0' 60' 120'
811 Know what's below. Call before you dig.
ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL CITY OF MEBANE AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS
GRAVEL WALKING TRAIL N.T.S.
VEGETATIVE CLEARING (2e' A.L.
GRAVEL WALKING TRAIL
General Notes:
1. CONTRACTOR SHALL CLEAR FOREST UNDER STORY AND BRUSH FOR A DISTANCE OF 20' ON EITHER SIDE OF THE TRAIL. TREES SHALL BE LIMBED UP TO A VERTICAL DISTANCE OF 12' FROM THE FOREST FLOOR IN THE 40' WIDE ZONE. BRANCHES SHALL BE CUT ABOVE AND PARALLEL TO THE BRANCH COLLAR WITH STANDARD TREE PRUNING EQUIPMENT. USE OF A BRUSH HOG TO REMOVE WEIGHT OF BRANCH UNION IS PROHIBITED.
2. CONTRACTOR SHALL USE WOOD CHIPPER TO DISPOSE OF LANDSCAPE CLEARING DEBRIS. WOOD CHIPS SHALL BE BLOWN INTO WOODS ADJACENT TO THE TRAIL. CONTRACTOR SHALL DISPOSE OF ALL FRACTION, MEANS TO REMOVE AMOUNT OF WASTE SENT FROM THE JOB SITE TO THE LANDFILL.
3. IN AREAS WHERE THE TRAIL IS ROUTED ADJACENT TO THE WOODS EDGE, UNDER STORY CLEARING SHALL EXTEND 20' INTO WOODS.
4. CONSTRUCTION MUST COMPLY WITH PATAN BUFFER ORDINANCE.
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TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652
ARTISAN AT MEBANE
MEBANE, ALAMANCE COUNTY, NORTH CAROLINA
PRELIMINARY SITE & SUBDIVISION PLAN
DATE 07/15/2026
DRAWN BY SSH
VERIFIED BY JJH
CHECKED BY J.CHANDLER
SCALE 1" = 60'
JOB NO. 44076
SHEET NO. C2.0
THE DRAWING PERIMETER AT THE RALEIGH OFFICE 5410 Trinity Road, Suite 102 Raleigh, NC 27607 TEL 919.866.4951 FAX 919.333.8124 www.timmons.com
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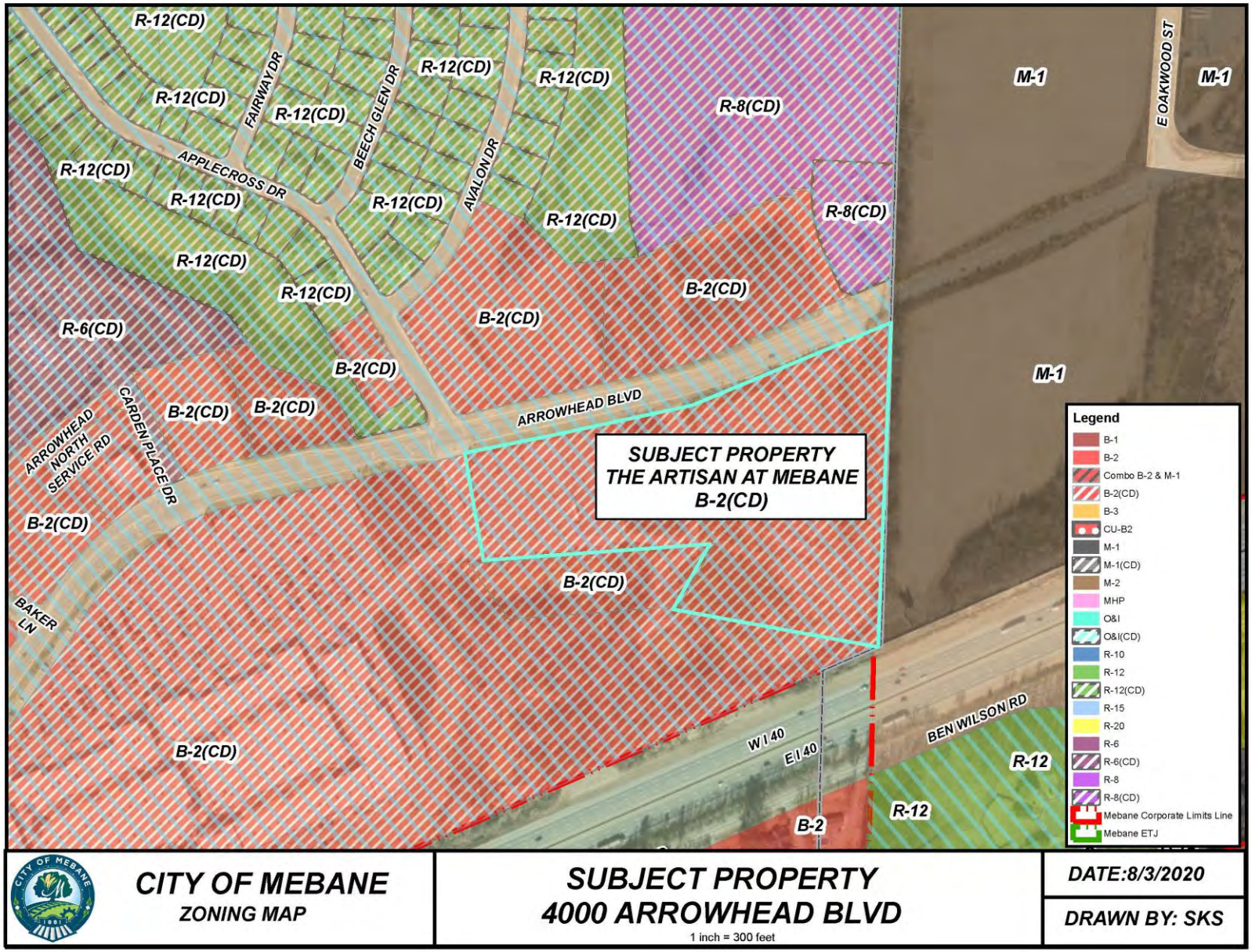
ZONING REPORT

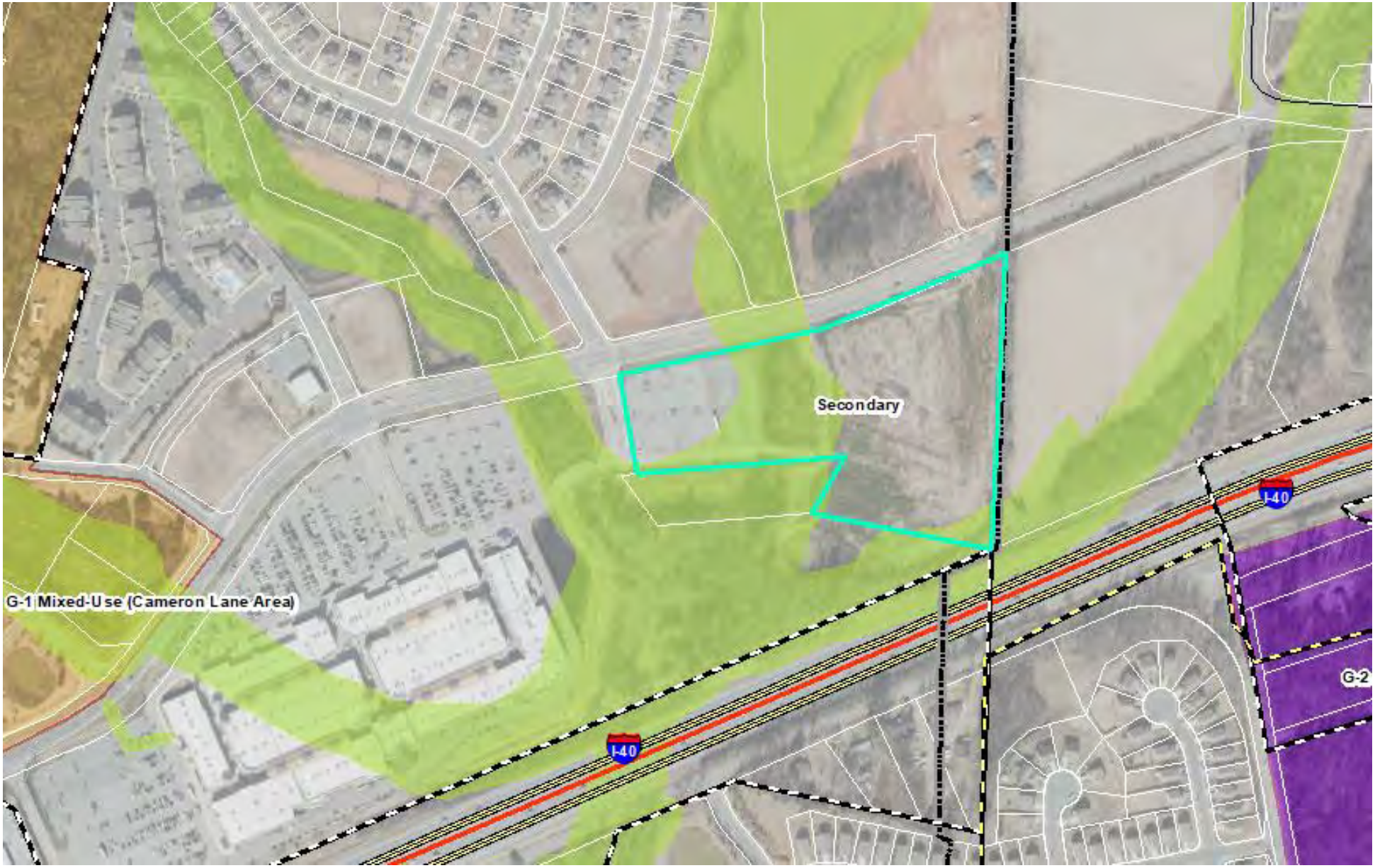
EXISTING ZONE	B-2(CD) (General Business Conditional Zoning Residential, *2008 Mebane Zoning Ordinance*)
REQUESTED ACTION	R-6(CD) (Residential, Conditional Zoning District)
CONDITIONAL ZONE?	☒YES ☐NO
CURRENT LAND USE	Parking Area, Vacant
PARCEL SIZE	+/-12.17 acres of a +/-50.89 parent parcel
PROPERTY OWNERS	Tanger Properties Limited Partnership 3200 Northline Avenue Suite 360 Greensboro, NC 27408 GPINs 9824166394
LEGAL DESCRIPTION	The applicant proposes to rezone +/-12.17 acres of a +/-50.89 ac tract from B-2(CD) (General Business, Conditional Zoning District) to R-6(CD) (Residential, Conditional Zoning District) to allow for a Residential Cluster rental townhome development of 85 lots.
AREA ZONING & DISTRICTS	All properties to the east and west are B-2 (CD) (General Business, Conditional Zoning District) and retail components of a master planned community under the 2008 *Mebane Zoning Ordinance*. Two properties to the north are also zoned for this purpose. The R-12(CD) (Single-Family Residential, Conditional Zoning District) and R-8(CD) (Multifamily Residential, Conditional Zoning District) to the north are also parts of that master planned community. The properties south across Interstate 40/85 are all zoned B-2 (General Business) with the exception of Collington Farm, which is zoned R-12 (Single-Family Residential).
SITE HISTORY	The property has been primarily used as an overflow parking lot by Tanger Outlet Shopping Center but is vacant most of the year as well as a forested vacant area. This property was approved for a Conditional Use Permit and rezoning request under the City's Zoning Permit and that multi-part development has maintained its vested rights through consistent activity on different components of the master plan that have subsequently been subdivided from the original large property.
	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 support single-family residential use, consistent with the R-12 development to the north. This development will differ in that its units will be available for rent not for sale. It will introduce a residential use next to the B-2(CD) zoning district to the west and along the interstate corridor but this is seen elsewhere in Mebane, including west of Mebane Oaks Road.


R-12(CD)
FAIRWAY DR
BEECH GLEN DR
AVALON DR
APPLECROSS DR
R-8(CD)
M-1
E OAKWOOD ST
R-6(CD)
B-2(CD)
ARROWHEAD BLVD
ARROWHEAD NORTH SERVICE RD
CARDEN PLACE DR
SUBJECT PROPERTY
THE ARTISAN AT MEBANE
B-2(CD)
BAKER LN
W I 40
E I 40
BEN WILSON RD
R-12
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 PROPERTY
4000 ARROWHEAD BLVD
1 inch = 300 feet
DATE:8/3/2020
DRAWN BY: SKS

LAND USE REPORT

EXISTING LAND USE	(Overflow) Parking Area, Vacant, & Forested
PROPOSED LAND USE & REQUESTED ACTION	The applicant is requesting a conditional rezoning to develop +/-12.17 acres of a +/-50.89 ac tract for a Residential Cluster rental townhome development of 85 lots (6.98 du/ac).
PROPOSED ZONING	R-6(CD) (Residential, Conditional Zoning District)
PARCEL SIZE	+/-12.17 acres of a +/-50.89 parent parcel
AREA LAND USE	One of the properties to the north is a single-family residential development. The Flats at Arrowhead apartments is also north of this project site. There are two vacant business parcels north of this property. The properties to the west are currently used for the Tanger Outlet Shopping Center. The property to the east is vacant. The properties directly south of the subject are across Interstate 40/85 and are largely used for residential purposes despite being zoned for business. The single-family residential development Collington Farm also lies south of the interstate corridor.
ONSITE AMENITIES & DEDICATIONS	The applicant proposes to provide a 8'-wide private walking trail that connects to the public sidewalk along Arrowhead Boulevard. The applicant is also proposing to provide a private swimming pool and clubhouse for residents.
WAIVER REQUESTED	☒YES ☐NO
DESCRIPTION OF REQUESTED WAIVER(S)	Reduction of the municipal street right of way for Roads C & D to 35' and featuring no sidewalks, unless otherwise shown on the site plan; A minimum lot size of 1,900 s.f. for the proposed individual townhome lots; Provision of 195 parking spaces total rather than the 213 required; A minimum lot size of 1,900 s.f. rather than the required area of 6,000 s.f. or permitted 40% reduction of 3,600 s.f.; A maximum lot coverage of 55% rather than the required maximum of 40%; A 25'front setback rather than the required 30'. A 10' corner side setback rather than the required 18', with a minimum building separation of 20'; A 15' rear setback rather than the required 25'; and A minimum lot width of 20' rather than the required 85' or a permitted reduction of 40'.

CONSISTENCY WITH *MEBANE BY DESIGN* STRATEGY	
LAND USE GROWTH STRATEGY DESIGNATION(S)	G-4 Secondary Growth Area Conservation Area
MEBANE BY DESIGN GOALS & OBJECTIVES SUPPORTED	GROWTH MANAGEMENT 1.6 Require that commercial development be pedestrian-friendly, supporting walking between differing land uses while also reducing parking requirements. 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	


Secondary
G-1 Mixed-Use (Cameron Lane Area)
I-40
I-40
G-2

UTILITIES REPORT

AVAILABLE UTILITIES	☒YES ☐NO
PROPOSED UTILITY NEEDS	Per the memorandum from Franz Holt of AWCK, the project is estimated to require 20,400 gallons per day of water and sewer service to support the development's 85 townhome residences. It features 8" sewer and water lines that will be served by the 8" sewer line and an 12" water line along Arrowhead Boulevard.
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	Arrowhead Boulevard is a city-maintained connector that does not have active traffic counts. It feeds directly into Oakwood Street, which has an average of 2600 trips per day. Neither Arrowhead Boulevard nor Oakwood Street have any known safety concerns.
TRAFFIC IMPACT ANALYSIS REQUIRED?	☐YES ☒NO
DESCRIPTION OR RECOMMENDED IMPROVEMENTS	The applicant will provide a right-turn lane with 100' feet of storage on a widened section of Arrowhead Boulevard to enter at Road B.
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 an 8' private gravel-surfaces walking trail network. This trail will intersect with the City's publicly-maintained sidewalk network on Arrowhead Boulevard. The applicant will include bicycle parking at their clubhouse and swimming pool.

STAFF RECOMMENDATION

STAFF ZONING RECOMMENDATION	☒ APPROVE ☐ DISAPPROVE
STAFF SPECIAL USE FINDING	☐ CONSISTENT ☐ NOT CONSISTENT……..WITH *MEBANE BY DESIGN*
RATIONALE	The proposed development "The Artisan at Mebane" is consistent with the guidance provided within *Mebane By Design*, the Mebane Comprehensive Land Development Plan. Specifically, it serves Goals 1.6 and 4.3. The proposed project will be developed as a Residential Cluster rental townhomes subdivision and is in harmony with the single-family residential and the denser multifamily uses of some of its nearby properties.
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.

July 31, 2020

Beth Blackmon, PE
Project Engineer
Timmons Group
5410 Trinity Road; Suite 102
Raleigh, NC 27607

Subject: Artisan at Mebane – Water and Sewer System

In regards to the subject Preliminary Site Plans 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 meets City standards based on the following:

1) Water system – The project is to be served with from the City's 12-inch water main in Arrowhead Blvd. Internal to the project site is an existing 8-inch water line stub at the current driveway cut on Arrowhead Blvd. and an existing 8-inch water line in Applecross Drive. The new internal water lines are proposed as 8-inch looped along new roadways with appropriate the appropriate number and location of gate valves and fire hydrants. When designed and installed to City and State standards and requirements, these lines will be a part of the City's water distribution system for ownership/operation/maintenance. The estimated daily water use for this project is 20,400 gallons per day (85 3-bedroom townhomes at 240 GPD per unit). 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 site is to be served from two proposed connections to an existing 8-inch sewer outfall that runs through the property. Internal to the project site are proposed 8-inch sewer lines with appropriate manhole spacing. When designed and installed to City and State standards and requirements, these lines will be a part of the City's sanitary sewer collection system for ownership/operation/maintenance. The estimated daily sewer use for this project is 20,400 gallons per day. The City has adequate sewer capacity available at the downstream Southeast Regional 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: Ashley Ownbey, Planner
Cy Stober, Development Director
Kyle Smith, Utilities Director

Technical Memorandum

Date: July 31, 2020
To: Ashley Ownbey, City Planner
From: Franz K. Holt, P.E.
Subject: Artisan at Mebane – City Engineering review

The Preliminary Site Plans, for the Artisan at Mebane dated July 15, 2020 and prepared by Beth Blackmon, P.E. with the Timmons Group in Raleigh, NC, have been reviewed by the Engineering Department as a part of the TRC. Our technical review comments are as follows:

A. General

The Artisan in Mebane is an 85-unit townhome development proposed to be built on 12.17 acres the east side of Tanger Outlets and south of Arrowhead Blvd.

The property is in the Haw Creek watershed (a class V watershed) and density restrictions do not apply to Class V watersheds. The Mebane Phase II Stormwater Post Construction Ordinance (SPCO) will apply to this project as the built upon area is greater than 24% and stormwater management will be required.

City sewer is proposed to be provided by new 8-inch gravity sewer lines connecting to an existing 8" sewer outfall that runs through the property. City water is proposed to be provided by connecting to existing 8-inch water lines from the existing 12-inch water main in Arrowhead Blvd.

Internal streets are considered local constructed to a 31-ft. b-b curb and gutter section. A proposed gravel trail meanders through the site with access to private amenities. All streets are to be constructed to City standards and will be made public when completed. Two streets that were previously proposed as alleyways are requested to be modified to a reduced right-of-way width.

Access to the site is from an existing driveway cut off Arrowhead Blvd. across from the entrance of the Flats Apartments. A second access is from Applecross Drive, a signalized intersection with Arrowhead Blvd. A cross access and maintenance may be required of Tanger as it appears from our review of plats Applecross is not public on the south side of Arrowhead Blvd.

A centralized mail kiosk is provided along with additional site amenities.

B. Availability of City Water and Sewer

In regard to the Preliminary Site Plans for the Artisan in Mebane 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 meets City standards based on the following:

1) Water system – The project is to be served with from the City's 12-inch water main in Arrowhead Blvd. Internal to the project site is an existing 8-inch water line stub at the current driveway cut on Arrowhead Blvd. and an existing 8-inch water line in Applecross Drive. The new internal water lines are proposed as 8-inch looped along new roadways with appropriate the appropriate number and location of gate valves and fire hydrants. When designed and installed to City and State standards and requirements, these lines will be a part of the City's water distribution system for ownership/operation/maintenance. The estimated daily water use for this project is 20,400 gallons per day (85 3-bedroom townhomes at 240 GPD per unit). 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 site is to be served from two proposed connections to an existing 8-inch sewer outfall that runs through the property. Internal to the project site are proposed 8-inch sewer lines with appropriate manhole spacing. When designed and installed to City and State standards and requirements, these lines will be a part of the City's sanitary sewer collection system for ownership/operation/maintenance. The estimated daily sewer use for this project is 20,400 gallons per day. The City has adequate sewer capacity available at the downstream Southeast Regional 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. The Townes Oakwood Square project is tributary to 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 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 use an existing off-site wet pond for storm water treatment, which is currently maintained by Tanger Properties. A cross easement will be required from Tanger Properties to allow for access and maintenance by the proposed development Property Owner Association. Fencing will be required around the off-site pond.

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 the existing off-site stormwater pond.

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 on one side for Roads identified as A & B on the preliminary site plans. Roads C & B were originally proposed as 20' or less alleyways but are now being shown as public roads to the typical roadway section of 31' B-B roll curb and gutter. The change was made at the request of staff to allow for better access for garbage pickup and emergency services. However, a waiver has been requested to remove the requirement of sidewalk on these former proposed alleyways and to reduce the road right-of-way width to 35' from 45' to address developer concerns over setbacks. These local streets will connect to Applecross Drive, which is signalized at Arrowhead Blvd. A cross access and maintenance easement will be required from Tanger Properties to access Applecross Drive as it appears to be private. The left turn lane requirement at 50 residential units is met with the existing typical section of Arrowhead Blvd.

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 at such time as 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.

Tanger® Outlets
NYSE:SKT

THINK OUTLETS. THINK TANGER.
TANGEROUTLETS.COM

Mr. Cy Stober
Development Director
City of Mebane

RE: 4000 Arrowhead Blvd
PIN 9824166394
Rezoning of approximately 12 acres to R6 (CD)

Mr. Stober :

As the owner of the above property, I am writing this letter to provide some historical context regarding the proposed rezoning of the parcel referenced above. Despite the continued success of our outlet center at this location, Tanger over the years has been unsuccessful in attracting commercial development to the 12 acres. We have approached a wide cross-section of retailers including outlet tenants not currently in the center, discount operators (TJX for example) as well as full price merchants. In all instances, the feedback Tanger received is that this tract was too removed from the main outlet center to realize any benefit from the outlet center's customer volumes and traffic patterns. The visual barrier that exists due to the creek bifurcating the site further exacerbates the perceived "disconnect" of the parcel from the outlet center.

Tanger has also reached out to various traditional commercial users who might place value on the site's freeway visibility. This has included limited service hotels, self-storage operators, industrial users, office developers and medical related uses to name a few. Unfortunately, demand from this cross-section of users has not materialized as most needed either just a 1-2 acre parcel abutting Arrowhead Blvd or a parcel larger than 12 acres.

The one source of consistent interest Tanger has received over the years is from multi-family developers. While we have spoken with numerous developers, none have proposed a product that we believed was compatible our outlet center from a quality perspective. The uniqueness and higher quality of the proposed townhome rental development proposed by Longbranch Development and its building partner we believe are an appropriate fit for the overall project. Tanger views the growing residential base surrounding our outlet mall as a positive trend in that it will create additional customers and lead to the overall densification of the surrounding area.

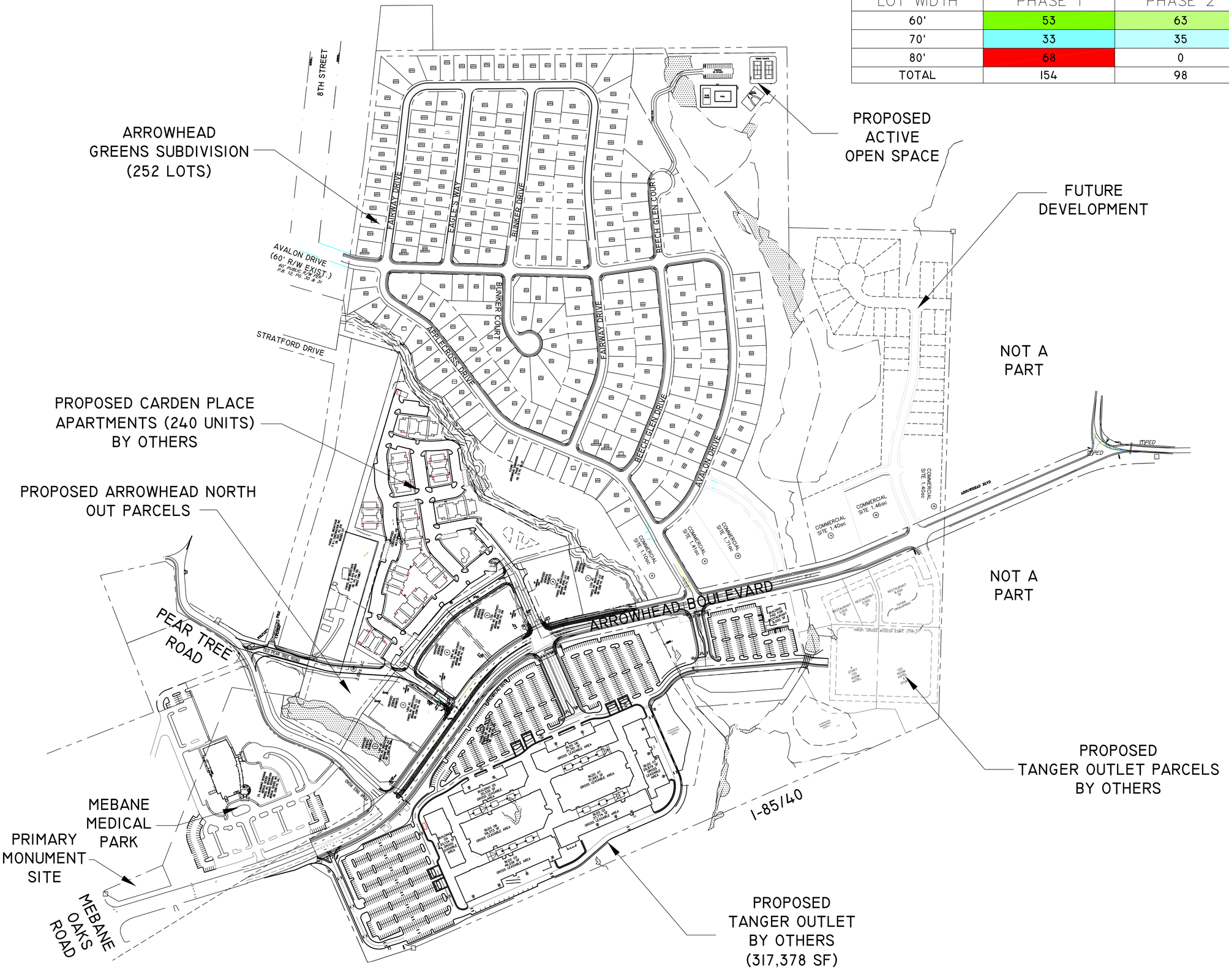
We are pleased to support this rezoning and if you have any questions, please do not hesitate to contact me at 330-671-3271.

Sincerely,

Charles Worsham
Senior Vice President
Development and Construction
Tanger Outlet Centers

TANGER OUTLET CENTERS
3200 Northline Avenue, Suite 360 // Greensboro, NC 27408 // Phone: 336.292.3010 // Fax: 336.852.2096

LOT WIDTH	PHASE 1	PHASE 2	TOTAL
60'	53	63	116
70'	33	35	68
80'	68	0	68
TOTAL	154	98	252



DAVIS-MARTIN-POWELL & ASSOCIATES, INC
ENGINEERING
LAND PLANNING
SURVEYING
6415 OLD PLANK ROAD
HIGH POINT, NC 27265
(336) 886-4821
FAX (336) 886-4458
WWW.DMP-INC.COM

REV	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		

	BY
PROJECT	090203
DATE	JAN. 2010
DESIGNED	JLM
DRAWN	JLM
CHECKED	JLM
SCALE	AS NOTED
SURVEYED	N/A

ARROWHEAD SUBDIVISION
CU-R-12 DEVELOPMENT PLAN
MEBANE, NORTH CAROLINA

SHEET NO.
OVERALL PLAN

OF ____

DRAWING NAME: P:\2009\090203\Civil\090203case.dwg — OVERALL Jun 03, 2011 - 11:24am

The Mebane City Council held its regular monthly meeting at 6:00 p.m., Monday, August 3, 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

City Staff Present via Zoom:
City Manager David Cheek
Planner Ashley Ownbey

Mayor Hooks called the virtual meeting to order. Mr. Bradley gave the invocation. No one spoke during the Public Comment period.

Mr. Cheek gave an overview of the Consent Agenda:

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
d. Adjustment of Financing Terms – City Park loan with American National Bank
e. Old Recreation Center Polling Place Usage Agreement

Council requested that the new polling place be advertised sufficiently so citizens would be sure which location they can vote at. Mr. Bradley made a motion, seconded by Ms. Philipps, to approve the consent agenda as presented. The motion carried unanimously.

Item b.

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;

DRAFT

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;

DRAFT

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

Item c.

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

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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: August 3, 2020

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_____
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: _____

A brief video was shown of Mayor Hooks presenting a Resolution of Recognition to Mebane citizen Richard Hurst. Mayor Hooks read aloud the Resolution during the meeting and praised the young man for completing the "50 Yard Challenge". Richard and his mother, Maryann Lang, attended the meeting virtually. All the Council commended Richard for his exemplary service and sacrifice.

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.

_____
Ed Hooks, Mayor
City of Mebane

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Mayor Hooks shared that NCDOT's Division 7 Engineer Mike Mills recently announced his retirement after 44 years of public service with the State of North Carolina. Mr. Mills attended the meeting virtually and Mayor Hooks officially recognized Mr. Mills, by presenting him with a Resolution of Recognition for his exemplary service to the citizens of Mebane during his 21-year tenure as the Division 7 Engineer providing admirable service to Rockingham, Guilford, Caswell, Alamance and Orange Counties. Mayor Hooks read aloud the following:

Resolution Recognizing Mike Mills
for Exemplary Service to the Citizens of Mebane

WHEREAS, the City of Mebane would like to recognize and show its appreciation to Mike Mills, who has announced his retirement effective August 1, 2020, after over 44 years of public service with the State of North Carolina, and

WHEREAS, Mike began serving as the Division 7 Engineer for the N.C. Department of Transportation over 21 years providing admirable service to Rockingham, Guilford, Caswell, Alamance and Orange Counties, and the cities located within, and

WHEREAS, the City of Mebane has worked on numerous occasions with Mike to facilitate economic development projects, street and roadway improvements, land purchases and easements, right-of-way conveyances, and various other transportation issues, and

WHEREAS, the City of Mebane has clearly benefited from Mike's critical roles in the creation of the N.C. Commerce Park and the N.C. 119 Bypass, and

WHEREAS, Mike's exemplary service and sacrifice has greatly benefited the City of Mebane, not only with numerous transportation improvements, but significant jobs and company investments, and

WHEREAS, Mike's humble attitude, ability to handle difficult public hearings, responsiveness information requests, ongoing reliability, and utmost integrity helped Mebane build and maintain a Positively Charming mobile environment,

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 Mike Mills for his dedication to the citizens of North Carolina, and specifically to the residents of 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 Mike Mills.

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

_____
Ed Hooks, Mayor
City of Mebane

Mr. Mills thanked Council and staff for the recognition and stated that Mebane City Council and City of Mebane staff have been a pleasure to work with on many projects over the years. Council and staff commended Mr. Mills for his public service, stating he has been one of the best public servants they have ever worked with and that he will be missed.

Mayor Hooks announced that the next two (2) items are public hearings and they will not be voted on until the continued meeting which will be held on Wednesday, August 5, 2020 at 6:00pm.

A Public Hearing was held on a request from Lebanon Road 3, LLC, c/o James Parker, Jr., for approval to conditionally rezone +/-93.5 acres of a +/-179.23-ac property located at 1818 Saddle

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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. Mr. Rollins gave a PowerPoint presentation overviewing the request. Mr. Rollins stated that a portion of the property is in the city's conservation area and watershed overlay district. The watershed overlay district limits the impervious cover to 30% of the area, which the development does meet. He said part of the project includes 4,325 linear feet of greenway. 1 acre of private amenities and a bike/ped crossing/connection to Lake Michael Park.

Jack Smyre, PE, AICP with The Design Response, joined the Zoom and presented the attached PowerPoint presentation overviewing the project request on behalf of the applicant. He began by sharing a site location map, site plan and basic facts about the proposed project. Mr. Smyre shared that a development with an conservation area requires an and/or clause; either develop at a lower intensity, undefined by taken as rural area intensities or R-20A agricultural version of R-20, would allow for 2.18 units per acre and they are under 2 units per acre therefore they are clearly developing at a lower overall density than a straight R-12 zoning district would allow. Tupelo Junction provides over half of its acreage as open space owned by the HOA, while Mebane's Unified Development Ordinance (UDO) stated 30% as a goal, not a requirement, for open space. He shared a slide with a map of the site plan, pointing out the entire edge of Stagecoach Road and Lebanon Road is undisturbed except for the entrance. He said also around the project they have voluntarily provided at least a 20-foot strip against all adjourning properties which is not an UDO requirement. He shared a closer look at the entrance off of Lebanon Road which is located in the same place as the 2005 approval. NCDOT and a traffic engineer took a fresh look at the proposed entrance and agreed that is the best location, being midpoint between Stagecoach Road and the entrance to Lake Michael Park. He shared that the pedestrian side path is separated from the entry road with a 10-foot planting area where street trees will be placed. Voluntary traffic calming measures were discussed, specifically curb extensions, as they plan to "pinch" in the street from a 13-foot width to a 10-foot width at each pedestrian crossing opportunity. Mr. Smyre then discussed the phasing plan of the project. With Phase 1, with 20 of the houses being built, the clubhouse, playground and field would also be built. Phase 2 would bring 33 more homes and the installment of the exterior pedestrian side path along Lebanon Road that would connect from Stagecoach down to Lake Michael Park. Phase 3 would include everything to the west of the main road and Phase 4 would be everything to the east of the main road with an extension out to Saddle Club Road, giving right of way to the adjacent residential property. Phase 5 includes development of the southeast corner. He gave a brief overview of the recreational areas, one of which includes a dog park. Mr. Smyre stated there are a couple of issues he would like to address regarding a charge that they would be paving over wetlands. He said nothing could be further from the truth. He said initially they had done a stream determination through Orange County and they found none, other than Mill Creek which is a central stream running through the project. He said they also commissioned a study by a wetland scientist through and environmental firm and shared maps showing the delineated areas in the northern and southern parts of the property. He then shared those areas as an overlay on the site plan map which shows that those areas are within the floodplain portions of the property and those are areas they are not in at all, except for the single crossing where a farm road once crossed at the narrowest point of the floodplain which is the easiest to cross. No impact on the wetlands by the project. He said there was another question about a farm pond which has been determined by studies to not be a wetland. He then talked about the Phase 5 boundary line of the property which adjoins the Linz property, stating that the seller, Lees Bees, Inc, was sued by the adjoining owner on a claim of adverse possession. The property line was not in question but the nature of the claim was that for more than 20 years, the adjoining owner had been maintaining a small strip of land along that edge, eyeing a barbwire fence that went tree to tree, and that because of the adverse uncontested possession of that strip that it belonged to them. He said the applicant advised the seller that it would have no impact on the project to grant the claim, so it was quickly settled by adjusting that boundary and the new plat has been provided to the City. He said there is no impact on the project because the module from the floodplain to property line was slightly more than what they needed. He shared a map showing they can still maintain the voluntary 20-foot buffer even with that new boundary line and in some areas even more than that except for a small 1-foot area in the northwest corner of the property adjoining

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lot 96 but can be simply cured by taking the southwest corner of lot 96 and making it coincident with the line between lots 81 and 82, moving it up 2-feet restores the 20-foot buffer and the applicant is willing to do that either by condition or in the final plat stage with staff they know that is the intent.

Mr. Smyre introduced Rebecca McAdoo, Division President with Garman Homes. She shared that they are a local privately owned business, active since 2007. She shared their company manifesto. While she read it aloud, slides were shared listing the proposed project's plan types, elevations and builder commitments.

Mr. Smyre concluded the presentation by giving a project overview list of bullet points highlighting items previously shared. He said the only minor exceptions from the UDO requirements are requested as follows:

- R-12 front setbacks reduced from 30' to 25' for this R-12(CD) district
- R-12 rear setbacks reduced from 25' to 20' for this R-12(CD) district
- R-12 side setbacks reduced from 10' to 5' for this R-12(CD) district
- R-12 corner lot setbacks reduced from 18' to 13' for this R-12(CD) district
- Requesting that payment-in-lieu for public recreation area be waived
- Council may reduce required area under Section 6-7.1.I of the UDO
- Consideration of the nature of the public area provided is allowed
- Nature and cost of public recreation area provided warrants reduction
- Amount of public recreation area required reduced to match provide

Mr. Rollins gave an overview of the waivers requested as follows:

- Public Open Space:
  - 5.7 ac required
  - +/-1.46 ac provided in public greenway
  - Payment in lieu: $16,531
  - Payment Offered: $0
- Setbacks
  - Front: 25' rather than 30'
  - Rear: 20' rather than 25'
  - Side: 5' rather than 10' (13' corner)
  - Lot width: 60' rather than 85'

He shared that The Mebane By Design goals served by this project are as follows:

- 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 Lebanon Road, Stagecoach Road and the entrance to Lake Michael.

- Open Space & 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 & Natural Resource Protection 4.3
  Support park, greenway, and open space expansion in developed and developing areas, prioritizing connectivity between each location.

Continued by sharing the that Tupelo Junction is a 181 Single Family home project with an average density of 1.94 dwelling units per acre. A 10-foot multiuse path greenway is to be provided per the City's Bike and Pedestrian Plan. The watershed protection is at 27.5% which is under the 30% maximum allowed. All the Transportation Improvement recommendations were

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provided and the City does have adequate water and sewer utilities for the project. The Planning Department finds that this request is consistent with the recommendation of Mebane By Design and it is consistent with the zoning in the surrounding area.

Ms. Auditori asked about the front porches. She said all the pictures on the PowerPoint showed homes with small front porches. She questioned if she chose one of the plans could she opt to not have a small front porch. Ms. McAdoo said they will have multiple different floor plans with or without front porches. Ms. Auditori then asked Mr. Smyre if he said there would be 2-feet or 10-feet of planting space between the main road and the pedestrian side path. Mr. Smyre said he said 10-feet.

Mr. Ewing questioned if there were any other stipulations with the boundary line lawsuit. Mr. Brown stated that he reviewed the settlement documents and in addition to the conveyance of the adverse possession claim of the land there was a $3,000 payment that was contemplated from Lees Bees Inc. to Mr. Linz.

Mr. Bradley questioned Ms. McAdoo about the comment she made regarding Garman Homes being a local company, where about is local. Ms. McAdoo said their office is currently located in Cary and one of the owners lives in Durham and the other lives in Apex. He asked if they have any intent on building a Hero Home in this area. Ms. McAdoo said they would love the opportunity to do so. He then asked Mr. Smyre if they plan to do any alterations to the floodplain. Mr. Smyre said there would be no alterations to the floodplain. All of their grading and disturbance will be outside the bounds of the floodplain, except for the road crossing with minimal disturbance.

Ms. Philipps said this is a beautiful plan and she especially likes the Bike and Ped accommodation. She stated that in other subdivisions there have been issues with developers not maintaining the stormwater retention ponds. She asked Mr. Smyre to speak about what he anticipates will happen with the maintenance of this project's stormwater retention ponds. Mr. Smyre said they will be wet retention ponds that retain water and there are strict requirements that have to be met. Ms. Philipps said past issues have been mowing around the ponds. He said he is not an engineer, in this project he has been more of a planner, but as part of the filtering process for retention ponds you do want vegetation to screen those ponds which hopefully will filter out any sediment.

Mr. Ewing questioned if there would be any berms or fences separating the project from the country residents. Mr. Smyre said there would be no construction of berms, as a matter of fact, they are trying to limit grading into that area in order to preserve existing trees.

Ms. Auditori followed up on Ms. Philipps previous questions regarding maintenance of retention ponds. She said the City's UDO requires that fences be installed around all retention ponds and she questioned if the fence helps or hinders the maintenance. Mr. Smyre said he does not think it has an impact one way or another. He said they will be providing the fences because the UDO requires it but there are some features about the design that they could argue because the fences may not be as necessary a component as you might think because there is a shelf underneath that is only a certain depth along the immediate edge of the ponds and the real depth is out in the center of the pond. Ms. Auditori said she would certainly be willing to entertain that argument because she, personally, does not think that every water hole needs to have a fence around it. She said the other item she wanted to bring up is the intersection of Lebanon and Stagecoach Roads. She said she does like the fact that the project's street frontage along those roads is mostly green and she is not that concerned about the traffic impact as the analysis showed that it was not a great concern as far as the number of cars but she does know that Lebanon Road is a very fast road and she would like the City to see about the possibility of a round-a-bout at that intersection and wondered if the applicant would support such if the City was to move in that direction. Mr. Smyre said he, the developer and others have all been in conversations about this idea and they are certainly supportive if the City is serious about converting that intersection into

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a round-a-bout but it would be nice to know that earlier than later because by Phase 2 they would be installing the multiuse side path down the northsides of Stagecoach and Lebanon. If there is going to be a reconfiguration of the Stagecoach intersection, it would be great to know before hand so they could place the side path to work with the round-a-bout.

Mr. Rollins said staff has been in conversation with NCDOT about the speed limits along that road and as all of you know there are multiple projects approved and being developed there and discussions have taken place in regard to round-a-bout there. He said Stagecoach and Lebanon are both NCDOT roads so the City cannot just do that on its own. The City would have to work with them through a design to figure out if it is even possible first and then to determine what the impacts would be. He said if this project is approved, discussions could continue.

Mr. Ewing questioned if additional signage or something placed at the pedestrian crossing at Lebanon Road. Mr. Rollins said he thinks that crossing would be considered a high visibility crossing and yes there would be signage and more markings on the road than you would with a standard pedestrian crossing. Mr. Smyre said it would anticipate that discussions with city staff about the nature of that crossing and what practice would be best put in place to bring attention to that particular crossing.

Ms. Philipps requested that the City encourage any sorts of traffic calming or speed limit reductions on Lebanon Road.

Pat Rice, 2000 Saddle Club Road, joined the meeting virtually via Zoom. Ms. Rice shared that the land was originally purchased by Jeff Lees for his bees to pollinate. She said he talked with her mother and father when he purchased the land and he told them that he understood that the land was designated as a wildlife preserve for the box turtles and the blue heron. She said he did that for a while and now he has decided to do this. She said a pack of coyotes were just in her backyard the other night and we lose these woods; coyotes are going to be eating people's pets instead of the rabbits. Our wildlife is being left with no place to live, hide and breed. The people in this area of Mebane want to live in a quiet country side not in town which is why we own various amounts of acreage, not a portion of an acre or even half an acre but 3 or more acres. She stated she lives in the middle of 9 acres and she has talked with others that said if this development come to fruition they plan to move. She said after 60 years, if this happens, she is also considering moving. She understands the need for change but Mebane really does not need more residents. We have enough transient residents in the multitude of apartments that have been built. There are 3 other cluster developments being built just down the road in her area and there are just far too many. Please be satisfied with whatever is already going up. What the applicant is proposing in not in harmony with the surrounding zoning or lands best use and therefore should not be allowed. You are talking about reducing the setbacks and she is asking that the reduction not be allowed. The side setback allowance means only 10 feet between houses, think about it, is this the kind of house you would live in. If Council is bound and determined to let development continue, please make sure the lots are no smaller than 3 acres. Make them livable, pleasant and appealing. What citizen would appreciate is natural woods to explore instead of just seeing it on paper on in a museum. Did you know that there is a tree that Daniel Boone marked as he was walking through this property? Do you know why there are roads named Stagecoach and Saddle Club? Are you aware of the history of the large rock on Lebanon Road and the fact that it's a historical monument and grave marker? She said she knows the history because her father shared it with her and requested that she be sure to remember what he and her grandfather told her and to stand up for preserving the history behind this land. Mebane could purchase this land itself as an extension of Lake Michael and turn it into a natural park. You should also be aware that living beside a bee pollination site is not pleasant. Every year her property is swarmed by bees to the point she cannot even step

outside. New residents will be subjected to this same punishment and risk. Lastly, the traffic is already heavy on Lebanon and Saddle Club Roads due to over development and the landfill on High Rock Road. The proposed entrances and exits from this development onto Lebanon and Saddle Club Roads are in dangerous high traffic areas with blind curves and hills. Every time there is an ice event there is a wreck on the hill near the lake entrance. This is an extremely dangerous place to put an entrance and an even more dangerous place for bikers or pedestrians. One of the entrances proposed, on Saddle Club Road, takes in her grandmother's home which one of the first homes built on Saddle Club and should be preserved. She said wouldn't you like to continue saying that Mebane is positively charming? She said when she thinks of charming, she thinks of little and cute, a place that captures you in its spell. She ended by saying, it is up to you to keep it that way by not allowing this development to be built.

City Clerk Stephanie Shaw read into the record a letter submitted via email from Gary Linz, 1514 Saddle Club Road, Mebane, NC 27302.

Mr Mayor, council members, thank you for the opportunity to "speak" at this less than public hearing. It would be nice if we had adequate internet service, but we don't. In the interest of time, I shall get right to my points. I was disappointed that planning approved of Tupelo Junction while the property lines were in dispute. Additionally, I find it rather disconcerting that the council is being asked to consider approval of a plan with part of our property on the designer's drawings. Seriously.

I would like to point out that the developer made no attempt to reach out to us until two weeks before the planning board meeting. Our only interaction with them on this project was when, for whatever reason; Orange County land records deeded our property to Summit. Orange County refused to provide details about how this came about, but suffice to say we were not amused.

Regarding wet lands below 1708 Saddle Club Rd, you can say the Federal designation is just "a guideline", or that the current administration has declared all wetlands should be paved over, but they are still wetlands. Every spring the peepers would be happy to tell you that. Let me quote Summit on the subject, regarding a tract of property on the east side of Saddle Club Road, "My Engineer who works with Orange County has pointed out that the GIS map shows a blue line drainage easement stream mid-way on the property. Potential loss of about 1-2 acres, it is likely to flag as a drainage easement." Now logic would perhaps lead one to believe this would also hold double for this drainage downstream, on the west side of Saddle Club Road.

Which brings us to buffers: Again quoting Summit regarding property on the east side of Saddle Club, "Property has no natural buffer around the perimeter and will require screening with plantings during the approval process most likely". At the rear of Havenstone, between this new subdivision and the rural folks at the rear of this property that were there previously, there is about 100 feet of vegetation as buffer. Between Mr Shanklin's rural property and the subdivision, there is about 100 feet of dense cover for buffer. Between The Retreat at Lake Michael and the rural neighbors to the east, there is 100 plus feet of buffer. The eight feet the developer is proposing at the side of our NC registered farm is not going to work for us or the potential new home owners. Eight feet is the height of most ceilings, eight feet is half the length of my pickup truck, eight feet is the width of a man's closet...well, probably twice the width of a man's closet, and eight feet is barely social distancing. I am going to have to insist on the same considerations other rural property owners in the area were afforded, fair and equal treatment if you will. 100 feet. Furthermore, the developer has the audacity to then ask for a setback waiver (variance?).

I understand that it is hard to find locations to stick 183 homes on a wildlife refuge, but please don't make that our problem.

Sincerely, Gary Linz

Next, Clerk Shaw read into the record a letter submitted via email from Cynthia Linz, 1514 Saddle Club Road, Mebane, NC 27302.

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Mebane council members,

My name is Cynthia Linz and my husband Gary and I live on the farm that this Tupelo subdivision encroaches. Here's a brief background of our 23 years here on this farm in Orange County within Mebane's ETJ, or in other words under Mebane's control.
We have 11 beautiful acres with a park like setting, and aside from the random high powered rifle shots we always have to worry about, we live a peaceful existence here.
We first encountered our unacceptance as a Mebane resident living in Orange County when it came to allowing our son play baseball here in Mebane when he was in grade school. He was good player but he wasn't allowed because you know Orange County not Alamance. We didn't bother to pursue it. Then our neighbor decided to build a barn without permit and without any knowledge about building anything, it ended up a parallelogram not even close to square, it was horrendous. We asked for Mebane's help in this matter, but got the same answer we always get, you're in Orange County go to them. We ask Orange County and they say our hands are tied-because we're in the ETJ. So my husband went to authorities in Raleigh and was able to remedy the situation and the owner was forced to remove it. Next, when lake Michael was ALLOWED by someone in Mebane to drain water from the lake into the creek on our land in order to help furnish water for Mill Creek golf course, Mebane wouldn't help of course, so again he went to authorities in Raleigh which put an end to that unethical if not illegal practice. Next, when a resident was killed going over the bridge across from Lake Michael, we implored Mebane to add signage so it wouldn't happen again, and again Mebane failed us and all its residents so we had to go to Raleigh yet again, and convince DOT to put up the warning signs around that bridge over the creek on Lebanon rd. WE pushed for it, not Mebane. There are many other examples, such as lake Michael dam that's about to falter, but you get the idea by now. We fight for what is right.

I'm deeply concerned about this Tupelo subdivision as you know. I won't bother trying to have a voice for our shared environment that we all have a responsibility to care for. You've made it clear that you shall do whatever it takes including filling in designated wetland to appease an out of town developer so they may have maximum profit. This is accomplished at our expense, and at the expense of every other neighbor of the landowner who will have houses crammed up into their boundaries, with a buffer about the length of a pickup truck.

Our property is the only farm along these boundaries, and we have 2 boundaries. This proposal on your map which is inaccurate because it shows part of OUR land included in your laughable 20 ft buffer. 12 ft of this Proposed buffer is OUR land, so this reduces the laughable buffer to 8 ft.
It's not really laughable though, it's arrogant, appalling, aggressive and incredibly intrusive. And we will not stand for it. So here's our proposal: We demand equal buffer as previously approved subdivisions that surrounds us.
Here's the councils approval of all the new subdivisions that engulfs us:
Havenstone : 100 ft
Mr. Shanklin : 100 ft
Retreat at lake Michael : 100 plus ft
LINZ FARM 8-20 ft

Because this land is not really suitable for development because of swamp and wetland, a larger buffer means less houses which means less profit.

I understand you can't stop progress, but it can be done in a more conscientious way. Why are you so eager to approve of such an assault against our land and our life? Who benefits by this besides owner and developer? I have to wonder who else with local business might benefit.

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This whole process is wholly UNdemocratic, why? Because we live under Mebane's rule, but we are unable to vote for council who just might look out for private farm landowner who wish a fair and acceptable coexistence with this subdivision, and we can't run for council to try to change things for the better. We are disenfranchised residents here. Council members are making decisions about the remainder of our life and we have no democratic recourse, we can't even have a public voice today on this issue because our Century Link internet is completely inadequate for us here a mile away, and of course Mebane has done nothing to improve that either. This town has a hard time stepping up to the plate for the good of the people, but with the right leadership we can address these issues instead of just kicking the can down the road into Orange County.

My husband has spent years and years and years picking up Mebane's trash which is strewn all over Lebanon road by the less environmentally conscience people who don't know any better and don't care. We happen to care more about our environment than the charming town of Mebane or Orange County. I say lead by example and give meaning to your slogan, otherwise it's just a word that sounds nice.

We will ALWAYS fight for what is RIGHT.

Lastly, Clerk Shaw read into the record a letter submitted via email from Teresa Dallas, 122 W. Clay Street, Mebane, NC 27302.

Two points of concern are;
1) The safety of the placement of the entrance. It's a down slope on a curve.
This seems a dangerous area for the entrance.

2) I am very concerned about any possible future changes, that could be made to the intersection at the corner of Stagecoach Road and Lebanon Road, by my property.

Our property has been negatively impacted twice in the past due road changes. The first time was when Lebanon road was placed, cutting directly through our property. This property was purchased with the intention of using this as our home site and it was planned to build a pond in the back. After Lebanon Road was cut through the property, the home had to be moved and turned around to face the new road and all possibility for a wooded lot with a pond was removed. An unbalanced division was made and the home site was reduced to approximately 1/7th of the original acreage. Later Stagecoach road went in and our property was further butchered.
Due to these roads being placed on our property, we have lost acreage and been left perched on a very busy corner, thus the desirability as a "private residence" lot was altered. There are other negative effects as well. The point is, I do not want this to happen again. The land is now more suitable as a corner store site, rather than the peaceful home site it was purchased to be. If another slice is removed from this corner, just how close to the front door will the road be?
Please advise as to how you feel this is going to impact my property and this intersection should this development be approved.

Thank you,
Teresa Dallas

Mayor Hooks asked for Council to take action to close the public hearing. Mr. Greene made a motion, seconded by Ms. Philipps to close the public hearing. The motion passed unanimously per roll call vote. Mayor Hooks asked for Council to take action regarding continuing the public hearing. Mr. Bradley made a motion, seconded by Mr. Ewing, to continue the public hearing until Wednesday, August 5, 2020., The motion carried unanimously per roll call vote.

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Mr. Brown spoke up reminding Council that the motion to close the public hearing was not needed as the public hearing is to be continued to allow any additional comments from the public for 24 hours. Mr. Bradley made a motion, seconded by Mr. Ewing, to open the public and to continue until Wednesday, August 5, 2020. The motion carried unanimously per roll call vote.

A Quasi-judicial Board of Adjustment public hearing was held on a request from 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.

Clerk Shaw administered the oath of affirmation to City of Mebane Planner Ashley Ownbey.

Ms. Ownbey gave an overview of the request. She stated that 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 temporary use is not expected to exceed 90 days and will more likely be around 45 to 60 days. She stated that the site plan was reviewed by the Technical Review Committee. She said among other things the plan shows how parents will navigate student drop off and pickup. This route was an alternative recommended in the Traffic analysis prepared by Ramey Kemp & Associates, Inc. That analysis was also reviewed by NCDOT District and Municipal & School Transportation Assistance (MSTA) Unit staff. She said in terms of the plan's consistency with the City of Mebane's long-range plan, the property is located in a primary residential growth area which encourages a mix of residential and light commercial and the school is consistent with those uses.

Clerk Shaw administered the oath of affirmation to Chad Abbott, P.E. with C3 Design & Engineering, PLLC, 2537 E. Lyon Station Road, Creedmoor, NC. He stated he is representing Alamance Community School and others attending tonight via Zoom are:

Leslie Paynter, Alamance Community School Director
Jim Way, Developer and Owner of the current school facility
Steve Hubrich, General Contractor
Josh Renke, Traffic Engineer with Ramey Kemp
Nick Kirkland, Real Estate Appraiser

Mr. Abbott said the purpose of their request is to have a special use permit granted for temporary use to occupy Crosslink Community Church until construction of the new school is completed. He said they went through all the proper channels to vet this site plan. He said all reviewing parties involved found that the facilities are sufficient for the temporary use. He stated 90 days was submitted on the application but 45 to 60 days is more likely. No improvements to the site were needed or required to facilitate the temporary use.

Mr. Abbott read aloud the following specific standards related to schools as listed on the site plan:

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

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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.

He then proceeded discussing the general special use standards, stating they are related to public health, safety and welfare. The request will not materially endanger the public health or safety. 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, the 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. Also giving the delay of the Alamance Burlington School System, they will not have to worry about traffic at the public schools located close to this area.

Clerk Shaw administered the oath of affirmation to Josh Reinke, Traffic Engineer with Ramey Kemp. He gave a brief overview of the studying stating that looking at this review for a temporary site, they looked at a transportation management plan with some analysis. They worked with the City and NCDOT. NCDOT indicated no improvements needed for this site. He said in terms of the transportation management plan, one of the recommendations was to stagger the start times by at least 30 minutes from start times of other schools in the area. He said there is 1500 feet of internal storage which will allow for adequate stacking with no danger of backing up into the public roads. In conclusion, with the implementation of the plan provided, they do not foresee any safety concerns with traffic at this site.

Clerk Shaw administered the oath of affirmation to Kirk Franklin, Licensed Residential Real Estate Appraiser with Kirkland Appraisals. Mr. Kirkland stated that performed a matched pair analysis and determined that there is no impact to the adjoining property values for adjoining a proposed school. He said this site will be a temporary use which further supports that any impact, which they conclude is none, would be temporary and gone within the 90 days.

Mr. Abbott said that the temporary use 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.

Lastly, the use 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.

Mr. Abbott stated as they have met all the conditions and standards, they respectfully request approval of the request.

Mr. Greene said his only concern is to be sure they have adequate drop off and pick up area so

that cars are not backed up onto the public roads. Mr. Reinke said the plan meets all MSTA guidelines and the internal storage is sufficient.

Ms. Auditori asked for clarification regarding student capacity. Mr. Reinke stated for the temporary use they will be operating K-3 only with approximately 400 students total but only approximate 220 students on a daily basis as they will be conducting a day on/day off schedule which would have them at a 50% capacity each day.

No one from the public spoke concerning this request.

Mr. Bradley made a motion, seconded by Ms. Philipps, to continue the public hearing until Wednesday, August 5, 2020. The motion carried unanimously per the roll call vote.

Mayor Hooks announced the upcoming retirement of City Manager David Cheek. Mr. Cheek is scheduled to retire on February 1, 2021. He stated that this schedule will allow for a transition of management. He said we all know that when Mr. Cheek hired Assistant City Manager Chris Rollins over seven years ago, Mr. Rollins would be Mr. Cheek's apparent successor under a succession plan that was discussed. Mayor Hooks said that Mr. Cheek commendation would best be held at a later time. He then asked if Council is in agreement to allow Mr. Cheek to continue as Manager until February 1, 2021 and to appoint Mr. Rollins as the successor Manager with the same salary and benefits as Mr. Cheek effective upon Mr. Cheek's retirement. Mr. Bradley made a motion allowing Mr. Cheek as City Manager until February 1, 2021 and stated he supports the succession plan to appoint Mr. Rollins as incoming Manager. However, to be fair, he would like to go into executive session in December 2020 or so to discuss salary. Mr. Greene seconded that motion. The motion carried unanimously.

Mr. Ewing thanked the Mebane Recreation and Parks, Eastern Alamance Principals, Teachers, Student Parents and the Students for the wonderful graduation event held at the MACC. He said it was an amazing event given the pandemic situation.

Mr. Cheek announced that the City Council will be hosting a Listening Session on August 5th directly following the continued public hearing voting meeting. Also, he gave a brief update on the Fitness Court located at the new Community Park. He shared photos and stated a grand opening will be held after the Governor opens the state to Phase 3. He thanked Aaron Davis for his work in marshalling the project through and for Chris Rollins' fundraising efforts for the project.

Mr. Cheek shared that the City was contacted by N.C. State Emergency Management in preparation of the active Hurricane. They have requested that the City make the MACC available as an emergency shelter and if the Council approves, an agreement will be signed agreeing to such. He said it would be a State-run shelter so the City would not be required to provide staffing or equipment. However, with the path of the Hurricane, it seems as though it will not be needed at this time. Mr. Bradley said a point of concern in the past has been that the MACC does not have an onsite generator. He questioned if Mr. Cheek thought the State would be willing to apply some grants or funds for an onsite generator. Mr. Cheek said he thinks that is a conversation that can be had.

Mr. Rollins added that the former Mayor Glendel Stephenson and the current Mayor Ed Hooks were also very instrumental in bringing the Fitness Court to Mebane.

Mr. Cheek made a final announcement, stating that the City recently received 800 COVID masks from the Piedmont Triad Regional Council and staff will be handing them out on Saturday.

There being no further business, the meeting ended at 8:35pm.

Attest: _____ _____

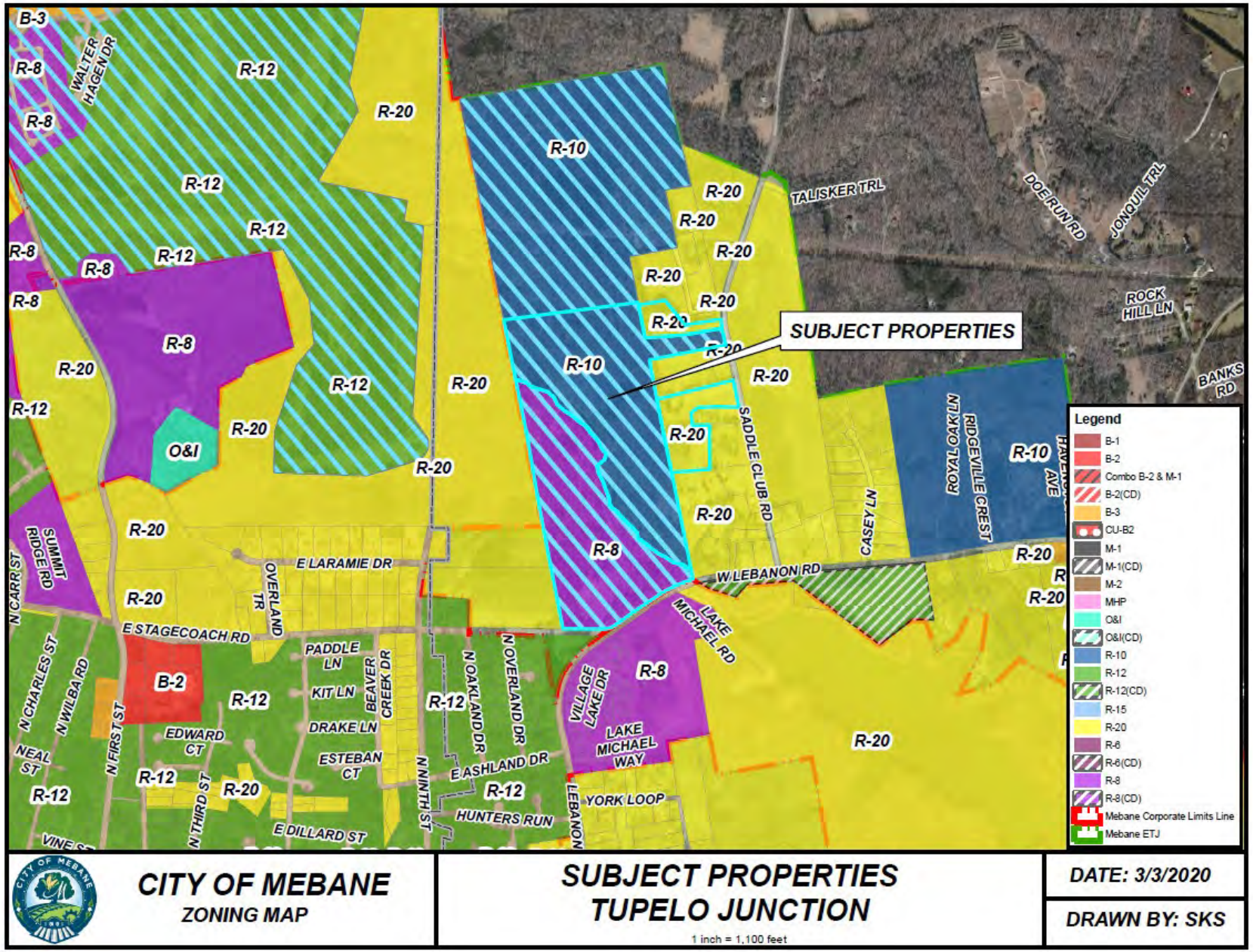
Stephanie W. Shaw, City Clerk Ed Hooks, Mayor

DRAFT

Mebane
Positively Charming

Development Director Cy Stober

Rezoning Request, CU-R-8 & CU-R-10 to R-12(CD) for 181 Home Residential Cluster on +/-93.5 ac From Lebanon Road 3, LLC



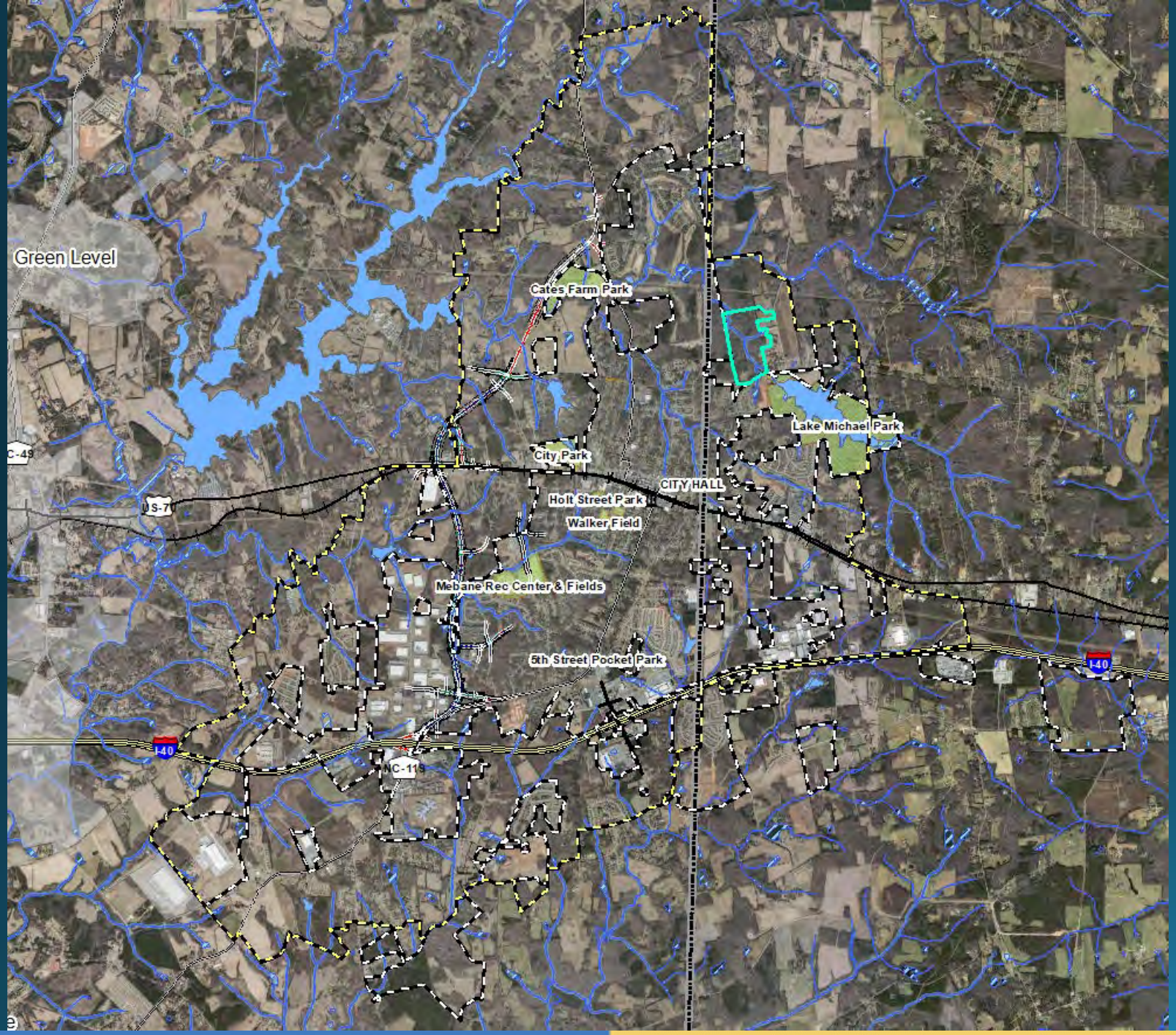
Tupelo Junction Conditional Zoning Review

Lebanon Road 3, LLC

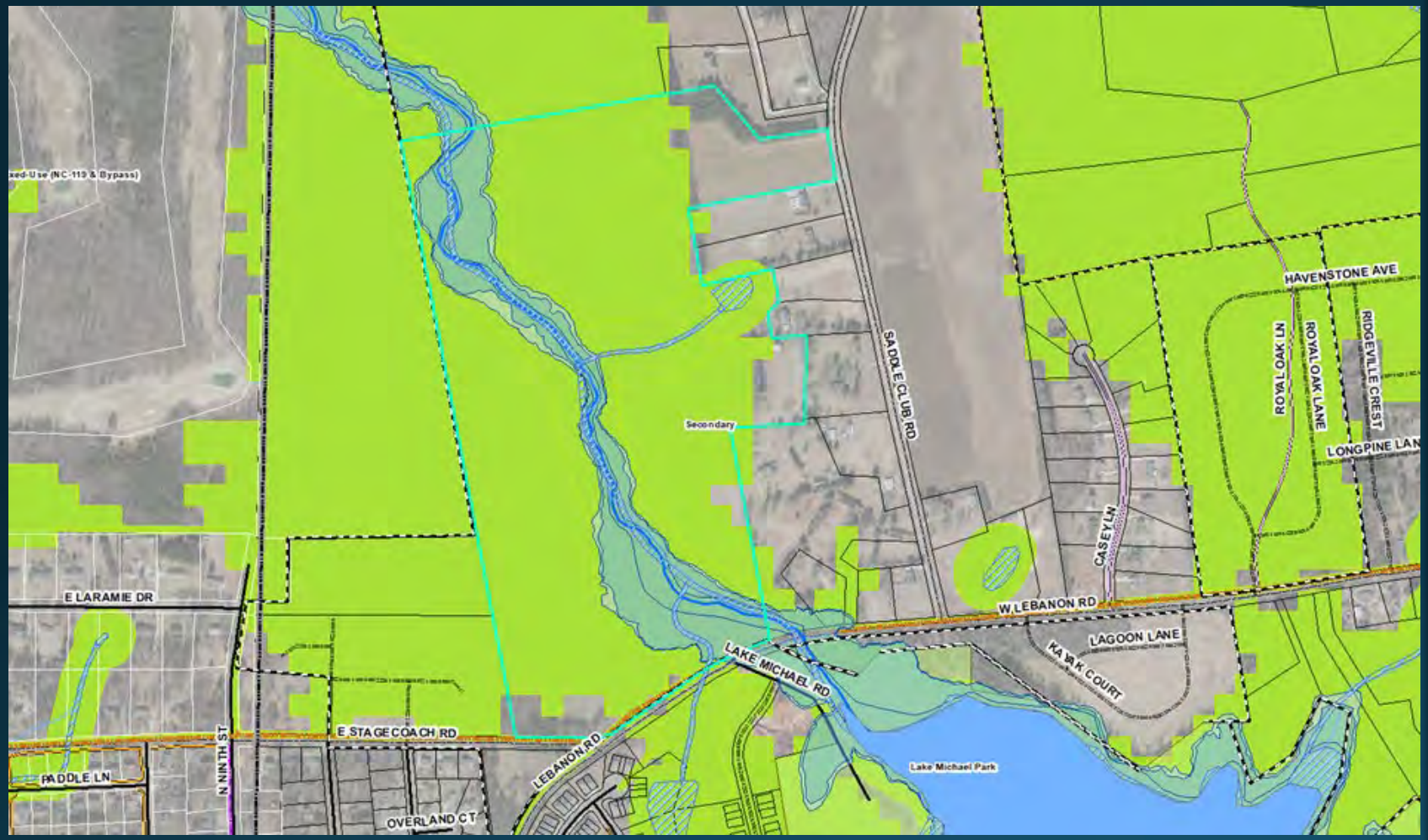
+/-93.5 acres of a +/-179.23-ac parcel

Current Zoning: CU-R-8, CU-R-10, & R-20

Request for Rezoning: R-12(CD)



Tupelo Junction Conditional Zoning Review

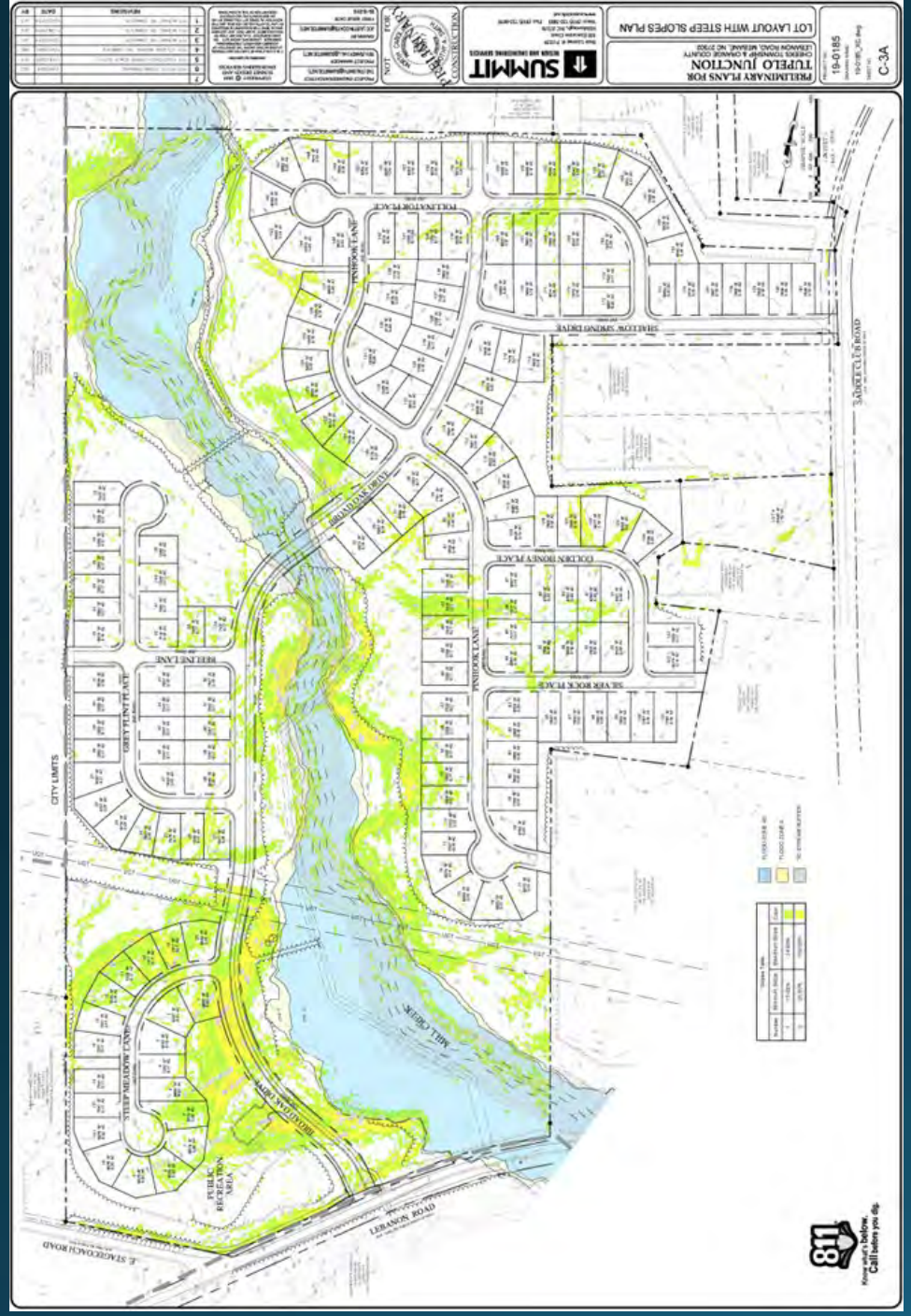


Tupelo Junction Conditional Zoning Review

- Conservation Area

"Conservation areas should be maintained by permitting rural developments of low intensity and/or conservation development featuring open space, recreation, greenways, etc., or remain in a natural state for the next 15 years."

- Watershed Overlay District



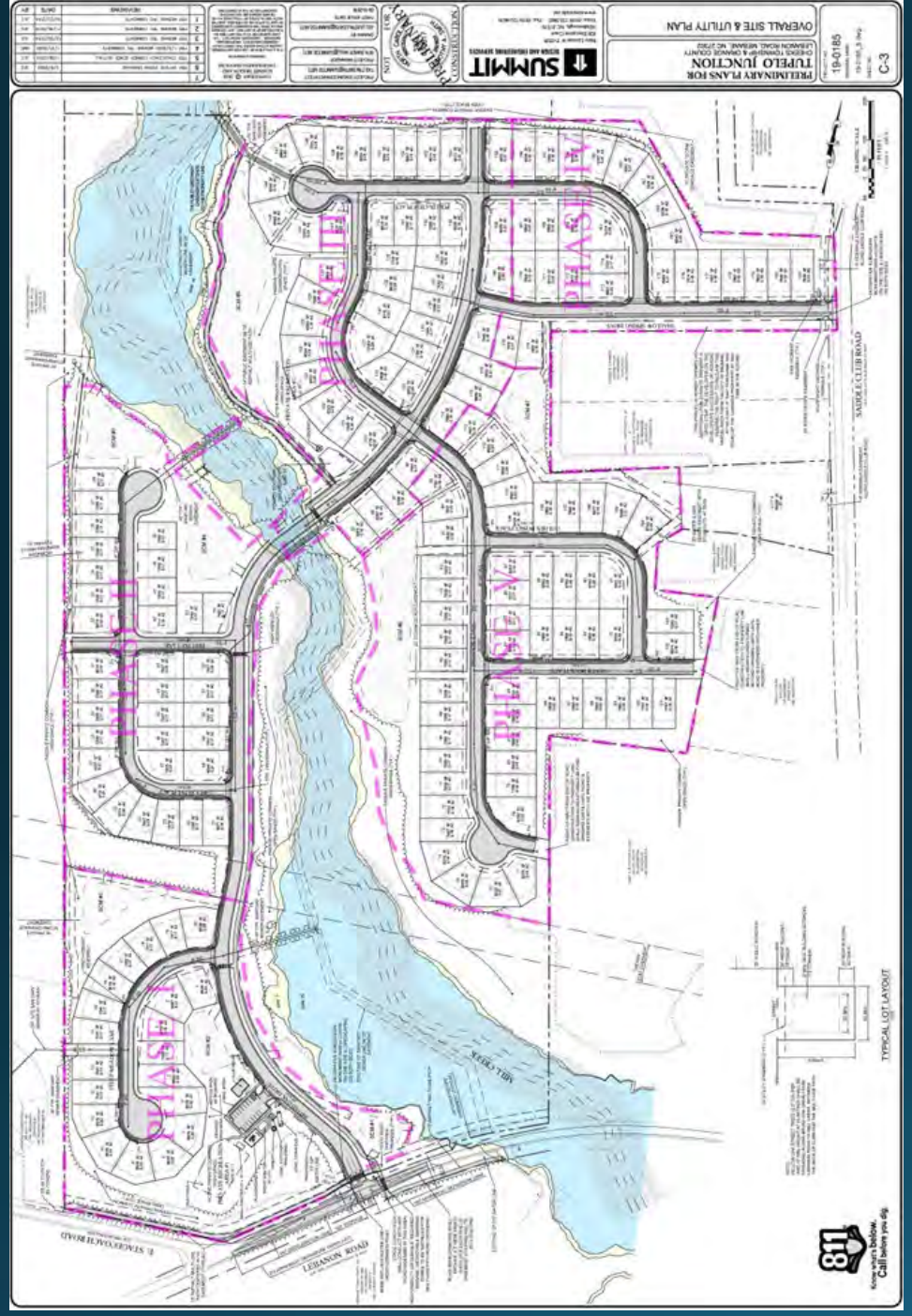
Tupelo Junction Conditional Zoning Review

- Conservation Area

"Conservation areas should be maintained by permitting rural developments of low intensity and/or conservation development featuring open space, recreation, greenways, etc., or remain in a natural state for the next 15 years."

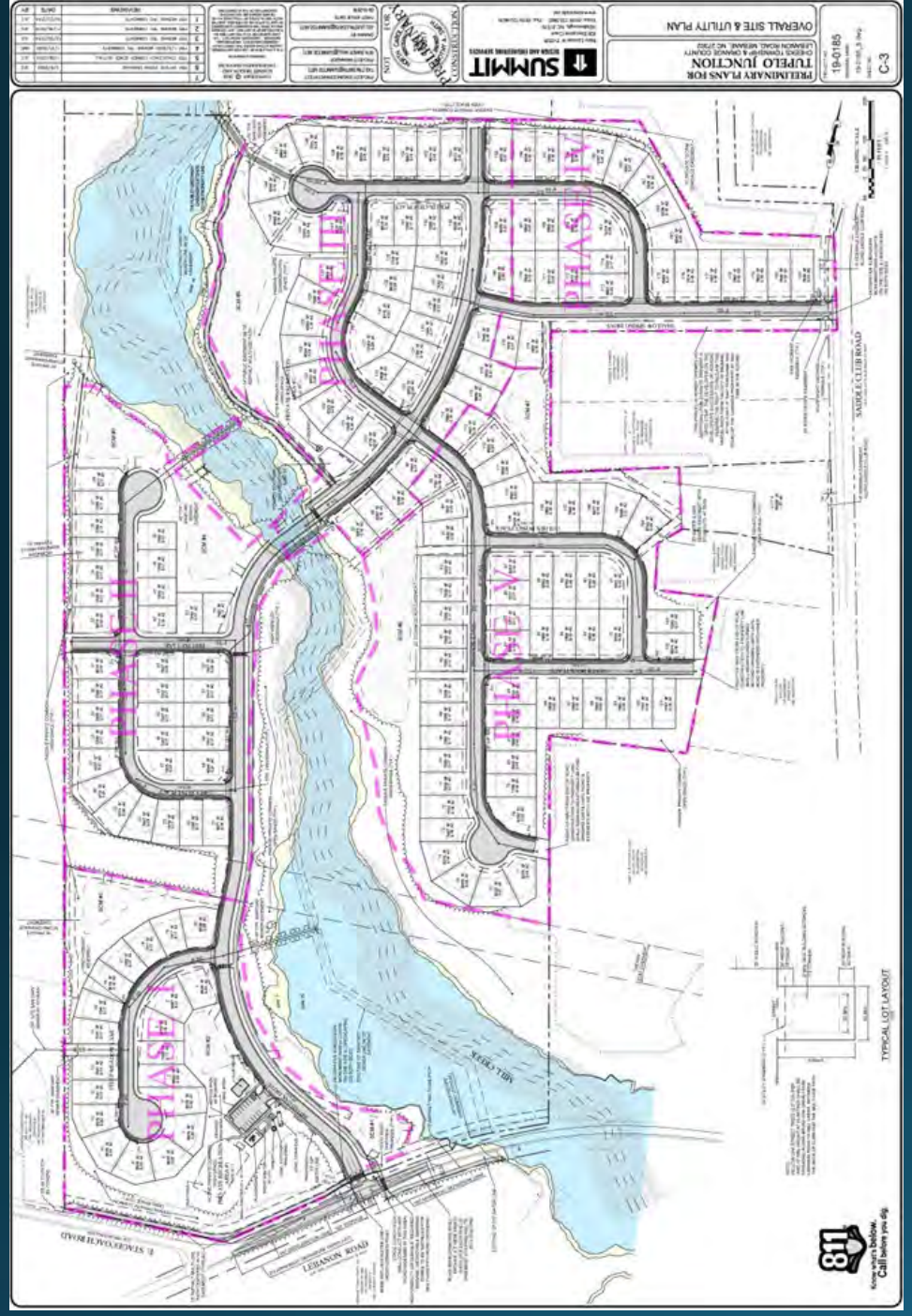
- Watershed Overlay District

Limits impervious cover to 30% of the area



Tupelo Junction Conditional Zoning Findings of Fact

- +/-93.5 ac of +/-179.23-ac parcel
- 181 home Residential Cluster
- Currently Forested/Vacant



Tupelo Junction Conditional Zoning Findings of Fact

- 4,325 LF greenway
- 1.0 ac of private amenities
- Bike/ped crossing/connection to Lake Michael Park

Applicant Presentation

TUPELO JUNCTION

Conditional R-12(CD) Rezoning for a Residential Cluster Development Subdivision

Mebane City Council

August 3, 2020

Jack L. Smyre, PE, AICP

The Design Response

SITE LOCATION



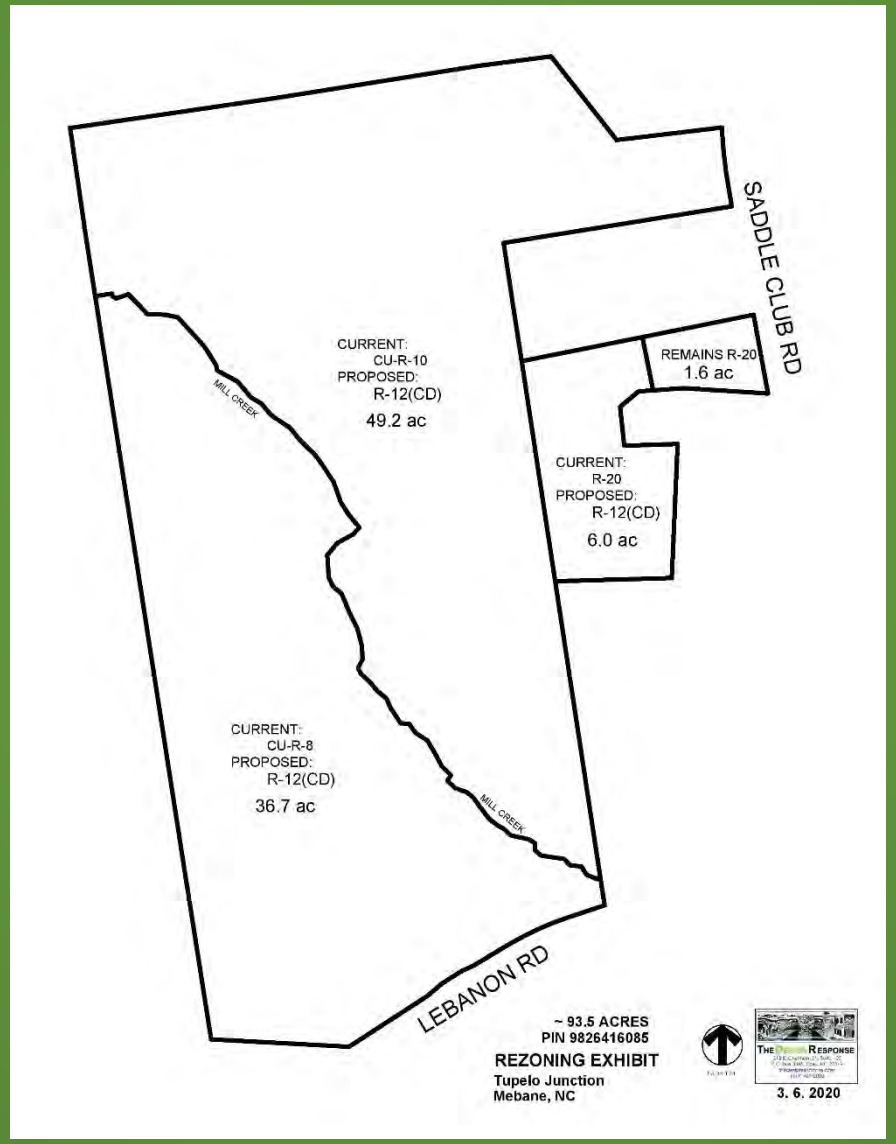
SITE PLAN


SKILLINGTON PLACE
BRENNA OAK DRIVE
SHALLOW BEYOND PLACE
GOLDEN HONEY DRIVE
SILVER ROCK PLACE
REDLINE LANE
SILVER ROCK PLACE
SILVER ROCK PLACE
BRENNA OAK DRIVE
SILVER ROCK PLACE
SILVER ROCK PLACE
SILVER ROCK PLAC

TUPELO JUNCTION

- 93.5 acres located across Lebanon Road from Lake Michael Park
- Southern portion of the Lees Bees, Inc. assemblage
- 181 homesites (1.94 units per acre density)
- Current zoning districts: CU-R-8, CU-R-10, and R-20 (2005 rezoning)
- Proposed zoning districts: R-12(CD) and R-20
- Conditional rezoning site plan is a Residential Cluster Development
- Minimum lot size: 7,200 square feet (nominal 60’ x 120’)
- Nearly 3 miles of public sidewalks, greenways, and multi-use side paths

CURRENT/PROPOSED ZONING DISTRICTS



OPEN SPACE

- Mebane UDO requires sum of all lot reductions (17%) be open space
- Mebane by Design has a Conservation Area goal of 30% open space
- Tupelo Junction provides 53% open space (owned by HOA)

- 14% of Tupelo Junction is public right-of-way (Mebane ownership)
- 33% of Tupelo Junction is private ownership (sum of all lot areas)
- 33% of Tupelo Junction is preserved and planted tree canopy

SITE PLAN


SKILLINGTON PLACE
BRENNA OAK DRIVE
SHALLOW BEYOND PLACE
GOLDEN HONEY DRIVE
SILVER ROCK PLACE
REDLINE LANE
SILVER ROCK PLACE
SILVER ROCK PLACE
BRENNA OAK DRIVE
SILVER ROCK PLACE
SILVER ROCK PLACE
SILVER ROCK PLAC

PEDESTRIAN PLAN



SITE PLAN


SKILLINGTON PLACE
BRENNA OAK DRIVE
SHALLOW BEYOND PLACE
GOLDEN HONEY DRIVE
SILVER ROCK PLACE
REDLINE LANE
SILVER ROCK PLACE
SILVER ROCK PLACE
BRENNA OAK DRIVE
SILVER ROCK PLACE
SILVER ROCK PLACE
SILVER ROCK PLAC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MAIL KIOSK
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E
F
G
LEBANON ROAD (SR



SITE PLAN


SKILLINGTON PLACE
BRENNA OAK DRIVE
SHALLOW BEYOND PLACE
GOLDEN HONEY DRIVE
SILVER ROCK PLACE
REDLINE LANE
SILVER ROCK PLACE
SILVER ROCK PLACE
BRENNA OAK DRIVE
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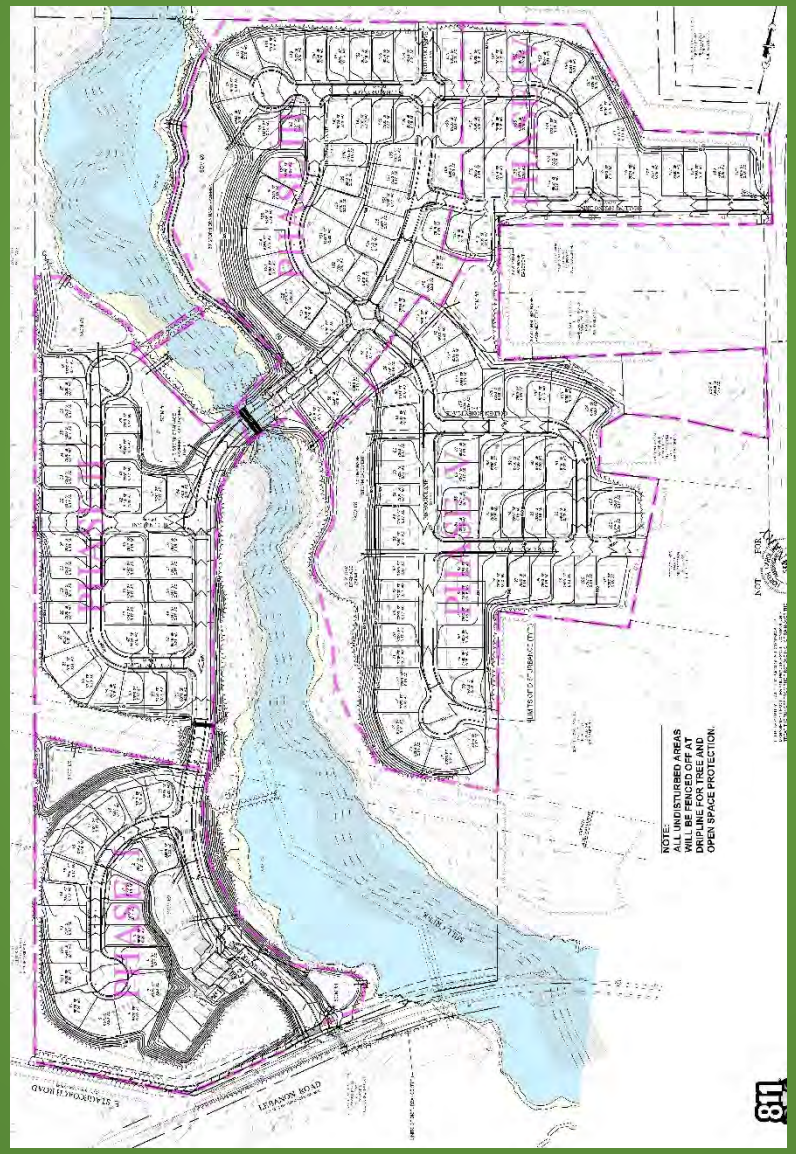
SILVER ROCK PLAC

TRAFFIC CALMING - CURB EXTENSIONS



PHASING


PHASE III
PHASE II
PHASE I
NOTE:
ALL UNDISTURBED AREAS
WILL BE FENCED OFF AT
DRIPLINE FOR TREE AND
OPEN SPACE PROTECTION.
LEBANON ROAD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STEERMEADOW DRIVE
LEBANON ROAD (SR 1306)
STAGECOACH ROAD (SR 1996)


GREY FLINT PLACE
BEELINE LANE
BROAD OAK DRIVE
DOG PARK
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PEDESTRIAN PLAN




POLLINATOR PLACE
BROAD OAK DRIVE
SHALLOW SPRING PLACE
PINHOOK LANE
GOLDEN HONEY DRIVE
PINHOOK
GRE
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PINHOOK LANE
GOLDEN HONEY DRIVE
PINHOOK LANE
SILVER ROCK PLACE
BROAD OAK DRIVE
CLUB ROAD (SR 1346)
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SITE PLAN


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BRENNA OAK DRIVE
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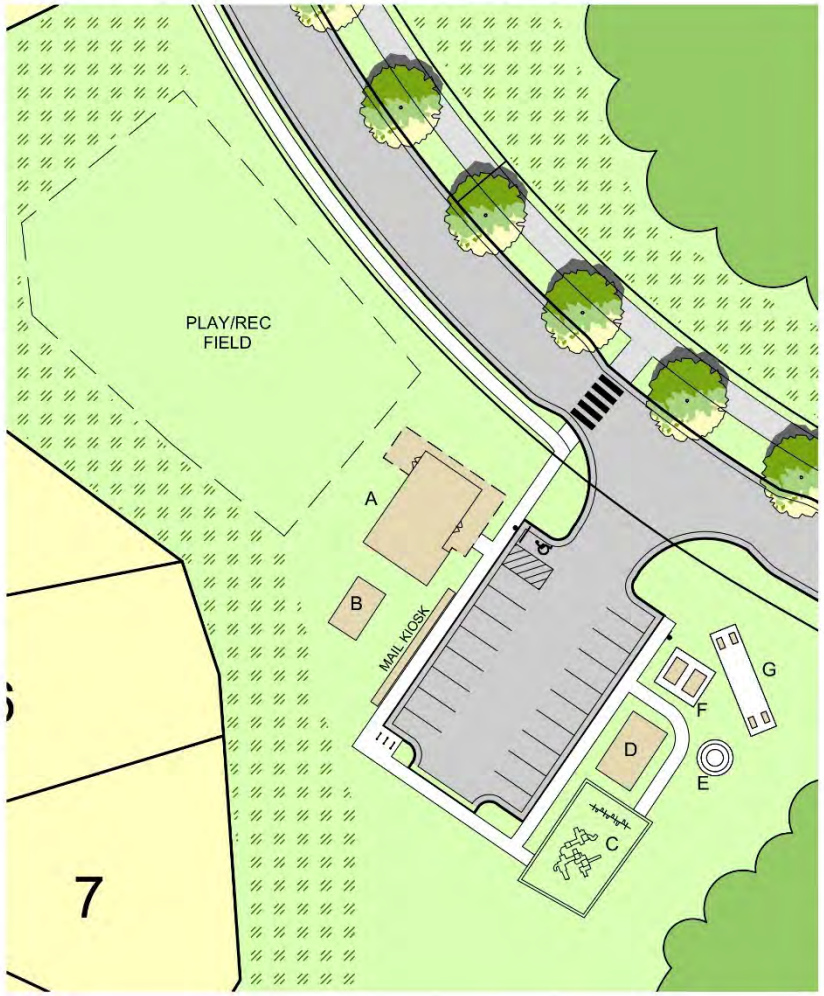
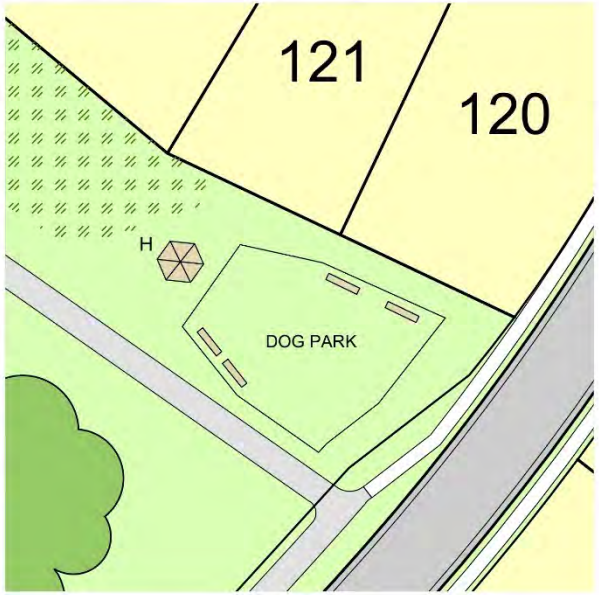
SILVER ROCK PLAC

RECREATION AREAS

SOUTH/MAIN AREA

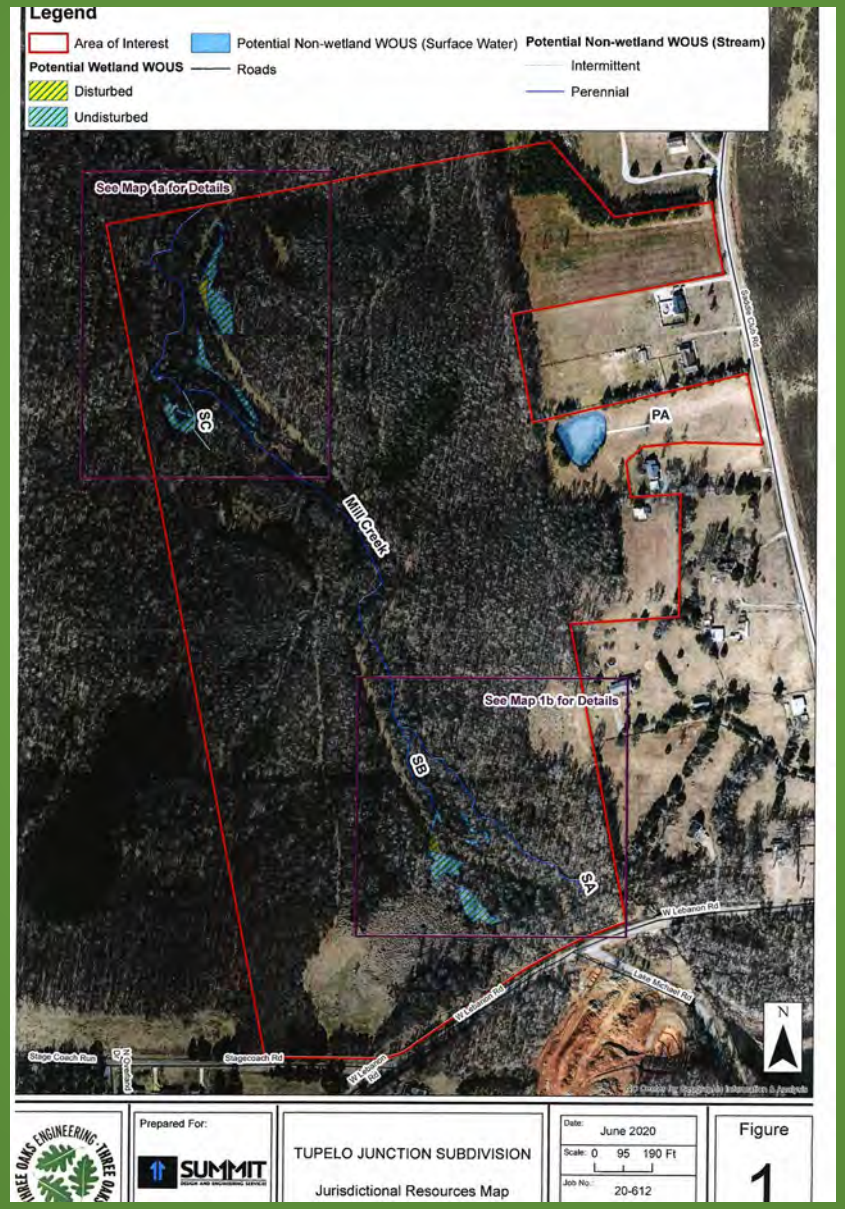


NORTH AREA

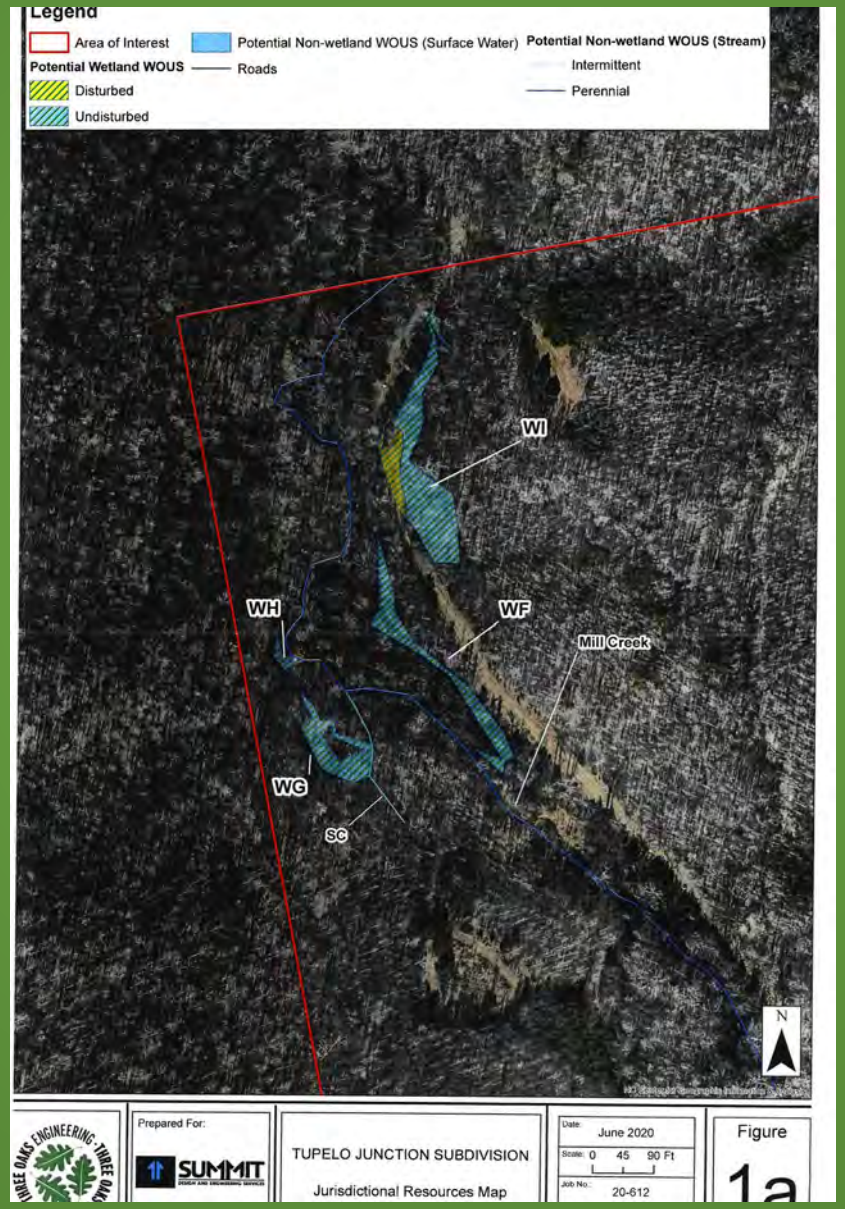


A - CLUBHOUSE
B - PICNIC SHELTER
C - PLAYGROUND
D - PICNIC SHELTER
E - CONCRETE FIRE PIT
F - TABLE TENNIS
G - CORNHOLE
H - GAZEBO

WETLANDS


Legend
Area of Interest
Potential Wetland WOUS
Disturbed
Undisturbed
Potential Non-wetland WOUS (Surface Water)
Roads
Potential Non-wetland WOUS (Stream)
Intermittent
Perennial
See Map 1a for Details
See Map 1b for Details
SC
SB
SA
PA
Mill Creek
Stage Coach Run
Stagecoach Rd
W Lebanon Rd
Duke Mitchell Rd
N
Prepared For:
SUMMIT
TUPELO JUNCTION SUBDIVISION
Jurisdictional Resources Map
Date: June 2020
Scale: 0 95 190 Ft
Job No.: 20-612
Figure
1

WETLANDS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Potential Non-wetland WOUS (Surface Water)
Roads
Potential Non-wetland WOUS (Stream)
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Perennial
WI
WH
WF
Mill Creek
WG
SC
N
Prepared For:
SUMMIT
TUPELO JUNCTION SUBDIVISION
Jurisdictional Resources Map
Date: June 2020
Scale: 0 45 90 Ft
Job No.: 20-612
Figure
1a

WETLANDS


Legend
Area of Interest
Potential Wetland WOUS
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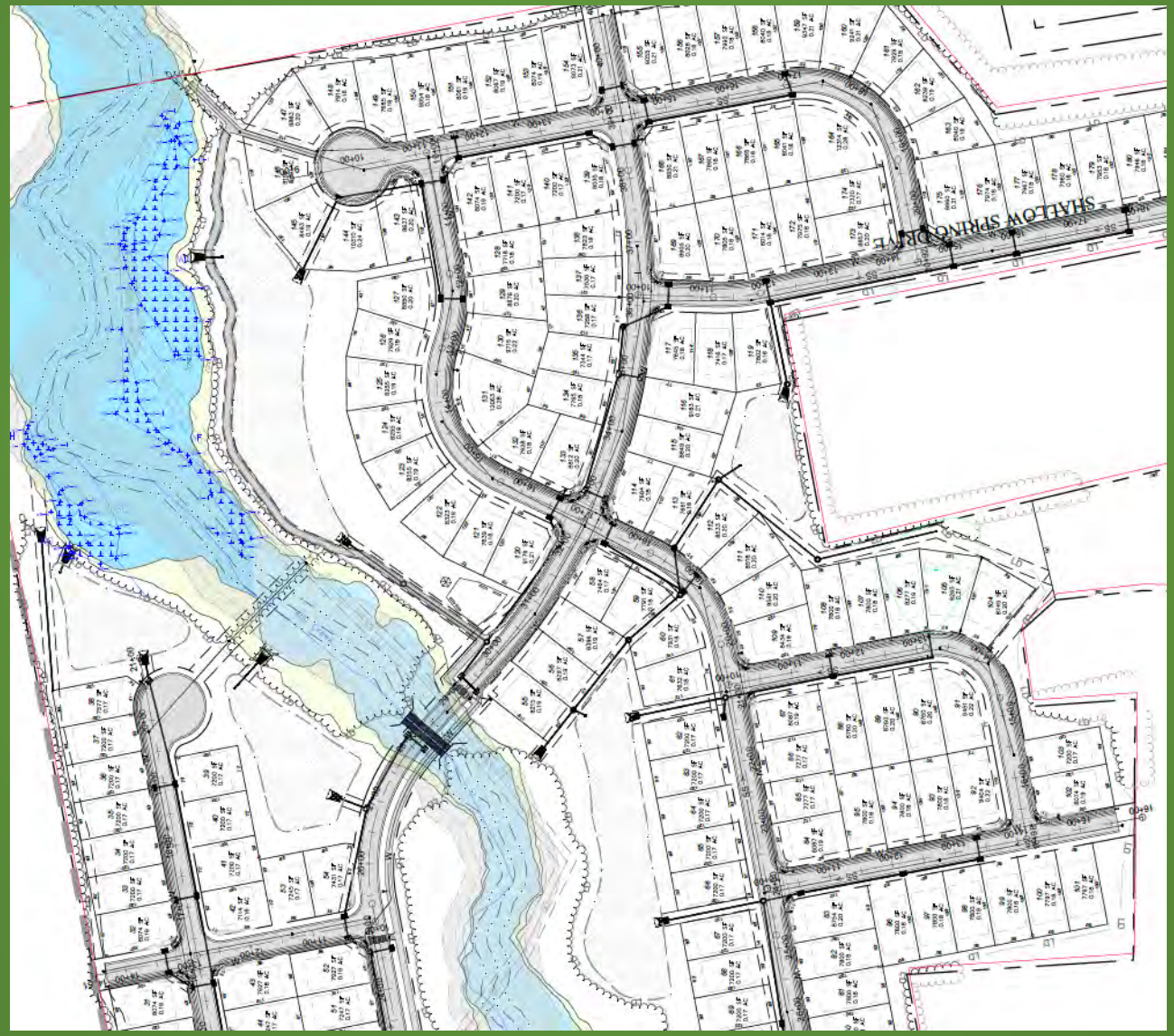
Undisturbed
Potential Non-wetland WOUS (Surface Water)
Roads
Potential Non-wetland WOUS (Stream)
Intermittent
Perennial
SB
Mill Creek
WB
WE
WC
WD
WA
N
Prepared For:
SUMMIT
TUPELO JUNCTION SUBDIVISION
Jurisdictional Resources Map
Date: June 2020
Scale: 0 20 40 Ft
Job No.: 20-612
Figure
1b

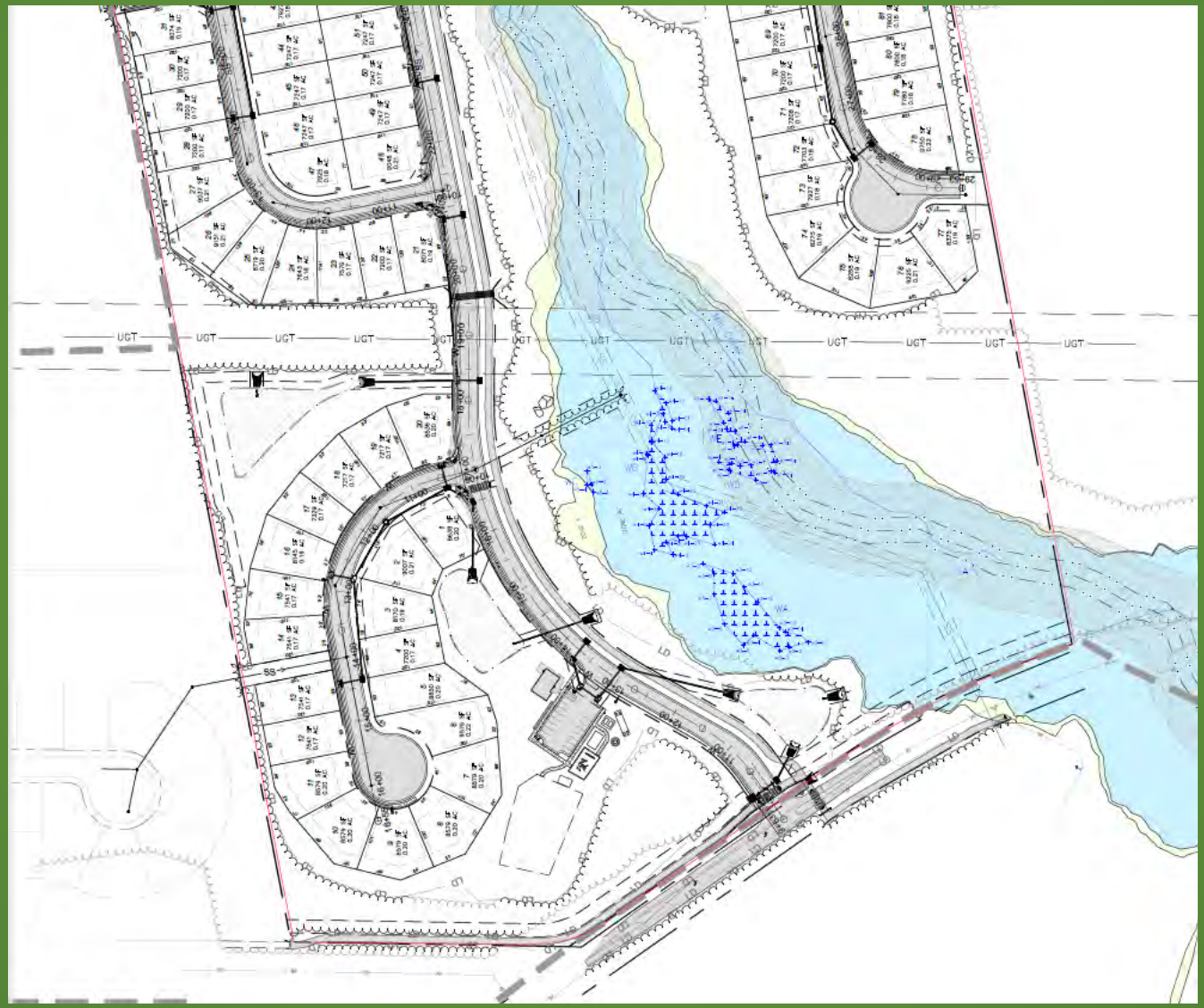
WETLANDS



WETLANDS



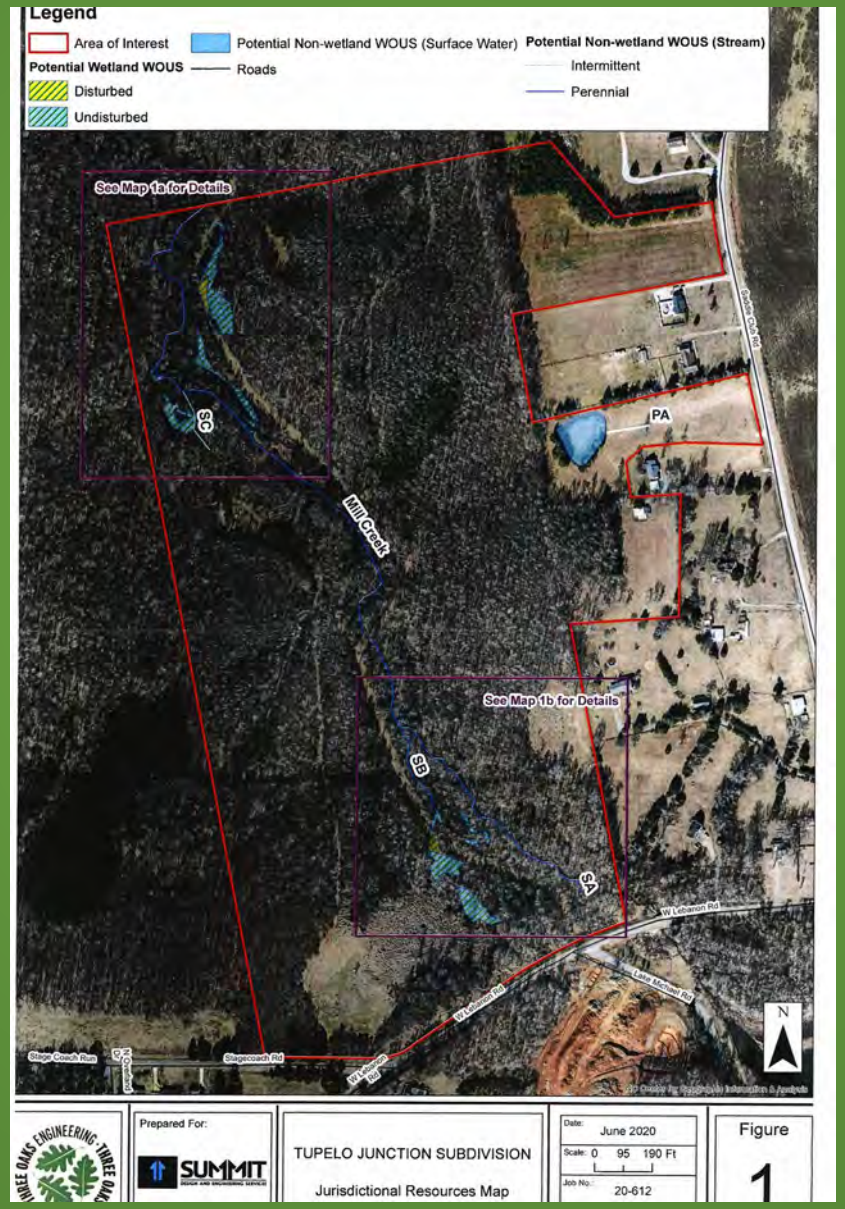
WETLANDS



WETLANDS



WETLANDS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Potential Non-wetland WOUS (Surface Water)
Roads
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See Map 1a for Details
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Mill Creek
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Prepared For:
SUMMIT
TUPELO JUNCTION SUBDIVISION
Jurisdictional Resources Map
Date: June 2020
Scale: 0 95 190 Ft
Job No.: 20-612
Figure
1

WETLANDS

Former horse pasture “pond”



WETLANDS

Table 3. Potential surface waters in the study area

Surface Water	Map ID of Jurisdictional Connection	Area (ac.)
PA	N/A	0.45

Note: PA is an old farm pond that was built in upland. Based on mapping, it pre-dates the 1977 Soil Survey Map. There are no inlets or outlets to this farm pond, and it is not connected to a jurisdictional feature; therefore, it is non-jurisdictional.

SITE PLAN


SKILLINGTON PLACE
BRENNA OAK DRIVE
SHALLOW BEYOND PLACE
GOLDEN HONEY DRIVE
SILVER ROCK PLACE
REDLINE LANE
SILVER ROCK PLACE
SILVER ROCK PLACE
BRENNA OAK DRIVE
SILVER ROCK PLACE
SILVER ROCK PLACE
SILVER ROCK PLAC


PINHOOK LANE
GOLDEN HONEY DRIVE
PINHOOK LANE
SILVER ROCK PLACE
BROAD OAK DRIVE
CLUB ROAD (SR 1346)
123
122
121
120
133
114
113
112
111
110
109
108
107
106
105
104
58
59
57
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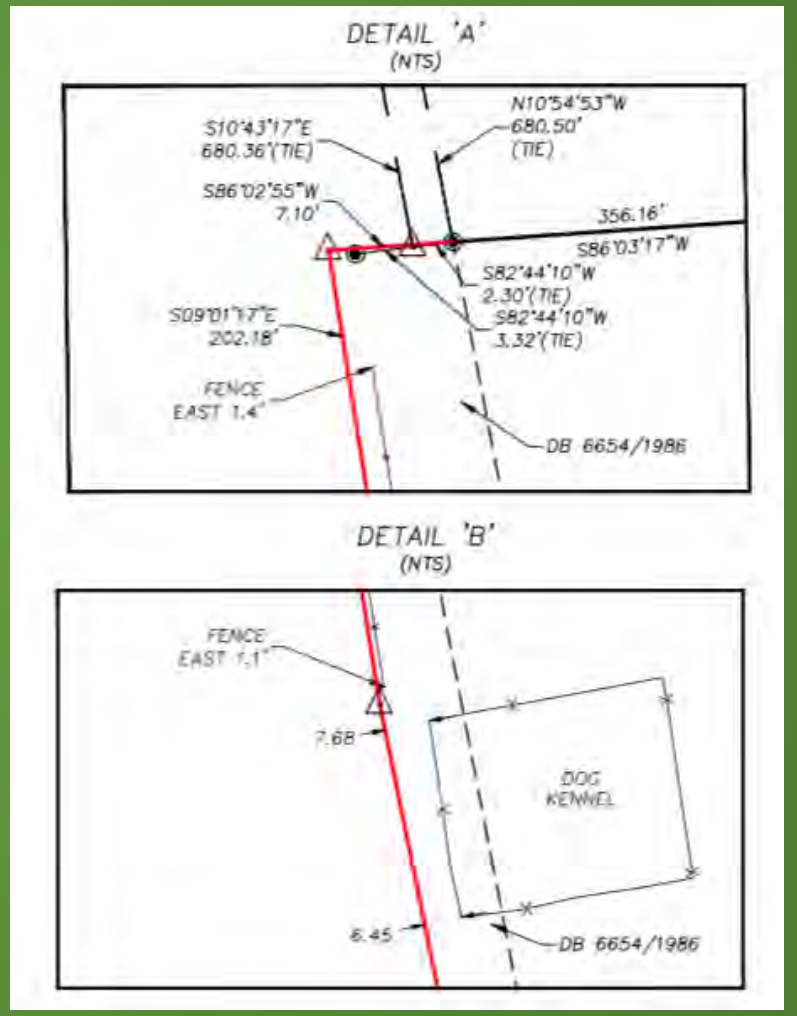
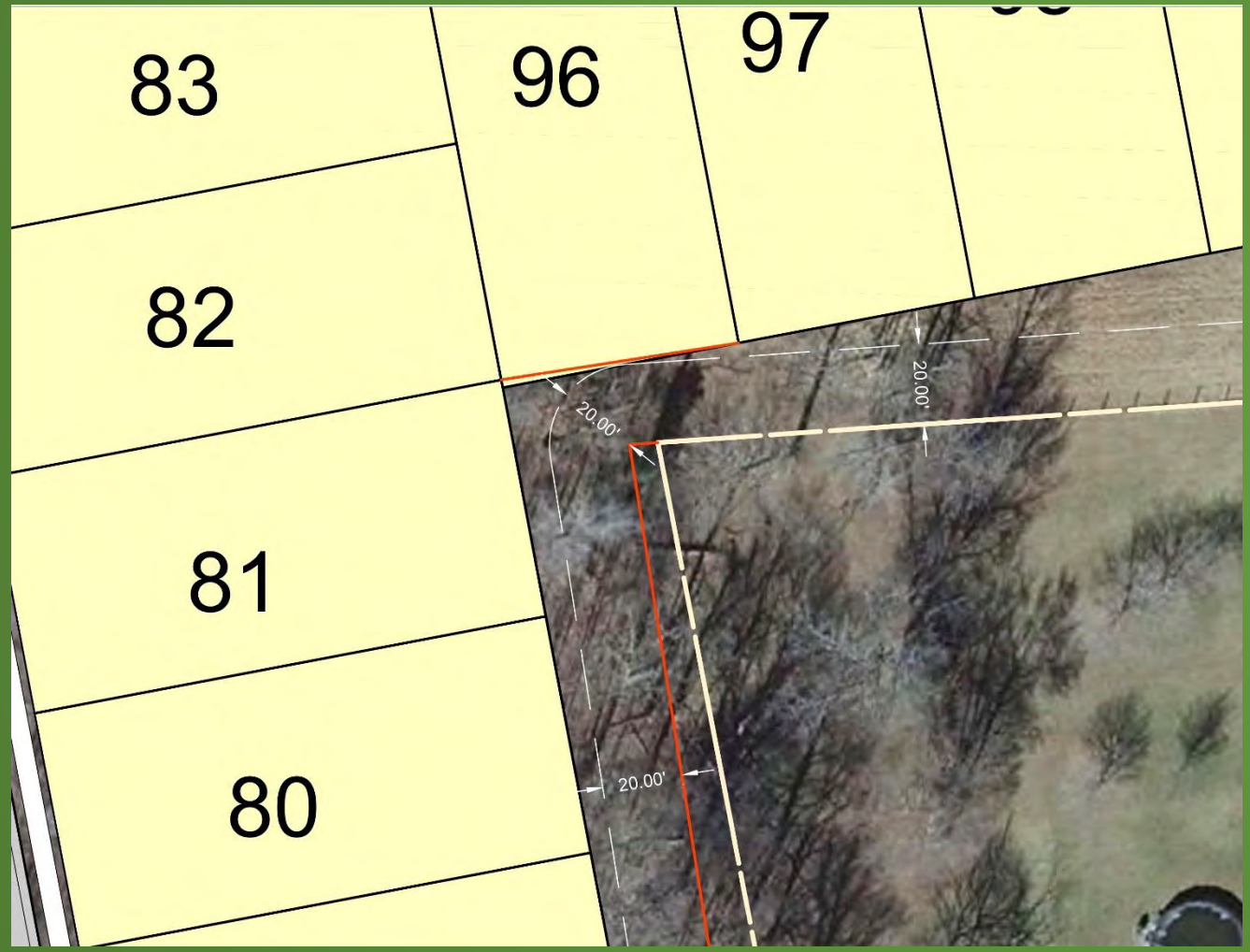
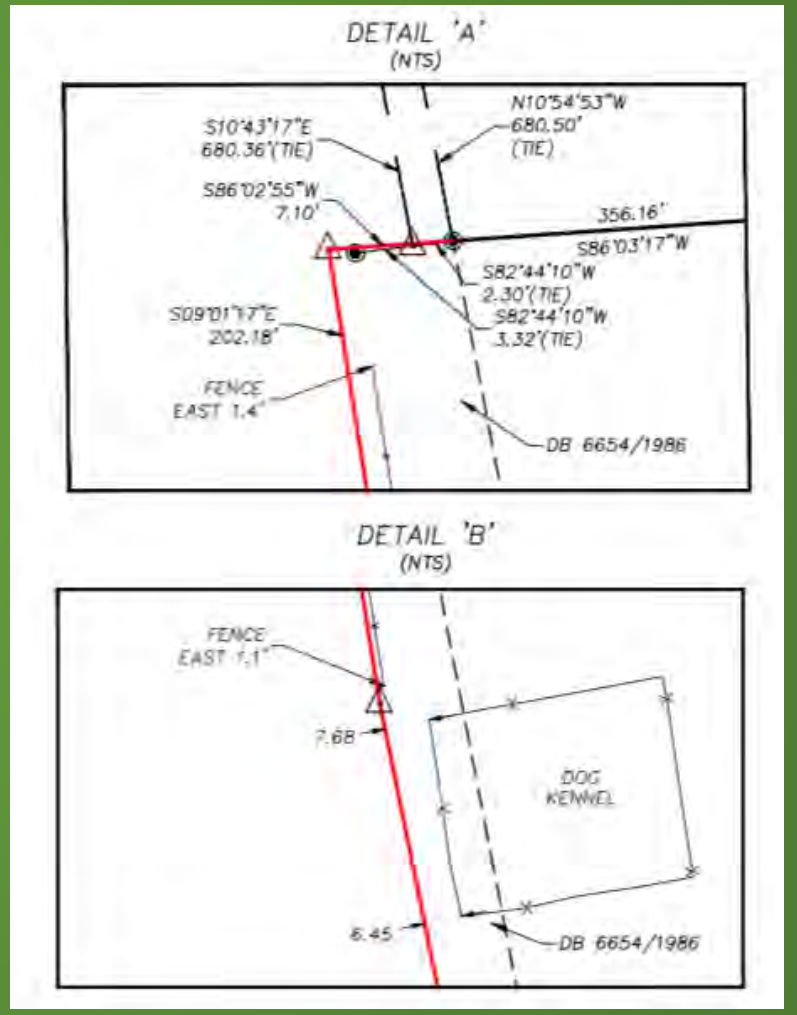
PROPERTY LINE/BUFFER





PROPERTY LINE/BUFFER





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SILVER ROCK PLAC

GARMAN HOMES

Fresh Paint Division

Rebecca McAdoo

Division President

GARMAN HOMES

Fresh Paint Division

Building a home for someone is an honor and a privilege. It is our honor. It is our privilege. And our work is as personal as the people we build homes for.

We believe homebuilding is an art, not a science. Our homes are joyfully built by human hands. Collaboration is our greatest strength and humility is our greatest teacher. With open hearts and open minds we relentlessly pursue ways to improve our craft.

We work with meaning and drive with purpose. We seek connections great and small knowing every interaction is an opportunity with infinite potential. To show respect and receive it in return. To be kind. To inspire and be inspired. To create and motivate. To be held accountable. To appreciate. To learn. To grow. To care. To be seen and heard as our whole perfectly imperfect selves.

We don't tolerate meanness, gossip, dishonesty or disloyalty. Nor do we indulge the entitled or engage with small hearts and small minds. And we will never make space for hate. We insist instead on offering the benefit of the doubt.

Every one of us shines our lights brightly and without apology. And we encourage others to do the same. Truth tellers and truth seekers. Big dreamers and even bigger doers. Change makers and status-quo challengers. We are each other's keepers. Mistakes are not just expected, they are inevitable. The quality of our experience with each other, our buyers, developers, trade partners and cooperating brokers is not in the presence or absence of mistakes, but what we each bring in response.

We protect and pursue profitability. Celebrate and prioritize diversity. And we combat any traces of entitlement with a deep and abiding practice of genuine gratitude. Our past, present and future success is made sweeter by our ability to give back generously.

We believe a home is a sacred space. It is not the finish nor the features that matter, but rather the quality of life lived inside those walls and the courage it takes to live that life.

GARMAN HOMES

PLAN TYPES

- RANCH PLANS: 1,400 - 2,000 sf, 3-4 bedrooms, 2-3 baths (1-2 plans)
- 1.5-STORY PLANS: 1,600 - 2,400 sf, 3-4 bedrooms, 2-4 baths (1-2 plans)
- 2-STORY PLANS: 1,600 - 2,800 sf, 3-5 bedrooms, 2.5-4 baths (3-4 plans)
- FRONT PORCHES: Included on some plans, optional on others

HOUSE ELEVATIONS

BLISS



Bliss A



Bliss B

HOUSE ELEVATIONS

HAPPY



Happy B



Happy C

HOUSE ELEVATIONS

GO



Go A



Go B

HOUSE ELEVATIONS

LUCKY



Lucky A



Lucky B



Lucky C

HOUSE ELEVATIONS

JOY



Joy A



Joy B

GARMAN HOMES

BUILDER COMMITMENTS

- SIDING: Fiber cement
- TRIM: Composite
- GUTTERS: 5” gutters and downspouts
- OPTIONAL EXTERIOR MATERIALS:
  - standing seam metal roofs
  - 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 parged on front elevation)

GARMAN HOMES

BUILDER COMMITMENTS

- SOD: Front yard
- STREET TREE: One in front yard (near right-of-way line)
- DRIVEWAY: 18’ width to right-of-way (if longer than 25’ then taper to 12’ at right-of-way)
- GARAGES: 1 & 2 car
- FRONT PORCHES: Included on some plans, optional on others

GARMAN HOMES

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SILVER ROCK PLAC

TUPELO JUNCTION

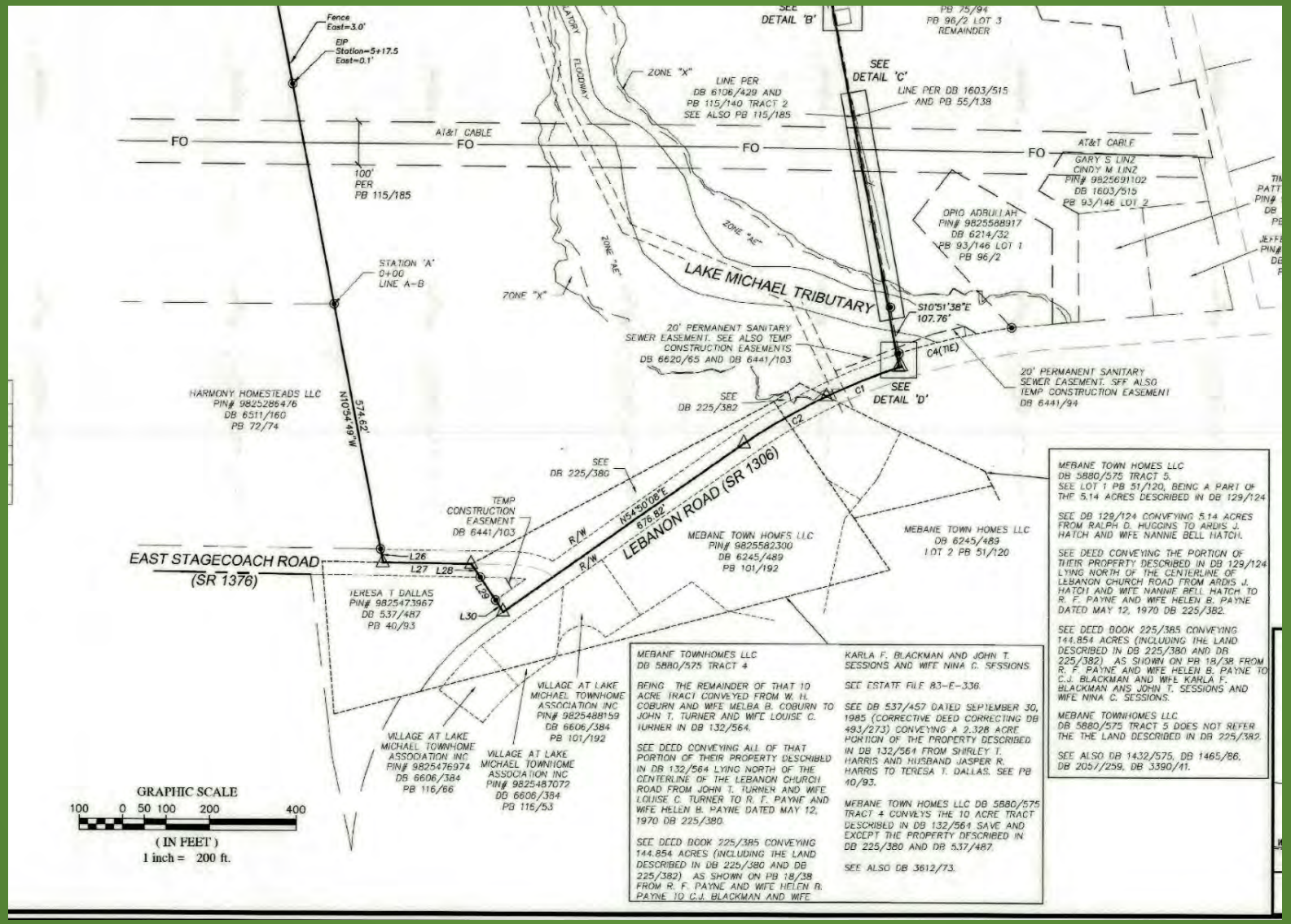
- Meets Mebane By Design goals for development in a Conservation Area
- Below “rural density” at 1.94 units per acre (R-20A allows 2.18 units/acre)
- Exceeds 30% open space goal for Conservation Areas with 53% provided
- Over half of all lots directly adjoin open space areas
- Rezoning lowers currently allowed density and increases minimum lot size
- No jurisdictional wetland areas are impacted
- Perimeter vegetation is preserved along Lebanon and Stagecoach
- 4,600 lineal feet of 10-foot wide greenways and multi-use sidepaths
- Pedestrian connection made from Stagecoach Rd. to Lake Michael Park
- Nearly 3 miles of public sidewalks, greenways, and multi-use side paths

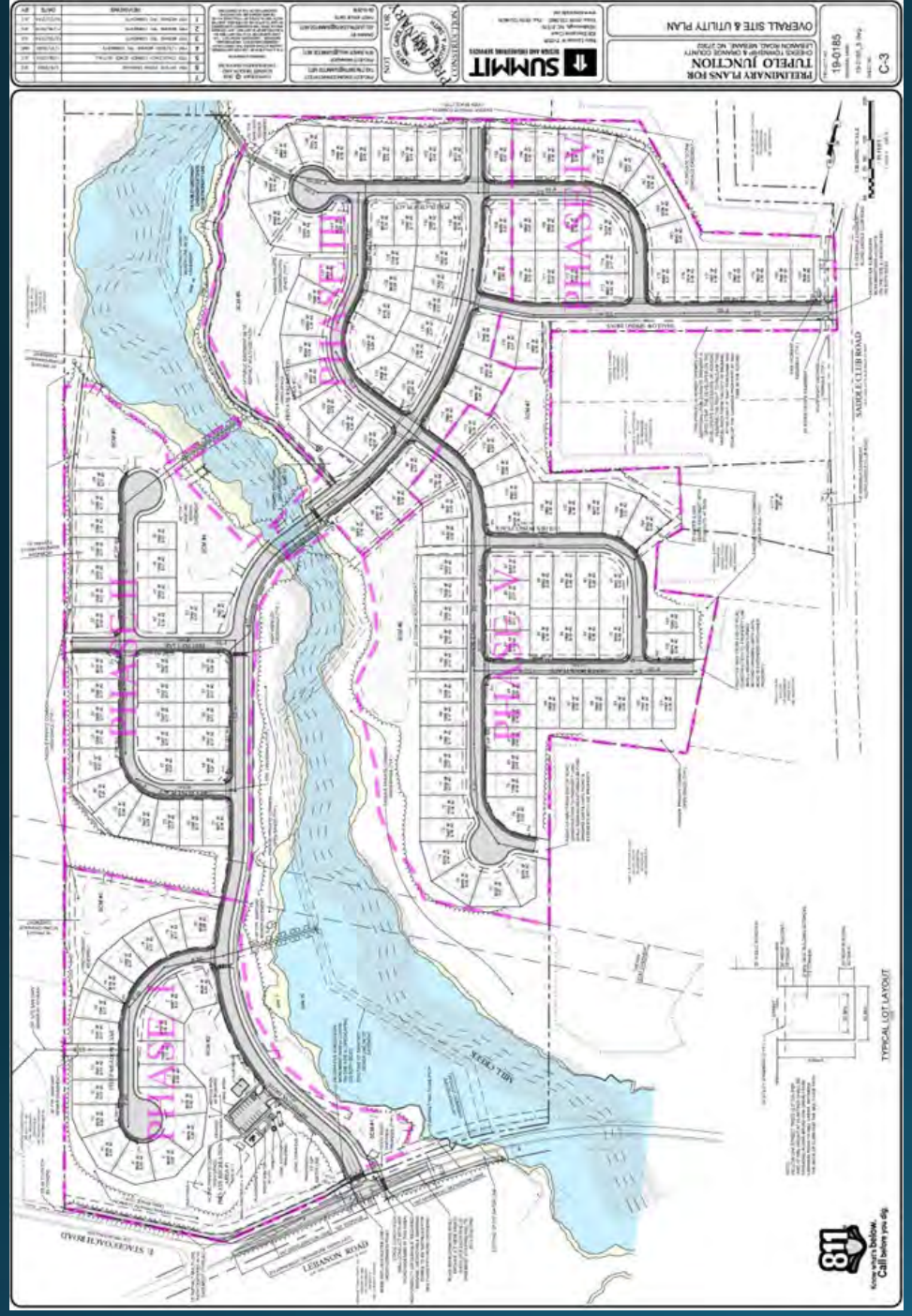
TUPELO JUNCTION

- Only minor exceptions from the UDO requirements are requested
- R-12 front setbacks reduced from 30’ to 25’ for this R-12(CD) district
- R-12 rear setbacks reduced from 25’ to 20’ for this R-12(CD) district
- R-12 side setbacks reduced from 10’ to 5’ for this R-12(CD) district
- R-12 corner lot setbacks reduced from 18’ to 13’ for this R-12(CD) district
- Requesting that payment-in-lieu for public recreation area be waived
- Council may reduce required area under Section 6-7.1.I of the UDO
- Consideration of the nature of the public area provided is allowed
- Nature and cost of public recreation area provided warrants reduction
- Amount of public recreation area required reduced to match provided

PEDESTRIAN PLAN




Fence
East=3.0'
EIP
Station=5+17.5
East=0.1'
FLOODWAY
ZONE "X"
LINE PER
DB 6106/429 AND
PB 115/140 TRACT 2
SEE ALSO PB 115/185
SEE
DETAIL 'B'
PB 75/94
PB 96/2 LOT 3
REMAINDER
SEE
DETAIL 'C'
LINE PER DB 1603/515
AND PB 55/138
AT&T CABLE
FO
100'
PER
PB 115/185
GARY S LINZ
CINDY M LINZ
PIN# 9825691102
DB 1603/515
PB 93/146 LOT 2
OPIO ABDULLAH
PIN# 9825588917
DB 6214/32
PB 93/146 LOT 1
PB 96/2
ZONE "AE"
STATION 'A'
0+00
LINE A-B
ZONE "X"
LAKE MICHAEL TRIBUTARY
S10°51'38"E
107.76'
C4(TIE)
20' PERMANENT SANITARY
SEWER EASEMENT. SEE ALSO
TEMP CONSTRUCTION EASEMENT
DB 6441/94
20' PERMANENT SANITARY SEWER EASEMENT. SEE ALSO TEMP CONSTRUCTION EASEMENTS DB 6620/65 AND DB 6441/103
SEE
DB 225/382
C1
C2
SEE
DETAIL 'D'
HARMONY HOMESTEADS LLC
PIN# 9825285476
DB 6511/160
PB 72/74
N10°54'49"W
574.62'
SEE
DB 225/380
TEMP
CONSTRUCTION
EASEMENT
DB 6441/103
R/W
N54°50'08"E
676.82'
LEBANON ROAD (SR 1306)
MEBANE TOWN HOMES LLC
PIN# 9825582300
DB 6245/489
PB 101/192
MEBANE TOWN HOMES LLC
DB 6245/489
LOT 2 PB 51/120
EAST STAGECOACH ROAD
(SR 1376)
L26
L27
L28
L29
L30
TERESA T DALLAS
PIN# 9825473967
DB 537/487
PB 40/93
VILLAGE AT LAKE
MICHAEL TOWNHOME
ASSOCIATION INC
PIN# 9825488159
DB 6606/384
PB 101/192
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 115/53
GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 200 ft.
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 DEED BOOK 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. BLACKMAN AND WIFE KARLA F. BLACKMAN 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.
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 DEED BOOK 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. BLACKMAN AND WIFE KARLA F. BLACKMAN ANS 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.



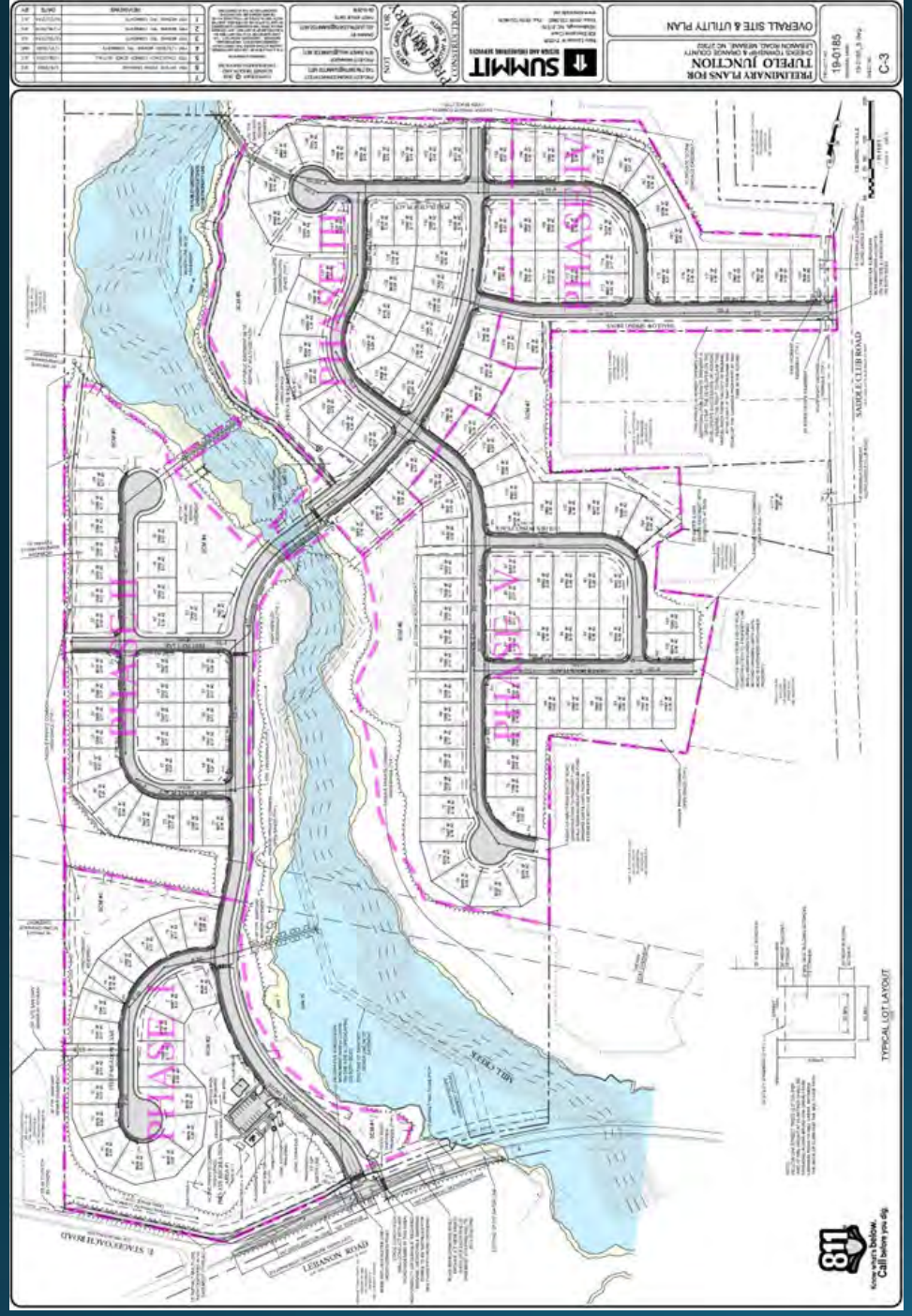
Tupelo Junction Conditional Zoning Findings of Fact

Waivers Requested

- Public Open Space:
  - 5.7 ac required
  - +/-1.46 ac provided in public greenway
  - Payment *in lieu*: $16,531
  - Payment Offered: $0

- Setbacks
  - Front: 25’ rather than 30’
  - Rear: 20’ rather than 25’
  - Side: 5’ rather than 10’ (13’ corner)

  - Lot width: 60’ rather than 85’



Tupelo Junction Conditional Zoning Findings of Fact

Mebane By Design Goals Served

- 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

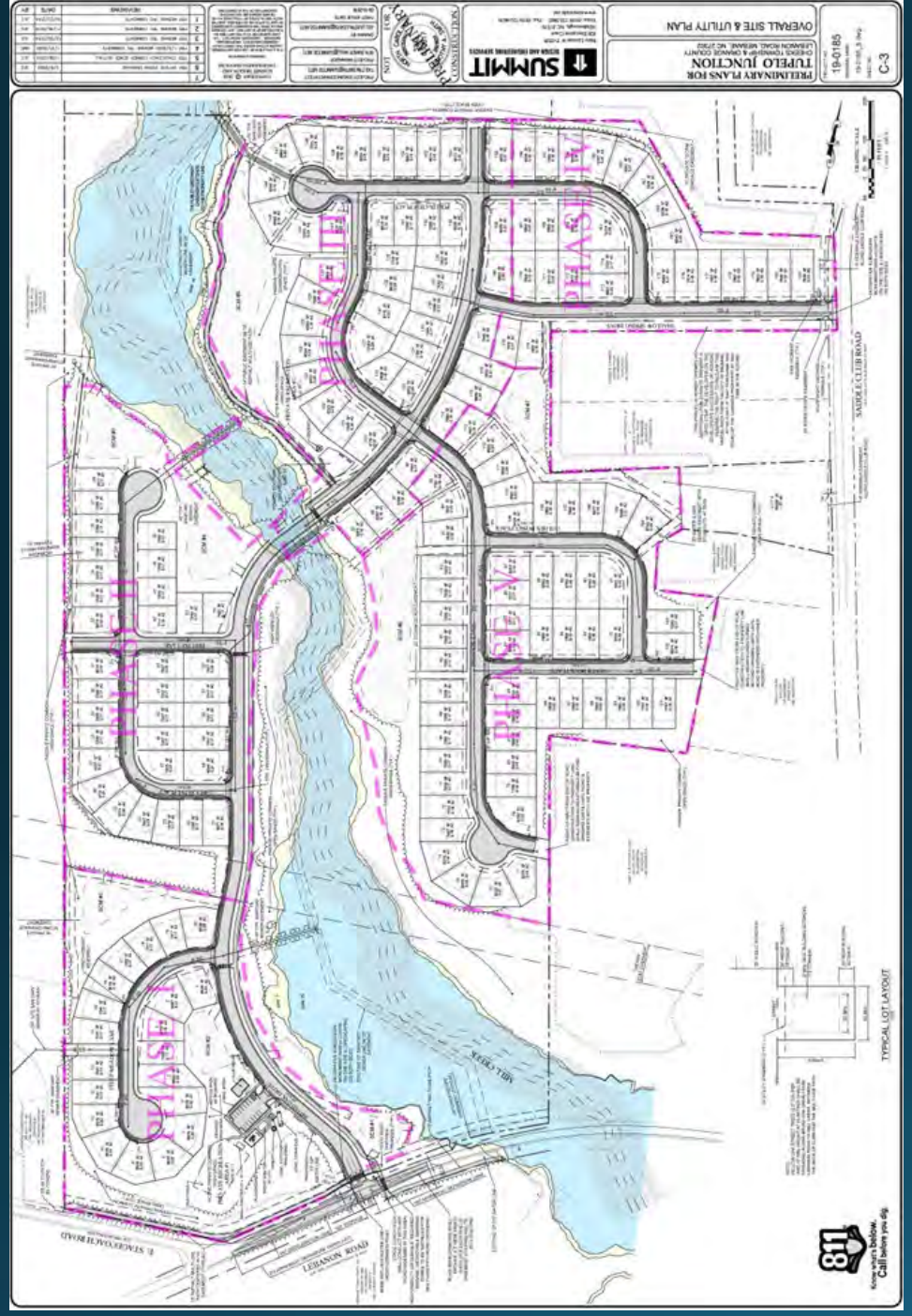
Improve safety and confidence of pedestrian access across major streets, including Lebanon Road , Stagecoach Road and the entrance to Lake Michael.

- Open Space & 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.

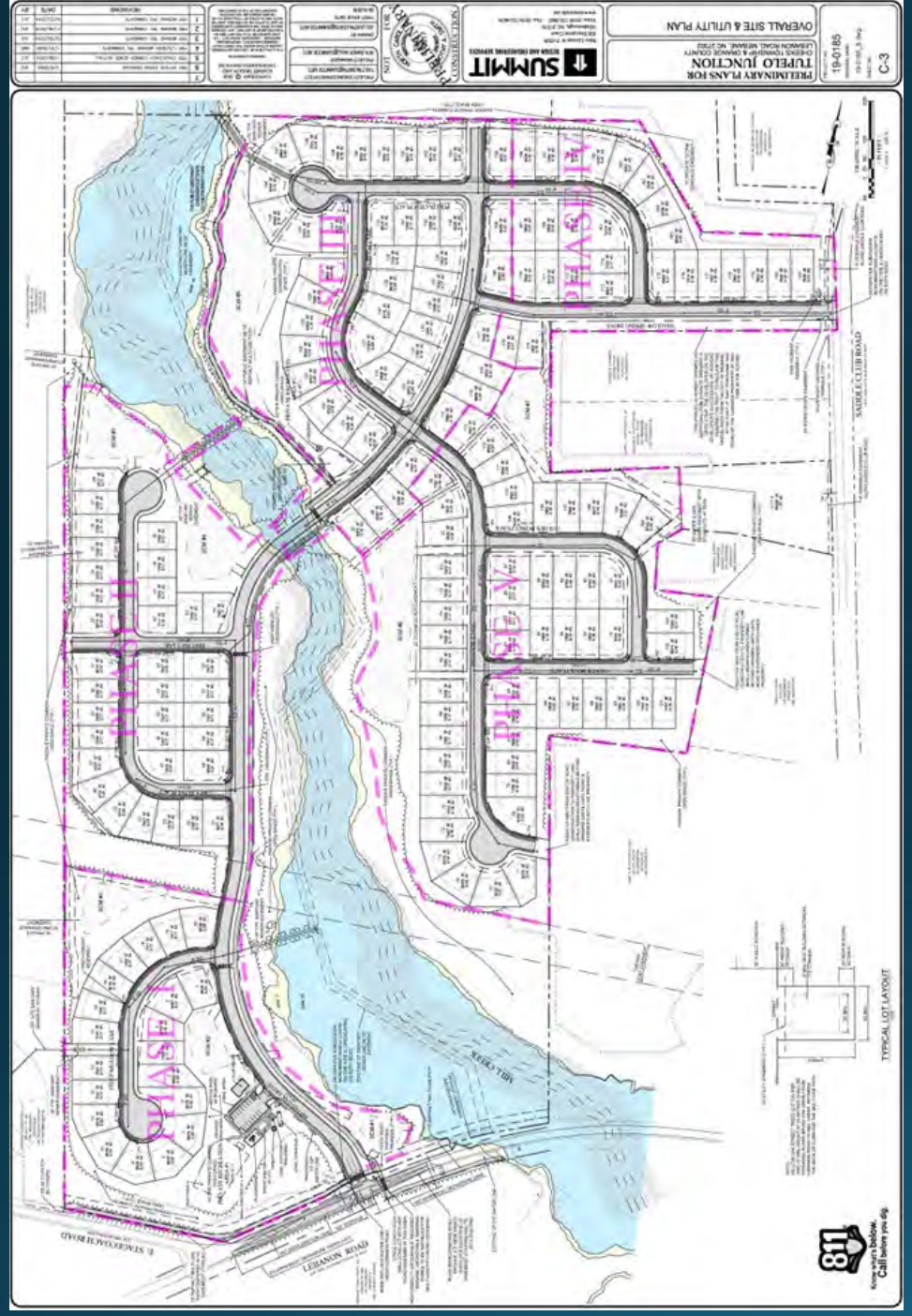
- Open Space & Natural Resource Protection 4.3

Support park, greenway, and open space expansion in developed and developing areas, prioritizing connectivity between each location.



Tupelo Junction Conditional Zoning Findings of Fact

- 181 Single-Family Homes
- Average Density: 1.94 du/ac
- 10’ multiuse path greenway provided, per City Bike & Ped Plan
- Watershed Protection:
  - 25.72 ac (27.5%) of 28.05 ac (30%) developed
- All TIA recommendations provided
- Adequate water and sewer utilities



Tupelo Junction Conditional Zoning Findings of Fact

Planning Department finds that this request is consistent with the recommendations of *Mebane By Design* and that it is consistent with the zoning of the surrounding area.

Questions?

The Mebane City Council held a continued meeting on August 5, 2020 at 6:04pm. The August 3, 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. Directly following the continued meeting, the Council held a Listening Session which began at 7:10 p.m., Wednesday, August 5, 2020. Due to public health concerns related to COVID-19, the meeting and session were 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

City Staff Present via Zoom:
City Manager David Cheek

Per the requirement of G.S. 166A-19.24 all votes were conducted by roll call.

Mayor Hooks called the meeting to order. He stated that tonight's Council meeting is divided into two parts. One being the continued two (2) public hearings from Monday, August 3, 2020 Regular Meeting and second, a Listening Session.

Mayor Hooks stated the first item tonight is the continued Quasi-judicial Board of Adjustment public hearing on a request from Alamance Community School c/o Leslie Hall Paynter, a newly approved charter school, for 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.

The Council had no further questions. No one from the public submitted any public comments. Mayor Hooks then called for a motion to close the public hearing. Mr. Greene made a motion, seconded by Mr. Ewing, to close the public hearing. The motion carried unanimously per a roll call vote. Mr. Ewing made a motion, seconded by Ms. Philipps, to approve the Special Use Permit as presented. The motion carried unanimously per a roll call vote.

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Mayor Hooks stated the next item is the continued public hearing on a request from 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.

Jack Smyre, PE, AICP with The Design Response, joined the meeting virtually via Zoom.

Mr. Bradley said there seems to be two major areas of concern from the constituents that he heard from. The first being wetlands and Council's lack of concern for the wetlands. He stated he dug into it pretty deeply yesterday and thanked Mr. Rollins for his knowledge of the subject. He said as he understands it, when the site plan was reviewed, other than the bridge crossing the floodplain, there did not appear to be any apparent wetland issues. Having said that, once the project moves forward, if it is approved, any wetland issue would have to be permitted and mediated by the developer before construction should begin and that is outside the purview of Mebane and he assumes it would be either State or Federal resources like the Army Corp or the EPA. He questioned if that assumption was correct. Mr. Rollins said that is correct. He said the developer has done a preliminary look with a licensed soil scientist to look for wetlands and streams. They also had a certified County person take a look at it originally. Mr. Rollins explained the process in detail and stated that the process is what the City goes through on each project regarding wetlands and streams.

Mr. Bradley said the other issue he has heard a fair amount about is the buffer. He said he went out and looked, comparing the plans that were submitted and it does not appear to him that the developer can increase the 20-30-foot buffer on the Saddle Club Road side without encroaching on wetlands on the other side of the development. His question for Mr. Smyre is, would the developer be willing to plant screening trees along the border on the Stagecoach Road side that abuts existing properties that are inhabited to block or hinder the view of the development. Mr. Smyre said that it is a pretty big ask but they were warned to give some pretty quick thought to that request before the meeting began. He said that is a lot of perimeter and they had not really represented that this would be a buffer, particularly an opaque buffer, but more of a spacing of the lots off of the property not lotting out to the common line but leaving a HOA controlled space between homeowners within Tupelo Junction and homeowners outside Tupelo Junction. He said in particular on the Linz property, he thinks the tree covering in that area is pretty thin, so looking at that area in particular, the developer would be willing to plant an evergreen buffer along that edge that utilizes materials off Mebane's recommended plant materials for evergreens, probably installed at a minimum of 6 feet initially as those things grow pretty fast in a double staggered row. That would be about 800 liner feet. Mr. Smyre said the question is, is that really needed in any other location because elsewise, there is not really any other lots backing up to existing houses or land being used residentially. Mr. Bradley said he is speaking in regard to the Linz property as everything northeast of Golden Honey Drive appears to be fairly buffered. The property south of Silver Rock Place just looks pretty open. Mr. Smyre said yes, the property owner has cleared out almost all the way to the property line, in fact he thinks, the southern most part of the area, Pinhook, down near the telephone easement line had been previously cleared even perhaps used for pasture purposes. He said he believes the Linz's may have leased some of the property for

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horses way back, so there is very little material in that area. Mr. Smyre said, so let us say, from the telephone easement moving northward up to the northwest corner of the Linz's property, then going east out to where our property ends, approximately 800 linear feet, the developer would be amenable to doing a double staggered planting of evergreen material at least six (6) feet high at installation, 8 feet on center with double staggered coincident with development in Phase 5, not opaque at installation but will quickly grow to be opaque. Mr. Bradley sated that covers the primary area of his concerns.

Mr. Greene stated that in 2006-2008, he sold to Garman Homes in Durham. Since then he has had no dealings with them but he wanted to disclose that. He said also in the last six (6) months, a friendly competitor asked if he would show one of his builders around Mebane and it turned out to be Jim Garman but there was no agreement, nothing asked, nothing given or promised but he also wanted to disclose that information as well. Mr. Brown standard is a "direct substantial financial impact" so if there are any questions, it should be discussed. If there are no questions, it does not need to be discussed. Mr. Bradley said his understanding of the ethics law is that unless the elected incumbent receives a direct financial benefit from the project, that they must vote, therefore he thinks Mr. Greene has the obligation to vote.

Ms. Philipps questioned how the 20-foot buffer around the whole development will be maintained by the HOA. She said she also has a little bit of a concern over a disagreement over the depth of the self-imposed buffer that the developer has offered next to the Linz property. She said on Monday night a slide was shown indicating a 20-foot buffer but then after the meeting was told that was not the case, so she would like some clarification about the distance between the new boundary of the Linz property and the boundary of this project. Mr. Smyre requested that Mr. Rollins pull up Monday night's PowerPoint slide depicting those boundaries. He said he thinks the confusion is over the adjoining property owner believing without possibly checking that there was just the minimum of 20-feet provided along their north/south boundary line with us, while in reality they had 35 feet depth in that area. So, he thinks the 10.8 feet maximum at the dog lot area that the property line was adjusted westerly. In the property owners minds, they some how took 20 feet minus the rounded up 11-12 feet, they thought that only left and 8 feet buffer but in reality they were able to greenlight the seller, Lees Bees Inc, to grant their request if it was his inclination because with the module they ended up with they had a 35 foot buffer, minus the 11-12 feet, they had a 24-foot buffer. The only pinch point was at the top corner but could be restored by tweaking lot 96.

Mr. Smyre said the HOA would not be patrolling the outside buffer, it would more than likely be a HOA complaint and response situation. He said the HOA will have a standing contract with a maintenance firm to maintain the street trees.

Ms. Philipps asked a final question as a follow up to Mr. Bradley's concerns about the wetlands. She said after the meeting they were shown a map from a federal wetland mapper which showed a potential wetland behind one of the Saddle Club properties. She said the map did state it was not for determination purposes but she requested that Mr. Rollins comment to whether or not that is a common occurrence.

Mr. Rollins explained that the online wetland mapper is based on a 1982 aerial photography that someone evaluated and said this could be a stream or could be a wetland but that website has as

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disclaimer posted in several places which basically states this map done from a 1982 map and does not mean there are wetlands there.

Mr. Rollins said he would like to make an additional point. He said that if understands what Mr. Smyre was saying, it appears that in the back corner of the property abutting lots 78-81/82, there are already matures trees in that area, so in general, when staff looks at plans, mature trees are requested to be saved, rather than tear them down and plant new cypresses so he just wanted to make sure everyone was on the same page. It could be that area needs some enhancing but no mature trees should be cut down.

Mr. Ewing thanked the developer for being willing to put in the evergreen buffer. He then asked why so many setback waivers were requested. Mr. Smyre said that it is fairly routine to reduce the setbacks when doing a cluster development. He gave a brief overview of the requested setbacks. They give the builder some flexibility about how to set the home on the lot.

Mr. Ewing asked Mr. Brown if there could be a legal argument made for higher density under the current zoning. Mr. Brown said there would be a higher density under the current zoning allowable than what is being requested. Mr. Smyre said in R-12 zoning 3.18 units per acre would be allowable but they are proposing 1.94 units per acre.

Ms. Auditori asked Mr. Rollins to put the site plan slide back up. She asked why they are suggesting that no buffer needs to be planted along the property that abuts lots 101, 102 and 103.

He said it is intended to included in part of the area for installing an evergreen buffer on lots all the way to lot 101. Mr. Greene questioned if it would include all the way up to lot 104. Mr. Smyre said he had not really contemplated that because they were trying to be very careful and sensitive to the fact the house near 103 and 104 because that home is set so deep into their lot, they did not want to put any lots up to the back of that property line. He said he has not heard from that property owner but since it is such a small area, they could establish an evergreen buffer that wraps that house so it was on the southern side of 104 and northern side of 103. Ms. Auditori said she would like to hear a definite confirmation that they will put in a buffer on the north/south property line abutting lots 101, 102 and 103. She also feels it is important to address each property owner whether we have heard from them or not. Mr. Smyre said they would be willing to supplement as needed with existing vegetation. He said he can agree to put in buffer along the north property line (lots 78-82) then east (lots 96-101) but as turning the corner (lots 101-103) supplement as needed. Ms. Auditori stated she if fine with that agreement.

Ms. Auditori said she wanted to address the other topic brought up by Mr. Bradley in regard to the wetlands. She said some concern was brought up that Three Oaks would, because they were employed by the developer, present a favorable wetlands report to the developer and to Council. She requested confirmation that if that were to be the case, that favorable report be evaluated in an unbiased way as it moves forward by using third parties. Mr. Rollins said the people invited from the soil scientist will clearly be US Army Corp of Engineers representative, a State representative and one of the City's engineers. The determination is made by the US Army Corp of Engineers and the State. Mr. Smyre confirmed that what Mr. Rollins said is correct.

Clerk Shaw read aloud a letter received from Karen Baker, 4040 Talisker Trail, Mebane, NC. via email during the 24-hour time frame after Monday night's public hearing.

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My name is Karen Baker, I live at 4040 Talisker Trail, Mebane, NC

Good Evening Mayor and members of Mebane City Council.

Thank you for providing me this opportunity to express my thoughts.

My husband and I purchased 51 acres from Jerry Kenyon in 2007. Before selling to us, he asked what we intended to do with the 51 acres. Our answer was that we intended to build one home and live the rest of our earthly life on this property. Once he was assured that we were not going to subdivide, he sold to us. Over the years we have purchased surrounding lots for a total of 89 contiguous acres. 14 of those acres are along Saddle Club Road.

I have spoken before you before regarding the Havenstone projects. 25 of our acres are in Cherry Place, with the only access being through the Havenstone Subdivision.

As I recall, there are 4 reasonable requirements that need to be met to grant approval for Tupelo Junction to go forward.

1 – will not endanger the public health or safety.

On this point, my biggest concern is the location of the access to Tupelo Junction, whether on Lebanon Road or Saddle Club Road. Especially on Saddle Club as this is a hill and blind curve. I realize there have been traffic and safety studies that support this location, however I find it difficult to believe what is written. It will be difficult to enforce a slower speed limit, as many do not adhere to the current posted signs. I mow along Saddle Club and am aware of traffic patterns for at least two hours every week for the past 10 years. It is very busy, especially on the weekends, with folks going to the recycle center. I can tell you that the majority of vehicles are traveling above the speed limit. Additionally, I have had difficulty exiting onto Lebanon Road from Havenstone due to the current traffic on Lebanon Road. This is necessary as we have property in Cherry Place. Havenstone has been approved for about 169 homes, multiply that by a minimum of two cars for 338 cars and minimum of two trips each car, that's 676 more trips, minimally on Lebanon Road and environs. Villages of Havenstone, south of Lebanon Road, with 43 home sites, has the potential to add 172 trips per day. That is busy! Then add Tupelo Junction with 181 homes, times 2 cars, times minimum of two trips for an additional 724 trips daily. There was talk about a roundabout at Stagecoach Rd. This I support. I can see a light at Saddle Club & Lebanon Road, as it is challenging now, without the potential, addition of 1572 trips per day in the area, to get onto Lebanon Road. Think about it.

2 – will not injure the value of adjoining or abutting property.

All I can say is that a cluster home edition brings the city to this rural area. As it has been said, those of us living in this area are here because we want to live in the county. Please consider decreasing the number of homes to be built.

3 – will be in harmony with the area in which it is located.

This point was discussed when Havenstone was on the agenda. I never did understand how the Mebane City Council could support that cluster homes were in harmony with homes on multi-acre lots. However, Havenstone was approved. Tupelo Junction, a cluster home community is not in harmony with the adjoining rural homes on multi-acre lots. Once Havenstone was approved and the developer paid to bring the water and sewer out in this direction, the writing was on the wall.

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4 – will be in conformity with the land development plan, throughfare plan, or other plan officially adopted by the City Council.

There is no doubt in my mind that this fits into Mebane by Design. I simply wish that zoning would not change to allow for this density of housing. Yes, Mebane is growing. Growth is inevitable. Mebane by Design is an attempt to demonstrate some control of how the growth occurs.

One other point to be reiterated is that this area is Orange County. We have all heard about the fact that this area is in the ETJ. There still are challenges with accountability. My husband and I have had issues with run off from Havenstone after Hurricane Florence. Yes, that was an unusual storm and act of nature, but we still should be able to speak with someone for assistance. I called Mebane and was told that we were in Orange County and needed to call that office. I called that office and was told that it was not their issue because of the ETJ. You have already heard this type of run around.

I am challenged with the fact that Mebane dictates the land usage, but living in Orange County means we do not get a vote. As these housing developments grow, there will be more citizens feeling this frustration.

In the end, there is little doubt in my mind that Mebane City Council will approve a plan for Tupelo Junction. I would like to strongly suggest decreasing the number of homes and work forcibly with DOT for road safety of the citizens.

Thank you for your attention.

Mr. Greene made a motion, seconded by Ms. Auditori, to close the public hearing. The motion carried unanimously per the roll call vote.

Mayor Hooks called for Council to take action on the Tupelo Junction conditional rezoning request. Mr. Ewing stated that he was elected on smart growth and this request, by terms presented and discussed, there is a legal possibility for higher density on these properties. The proposed owner is requesting to have lower density and they are investing in the Mebane community by a greenway and after this meeting they are supporting our country neighbors by agreeing to install the buffers, which they did not have to do, therefore, Mr. Ewing made a motion, seconded by Ms. Philipps, 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);

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- ☐ 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*.

Additionally, the developer has agreed to install an evergreen buffer along the sides of 1514 Saddle Club Road, 1622 Saddle Club Road, the eastern sides of 1708 which is the other sides of development for lots 77-83, lots 96-101 and lots 102-104.

Mr. Bradley stated that he would like to mention, based on a comment made by Ms. Baker, stating that this development would add to the number of people in Orange County that did not have a voice before City Council but it is his understanding that this property will be annexed and become City limits so all of these homes will be residents of Mebane. Ms. Auditori said that is a really good point and one of the things that we have struggled with is that some people are sad to see Mebane grow in this way and she understands that but people want to live in this area and it is really important for us to consider the option of not approving some plans like this and what happens when people want to live in our community and we do not allow them to. What happens is they move outside of the ETJ and are not inside our City limits. We have since this happen and the City does not have any say on how we grow and this is one of the reasons she felt it was important to move forward with this project. Mr. Bradley said he wanted to clarify that the annexation will only take in the residents of the project, not those surrounding. He also wants people living in Orange County to know they do have a voice as a majority heard from during this hearing were non-city residents in Orange County. He also stated that he would be severely disappointed if Mebane got a call on a development in Mebane that was approved by Mebane and they were told do not bother us, you need to call Orange County. He said if this has happened, he is sure that it will not happen anymore.

The motion carried unanimously per the roll call vote.

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Listening Session Registered Speakers via Zoom:
Carolyn Burns, Mebane resident
Tommy Jones, Mebane resident
Debra Kaufman, Mebane resident
Angela Gathright, Mebane resident

Mayor Hooks opened the Listening Session with a review of the speaking order for the registered speakers. He continued by saying that he would like for it to be clear that Council's lack of response during the session 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. He also reviewed the guidelines for the session as follows:

- 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 registered. The Speaking Order List was displayed on a PowerPoint slide at the beginning of the session.
- Each speaker will be allowed five (5) minutes. At the end of the 5 minutes, speakers will be taken out of the queue and will not have another opportunity to speak during this session.
- Per authority of NCGS 143-318.17, if a person participating remotely willfully disrupts the session, then upon direction by the Mayor, such person may be removed from electronic participation.

Mayor Hooks thanked all speakers for registering to speak and introduced the first speaker, Carolyn Burns.

Carolyn Burns, 600 Bunker Drive, Mebane, said she has lived in Mebane for the last six (6) years and currently lives in the Arrowhead Greens subdivision. She thanked the Mayor and Council for all the time they devote to serving the community. She stated that she signed up to speak because of something she read in the Mebane Enterprise but before that she would like to speak about a housing issue. She said when they moved into their Mebane home, they started having roofing problems within two years and now after several years, they need a new roof which she feels is absurd. She said they have had several people look at their roof who have told them it was done poorly. She stated she spoke with Keith Williams, City of Mebane Inspector, asking him why was it not caught during their inspection. She said she was told that the inspectors are not allowed to climb up on the roof. She said she is sure there is a good reason for that but she would like to make a suggestion that in the overall picture when putting new homes in Mebane, a consideration might be what type of roof people are getting and maybe somebody should climb up on the roofs to inspect the work so this type of thing does not happen to other people. Mr. Burns said it will be a very costly fix. She said Dan Ryan Builders built the homes in her subdivision and the roofs were put on by Alpha Omega. She said shingles have been flying off of various roofs in her neighborhood but her home seems to be the worst one. She feels this issue should be addressed for future

residents. Ms. Burns said secondly, she would like to speak about something she read in the Mebane Enterprise regarding the presentation made to Council about the possibility of having an advisory committee. She said she feels very strongly that people remember that white is a color too and that if the city does have an advisory committee it should be represented by all people that live in our community. She shared that after her and her husband retired, they traveled for seven (7) years all over the country in a motor home and it was such great fun. She said the whole time they were traveling they were looking and wondering where they wanted to settle down for the rest of their retirement. She said they came to Mebane because their son and grandson lived here and they could not believe that they found such a wonderful place. She said Mebane is fabulous, although there is quite a bit more traffic now then when they first moved here. She said Mebane is just a charming place to live. She said her neighborhood is very integrated and she has been very pleased with the way everyone gets along with one another within the whole community and she wants it to stay that way. She said she feels rancor out there in the world beyond Mebane's "walls". She said her feeling is that we are all more alike than we are different and many want the same things for their families, peace, love, good jobs and opportunities. She said we get those kinds of things and build that kind of community by working together. She concluded by stating again that if an advisory committee is put in place, it should include representation from everyone in the community, all voices should be heard.

Mayor Hooks thanked Ms. Burns for her comments and introduced Mr. Jones.

Tommy Jones, 307 E. Dogwood Drive, Mebane, said he spoke to Council at a previous meeting requesting further representation within the city, a minority based advisory committee to play along side the City Council. He said, at present, he has met with several leaders throughout the community and also currently he is in the process of meetings with the NAACP. He said the purpose of the committee is not to overshadow any other members of the community. He said the purpose of the committee is to bring further acknowledgement and awareness to situations of African-Americans throughout the city and to prevent such actions that have happened in other areas around us from taking place here.

Due to audio difficulties, it became very hard to hear Mr. Jones speak, so Mayor Hooks requested that staff work on the connection and in the meanwhile have the next registered speaker begin.

Debra Kaufman, 207 W. Holt Street, Mebane, stated she thought she had registered to speak during the Tupelo Junction Public Hearing but was confused as to the order. She stated she wrote to all of the Councilmembers a couple of days earlier and she appreciated the replies she received back. She thanked Mr. Rollins for sharing his deep knowledge in regard to the wetlands and the process, stating it gave her a lot of assurance. She said way back when Mill Creek was being developed there were some allowances made so that the setbacks were not as far from the wetlands as the State recommended therefore, she had some old concerns that were still resonant in her mind. She stated she has two (2) main concerns, in general, she is always leery of development that will take away trees and wildlife that cannot be replaced but she does realize that is an inevitable part of growth. She requested that Council be mindful of that as the City grows. She said she was sad when Lees Bees sold and as a granddaughter of a farmer, she is always sad when farm land can not be bought by a land conservancy or other farmers. She said traffic is another concern, especially with the NC 119 bypass coming through, she thinks we need to be

mindful of the traffic issues that come with growth. She continued by saying that the Unified Development Ordinance is pretty wise for the most part and she really appreciates the Council and staff ensuring that builders follow them and not deviate from them, to the extent that it possible, but keeping in mind that negotiations have to be made sometimes. She also expressed appreciation for the neighbors of the project as the area is more rural. She said she appreciates the Council and staff and all they work they do. She said she really enjoys being a part of Mebane. She concluded by complimenting the Council and Administration by saying they are the best the City has had since 1989 when she moved to Mebane.

Mayor Hooks thanked Ms. Kaufman for her comments and invited Mr. Jones back to the meeting as the audio issues were fixed.

Mr. Jones said the purpose for him speaking during this session was to continue the conversation that was held at the last Council meeting that he attended virtually. He said when he previously spoke it was to recommend the creation of an advisory committee to the City Council, much like the other committees that are presently within the city, and how the committee would be beneficial to discussing the issues that are on a rise in our country and on a rise within our town and to prevent those things from happening here. He said at the last meeting when he spoke, he was very fair in stating that he did not necessarily see a lot of the conflicts that have happened in other places happening here in our city but that does not mean that there are no issues that have happened here in our city as well. He said the issues that have been discussed are things that have plagued our county forever. He asked how do we continue the conversation and how do we see the needs of people who feel they do not have a voice. He said communication and coming together is needed and the existence of such a committee could be vital to those things happening. He said when you look at organizations like the NAACP and the ACC Jews and the purpose of why those organizations were started in the first place was because minority people, particularly right now African-Americans, were not allowed the same opportunities to make themselves and their voices heard and to be recognized for things which they have dealt with within their communities. He said issues that have happened in Mebane, such as West End, need to have continued conversation. He said that area needs to receive the proper annexation that it deserves without having gentrification becoming an issue in that area as well. Again, he stated the only way that can be done is through communication between the people and the city. He said if we are able to put together an advisory committee in our area, we would be able to communicate with people within those areas to find out what issues are going on within their areas and have a collective unit that could work along side with everyone together. He said he does not see this as something that would be a detriment to our community but something that could give our town opportunities. He said we know the history; we know what has happened. He asked how do we push the envelope farther? He said it is his hope that putting together such an advisory committee with collective unification of the City of Mebane can be something that can push our city even further and could be a benefit to everyone involved. He ended his comments by thanking everyone.

Mayor Hooks thanked Mr. Jones for his comments and introduced Ms. Gathright.

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Angela Gathright, 1421 Yellowood Drive, Mebane thanked Council for allowing her to speak. She said is a retired military veteran and currently lives in the Manorfield subdivision. She said she moved to Mebane in 2013 while she was working at the VA in Durham. She said the main reason she attended tonight's session was to listen in on the issues that surround Mebane. She said she learned of Mebane while attending college in Winston-Salem. She said she used to drive through Mebane to come see her aunt that lived in the Holly Ridge subdivision. She said Mebane has grown a lot since then. She said she used to live in the Cary Mooresville area and when she was working at the VA she decided to retire with her children to Mebane. She said she and her children love Mebane. She said her daughter just graduated from Eastern Alamance High School and her soon recently moved to Kentucky but he is still a North Carolinian. She said as a veteran and as a worker in childcare and education field, as well as having a degree in biology and chemistry, and with her parents living in the Fort Bragg area, so she has always been a part of the political process. She said as she is getting older, she wants to learn more about the process and about how to successfully communicate the needs of her children and other children that may move to Mebane. She said she would like to see Mebane grow as diverse as it can be, so with that said she supports Mr. Jones and some of his ideas about coming together. She stated you can not have diversity without listening to one another. She said listening to each other is so important which she learned in the military, serving in the Army with some of her service being in combat in Afghanistan. She said as a Mebanite it is important that there be a forum in which her voice and her children's voices can be heard. She said she wants her children to learn the process. She said there is a scripture saying "if you perish, you perish for lack of knowledge" and that is not the future she wants for her children or her grandchildren. She said when she retired in Mebane that was a big decision for her. She thanked Council for listening and requested that should the advisory committee move forward; she would like to serve in that capacity.

Mayor Hooks thanked Ms. Gathright for her comments. He stated that all registered speaker has spoken and thanked each of them again for participating. He assured them all that the comments made tonight will be taken under advisement.

Mr. Greene commented that the session was excellent with good comments.

Mr. Ewing thanked everyone for their comments and stated that he values their feedback so greatly.

Ms. Philipps said it was a wonderful opportunity to hear from people and she hopes there will be more of it and that more people become involved. She said the technical issues need to be worked out.

Mr. Bradley said it is important for people to know that they have an opportunity to share concerns at each regular monthly meeting during the public comment period. He said he enjoys and welcomes citizens comments.

Ms. Auditori said she appreciates everyone's comments. She said she thinks there is a real opportunity to make strides towards diversity inclusion. She said fortunately in Mebane we have

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been lucky that it has been a place of little adversity in recent years and that is really best time instead of being reactionary, we can be proactive about creating a more diverse and inclusive community.

Mayor Hooks adjourned the Listening Session at 7:32pm

Attest: _____ _____

Stephanie W. Shaw, City Clerk Ed Hooks, Mayor

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AGENDA ITEM #5B

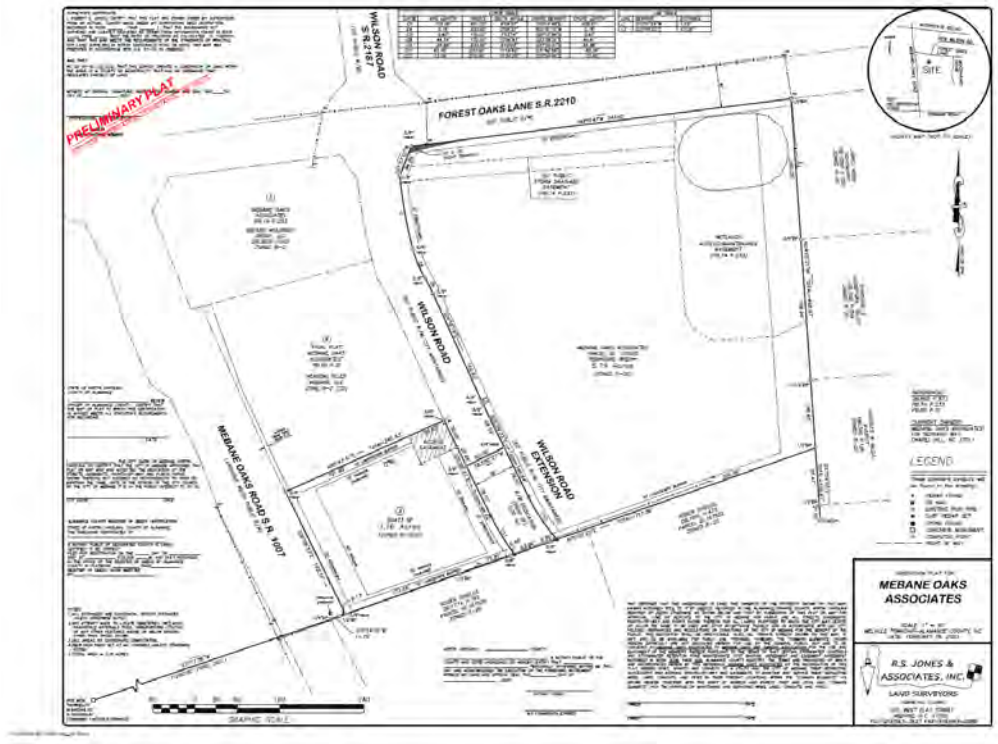
Final Plat – Mebane Oaks Road Associates

Presenter
Cy Stober, Development Director

Applicant
Mebane Oaks Associates
104 Serrano Way
Chapel Hill, NC 27517

Public Hearing
Yes ☐ No ☒

Final Plat



Property
1311 Mebane Oaks Road, Alamance Co.
GPIN#9824046036

Proposed Zoning
N/A

Current Zoning
B-2(CD)

Size
+/-1.36 acres

Surrounding Zoning
R-20, B-2(CD), CU-B-2

Surrounding Land Uses
Residential,
Commercial,
Vacant

Utilities
To be extended at developer's expense

Floodplain
No

Watershed
No

City Limits
Yes

Summary

Mebane Oaks Associates is requesting approval to subdivide the property of subject (GPIN 9824046036) from a +/-7.55-acre lot into two lots: Lot 1 measuring +/-6.19 acres in area and Lot 3 measuring +/-1.36 acres in area. An additional 0.20 acres shall be dedicated as right of way for the improvement and extension of Wilson Road, per the City's adopted thoroughfare plan.

Lot 3 was approved as a B-2(CD) zoning district by the Mebane City Council at their June 1, 2020, meeting. The Technical Review Committee has reviewed the Final Plat and the applicant has revised the plat to reflect its comments.

Financial Impact

N/A

Recommendation

The Planning Staff recommend approval of the Final Subdivision Plat.

Suggested Motion

Motion to approve the final subdivision plat as presented.

Attachments

1. Final Plat

SURVEYOR'S CERTIFICATE

I, ROBERT S. JONES, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION(DEED DESCRIPTION RECORDED IN BOOK _____, PAGE _____) ;THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN FROM INFORMATION FOUND IN BOOK _____, PAGE _____; THAT THE RATIO OF PRECISION AS CALCULATED 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 PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED.

AND THAT:

NC GS 47-30 (f)(11)(a) THAT THIS SURVEY CREATES A SUBDIVISION OF LAND WITHIN THE AREA OF A COUNTY OR MUNICIPALITY THAT HAS AN ORDINANCE THAT REGULATES PARCELS OF LAND.

WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS_____TH DAY OF_____, 2020.

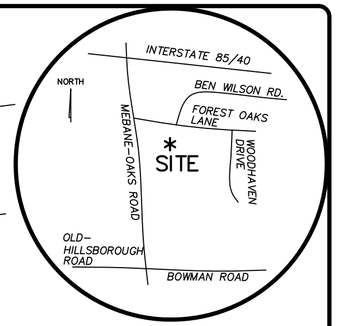
_____
PROFESSIONAL LAND SURVEYOR

L-3939
REGISTRATION NUMBER

PRELIMINARY PLAT
NOT FOR RECORDATION, CONVEYANCE, OR SALES.

CURVE TABLE					
CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	105.66'	661.50'	9°09'07"	S10°04'48"E	105.55'
C4	3.79'	230.00'	0°56'37"	N25°41'15"W	3.79'
C5	5.60'	170.00'	1°53'14"	S25°12'56"E	5.60'
C8	44.74'	170.00'	15°04'43"	S22°56'01"E	44.61'
C9	24.89'	230.00'	6°12'03"	S27°22'21"E	24.88'
C11	65.16'	330.00'	11°18'49"	S31°48'58"E	65.06'
C12	73.08'	270.00'	15°30'26"	S33°54'46"E	72.85'

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S73°01'24"W	1.65'
L2	S25°04'22"E	67.06'



VICINITY MAP (NOT TO SCALE)

WILSON ROAD S.R.2187
(70' PUBLIC R/W)

FOREST OAKS LANE S.R.2210
(60' PUBLIC R/W)

S82°51'43"W 543.60'

10' STREETSCAPE

10' X 70' SIGHT TRIANGLE

S21°37'12"W 44.96'

20' PUBLIC STORM DRAINAGE EASEMENT (PB.74 P.233)

1/2"EIP

200.05'

JARED ROSS SCHUMANN DB.3359 P.750 ZONED R-20

WETLANDS ACCESS/MAINTENANCE EASEMENT (PB.74 P.233)

3/4"EIP

N04°00'21"W TOTAL=496.97'

199.94'

CHRISTINE S. SHROPSIRE, TRUST DB.392 P.359 ZONED R-20

1-1/2"EIP

96.98'

1/2"EIP

S03°54'45"E TOTAL=102.97'

81.47'

1/2"EIP

21.50'

3/4"EIP

CHARLES & HILDA HAVERFITT DB.385 P.126 ZONED R-20

NAD 83 (2011)

① MEBANE OAKS ASSOCIATES PB.74 P.233

WALKER HOLDINGS GROUP, LLC DB.3008 P.601 ZONED B-2

② "FINAL PLAT: MEBANE OAKS ASSOCIATES" PB.80 P.31

HENDON TILLER MEBANE, LLC ZONE B-2 (CD)

③ 50473 SF 1.16 Acres (ZONED B-2(CD)

MEBANE OAKS ASSOCIATES PARCEL ID: 170920 REMAINING AREA= 6.19 Acres (ZONED R-20)

WILSON ROAD (60' PUBLIC R/W, CITY MAINTAINED)

S24°16'19"E 166.62'

5/8" rebar

C1

10' STREETSCAPE

C8

C9

C5

S26°09'33"E 68.54'

C4 39.08'

55.03' ACCESS EASEMENT

N65°43'41"E Total=246.93'

197.90'

10' LANDSCAPE BUFFER

WELL

15' Setback (reduced)

29.46'

S26°09'33"E Total=146.64'

60.00'

S63°50'27"W

60'

78.10'

30' Setback

10' STREETSCAPE

WILSON ROAD EXTENSION (60' PUBLIC R/W, CITY MAINTAINED)

R/W DEDICATION (8830 SF) 0.20 Ac.

C11

C12

6.46'

53.96'

9.90'

N70°32'22"E TOTAL=717.36'

10' LANDSCAPE BUFFER

389.46'

ROGER SHIELDS DB.1810 P.473 PARCEL ID:167502 ZONED R-20

MEBANE OAKS ROAD S.R. 1007
(VARIABLE WIDTH PUBLIC R/W)

S26°09'33"E 193.56'

40' Setback

10' Streetscape

15' Setback (reduced)

10' LANDSCAPE BUFFER

75.81'

172.66'

9.13'

telepone pedestal

3/4"EIP

1/2"EIP

S70°14'10"W 12.79'

S71°11'36"W 11290.00' (GRID DIST.)

NGS MON. "HAWFIELDS" N: 840044.20' E: 1909650.81' (COMBINED FACTOR: 0.9999453)

ROGER SHIELDS DB.1774 P.745 PARCEL ID:167500 ZONED R-20

60 0 30 60 120 240
GRAPHIC SCALE

REFERENCES
DB.805 P.973
PB.74 P.233
PB.80 P.31

CURRENT OWNERS
MEBANE OAKS ASSOCIATES
104 SERRANO WAY
CHAPEL HILL, NC 27517

LEGEND

These standard symbols will be found in the drawing.

- REBAR FOUND
- PK NAIL
- EXISTING IRON PIPE
- 5/8" REBAR SET
- STONE FOUND
- CONCRETE MONUMENT
- COMPUTED POINT
- RIGHT OF WAY

STATE OF NORTH CAROLINA
COUNTY OF ALAMANCE

I, _____, REVIEW OFFICER OF ALAMANCE COUNTY. CERTIFY THAT THE MAP OR PLAT TO WHICH THIS CERTIFICATION IS AFFIXED MEETS ALL STATUTORY REQUIREMENTS FOR RECORDING.

_____
DATE

I _____ THE CITY CLERK OF MEBANE, NORTH CAROLINA, DO CERTIFY THAT THE CITY OF MEBANE APPROVED THIS PLAT OR MAP AND AND ACCEPTED THE DEDICATION OF THE STREETS, EASEMENTS, RIGHTS-OF-WAY AND PUBLIC PARKS SHOWN THEREON, BUT ASSUMES NO RESPONSIBILITY TO OPEN OR MAINTAIN THE SAME, UNTIL IN THE OPINION OF THE CITY COUNCIL OF THE CITY OF MEBANE IT IS IN THE PUBLIC INTEREST TO DO SO.

_____ _____
CITY CLERK DATE

ALAMANCE COUNTY REGISTER OF DEEDS CERTIFICATION

STATE OF NORTH CAROLINA, COUNTY OF ALAMANCE
THE FOREGOING CERTIFICATES OF:
_____
_____
A NOTARY PUBLIC OF DESIGNATED COUNTY IS (ARE) CERTIFIED TO BE CORRECT.
FILED FOR REGISTRATION ON THE _____ DAY OF _____, 2001 AT _____ O'CLOCK _____M, AND DULY RECORDED IN THE OFFICE OF THE REGISTER OF DEEDS OF ALAMANCE COUNTY IN PLATBOOK _____ PAGE_____.
REGISTER OF DEEDS, HUGH WEBSTER
BY:_____

NOTES:
1.) ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES UNLESS OTHERWISE NOTED.
2.) NO ATTEMPT MADE TO LOCATE CEMETERIES, WETLANDS, HAZARDOUS MATERIALS SITES, UNDERGROUND UTILITIES, OR ANY OTHER FEATURES ABOVE OR BELOW GROUND OTHER THAN THOSE SHOWN.
3.) ALL AREAS BY COORDINATE COMPUTATION.
4.) NEW IRON RODS SET AT ALL CORNERS UNLESS OTHERWISE NOTED.
5.) TOTAL AREA = 7.35 ACRES

NORTH CAROLINA _____ COUNTY

I,_____ A NOTARY PUBLIC OF THE COUNTY AND STATE AFORESAID, DO HEREBY CERTIFY THAT _____ PERSONALLY APPEARED BEFORE ME THIS DAY AND ACKNOWLEDGED THE EXECUTION OF THE FOREGOING INSTRUMENT. WITNESS MY HAND AND OFFICIAL SEAL THIS_____ DAY OF _____, 2020.

_____
NOTARY PUBLIC

_____
MY COMMISSION EXPIRES

THIS CERTIFIES THAT THE UNDERSIGNED IS (ARE) THE OWNER(S) OF THE PROPERTY SHOWN ON THIS MAP, HAVING ACQUIRED TITLE TO IT BY DEED(S) RECORDED IN THE ALAMANCE/ORANGE COUNTY, NORTH CAROLINA REGISTER OF DEEDS OTHERMISE AS SHOWN BELOW AND THAT BY SUBMISSION OF THIS PLAT OR MAP FOR APPROVAL, I/WE DO DEDICATE TO THE CITY OF MEBANE FOR PUBLIC USE ALL STREETS, EASEMENTS, RIGHTS-OF-WAY AND PARKS SHOWN THEREON FOR ALL LAWFUL PURPOSES TO WHICH THE CITY MAY DEVOTE OR ALLOW THE SAME TO BE USED AND UPON ACCEPTANCE THEREOF AND IN ACCORDANCE WITH ALL CITY POLICIES, ORDINANCES AND REGULATIONS OR CONDITIONS OF THE CITY OF MEBANE FOR THE BENEFIT OF THE PUBLIC. THIS DEDICATION SHALL BE IRREVOCABLE. ALSO, ALL PRIVATE STREETS SHOWN ON THIS MAP, IF ANY, ARE TO BE AVAILABLE FOR PUBLIC USE. PROVIDED, HOWEVER, THE "COMMON ELEMENTS" SHOWN HEREON EXPRESSLY ARE NOT DEDICATED HEREBY FOR USE BY THE GENERAL PUBLIC, BUT ARE TO BE CONVEYED BY MEBANE OAKS ASSOCIATES TO MEBANE OAKS SRP OWNERS ASSOCIATION FOR THE USE AND ENJOYMENT OF THE MEMBERS THEREOF PURSUANT TO THE TERMS OF THAT CERTAIN STORMWATER CONTROLS AND STORMWATER RETENTION POND MAINTENANCE COST SHARING AGREEMENT AND EASEMENT AGREEMENT RECORDED IN BOOK 3008, PAGE 606, ALAMANCE COUNTY REGISTRY, THE TERMS AND PROVISIONS OF WHICH ARE INCORPORATED HEREIN BY THIS REFERENCE. MEBANE OAKS ASSOCIATES BY THE RECORDATION OF THIS PLAT, HEREBY GIVES, GRANTS AND CONVEYS TO A UTILITY AND THE CITY OF MEBANE, THEIR RESPECTIVE SUCCESSORS AND ASSIGNS, RIGHTS-OF-WAY AND EASEMENTS TO MAINTAIN AND SERVICE THEIR RESPECTIVE WIRES, LINES, CONDUITS, AND PIPES IN THEIR PRESENT LOCATIONS WITHIN THE "COMMON ELEMENTS" AS SHOWN HEREON TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS OVER AND UPON SAID "COMMON ELEMENTS" FOR THE PURPOSE OF MAINTAINING AND SERVICING WIRES, LINES, CONDUITS, AND PIPES.

_____ _____
OWNER DATE

_____ _____
OWNER DATE

SUBDIVISION PLAT FOR:

MEBANE OAKS ASSOCIATES

SCALE: 1" = 60'
MELVILLE TOWNSHIP-ALAMANCE COUNTY, NC
DATE: FEBRUARY 18, 2020

R.S. JONES & ASSOCIATES, INC.
LAND SURVEYORS
LICENSE NO.: C-2565
201 WEST CLAY STREET
MEBANE, N.C. 27302
PH.: (919)563-3623 FAX: (919)563-0086

D:\1805\18067\18067-sub_Lot 3.dwg

AGENDA ITEM #5C

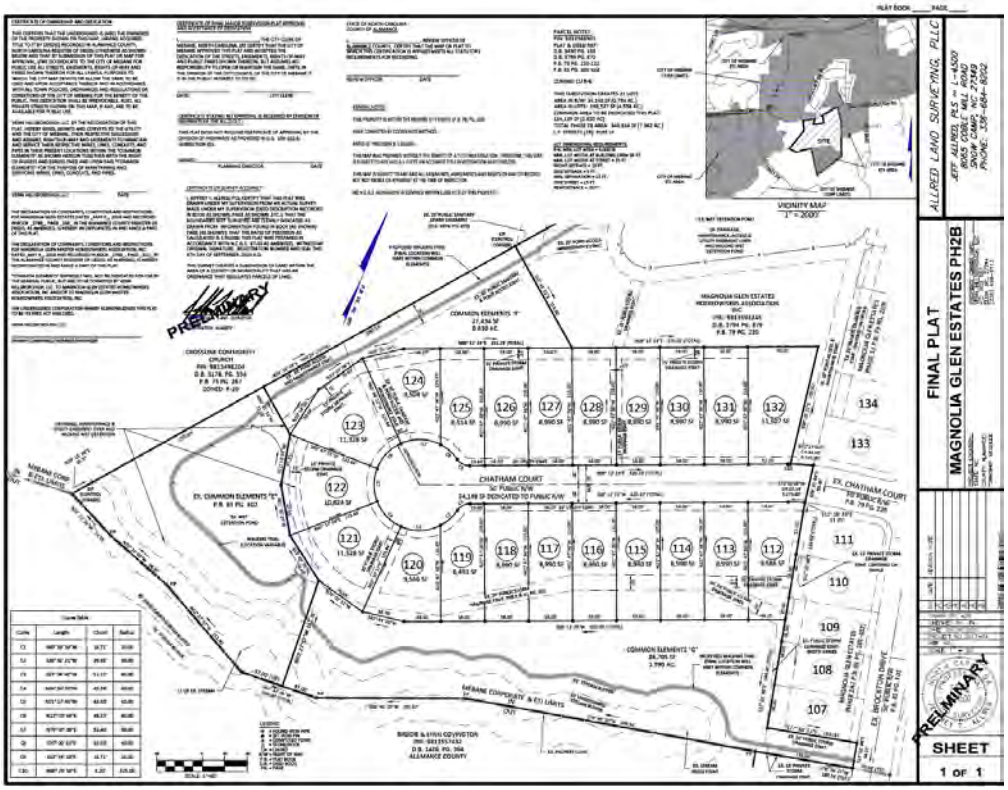
Final Plat-
Magnolia Glen Estates,
Phase 2B

Presenter
Cy Stober, Development Director

Applicant
Venn Hillsborough, LLC.
P.O. Box 667
Elon, NC 27244

Public Hearing
Yes No X

Final Plat



Property
Chatham Court,
Alamance County
Parcel ID 163295

Proposed Zoning
N/A

Current Zoning
CU-R-6

Size
+/-7.962 acres

Surrounding Zoning
R-20

Surrounding Land Uses
Residential & Institutional

Utilities
Extended at developer's expense.

Floodplain
No

Watershed
No

City Limits
Yes

Summary

Venn Hillsborough, LLC, is requesting approval of the Final Plat for Magnolia Glen Estates, Phase 2B, which was approved 5-0 as a Conditional Use Permit by the Mebane City Council on July 6, 2015. The Final Plat will include a total area of 7.962 acres including 4.558 acres in 21 lots, 2.620 acres dedicated to common elements, and 0.784 acres in public right-of-way.

The Technical Review Committee (TRC) has reviewed the Final Plat and the applicant has revised the plan to reflect its comments. The subdivision of this property meets the City of Mebane's Unified Development Ordinance requirements. All infrastructure must be completed and approved to meet the City of Mebane Specifications. All infrastructure not completed shall be bonded or a letter of credit provided prior to recordation.

Financial Impact

The developer has extended utilities at his own expense.

Recommendation

Staff recommends approval of the Final Plat.

Suggested Motion

Motion to approve the final plat as presented.

Attachments

1. Final Plat

PLAT BOOK _____ PAGE _____

CERTIFICATE OF OWNERSHIP AND DEDICATION

THIS CERTIFIES THAT THE UNDERSIGNED IS (ARE) THE OWNER(S) OF THE PROPERTY SHOWN ON THIS MAP, HAVING ACQUIRED TITLE TO IT BY DEED(S) RECORDED IN ALAMANCE COUNTY, NORTH CAROLINA REGISTER OF DEEDS OTHERWISE AS SHOWN BELOW AND THAT BY SUBMISSION OF THIS PLAT OR MAP FOR APPROVAL, I/WE DO DEDICATE TO THE CITY OF MEBANE FOR PUBLIC USE ALL STREETS, EASEMENTS, RIGHTS-OF-WAY AND PARKS SHOWN THEREON FOR ALL LAWFUL PURPOSES TO WHICH THE CITY MAY DEVOTE OR ALLOW THE SAME TO BE USED AND UPON ACCEPTANCE THEREOF AND IN ACCORDANCE WITH ALL TOWN POLICIES, ORDINANCES AND REGULATIONS OR CONDITIONS OF THE CITY OF MEBANE FOR THE BENEFIT OF THE PUBLIC, THIS DEDICATION SHALL BE IRREVOCABLE. ALSO, ALL PRIVATE STREETS SHOWN ON THIS MAP, IF ANY, ARE TO BE AVAILABLE FOR PUBLIC USE.

VENN HILLSBOROUGH, LLC BY THE RECORDATION OF THIS PLAT, HEREBY GIVES, GRANTS AND CONVEYS TO THE UTILITY AND THE CITY OF MEBANE, THEIR RESPECTIVE SUCCESSORS AND ASSIGNS, RIGHTS-OF-WAY AND EASEMENTS TO MAINTAIN AND SERVICE THEIR RESPECTIVE WIRES, LINES, CONDUITS, AND PIPES IN THEIR PRESENT LOCATIONS WITHIN THE "COMMON ELEMENTS" AS SHOWN HEREON TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS OVER AND UPON SAID "COMMON ELEMENTS" FOR THE PURPOSE OF MAINTAINING AND SERVICING WIRES, LINES, CONDUITS, AND PIPES.

_____ _____
VENN HILLSBOROUGH, LLC DATE

THE DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR MAGNOLIA GLEN ESTATES DATED _MAY 9_, 2018 AND RECORDED IN BOOK _3788_, PAGE _338_ IN THE ALAMANCE COUNTY REGISTER OF DEEDS, AS AMENDED, IS HEREBY INCORPORATED IN AND MADE A PART OF THIS PLAT.

THE DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR MAGNOLIA GLEN MASTER HOMEOWNERS ASSOCIATION, INC. DATED_MAY 9_, 2018 AND RECORDED IN BOOK _3788_, PAGE _310_ IN THE ALAMANCE COUNTY REGISTER OF DEEDS, AS AMENDED, IS HEREBY INCORPORATED IN AND MADE A PART OF THIS PLAT.

"COMMON ELEMENTS" EXPRESSLY WILL NOT BE DEDICATED FOR USE BY THE GENERAL PUBLIC, BUT ARE TO BE CONVEYED BY VENN HILLSBOROUGH, LLC. TO MAGNOLIA GLEN ESTATES HOMEOWNERS ASSOCIATION, INC AND/OR TO MAGNOLIA GLEN MASTER HOMEOWNERS ASSOCIATION, INC.

THE UNDERSIGNED CORPORATION HEREBY ACKNOWLEDGES THIS PLAT TO BE ITS FREE ACT AND DEED.

VENN HILLSBOROUGH, LLC.

_____
SHAWN CUMMINGS, MEMBER/MANAGER

CERTIFICATE OF FINAL MAJOR SUBDIVISION PLAT APPROVAL AND ACCEPTANCE OF DEDICATION

I, _____, THE CITY CLERK OF MEBANE, NORTH CAROLINA, DO CERTIFY THAT THE CITY OF MEBANE APPROVED THIS PLAT AND ACCEPTED THE DEDICATION OF THE STREETS, EASEMENTS, RIGHTS-OF-WAY AND PUBLIC PARKS SHOWN THEREON, BUT ASSUMES NO RESPONSIBILITY TO OPEN OR MAINTAIN THE SAME, UNTIL IN THE OPINION OF THE CITY COUNCIL OF THE CITY OF MEBANE IT IS IN THE PUBLIC INTEREST TO DO SO.

_____ _____
DATE: CITY CLERK

CERTIFICATE STATING NO APPROVAL IS REQUIRED BY DIVISION OF HIGHWAYS OF THE N.C.D.O.T.:

THIS PLAT DOES NOT REQUIRE CERTIFICATE OF APPROVAL BY THE DIVISION OF HIGHWAYS AS PROVIDED IN G.S. 136-102.6, SUBSECTION (G).

SIGNED:_____
PLANNING DIRECTOR DATE

CERTIFICATE OF SURVEY ACCURACY

I, JEFFREY T. ALLRED, PLS, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DEED DESCRIPTION RECORDED IN BOOK AS SHOWN, PAGE AS SHOWN ,ETC.); THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN FROM INFORMATION FOUND IN BOOK (AS SHOWN) PAGE (AS SHOWN); THAT THE RATIO OF PRECISION AS CALCULATED IS 1:30,000; THIS PLAT WAS PREPARED IN ACCORDANCE WITH N.C.G.S. 47-30 AS AMENDED. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS 8TH DAY OF SEPTEMBER, 2020 A.D.

THIS SURVEY CREATES A SUBDIVISION OF LAND WITHIN THE AREA OF A COUNTY OR MUNICIPALITY THAT HAS AN ORDINANCE THAT REGULATES PARCELS OF LAND.

PRELIMINARY
PROFESSIONAL LAND SURVEYOR
REGISTRATION NUMBER

STATE OF NORTH CAROLINA
COUNTY OF ALAMANCE

I, _____, REVIEW OFFICER OF ALAMANCE COUNTY, CERTIFY THAT THE MAP OR PLAT TO WHICH THIS CERTIFICATION IS AFFIXED MEETS ALL STATUTORY REQUIREMENTS FOR RECORDING.

_____
REVIEW OFFICER DATE

GENERAL NOTES:

THIS PROPERTY IS WITHIN THE MEBANE CITY LIMITS. (P.B. 78, PG. 120)

AREA COMPUTED BY COORDINATE METHOD.

RATIO OF PRECISION IS 1:30,000+.

THIS MAP WAS PREPARED WITHOUT THE BENEFIT OF A TITLE INVESTIGATION, THEREFORE, THIS MAP IS SUBJECT TO ANY AND ALL FACTS AN ACCURATE TITLE INVESTIGATION MAY DISCLOSE.

THIS MAP IS SUBJECT TO ANY AND ALL EASEMENTS, AGREEMENTS AND RIGHTS OF WAY OF RECORD BUT NOT VISIBLE OR APPARENT AT THE TIME OF INSPECTION.

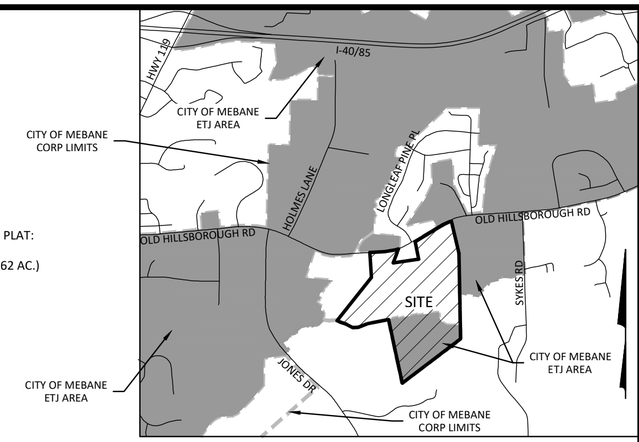
NO N.C.G.S. MONUMENT RECOVERED WITHIN 2,000 FEET OF THIS PROPERTY.

PARCEL NOTES:
PIN: 9813588901
PLAT & DEED REF:
D.B. 3490 PG. 193
D.B. 3799 PG. 870
P.B. 79 PG. 220-221
P.B. 81 PG. 101-102

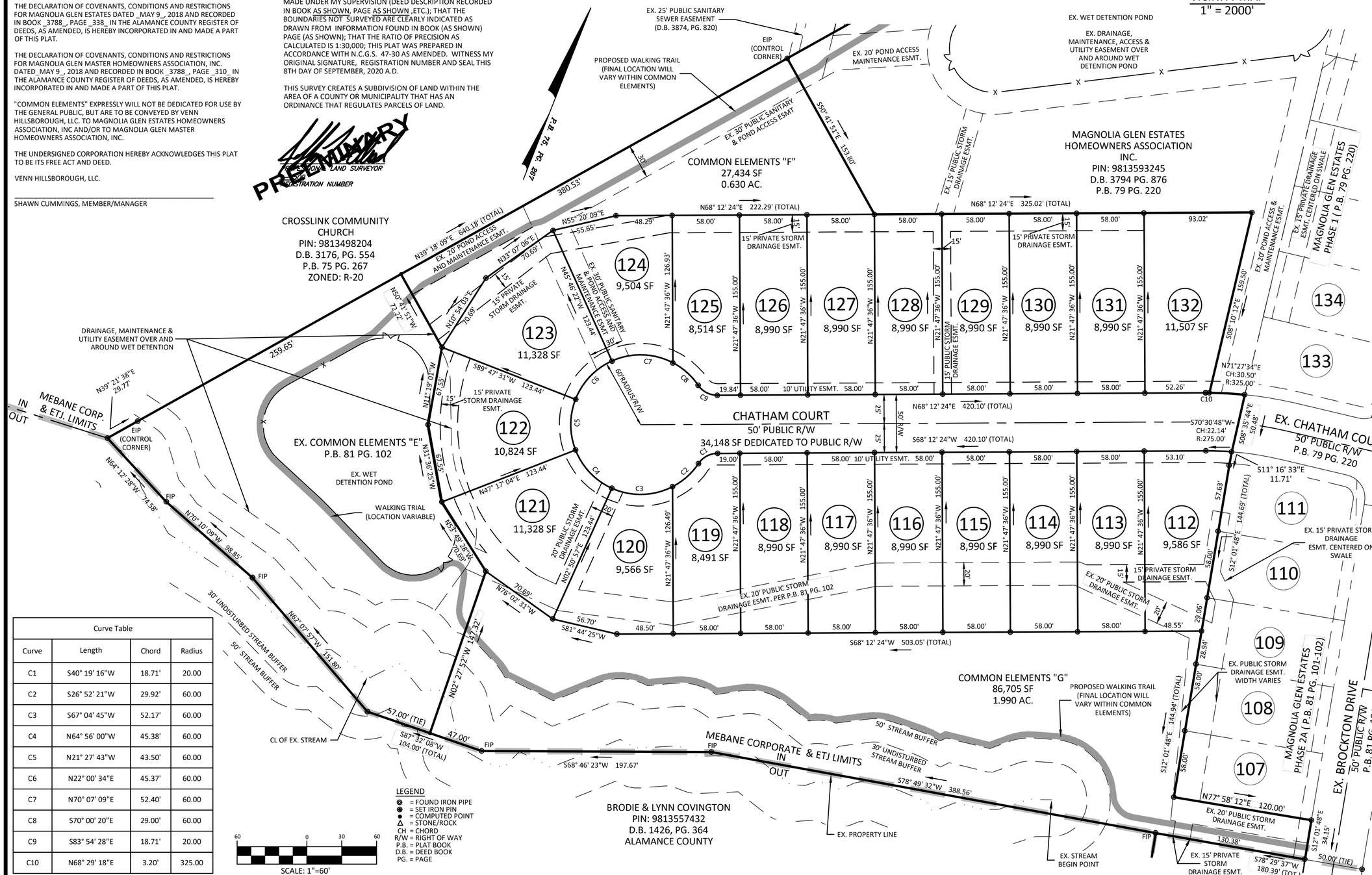
ZONING: CU R-6

THIS SUBDIVISION CREATES 21 LOTS
AREA IN R/W: 34,148 SF (0.784 AC.)
AREA IN LOTS: 198,527 SF (4.558 AC.)
COMMON AREA TO BE DEDICATED THIS PLAT:
114,139 SF (2.620 AC)
TOTAL PHASE 2B AREA: 346,814 SF (7.962 AC.)
L.F. STREETS (2B): 515± LF

LOT DIMENSIONAL REQUIREMENTS:
R-6, MIN. LOT AREA = 6,000 SF
MIN. LOT WIDTH AT BUILDING LINE= 56 FT.
MIN. LOT WIDTH AT STREET = 35 FT.
FRONT SETBACK = 20 FT.
SIDE SETBACK = 5 FT.
MIN. SEPARATION = 15 FT.
SIDE STREET = 15 FT.
REAR SETBACK = 20 FT.



VICINITY MAP
1" = 2000'



Curve Table			
Curve	Length	Chord	Radius
C1	S40° 19' 16"W	18.71'	20.00
C2	S26° 52' 21"W	29.92'	60.00
C3	S67° 04' 45"W	52.17'	60.00
C4	N64° 56' 00"W	45.38'	60.00
C5	N21° 27' 43"W	43.50'	60.00
C6	N22° 00' 34"E	45.37'	60.00
C7	N70° 07' 09"E	52.40'	60.00
C8	S70° 00' 20"E	29.00'	60.00
C9	S83° 54' 28"E	18.71'	20.00
C10	N68° 29' 18"E	3.20'	325.00

LEGEND
⊙ = FOUND IRON PIPE
● = SET IRON PIN
• = COMPUTED POINT
△ = STONE/ROCK
CH = CHORD
R/W = RIGHT OF WAY
P.B. = PLAT BOOK
D.B. = DEED BOOK
PG. = PAGE

60 0 30 60
SCALE: 1"=60'

ALLRED LAND SURVEYING, PLLC
JEFF ALLRED, PLS ~ L-4500
8065 COBLE MILL ROAD
SNOW CAMP, NC 27349
PHONE: 336-684-8202

FINAL PLAT
MAGNOLIA GLEN ESTATES PH2B

PROPERTY OWNER INFO:
VENN HILLSBOROUGH, LLC
P.O. BOX 672244
ELON, NC
(336) 404-9113

PROJECT LOCATION:
STATE: NC
COUNTY: ALAMANCE
TOWNSHIP: MELVILLE

NO.	DATE	REVISION NOTE
1		
2		
3		
4		
5		
6		

DRAWING FILE PATH: EA\Cordon Projects\

DRAWN BY: AGB
CHECKED BY: JTA
DATE: 09/08/2020
PROJECT NO.:2017-74
REF. NO.:
SCALE: 1" = 60'

NORTH CAROLINA PROFESSIONAL SEAL L-4500 SURVEYOR JEFFREY T. ALLRED

PRELIMINARY

SHEET
1 OF 1

AGENDA ITEM #5D

Final Plat –

Villas on Fifth, Phase 2B

Presenter

Cy Stober, Development Director

Applicant

NOVA TRIAD PARTNERS, LLC

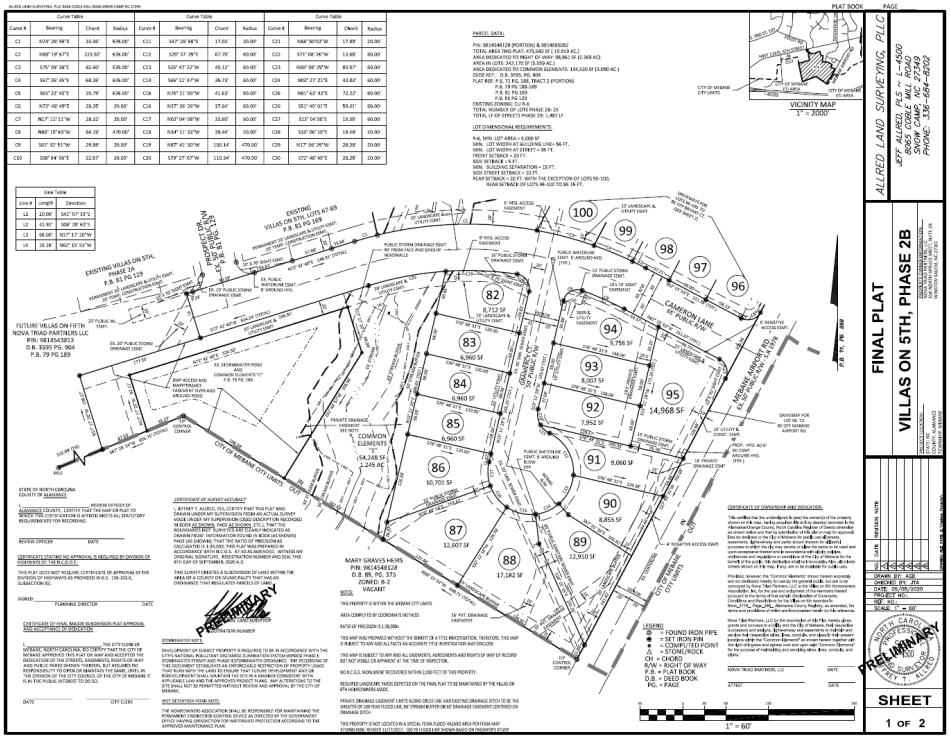
206 NORTH SPRUCE SREET, SUITE 2B

WINSTON-SALEM 27101

Public Hearing

Yes☐ No ☒

Final Plat



Property

Bryant Ct, Gramercy Ct, Cameron Ln,

Alamance County

Parcel ID 163985, 164156

Proposed Zoning

N/A

Current Zoning

CU-R-6

Size

+/-10.919 acres

Surrounding Zoning

R-6 & B-2

Surrounding Land Uses

Residential & Vacant

Utilities

Extended at developer's expense.

Floodplain

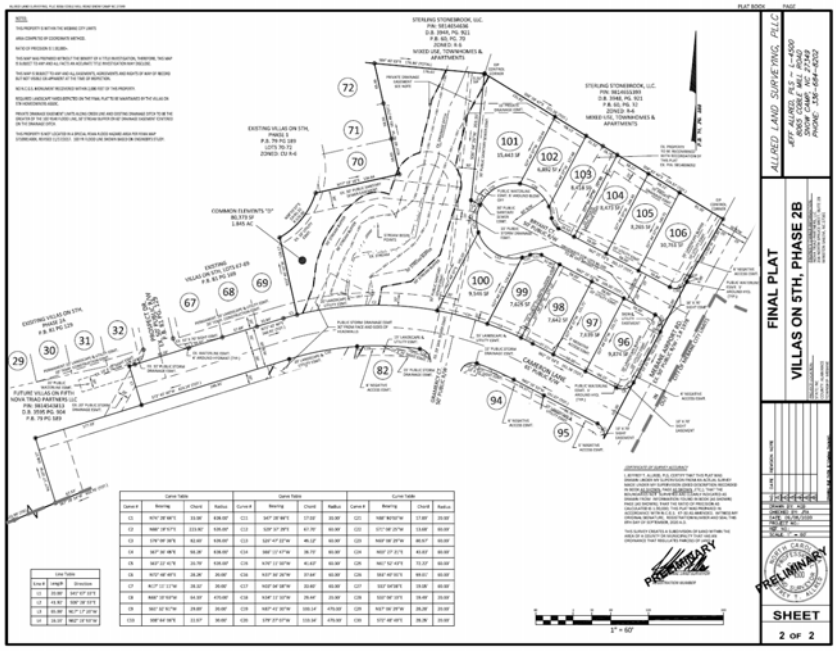
No

Watershed

No

City Limits

Yes



Summary

Nova Triad Partners, LLC, is requesting approval of the Final Plat for Villas On Fifth, Phase 2B, which was approved 4-0 as a Conditional Use Permit by the Mebane City Council on January 11, 2017. The Final Plat will include a total area of 10.919 acres including 5.559 acres in 25 lots, 3.090 acres dedicated to common elements, and 1,487 linear feet and 3.090 acres of public right-of-way.

The Technical Review Committee (TRC) has reviewed the Final Plat and the applicant has revised the plat to reflect its comments. The subdivision of this property meets the provisions of the City of Mebane's Unified Development Ordinance (UDO). All infrastructure must be completed and approved to meet the City of Mebane Specifications. All infrastructure not completed shall be bonded or a letter of credit provided prior to recordation.

Financial Impact

The developer has extended utilities at his own expense.

Recommendation

Staff recommends approval of the Final Plat.

Suggested Motion

Motion to approve the final plat as presented.

Attachments

1. Final Plat

Curve Table				Curve Table				Curve Table			
Curve #	Bearing	Chord	Radius	Curve #	Bearing	Chord	Radius	Curve #	Bearing	Chord	Radius
C1	N74° 28' 55"E	33.06'	535.00'	C11	S47° 28' 55"E	17.03'	30.00'	C21	N88° 50'03"W	17.89'	20.00'
C2	N88° 19' 57"E	223.92'	535.00'	C12	S29° 37' 29"E	67.70'	60.00'	C22	S71° 08' 25"W	13.68'	60.00'
C3	S75° 09' 38"E	82.60'	535.00'	C13	S26° 47' 22"W	45.12'	60.00'	C23	N60° 08' 29"W	80.57'	60.00'
C4	S67° 36' 45"E	58.25'	535.00'	C14	S66° 11' 47"W	35.73'	60.00'	C24	N03° 27' 21"E	43.83'	60.00'
C5	S63° 22' 41"E	20.79'	535.00'	C15	N76° 11' 00"W	41.63'	60.00'	C25	N61° 52' 43"E	72.22'	60.00'
C6	N72° 48' 49"E	28.25'	20.00'	C16	N37° 36' 26"W	37.64'	60.00'	C26	S51° 40' 01"E	59.01'	60.00'
C7	N17° 11' 11"W	28.32'	20.00'	C17	N03° 04' 08"W	33.60'	60.00'	C27	S13° 04'38"E	19.05'	60.00'
C8	N66° 10' 50"W	64.19'	470.00'	C18	N34° 11' 33"W	29.44'	20.00'	C28	S33° 06' 10"E	19.49'	20.00'
C9	S61° 32' 51"W	29.89'	20.00'	C19	N87° 41' 30"W	100.14'	470.00'	C29	N17° 06' 29"W	28.28'	20.00'
C10	S08° 54' 06"E	22.57'	30.00'	C20	S79° 27' 07"W	110.34'	470.00'	C30	S72° 48' 49"E	28.25'	20.00'

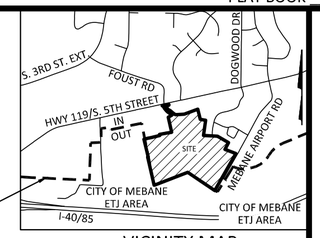
Line Table		
Line #	Length	Direction
L1	20.00'	S41° 07' 33"E
L2	41.92'	S06° 28' 53"E
L3	65.00'	N17° 17' 20"W
L4	16.16'	N62° 15' 53"W

PARCEL DATA:

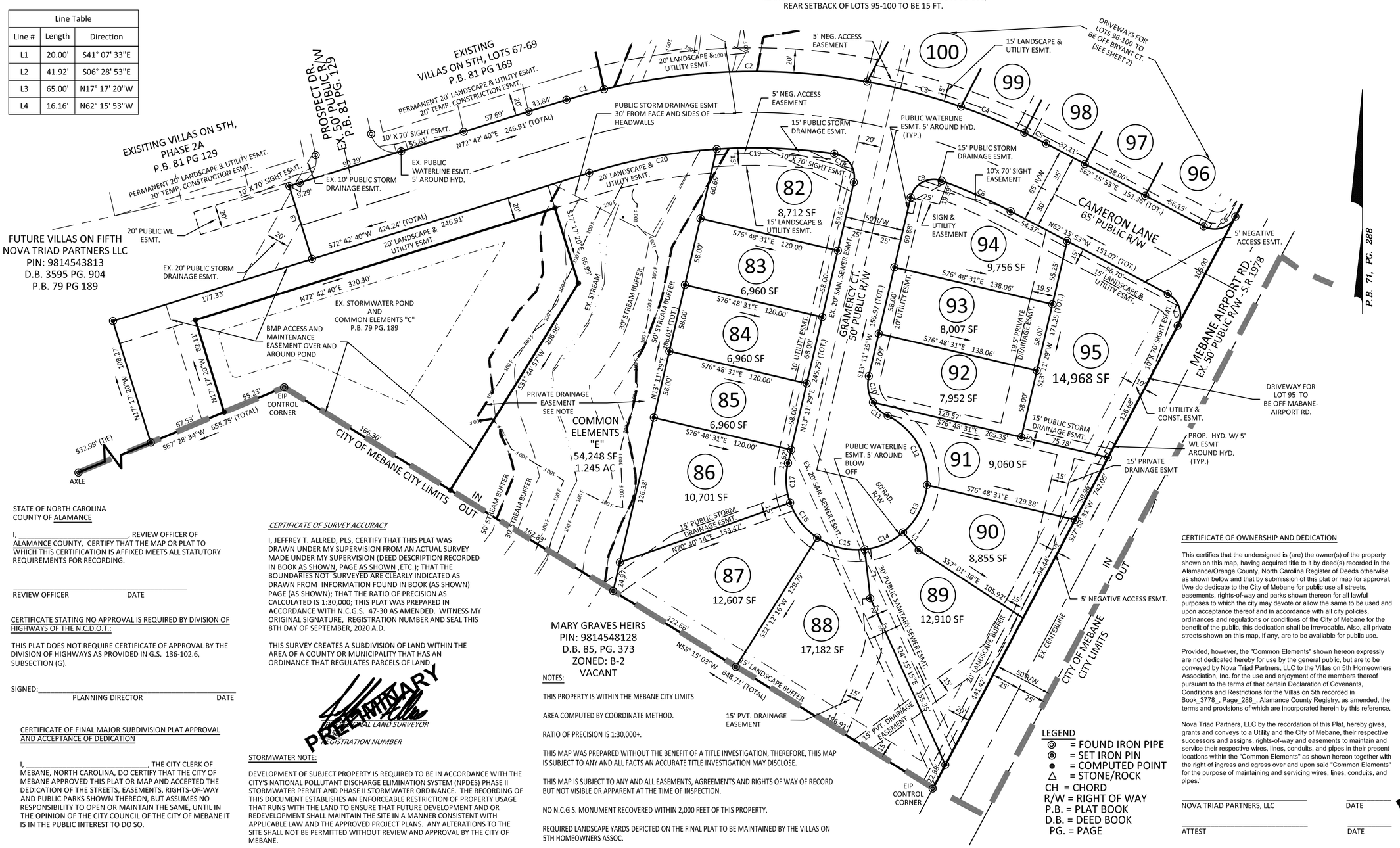
PIN: 9814548128 (PORTION) & 9814655052
TOTAL AREA THIS PLAT: 475,642 SF (10.919 AC.)
AREA DEDICATED TO RIGHT OF WAY: 98,851 SF (2.269 AC)
AREA IN LOTS: 242,170 SF (5.559 AC.)
AREA DEDICATED TO COMMON ELEMENTS: 134,620 SF (3.090 AC.)
DEED REF: D.B. 3595, PG. 904
PLAT REF: P.B. 71 PG. 288, TRACT 2 (PORTION)
P.B. 79 PG 188-189
P.B. 81 PG 169
P.B. 81 PG 129
EXISTING ZONING: CU R-6
TOTAL NUMBER OF LOTS PHASE 2B: 25
TOTAL LF OF STREETS PHASE 2B: 1,487 LF

LOT DIMENSIONAL REQUIREMENTS:

R-6, MIN. LOT AREA = 6,000 SF
MIN. LOT WIDTH AT BUILDING LINE= 56 FT.
MIN. LOT WIDTH AT STREET = 35 FT.
FRONT SETBACK = 20 FT.
SIDE SETBACK = 5 FT.
MIN. BUILDING SEPARATION = 15 FT.
SIDE STREET SETBACK = 10 FT.
REAR SETBACK = 20 FT. WITH THE EXCEPTION OF LOTS 95-100,
REAR SETBACK OF LOTS 95-100 TO BE 15 FT.



VICINITY MAP
1" = 2000'



STATE OF NORTH CAROLINA
COUNTY OF ALAMANCE

I, _____, REVIEW OFFICER OF ALAMANCE COUNTY, CERTIFY THAT THE MAP OR PLAT TO WHICH THIS CERTIFICATION IS AFFIXED MEETS ALL STATUTORY REQUIREMENTS FOR RECORDING.

_____
REVIEW OFFICER DATE

CERTIFICATE STATING NO APPROVAL IS REQUIRED BY DIVISION OF HIGHWAYS OF THE N.C.D.O.T.:

THIS PLAT DOES NOT REQUIRE CERTIFICATE OF APPROVAL BY THE DIVISION OF HIGHWAYS AS PROVIDED IN G.S. 136-102.6, SUBSECTION (G).

SIGNED:_____
PLANNING DIRECTOR DATE

CERTIFICATE OF FINAL MAJOR SUBDIVISION PLAT APPROVAL AND ACCEPTANCE OF DEDICATION

I, _____, THE CITY CLERK OF MEBANE, NORTH CAROLINA, DO CERTIFY THAT THE CITY OF MEBANE APPROVED THIS PLAT OR MAP AND ACCEPTED THE DEDICATION OF THE STREETS, EASEMENTS, RIGHTS-OF-WAY AND PUBLIC PARKS SHOWN THEREON, BUT ASSUMES NO RESPONSIBILITY TO OPEN OR MAINTAIN THE SAME, UNTIL IN THE OPINION OF THE CITY COUNCIL OF THE CITY OF MEBANE IT IS IN THE PUBLIC INTEREST TO DO SO.

_____ _____
DATE: CITY CLERK

CERTIFICATE OF SURVEY ACCURACY

I, JEFFREY T. ALLRED, PLS, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DEED DESCRIPTION RECORDED IN BOOK AS SHOWN, PAGE AS SHOWN ,ETC.); THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN FROM INFORMATION FOUND IN BOOK (AS SHOWN) PAGE (AS SHOWN); THAT THE RATIO OF PRECISION AS CALCULATED IS 1:30,000; THIS PLAT WAS PREPARED IN ACCORDANCE WITH N.C.G.S. 47-30 AS AMENDED. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS 8TH DAY OF SEPTEMBER, 2020 A.D.

THIS SURVEY CREATES A SUBDIVISION OF LAND WITHIN THE AREA OF A COUNTY OR MUNICIPALITY THAT HAS AN ORDINANCE THAT REGULATES PARCELS OF LAND.

PRELIMINARY
PROFESSIONAL LAND SURVEYOR
REGISTRATION NUMBER

STORMWATER NOTE:

DEVELOPMENT OF SUBJECT PROPERTY IS REQUIRED TO BE IN ACCORDANCE WITH THE CITY'S NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PHASE II STORMWATER PERMIT AND PHASE II STORMWATER ORDINANCE. THE RECORDING OF THIS DOCUMENT ESTABLISHES AN ENFORCEABLE RESTRICTION OF PROPERTY USAGE THAT RUNS WITH THE LAND TO ENSURE THAT FUTURE DEVELOPMENT AND OR REDEVELOPMENT SHALL MAINTAIN THE SITE IN A MANNER CONSISTENT WITH APPLICABLE LAW AND THE APPROVED PROJECT PLANS. ANY ALTERATIONS TO THE SITE SHALL NOT BE PERMITTED WITHOUT REVIEW AND APPROVAL BY THE CITY OF MEBANE.

WET DETENTION POND NOTE:

THE HOMEOWNERS ASSOCIATION SHALL BE RESPONSIBLE FOR MAINTAINING THE PERMANENT ENGINEERED CONTROL DEVICE AS DIRECTED BY THE GOVERNMENT OFFICE HAVING JURISDICTION FOR WATERSHED PROTECTION ACCORDING TO THE APPROVED MAINTENANCE PLAN.

NOTES:

THIS PROPERTY IS WITHIN THE MEBANE CITY LIMITS

AREA COMPUTED BY COORDINATE METHOD.

RATIO OF PRECISION IS 1:30,000+.

THIS MAP WAS PREPARED WITHOUT THE BENEFIT OF A TITLE INVESTIGATION, THEREFORE, THIS MAP IS SUBJECT TO ANY AND ALL FACTS AN ACCURATE TITLE INVESTIGATION MAY DISCLOSE.

THIS MAP IS SUBJECT TO ANY AND ALL EASEMENTS, AGREEMENTS AND RIGHTS OF WAY OF RECORD BUT NOT VISIBLE OR APPARENT AT THE TIME OF INSPECTION.

NO N.C.G.S. MONUMENT RECOVERED WITHIN 2,000 FEET OF THIS PROPERTY.

REQUIRED LANDSCAPE YARDS DEPICTED ON THE FINAL PLAT TO BE MAINTAINED BY THE VILLAS ON 5TH HOMEOWNERS ASSOC.

PRIVATE DRAINAGE EASEMENT LIMITS ALONG CREEK LINE AND EXISTING DRAINAGE DITCH TO BE THE GREATER OF 100 YEAR FLOOD LINE, 50' STREAM BUFFER OR 60' DRAINAGE EASEMENT CENTERED ON DRAINAGE DITCH.

THIS PROPERTY IS NOT LOCATED IN A SPECIAL FEMA FLOOD HAZARD AREA PER FEMA MAP 3710981400K, REVISED 11/17/2017. 100 YR FLOOD LINE SHOWN BASED ON ENGINEER'S STUDY.

CERTIFICATE OF OWNERSHIP AND DEDICATION

This certifies that the undersigned is (are) the owner(s) of the property shown on this map, having acquired title to it by deed(s) recorded in the Alamance/Orange County, North Carolina Register of Deeds otherwise as shown below and that by submission of this plat or map for approval, I/we do dedicate to the City of Mebane for public use all streets, easements, rights-of-way and parks shown thereon for all lawful purposes to which the city may devote or allow the same to be used and upon acceptance thereof and in accordance with all city policies, ordinances and regulations or conditions of the City of Mebane for the benefit of the public, this dedication shall be irrevocable. Also, all private streets shown on this map, if any, are to be available for public use.

Provided, however, the "Common Elements" shown hereon expressly are not dedicated hereby for use by the general public, but are to be conveyed by Nova Triad Partners, LLC to the Villas on 5th Homeowners Association, Inc. for the use and enjoyment of the members thereof pursuant to the terms of that certain Declaration of Covenants, Conditions and Restrictions for the Villas on 5th recorded in Book_3778_, Page_286_, Alamance County Registry, as amended, the terms and provisions of which are incorporated herein by this reference.

Nova Triad Partners, LLC by the recordation of this Plat, hereby gives, grants and conveys to a Utility and the City of Mebane, their respective successors and assigns, rights-of-way and easements to maintain and service their respective wires, lines, conduits, and pipes in their present locations within the "Common Elements" as shown hereon together with the right of ingress and egress over and upon said "Common Elements" for the purpose of maintaining and servicing wires, lines, conduits, and pipes.'

_____ _____
NOVA TRIAD PARTNERS, LLC DATE

_____ _____
ATTEST DATE

LEGEND
◎ = FOUND IRON PIPE
◉ = SET IRON PIN
● = COMPUTED POINT
△ = STONE/ROCK
CH = CHORD
R/W = RIGHT OF WAY
P.B. = PLAT BOOK
D.B. = DEED BOOK
PG. = PAGE

60 0 30 60 120 240
1" = 60'

ALLRED LAND SURVEYING, PLLC

JEFF ALLRED, PLS ~ L-4500
8065 COBLE MILL ROAD
SNOW CAMP, NC 27349
PHONE: 336-684-8202

FINAL PLAT
VILLAS ON 5TH, PHASE 2B

PROJECT LOCATION:
STATE: NC
COUNTY: ALAMANCE
TOWNSHIP: MEBANE

PROPERTY OWNER INFORMATION:
NOVA TRIAD PARTNERS, LLC
206 NORTH SPRUCE SREET, SUITE 2B
WINSTON SALEM, NC 27101

NO.	DATE	REVISION NOTE
1		
2		
3		
4		
5		
6		

DRAWING FILE PATH: E:\Carlson Projects\

DRAWN BY: AGB
CHECKED BY: JTA
DATE: 09/08/2020
PROJECT NO.:
REF. NO.:
SCALE: 1" = 60'

NORTH CAROLINA PROFESSIONAL SEAL L-4500 LAND SURVEYOR JEFFREY T. ALLRED
PRELIMINARY

SHEET
1 OF 2

NOTES:

THIS PROPERTY IS WITHIN THE MEBANE CITY LIMITS

AREA COMPUTED BY COORDINATE METHOD.

RATIO OF PRECISION IS 1:30,000+.

THIS MAP WAS PREPARED WITHOUT THE BENEFIT OF A TITLE INVESTIGATION, THEREFORE, THIS MAP IS SUBJECT TO ANY AND ALL FACTS AN ACCURATE TITLE INVESTIGATION MAY DISCLOSE.

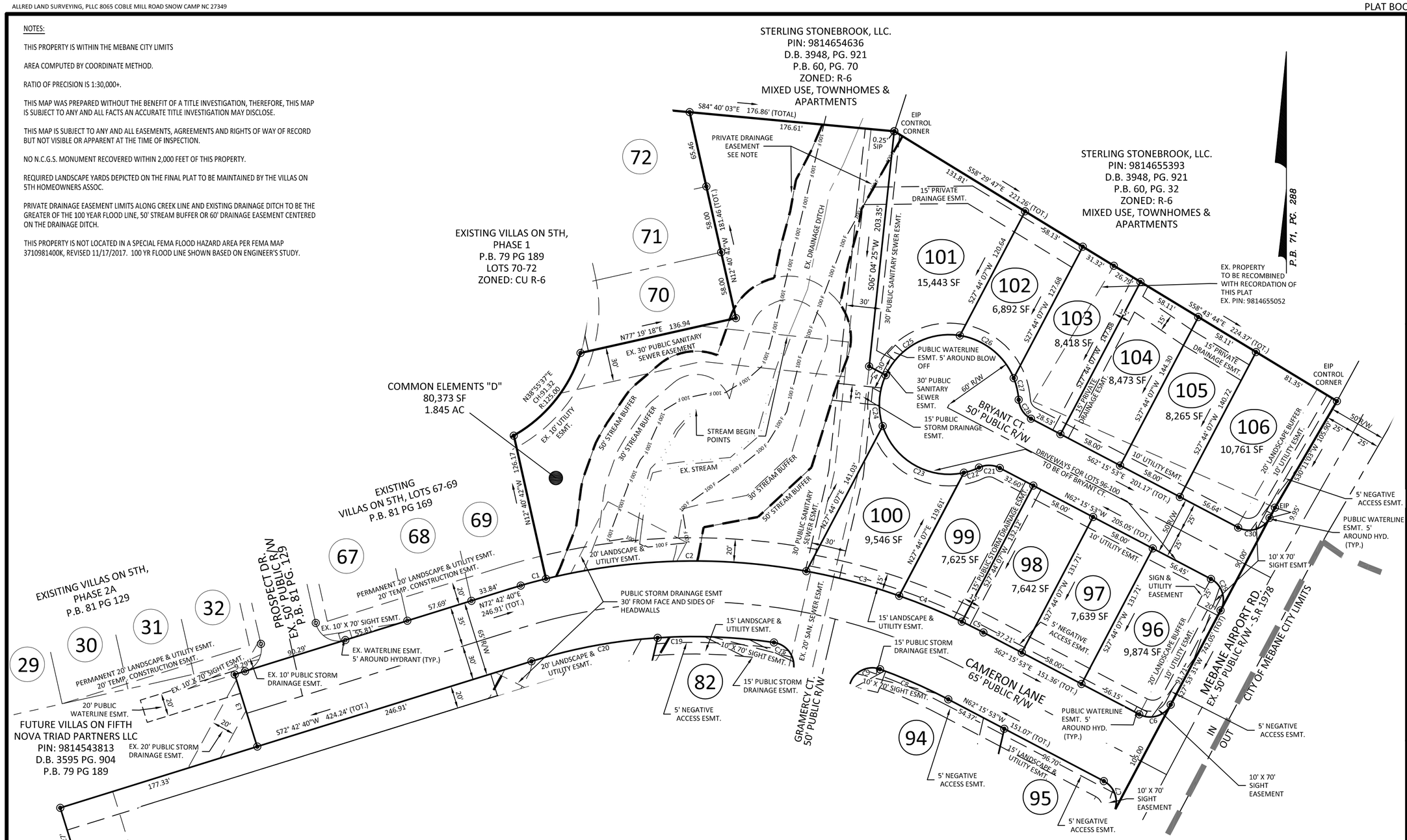
THIS MAP IS SUBJECT TO ANY AND ALL EASEMENTS, AGREEMENTS AND RIGHTS OF WAY OF RECORD BUT NOT VISIBLE OR APPARENT AT THE TIME OF INSPECTION.

NO N.C.G.S. MONUMENT RECOVERED WITHIN 2,000 FEET OF THIS PROPERTY.

REQUIRED LANDSCAPE YARDS DEPICTED ON THE FINAL PLAT TO BE MAINTAINED BY THE VILLAS ON 5TH HOMEOWNERS ASSOC.

PRIVATE DRAINAGE EASEMENT LIMITS ALONG CREEK LINE AND EXISTING DRAINAGE DITCH TO BE THE GREATER OF THE 100 YEAR FLOOD LINE, 50' STREAM BUFFER OR 60' DRAINAGE EASEMENT CENTERED ON THE DRAINAGE DITCH.

THIS PROPERTY IS NOT LOCATED IN A SPECIAL FEMA FLOOD HAZARD AREA PER FEMA MAP 3710981400K, REVISED 11/17/2017. 100 YR FLOOD LINE SHOWN BASED ON ENGINEER'S STUDY.



Line Table		
Line #	Length	Direction
L1	20.00'	S41° 07' 33"E
L2	41.92'	S06° 28' 53"E
L3	65.00'	N17° 17' 20"W
L4	16.16'	N62° 15' 53"W

Curve Table				Curve Table				Curve Table			
Curve #	Bearing	Chord	Radius	Curve #	Bearing	Chord	Radius	Curve #	Bearing	Chord	Radius
C1	N74° 28' 55"E	33.06'	535.00'	C11	S47° 28' 55"E	17.03'	30.00'	C21	N88° 50'03"W	17.89'	20.00'
C2	N88° 19' 57"E	223.92'	535.00'	C12	S29° 37' 29"E	67.70'	60.00'	C22	S71° 08' 25"W	13.68'	60.00'
C3	S75° 09' 38"E	82.60'	535.00'	C13	S26° 47' 22"W	45.12'	60.00'	C23	N60° 08' 29"W	80.57'	60.00'
C4	S67° 36' 45"E	58.25'	535.00'	C14	S66° 11' 47"W	35.73'	60.00'	C24	N03° 27' 21"E	43.83'	60.00'
C5	S63° 22' 41"E	20.79'	535.00'	C15	N76° 11' 00"W	41.63'	60.00'	C25	N61° 52' 43"E	72.22'	60.00'
C6	N72° 48' 49"E	28.25'	20.00'	C16	N37° 36' 26"W	37.64'	60.00'	C26	S51° 40' 01"E	59.01'	60.00'
C7	N17° 11' 11"W	28.32'	20.00'	C17	N03° 04' 08"W	33.60'	60.00'	C27	S13° 04'38"E	19.05'	60.00'
C8	N66° 10' 50"W	64.19'	470.00'	C18	N34° 11' 33"W	29.44'	20.00'	C28	S33° 06' 10"E	19.49'	20.00'
C9	S61° 32' 51"W	29.89'	20.00'	C19	N87° 41' 30"W	100.14'	470.00'	C29	N17° 06' 29"W	28.28'	20.00'
C10	S08° 54' 06"E	22.57'	30.00'	C20	S79° 27' 07"W	110.34'	470.00'	C30	S72° 48' 49"E	28.25'	20.00'

CERTIFICATE OF SURVEY ACCURACY

I, JEFFREY T. ALLRED, PLS, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DEED DESCRIPTION RECORDED IN BOOK AS SHOWN, PAGE AS SHOWN ,ETC.); THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN FROM INFORMATION FOUND IN BOOK (AS SHOWN) PAGE (AS SHOWN); THAT THE RATIO OF PRECISION AS CALCULATED IS 1:30,000; THIS PLAT WAS PREPARED IN ACCORDANCE WITH N.C.G.S. 47-30 AS AMENDED. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS 8TH DAY OF SEPTEMBER, 2020 A.D.

THIS SURVEY CREATES A SUBDIVISION OF LAND WITHIN THE AREA OF A COUNTY OR MUNICIPALITY THAT HAS AN ORDINANCE THAT REGULATES PARCELS OF LAND.

PRELIMINARY

PROFESSIONAL LAND SURVEYOR

REGISTRATION NUMBER

ALLRED LAND SURVEYING, PLLC

JEFF ALLRED, PLS ~ L-4500
8065 COBLE MILL ROAD
SNOW CAMP, NC 27349
PHONE: 336-684-8202

FINAL PLAT

VILLAS ON 5TH, PHASE 2B

PROPERTY OWNER INFORMATION:
NOVA TRIAD PARTNERS, LLC
206 NORTH SPRUCE SREET, SUITE 2B
WINSTON SALEM, NC 27101

PROJECT LOCATION:
STATE: NC
COUNTY: ALAMANCE
TOWNSHIP: MEBANE

NO.	DATE	REVISION NOTE
A		
A		
A		
A		
A		
A		

DRAWING FILE PATH: E:\Carlson Projects\

DRAWN BY: AGB
CHECKED BY: JTA
DATE: 09/08/2020
PROJECT NO.:
REF. NO.:
SCALE: 1" = 60'

NORTH CAROLINA PROFESSIONAL SEAL L-4500 LAND SURVEYOR JEFFREY T. ALLRED

PRELIMINARY

SHEET

2 OF 2

AGENDA ITEM #5E

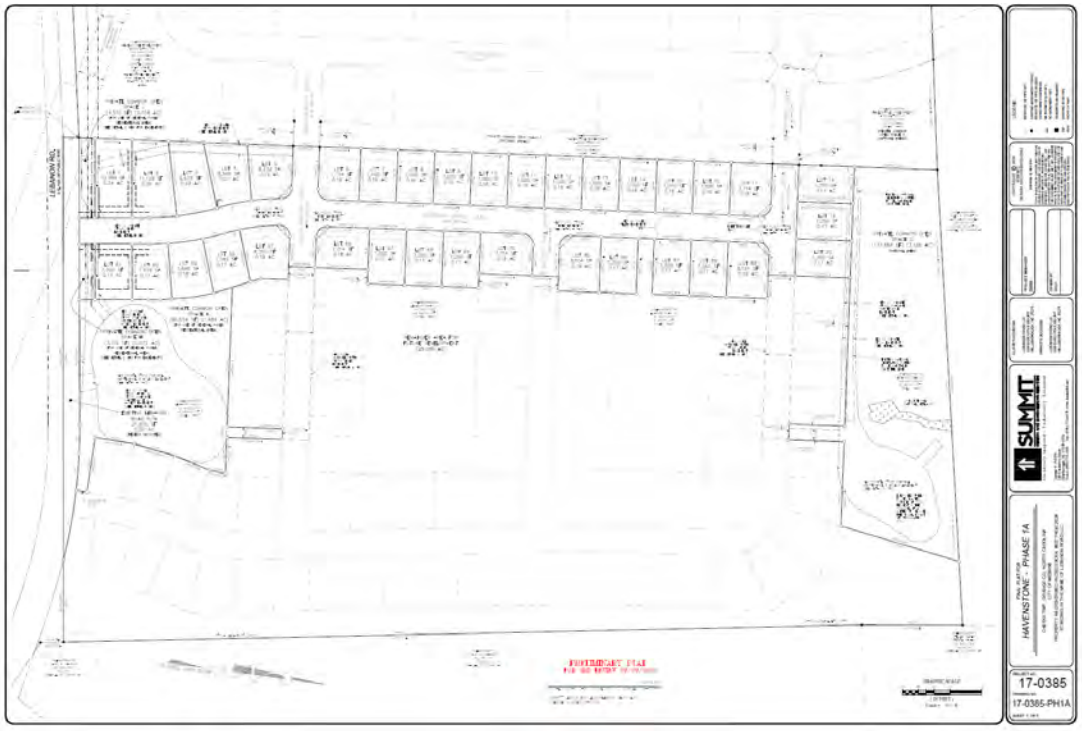
Final Subdivision Plat – Havenstone, Phase 1A

Presenter
Cy Stober, Development Director

Applicant
Lebanon Road Partners, LLC,
504 Meadowland Drive
Hillsborough, NC 27278

Public Hearing
Yes ☐ No ☒

Final Plat



Property
Havenstone, Phase 1, Orange County
GPIN 9825799832

Proposed Zoning
N/A

Current Zoning
R-10

Size
+/- 14.062 acres

Surrounding Zoning
R-20, R-10, AR (Orange Co.)

Surrounding Land Uses
Residential, Vacant

Utilities
Extended at developer's expense.

Floodplain
No

Watershed
Yes

City Limits
Yes

Summary

Lebanon Road, LLC, is requesting approval of the Final Plat for Phase 1A of the Havenstone Subdivision (approved for rezoning and special use by City Council as "Northeast Village, Phase 1" 12/04/17)). The Final Plat will include a total area of 14.062 acres featuring 35 lots of 6.184 acres, 5.321 acres of four open and recreational areas, and 1,775 linear feet and 2.557 acres of dedicated right of way.

The Technical Review Committee (TRC) has reviewed the Final Plat and the applicant has revised the plan to reflect its comments. All infrastructure must be completed and approved to meet the City of Mebane Specifications. All infrastructure not completed shall be bonded or a letter of credit provided prior to recordation.

Financial Impact

The developer has extended utilities at his own expense.

Recommendation

Staff recommends approval of the Final Plat.

Suggested Motion

Motion to approve the final plat as presented.

Attachments

1. Final Plat

CERTIFICATE OF OWNERSHIP AND DEDICATION

THIS CERTIFIES THAT THE UNDERSIGNED IS (ARE) THE OWNER(S) OF THE PROPERTY SHOWN ON THIS MAP, HAVING ACQUIRED TITLE TO IT BY DEED(S) RECORDED IN THE ALAMANCE/ORANGE COUNTY, NORTH CAROLINA REGISTER OF DEEDS OTHERWISE AS SHOWN BELOW AND THAT BY SUBMISSION OF THIS PLAT OR MAP FOR APPROVAL, I/WE DO DEDICATE TO THE CITY OF MEBANE FOR PUBLIC USE ALL STREETS, EASEMENTS, RIGHTS-OF-WAY AND PARKS SHOWN THEREON FOR ALL LAWFUL PURPOSES TO WHICH THE CITY MAY DEVOTE OR ALLOW THE SAME TO BE USED AND UPON ACCEPTANCE THEREOF AND IN ACCORDANCE WITH ALL CITY POLICIES, ORDINANCES AND REGULATIONS OR CONDITIONS OF THE CITY OF MEBANE FOR THE BENEFIT OF THE PUBLIC, THIS DEDICATION SHALL BE IRREVOCABLE. ALSO, ALL PRIVATE STREETS SHOWN ON THIS MAP, IF ANY, ARE TO BE AVAILABLE FOR PUBLIC USE. PROVIDED, HOWEVER, THE "COMMON ELEMENTS" SHOWN HEREON EXPRESSLY ARE NOT DEDICATED HEREBY FOR USE BY THE GENERAL PUBLIC, BUT ARE TO BE

CONVEYED BY _____ TO _____ HOMEOWNERS ASSOCIATION, INC. FOR THE USE AND ENJOYMENT OF THE MEMBERS THEREOF PURSUANT TO THE TERMS OF THAT CERTAIN DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR

_____ RECORDED IN BOOK_____, PAGE_____, _____ COUNTY REGISTRY, THE TERMS AND PROVISIONS OF WHICH ARE INCORPORATED HEREIN BY THIS REFERENCE.

_____ BY THE RECORDATION OF THIS PLAT, HEREBY GIVES, GRANTS AND CONVEYS TO A UTILITY AND THE CITY OF MEBANE, THEIR RESPECTIVE SUCCESSORS AND ASSIGNS, RIGHTS-OF-WAY AND EASEMENTS TO MAINTAIN AND SERVICE THEIR RESPECTIVE WIRES, LINES, CONDUITS, AND PIPES IN THEIR PRESENT LOCATIONS WITHIN THE "COMMON ELEMENTS" AS SHOWN HEREON TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS OVER AND UPON SAID "COMMON ELEMENTS" FOR THE PURPOSE OF MAINTAINING AND SERVICING WIRES, LINES,CONDUITS, AND PIPES.

_____ _____
OWNER DATE

_____ _____
OWNER DATE

_____ _____
(NOTARIZED) DATE

BOOK NO._____ PAGE NO._____
/S/_____

_____COUNTY, NORTH CAROLINA

I CERTIFY THAT THE FOLLOWING PERSON(S) PERSONALLY APPEARED BEFORE ME THIS DAY, EACH ACKNOWLEDGING TO ME THAT HE OR SHE SIGNED THE FOREGOING DOCUMENT:

_____.
NAME(S) OF PRINCIPAL(S)

DATE:_____

_____
OFFICIAL SIGNATURE OF NOTARY

_____NOTARY PUBLIC
NOTARY'S PRINTED NAME

MY COMMISSION EXPIRES:_____

CERTIFICATE OF FINAL MAJOR SUBDIVISION PLAT APPROVAL AND ACCEPTANCE OF DEDICATION

I, _____ THE CITY CLERK OF MEBANE, NORTH CAROLINA, DO CERTIFY THAT THE CITY OF MEBANE APPROVED THIS PLAT OR MAP AND ACCEPTED THE DEDICATION OF THE STREETS, EASEMENTS, RIGHT-OF-WAY AND PUBLIC PARKS SHOWN THEREON, BUT ASSUMES NO RESPONSIBILITY TO OPEN OR MAINTAIN THE SAME, UNTIL IN THE OPINION OF THE CITY COUNCIL OF THE CITY OF MEBANE IT IS IN THE PUBLIC INTEREST TO DO SO.

_____
DATE CITY CLERK

STATE OF NORTH CAROLINA
ORANGE COUNTY

I, _____ , REVIEW OFFICER OF ORANGE COUNTY, CERTIFY THAT THIS MAP OR PLAT TO WHICH THIS CERTIFICATION IS AFFIXED MEETS ALL STATUTORY REQUIREMENTS FOR RECORDING FOR WHICH THE REVIEW OFFICER HAS RESPONSIBILITY AS PROVIDED BY LAW.

_____
REVIEW OFFICER DATE OF CERTIFICATION
ORANGE COUNTY LAND RECORDS/GIS

PUBLIC WATER SUPPLY WATERSHED STATEMENT

'ALL OR PORTIONS OF THE PROPERTY CONTAINED IN THIS SUBDIVISION ARE LOCATED WITHIN A PUBLIC WATER SUPPLY WATERSHED. ADDITIONAL DEVELOPMENT RESTRICTIONS REGARDING SUCH MATTERS AS RESIDENTIAL DENSITY, MAXIMUM IMPERVIOUS SURFACE AREA, AND STORMWATER CONTROL MEASURES MAY APPLY TO THIS PROPERTY. ANY ENGINEERED STORMWATER CONTROLS SHOWN ON THIS PLAT ARE TO BE OPERATED AND MAINTAINED BY THE PROPERTY OWNERS AND/OR A PROPERTY OWNERS' ASSOCIATION PURSUANT TO THE OPERATION AND MAINTENANCE AGREEMENT FILED WITH THE ALAMANCE/ORANGE COUNTY OFFICE OF THE REGISTER OF DEEDS IN BOOK _____ PAGE _____.'

CERTIFICATE OF APPROVAL FOR RECORDING IN PUBLIC WATER SUPPLY WATERSHED

I CERTIFY THE PLAT SHOWN HEREON COMPLIES WITH ARTICLE 5, SECTION 5-2 WATERSHED OVERLAY DISTRICTS OF THE MEBANE UNIFIED DEVELOPMENT ORDINANCE AND IS APPROVED FOR RECORDING IN REGISTER OF DEEDS OFFICE.
NOTICE: THIS PROPERTY IS LOCATED WITHIN A PUBLIC DRINKING WATER SUPPLY WATERSHED. DEVELOPMENT RESTRICTIONS MAY APPLY.

_____
DATE ZONING ADMINISTRATOR
(AUTHORIZED OFFICIAL)

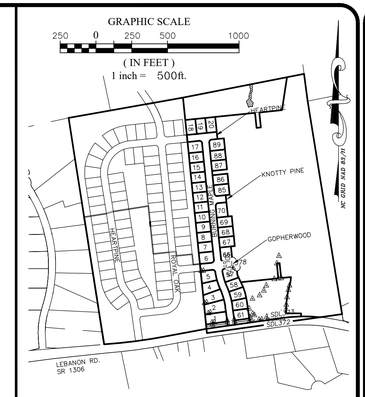
CERTIFICATE OF PRELIMINARY MAJOR SUBDIVISION PLAT APPROVAL

I HEREBY CERTIFY THAT THE CITY OF MEBANE PLANNING BOARD

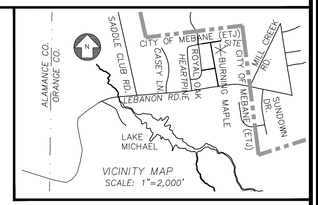
APPROVED ON THE DAY OF _____ THE PRELIMINARY PLAT OF SUBDIVISION AS SHOWN ON THIS PLAT. PRELIMINARY PLAT APPROVAL IS VALID FOR A PERIOD OF 12 MONTHS FROM THE ABOVE DATE OR AS ESTABLISHED UNDER THE VESTED RIGHTS PROCEDURES, IF APPLICABLE.

_____ _____
PLANNING DIRECTOR DATE

GRAPHIC SCALE
250 0 250 500 1000
(IN FEET)
1 inch = 500ft.



INSET MAP



VICINITY MAP
SCALE: 1"=2,000'

LEGEND:
- ○ IRON ROD OR PIPE SET
- ◉ IRON ROD OR PIPE FOUND; BENT/DISTURBED UNLESS OTHERWISE DESCRIBED
- △ MATHEMATICAL POINT; NO MONUMENT SET
- ■ CONCRETE MONUMENT
- EIP EXISTING IRON PIPE
- ROW RIGHT OF WAY

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DESIGN AND ENGINEERING SUMMIT, INC.
DRAWING ALTERATION
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT, ENGINEER, SURVEYOR, ENGINEER, LANDSCAPE ARCHITECT, OR LICENSED PROFESSIONAL LAND SURVEYOR, TO ALTER THIS DOCUMENT IN ANY WAY. ANY LICENSEE WHO ALTERS THIS DOCUMENT SHALL AFFIX HIS OR HER SEAL AND THE NOTATION "ALTERED" FOLLOWED BY HIS OR HER SIGNATURE AND SPECIFIC DESCRIPTION OF THE ALTERATIONS.

PROJECT MANAGER: BWW

DRAWN BY: RAH

CLIENT'S ADDRESS
LEBANON ROAD LLC
320 EXECUTIVE COURT
HILLSBOROUGH, NC 27278

OWNER'S ADDRESS
LEBANON ROAD LLC
320 EXECUTIVE COURT
HILLSBOROUGH, NC 27278

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Hillsborough, NC 27278-8353
Voice (919) 732-3883 Fax (919) 732-6676 www.summitde.net

FINAL PLAT OF
HAVENSTONE - PHASE 1A
CHEEKS TWP., ORANGE CO., NORTH CAROLINA
CITY OF MEBANE
PROPERTY AS DESCRIBED IN DEED BOOK 6627 PAGE 2024
STANDING IN THE NAME OF LEBANON ROAD LLC

PROJECT NO.
17-0385
DRAWING NO.
17-0385-PH1A
SHEET 1 OF 3

LINE TABLE		
LINE #	DIRECTION	LENGTH
L1	N07°58'38"W	29.77'
L2	N07°58'38"W	29.60'
L3	N07°58'38"W	70.00'
L4	N07°58'38"W	70.00'
L5	N07°59'01"W	32.71'
L6	N07°58'38"W	30.75'
L8	S08°00'06"E	32.69'
L9	S07°58'38"E	70.00'
L10	S07°58'38"E	29.87'
L11	S12°01'52"E	22.30'
L12	S07°58'39"E	22.30'
L13	S19°15'45"E	39.81'
L14	S12°01'52"E	39.81'
L15	S25°29'49"E	35.95'
L16	S25°29'49"E	37.06'
L17	S05°47'49"E	52.59'
L18	S25°29'49"E	19.72'
L19	S81°54'33"W	50.00'
L20	S81°54'33"W	150.83'
L21	S81°54'33"W	105.00'

LINE TABLE		
LINE #	DIRECTION	LENGTH
L22	N05°47'50"W	30.25'
L23	S05°47'49"E	27.00'
L24	S05°47'49"E	42.11'
L25	N05°47'49"W	62.89'
L26	S05°47'49"E	43.00'
L27	N05°47'49"W	27.00'
L28	S05°47'49"E	30.04'
L29	S05°47'49"E	30.19'

CURVE TABLE						
CURVE #	RADIUS	LENGTH	DELTA	TANGENT	CHORD BEARING	CHORD
C1	525.00'	35.19'	3°50'26"	17.60'	N10° 06' 39"W	35.18'
C2	1074.00'	53.06'	2°49'50"	26.53'	S83° 18' 50"W	53.05'
C3	525.00'	66.26'	7°13'53"	33.17'	N15° 38' 48"W	66.22'
C4	1030.00'	133.26'	7°24'45"	66.72'	N87° 35' 29"W	133.16'
C5	525.00'	42.90'	4°40'54"	21.46'	N21° 36' 12"W	42.89'
C6	400.00'	28.69'	4°06'36"	14.35'	S21° 55' 13"E	28.69'
C7	400.00'	75.33'	10°47'23"	37.78'	S14° 28' 14"E	75.22'
C8	450.00'	65.72'	8°22'06"	32.92'	S19° 46' 28"E	65.67'
C9	20.00'	32.56'	93°17'21"	21.18'	S37° 33' 29"W	29.08'
C10	20.00'	31.02'	88°52'30"	19.61'	S50° 14' 04"E	28.01'
C11	20.00'	31.42'	90°00'00"	20.00'	S39° 12' 10"W	28.28'
C12	20.00'	30.63'	87°45'00"	19.23'	S49° 40' 19"E	27.72'
C13	20.00'	30.63'	87°45'00"	19.23'	S38° 04' 41"W	27.72'
C14	20.00'	31.02'	88°52'30"	19.61'	N51° 21' 35"W	28.01'
C15	20.00'	30.24'	86°37'30"	18.86'	N40° 53' 25"E	27.44'
C16	20.00'	29.71'	85°06'38"	18.36'	N51° 00' 07"W	27.05'
C17	475.00'	1.05'	0°07'38"	0.53'	N23° 53' 41"W	1.05'
C18	450.00'	56.10'	7°08'36"	28.09'	S12° 01' 07"E	56.07'
C19	475.00'	77.32'	9°19'37"	38.75'	N19° 10' 04"W	77.24'
C20	471.83'	52.18'	6°20'10"	26.12'	N11° 20' 48"W	52.15'
C21	1030.00'	71.43'	3°58'25"	35.73'	S86° 42' 57"W	71.42'

LINE TABLE		
LINE #	DIRECTION	LENGTH
SDL300	S84°12'11"W	10.00'
SDL301	S84°12'10"W	10.00'
SDL302	N05°47'49"W	120.00'
SDL303	N84°12'11"E	150.00'
SDL304	N84°12'11"E	140.00'
SDL305	N79°47'28"E	112.29'
SDL306	N54°30'37"E	30.53'
SDL307	S53°54'16"E	53.55'
SDL308	S36°03'40"W	20.00'
SDL309	N53°54'15"W	52.99'
SDL310	N70°22'37"E	55.24'
SDL311	S83°25'02"W	49.83'
SDL312	S05°47'49"E	145.27'
SDL313	N84°12'11"E	263.00'
SDL314	N05°47'49"W	95.00'
SDL315	N83°25'02"E	20.00'
SDL316	S84°12'11"W	50.82'
SDL317	S84°12'11"W	97.18'
SDL318	N84°12'11"E	140.00'
SDL319	N84°12'11"E	130.00'
SDL320	N05°47'49"W	95.00'

LINE TABLE		
LINE #	DIRECTION	LENGTH
SDL321	N05°47'49"W	49.74'
SDL322	N05°47'49"W	13.16'
SDL323	N05°47'50"W	1.94'
SDL324	S77°41'14"W	71.02'
SDL325	N84°12'11"E	279.59'
SDL326	N80°27'32"E	128.37'
SDL327	N09°32'28"W	15.00'
SDL328	N80°27'32"E	128.86'
SDL329	N84°12'11"E	279.23'
SDL330	S77°41'14"W	71.88'
SDL331	S07°55'26"E	7.50'
SDL332	S07°55'26"E	7.50'
SDL333	S82°01'47"W	104.84'
SDL334	N15°49'54"W	15.15'
SDL335	N21°39'10"W	69.98'
SDL336	S20°25'34"E	76.50'
SDL337	S05°47'49"E	224.41'
SDL338	N84°12'11"E	15.00'
SDL339	N84°12'13"E	4.00'
SDL340	S05°47'49"E	222.47'
SDL341	S20°25'14"E	74.27'

LINE TABLE		
LINE #	DIRECTION	LENGTH
SDL342	S21°39'10"E	73.63'
SDL343	N82°01'56"E	91.49'
SDL344	N07°58'38"W	7.59'
SDL345	N07°58'38"W	7.41'
SDL346	S81°57'51"W	110.56'
SDL347	S39°26'54"W	30.84'
SDL349	S39°26'54"W	37.08'
SDL350	S81°57'51"W	116.41'
SDL351	N84°12'11"E	288.00'
SDL368	N68°20'50"E	15.00'
SDL369	N19°27'25"W	32.85'
SDL370	S81°54'33"W	30.60'
SDL371	N19°27'25"W	27.81'
SDL372	S81°54'33"W	55.50'
SDL373	N81°54'33"E	6.57'
SDL374	S05°47'49"E	156.05'
SDL375	N05°47'49"W	105.44'
SDL376	S84°12'11"W	282.25'
SDL377	N84°12'11"E	326.75'
SDL378	N84°12'01"E	24.50'
SDL379	N05°47'49"W	50.00'

CURVE TABLE						
CURVE #	RADIUS	LENGTH	DELTA	TANGENT	CHORD BEARING	CHORD
SDC300	40.30'	17.25'	24°31'36"	8.76'	N71° 00' 29"E	17.12'
SDC301	38.59'	36.02'	53°28'27"	19.44'	N29° 00' 06"E	34.72'
SDC302	174.83'	68.93'	22°35'19"	34.92'	S13° 33' 32"W	68.48'
SDC303	90.80'	44.67'	28°11'16"	22.80'	S56° 16' 59"W	44.22'
SDC304	39.22'	98.56'	143°58'55"	120.64'	N40° 14' 42"W	74.59'
SDC305	538.11'	101.02'	10°45'24"	50.66'	S22° 56' 57"W	100.87'
SDC306	93.14'	94.60'	58°11'48"	51.84'	N55° 06' 16"E	90.59'
SDC307	99.20'	44.48'	25°41'38"	22.62'	S34° 55' 36"E	44.11'
SDC308	68.59'	77.56'	64°47'33"	43.52'	S18° 42' 49"W	73.50'
SDC309	1081.20'	55.16'	2°55'24"	27.59'	N64° 40' 33"E	55.16'
SDC310	107.13'	44.99'	24°03'53"	22.83'	N41° 26' 09"E	44.66'
SDC311	84.16'	73.78'	50°13'56"	39.45'	S50° 39' 47"W	71.44'
SDC312	246.03'	29.27'	6°48'55"	14.65'	S80° 10' 23"W	29.25'
SDC313	58.31'	84.30'	82°49'56"	51.44'	N48° 48' 59"W	77.15'
SDC314	630.00'	33.10'	3°00'36"	16.55'	S14° 14' 44"W	33.09'
SDC315	630.00'	50.55'	4°35'51"	25.29'	S10° 26' 30"W	50.54'
SDC316	630.00'	52.93'	4°48'51"	26.48'	S05° 44' 09"W	52.92'
SDC317	642.74'	32.26'	2°52'34"	16.14'	S01° 52' 51"W	32.26'
SDC318	43.80'	46.27'	60°32'14"	25.56'	N51° 46' 44"E	44.15'
SDC319	339.33'	55.62'	9°23'28"	27.87'	S80° 06' 33"W	55.56'
SDC320	99.20'	90.50'	52°16'21"	48.67'	S82° 35' 06"E	87.40'

CURVE TABLE						
CURVE #	RADIUS	LENGTH	DELTA	TANGENT	CHORD BEARING	CHORD
SDC321	450.00'	5.13'	0°39'11"	2.56'	S08° 46' 24"E	5.13'
SDC322	400.00'	5.33'	0°45'47"	2.66'	S09° 27' 26"E	5.33'
SDC323	99.20'	15.02'	8°40'31"	7.52'	S52° 06' 40"E	15.01'
SDC324	659.77'	30.02'	2°36'25"	15.01'	S72° 25' 29"W	30.02'
SDC325	339.33'	15.31'	2°35'05"	7.65'	S68° 35' 51"W	15.31'
SDC326	706.24'	20.01'	1°37'24"	10.01'	S85° 56' 16"W	20.01'

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 PLAT "FINAL PLAT CHERRY PLACE" BY STEVE F. YUHASZ, PLS, DATED 12/21/01, AND RECORDED IN PB 89/151

SEE PLAT "FINAL PLAT FOR HAVENSTONE-PHASE 2A" BY THOMAS A. TELLUP, PLS, DATED 7/23/19, AND RECORDED IN PB 120/122

SEE PLAT "FINAL PLAT FOR HAVENSTONE-PHASE 2B" BY THOMAS A. TELLUP, PLS, DATED 12/9/19, AND RECORDED IN PB 121/49.

NOTE "H"
THIS PROPERTY IS NOT LOCATED IN A HAZARDOUS FLOOD ZONE AS SHOW ON FEMA FLOOD PANEL MAP NUMBER 3710982500L & 3710982600L EFFECTIVE DATE: 11/17/17

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

NOTE "J"
THIS PROPERTY IS WITHIN THE CAPE FEAR RIVER BASIN.
GRAHAM-MEBANE RESERVOIR WATER SUPPLY (II) WATERSHED

NOTE "L"
ZONING: R-10
MAXIMUM BUILDING HEIGHT: 35 FT
BUILDING FRONT SETBACK: 20 FT
BUILDING REAR SETBACK: 20 FT*
BUILDING SIDE SETBACK: 5 FT
15 FT AGGREGATE
CORNER LOTS ADD 8 FT TO SIDE SETBACK
* REAR SETBACK FOR FUTURE LOTS 28-46 ARE 25 FT.

LAND USE: RESIDENTIAL CLUSTER
BY SUP (12/04/2017)

PARCEL REMAINDER TABLE		
DESCRIPTION	UNITS	TOTAL ACRES
PARCEL AREA		34.786
LOTS	35	-6.184
OPEN SPACES	4	-5.321
ROADS		-2.557
PARCEL REMAINDER		20.724
TOTAL DEDICATED TO PUBLIC RW		(2.557)

SITE SUMMARY
PHASE 1A TOTAL AREA = 14.062 ACRES
35 LOTS TOTAL = 6.184 ACRES
4 OPEN SPACES = 5.321 ACRES
R/W DEDICATION = 2.557 ACRES
TOTAL IMPERVIOUS SURFACE AREA = 68,973 SF
TOTAL LINEAR FEET OF ROADS = 1,775 FT

REF.:
PIN# 9825896739
PB 98/48
DB 6627/2024

CERTIFICATE OF OF SURVEY AND ACCURACY

I, BRANTLEY W. WELLS, PLS, L-4544, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DEED DESCRIPTION RECORDED IN BOOK 6627; PAGE 2024, ETC.) (OTHER); THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN FROM INFORMATION FOUND IN BOOK _____ PAGE _____; THAT THE RATIO OF PRECISION OR POSITIONAL ACCURACY AS CALCULATED IS 1:10,000; THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH NCGS 47-30 AS AMENDED. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS _____ DAY OF _____, A.D.,_____

_____
SURVEYOR

_____
REGISTRATION NUMBER

CERTIFICATE OF PURPOSE OF PLAT

THIS SURVEY CREATES A SUBDIVISION OF LAND WITHIN THE AREA OF A COUNTY OR MUNICIPALITY THAT HAS AN ORDINANCE THAT REGULATES PARCELS OF LAND.

_____
SURVEYOR

_____
DATE

I, BRANTLEY W. WELLS, PLS, L-4544, 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: 1/25/2018
(5) DATUM/EPOCH: 83/11
(6) PUBLISHED/FIXED CONTROL USED: HELD VRS
(7) GEOID MODEL: 2012A
(8) COMBINED GRID FACTOR: 0.999957661
(9) UNITS: US SURVEY FEET

I HEREBY CERTIFY THAT THIS PLAT IS OF THE FOLLOWING TYPE:

G.S. 47-30 (f)(11)(A). THIS SURVEY CREATES A SUBDIVISION OF LAND WITHIN THE AREA OF A COUNTY OR MUNICIPALITY THAT HAS AN ORDINANCE THAT REGULATES PARCELS OF LAND.

I, BRANTLEY W. WELLS, PLS, L-4544, 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 CLEARLY INDICATED AS DRAWN FROM INFORMATION IN BOOK/PAGE(AS NOTED HEREON); THAT THE RATIO OF PRECISION OR POSITIONAL ACCURACY AS CALCULATED IS 1:10000+; THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED. WITNESS MY ORIGINAL SIGNATURE, LICENSE NUMBER AND SEAL THIS 4TH DAY OF AUGUST, 2020.

PRELIMINARY PLAT
FOR 3RD REVIEW 09/09/2020

_____
PROFESSIONAL LAND SURVEYOR LICENSE NUMBER L-4544

SUMMIT DESIGN AND ENGINEERING SERVICES
LICENSE NUMBER P-0339

LEBANON RD.
S.R. 1306 (60' PUBLIC R/W)

N=859041.73
E=1928321.73

ROYAL OAK LANE
50' PUBLIC R/W

GOPHERWOOD LANE
EX. 50' PUBLIC R/W

BURNING MAPLE LANE
NEW 50' PUBLIC R/W

KNOTTY PINE DRIVE
NEW 50' PUBLIC R/W

HEARTPINE DRIVE
EX. 50' PUBLIC R/W

HEARTPINE DRIVE
NEW 50' PUBLIC R/W

CITY OF MEBANE/ETJ LIMITS

PIN#9825892105
HAVENSTONE HOMEOWNERS ASSOCIATION INC
DB 6644/1184
PB 121/49-52
ZONED: R-10
PRIVATE COMMON OPEN SPACE D
(FOR USE OF HAVENSTONE RESIDENTS AND GENERAL PUBLIC. AMENITY & PARKING AREA)

A1&T UTILITY EASEMENT DB 4602/2019 DB 4622/2024

PRIVATE COMMON OPEN SPACE J
(4,510 SF) (0.104 AC)
(FOR USE OF GENERAL PUBLIC RECREATIONAL AREA)
(SEE DETAIL C SH3 FOR EASEMENTS)

NEW 15' PRIVATE STORM EASEMENT (SEE DETAIL H SH3)

LOT 1 10,384 SF 0.24 AC
LOT 2 11,129 SF 0.26 AC
LOT 3 9,625 SF 0.22 AC
LOT 4 8,566 SF 0.20 AC
LOT 5 8,232 SF 0.19 AC
LOT 57 8,350 SF 0.19 AC
LOT 58 7,382 SF 0.17 AC
LOT 59 7,686 SF 0.18 AC
LOT 60 7,525 SF 0.17 AC
LOT 61 7,350 SF 0.17 AC

NEW 15' PRIVATE STORM SEWER EASEMENT (SEE DETAIL H SH3)

NEW PUBLIC STORM SEWER EASEMENT (SEE DETAIL H SH3)

NEW 15' PUBLIC STORM SEWER & STORM DRAINAGE MAINTENANCE & ACCESS EASEMENT (SEE DETAIL A SH3)

PRIVATE COMMON OPEN SPACE K
(86,659 SF) (1.989 AC)
(FOR USE OF GENERAL PUBLIC RECREATIONAL AREA)

PRIVATE COMMON OPEN SPACE H
(3,115 SF) (0.072 AC)
(FOR USE OF GENERAL PUBLIC RECREATIONAL AREA)
(SEE DETAIL D SH3 FOR EASEMENTS)

NEW PRIVATE STORM DRAINAGE MAINTENANCE & ACCESS EASEMENT (SEE DETAIL A, SH3)

NEW 30' PUBLIC STORM SEWER & STORM DRAINAGE MAINTENANCE & ACCESS EASEMENT (SEE DETAIL A SH3)

EXISTING LEBANON ROAD R/W
21,905 SF
0.50 AC
(HEREBY DEDICATED)

PIN#9825896739
LEBANON ROAD LLC
DB 6627/2024
PB 98/48 LOT 1
ZONED: R-10

PRIVATE COMMON OPEN SPACE F
(NATURAL AREAS)

PIN#9825891874
HAVENSTONE HOMEOWNERS ASSOCIATION INC
DB 6644/1184
PB 121/49-52
ZONED: R-10

LOT 6 7,714 SF 0.18 AC
LOT 7 7,000 SF 0.16 AC
LOT 8 7,000 SF 0.16 AC
LOT 9 7,000 SF 0.16 AC
LOT 10 7,000 SF 0.16 AC
LOT 11 7,025 SF 0.16 AC
LOT 12 7,000 SF 0.16 AC
LOT 13 7,000 SF 0.16 AC
LOT 14 7,000 SF 0.16 AC
LOT 15 7,000 SF 0.16 AC
LOT 16 7,000 SF 0.16 AC
LOT 17 7,714 SF 0.18 AC
LOT 66 7,714 SF 0.18 AC
LOT 67 7,350 SF 0.17 AC
LOT 68 7,350 SF 0.17 AC
LOT 69 7,350 SF 0.17 AC
LOT 70 7,714 SF 0.18 AC
LOT 85 8,104 SF 0.19 AC
LOT 86 7,350 SF 0.17 AC
LOT 87 7,350 SF 0.17 AC
LOT 88 7,350 SF 0.17 AC
LOT 89 8,104 SF 0.19 AC

NEW PUBLIC STORM SEWER EASEMENT (SEE DETAIL E SH3)

NEW PUBLIC STORM SEWER EASEMENT (SEE DETAIL F SH3)

NEW 10' PUBLIC UTILITY EASEMENT (TYP)

10'X70' SIGHT TRIANGLE

10'X70' SIGHT TRIANGLE (TYP)

NEW PUBLIC STORM SEWER EASEMENT (SEE DETAIL G SH3)

PIN#9825896739
LEBANON ROAD LLC
DB 6627/2024
PB 98/48 LOT 1
ZONED: R-10

PIN#9826800586
HAVENSTONE HOMEOWNERS ASSOCIATION INC
DB 6644/1184
PB 121/49-52
ZONED: R-10
PRIVATE COMMON OPEN SPACE B
(NATURAL AREAS)

LOT 18 7,350 SF 0.17 AC
LOT 19 7,350 SF 0.17 AC
LOT 20 7,350 SF 0.17 AC

EXISTING NATURAL VEGETATION BUFFER TO BE MAINTAINED PAST THIS LINE

PRIVATE COMMON OPEN SPACE G
(137,464 SF) (3.156 AC)
(NATURAL AREA)

PIN#9826280480
GLEN G. WRIGHT III AND MARY COOTER
DB 6313/221
PB 89/151 LOT 5
ORANGE CO. ZONING AR

NEW 25' PRIVATE STORM DRAINAGE MAINTENANCE EASEMENT (SEE DETAIL B SH3)

NEW 15' PRIVATE STORM EASEMENT (SEE DETAIL B SH3)

EXISTING NATURAL VEGETATION BUFFER TO BE MAINTAINED PAST THIS LINE

PIN#9825896739
LEBANON ROAD LLC
DB 6627/2024
PB 98/48 LOT 1
ZONED: R-10

JURISDICTIONAL NATURAL WETLANDS

NEW PUBLIC VARIABLE WIDTH STORM SEWER EASEMENT (SEE DETAIL B SH3)

NEW PRIVATE STORM DRAINAGE MAINTENANCE & ACCESS EASEMENT (SEE DETAIL B, SH3)

EVERGREEN TREES TO BE PLANTED OUTSIDE OF POND FENCE FOR THE PURPOSE OF A BUFFER TO REDUCE THE VISUAL IMPACT OF STORMWATER POND.

REMAINDER AREA FOR FUTURE DEVELOPMENT
(25.066 AC)

NEW PUBLIC VARIABLE WIDTH STORM SEWER EASEMENT (SEE DETAIL A SH3)

PIN#9825896739
LEBANON ROAD LLC
DB 6627/2024
PB 98/48 LOT 1
ZONED: R-10

PIN#9825896739
LEBANON ROAD LLC
DB 6627/2024
PB 98/48 LOT 1
ZONED: R-10

PIN#9826904111
DAVID M. SHAKLIN
DB 166/336
PB 7/40
ORANGE CO. ZONING AR

PIN#9825993138
DAVID M. SHAKLIN
DB 4242/497
PB 7/40
ORANGE CO. ZONING AR

PIN#9826900874
STEVEN BABER
TAMRA BABER
DB 6052/369
PB 61/93
ORANGE CO. ZONING AR

CITY OF MEBANE/ETJ LIMITS

1508.62
S09°11'01"E

190.77
S07°45'00"E

43.76 TIE
S09°13'31"E

NC GRID NAD 83/11

PRELIMINARY PLAT
FOR 3RD REVIEW 09/09/2020

09/09/20
PROFESSIONAL LAND SURVEYOR LIC. NUMBER L-4544

SUMMIT DESIGN AND ENGINEERING SERVICES
LICENSE NUMBER P-0339

GRAPHIC SCALE
30 0 30 60 120
(IN FEET)
1 inch = 60 ft.

LEGEND:
- IRON ROD OR PIPE SET
- EXISTING IRON PIPE FOUND; IRON ROD OR PIPE SET OTHERWISE DESCRIBED
- MATHEMATICAL POINT; NO MONUMENT SET
- CONCRETE MONUMENT
- EIP EXISTING IRON PIPE
- ROW RIGHT OF WAY

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DRAWING ALTERATION
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PROJECT MANAGER
BWW

DRAWN BY
RAH

CLIENT'S ADDRESS
LEBANON ROAD LLC
320 EXECUTIVE COURT
HILLSBOROUGH, NC 27278

OWNER'S ADDRESS
LEBANON ROAD LLC
320 EXECUTIVE COURT
HILLSBOROUGH, NC 27278

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

FINAL PLAT FOR
HAVENSTONE - PHASE 1A

CHEEKS TWP., ORANGE CO., NORTH CAROLINA
CITY OF MEBANE

PROPERTY AS DESCRIBED IN DEED BOOK 6627 PAGE 2024
STANDING IN THE NAME OF LEBANON ROAD LLC

PROJECT NO.
17-0385
DRAWING NO.
17-0385-PH1A
SHEET 2 OF 3



LINE TABLE		
LINE #	DIRECTION	LENGTH
L200	N81°51'43"E	149.84'
L201	N82°03'07"E	150.21'
L202	S82°01'22"W	17.06'
L203	S07°58'39"E	14.41'
L204	N05°47'50"W	4.47'
L205	N05°47'50"W	11.65'
L206	N05°47'49"W	8.43'
L207	N05°47'49"W	5.65'
L208	S07°21'46"E	5.22'
L209	S08°20'15"E	8.92'
L210	S07°58'44"E	1.31'
L211	N81°51'43"E	105.06'
L212	N81°32'41"E	105.00'
L213	N82°40'26"E	39.59'
L214	N07°58'40"W	4.79'
L215	S07°58'38"E	8.28'
L216	S07°58'38"E	4.89'
L217	S07°58'37"E	11.60'
L218	N07°58'39"W	12.81'
L219	N07°58'41"W	3.01'

LINE TABLE		
LINE #	DIRECTION	LENGTH
L220	N08°20'23"W	8.86'
L221	N07°20'43"W	5.08'
L222	N82°40'26"E	65.70'
L223	N85°59'00"E	40.30'
L224	S81°54'33"W	143.40'
L225	N08°02'13"W	25.28'
L226	N82°01'22"E	60.00'
L227	S07°19'34"E	17.44'
L228	N82°01'22"E	60.00'
L229	N82°40'26"E	45.20'

CURVE TABLE						
CURVE #	RADIUS	LENGTH	DELTA	TANGENT	CHORD BEARING	CHORD
C200	12439.67'	20.67'	0°05'43"	10.33'	S82° 00' 38"W	20.67'
C201	6.50'	5.11'	45°00'00"	2.69'	N59° 31' 22"E	4.97'
C202	23.50'	18.46'	45°00'00"	9.73'	S59° 31' 22"W	17.99'
C203	11761.15'	103.97'	0°30'23"	51.98'	N85° 43' 27"E	103.97'
C204	12439.67'	90.68'	0°25'04"	45.34'	S81° 45' 15"W	90.68'

PRELIMINARY PLAT
FOR 3RD REVIEW 09/09/2020

09/09/20
PROFESSIONAL LAND SURVEYOR LIC. NUMBER L-4544

SUMMIT DESIGN AND ENGINEERING SERVICES
LICENSE NUMBER P-0339

LEGEND:
- ○ IRON ROD OR PIPE SET
- ◉ IRON ROD OR PIPE SET (EXIST. IRON ROD FOUND; RBRO ROD OR PIPE UNLESS OTHERWISE DESCRIBED)
- △ MATHEMATICAL POINT; NO MONUMENT SET
- ■ CONCRETE MONUMENT
- EIP EXISTING IRON PIPE
- R/W RIGHT OF WAY

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PROJECT MANAGER: BWW
DRAWN BY: RAH

CLIENT'S ADDRESS
LEBANON ROAD LLC
320 EXECUTIVE COURT
HILLSBOROUGH, NC 27278

OWNER'S ADDRESS
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FINAL PLAT FOR
HAVENSTONE - PHASE 1A
CHEEKS TWP. - ORANGE CO. NORTH CAROLINA
CITY OF MEBANE
PROPERTY AS DESCRIBED IN DEED BOOK 6627 PAGE 2024
STANDING IN THE NAME OF LEBANON ROAD LLC

PROJECT NO.
17-0385
DRAWING NO.
17-0385-PH1A
SHEET 3 OF 3

AGENDA ITEM #5F

Fee schedule amendment- Recreation

Presenter
Aaron Davis, Recreation and Parks Director

Public Hearing
Yes ☐ No ☒

Summary
Adoption of the attached resolution will amend the fee schedule to allow for the rental of the Sand Volleyball Court located near the Mebane Recreation Center and to allow for the adoption of an Adult Sand Volleyball League to be played at the same location. The final amendment to the fee schedule will the Recreation and Parks Department to operate a Youth Speed and Agility Camp.

Background
Sand Volleyball is becoming very popular in Mebane due to the ability to social distance while playing. Many college students are completing their course work from home during the pandemic, and the courts are typically busy at night and on the weekends. There have been a few inquiries from citizens interested in renting the court for potential outings or tournaments, also for the City to start a league. To allow the citizens to schedule times, we believe a fee-based rental program vs. a first-come, first-serve model will best suit the citizens. We also believe that having the opportunity to program a 4v4 Adult Sand Volleyball League for the citizens would be a great offering with its non-contact gameplay style. The Sand Volleyball League would be self-officiated with one part-time or full-time leader acting as a moderator and scorekeeper. The City is concerned about the possibility of future indoor programs being canceled due to COVID-19 and would like to have the ability to offer a Youth Speed and Agility Camp. This camp could be offered indoors and allow for proper social distancing for the participants.

The City's fee schedule is adopted annually with the budget, but may be amended at any time by resolution of the City Council. The attached fees would allow for the rental of the Sand Volleyball Court, to have the opportunity to start an Adult Sand Volleyball League, and to offer a Youth Speed and Agility Camp.

Financial Impact
The City will recoup costs for the usage of the Sand Volleyball Courts and revenue from the Sand Volleyball League team fees and Youth Speed and Agility Camp.

Recommendation
Staff recommends adoption of the resolution to amend the fee schedule.

Suggested Motion
That the Council adopt the resolution.

Attachments
1. Resolution to amend the fee schedule for 2020-2021

A RESOLUTION TO AMEND THE FEE SCHEDULE ADOPTED FOR FISCAL YEAR 2020-2021

BE IT RESOLVED by the City Council of the City of Mebane that the Council hereby amends the fee schedule approved for FY21 on July 1, 2020 by adoption of the following additions:

Sand Volleyball Court Rental	$15/Hr.
1 Day Sand Volleyball Tournament	$75.00
2 Day Sand Volleyball Tournament	$125.00
3 Day Sand Volleyball Tournament	$175.00
Adult Sand Volleyball League (4v4)	$100.00/Team
Speed and Agility Sports Program	$15 Residents $25 Non Residents

This the 14th day of September 14, 2020.

By: _____
City Clerk
City of Mebane, North Carolina

By: _____
Mayor
City of Mebane, North Carolina

AGENDA ITEM #5G

Request for Qualifications – Facilities Assessment & Capital Plan

Presenter
David Cheek, City Manager

Public Hearing
Yes ☐ No ☒

Summary
The Council will consider approving the issuance of a Request for Qualifications to seek an engineering and architecture firm to complete a Facilities Assessment and Capital Plan (FACP). The City is seeking a qualified firm to perform a Facilities Assessment and Capital Plan (FACP) to be presented at the February 2021 budget work session.

Background
As the City of Mebane prepares for mounting growth, departments are expressing the need for significant facility additions. In the 2021-2025 Capital Improvement Plan, a police station was requested for the current year and fire stations for 2023 and 2025. Also, the Planning and Inspections Departments need space and have requested a building addition for the 2021 year. With the expected domino effect that occurs when constructing new facilities and freeing up old facilities, the Council included a space study in the current year's budget. The last time the City performed such an assessment was twenty years ago in 2000. It is vital to get this project started as soon as possible to inform decision-making in the 2021-22 budget process.

Financial Impact
The City budgeted $110,000 for the FACP.

Recommendation
Staff recommends advertising and proceeding with the RFQ as soon as possible.

Suggested Motion
I recommend approval of the RFQ process to seek a qualified firm to complete the Facilities Assessment & Capital Plan.

Attachments
1. Request for Qualifications – Facilities Assessment and Capital Plan

Request for Qualifications

Facilities Assessment and Capital Plan

Date: September 15, 2020

To: Prospective Qualified Firms

Subject: Facilities Assessment and Capital Plan

The City of Mebane is issuing a Request for Qualifications (RFQ) from qualified architectural and engineering firms to perform services for a Facilities Assessment and Capital Plan (FACP). Sealed responses will be accepted no later than Friday, October 16, 2020, at 2:00 pm in the City Council Chambers, 106 E. Washington St., Mebane, NC 27302. An informational meeting will be held on Wednesday, September 30, 2020, at 2:00 in the City Council Chambers in person at 106 E. Washington St., Mebane, NC 27302, or the firm can attend virtually via Zoom. Firms submitting the best responses will present their qualifications to the FACP Committee on Friday, October 16, 2020. The selected firm will be notified on Thursday, October 22, 2020. A contract and fee will be agreed upon by the Project Manager and the Firm by Wednesday, October 28, 2020. A schedule of all important dates is provided below with timeframes. Timely completion of the FACP is critical to the City. Direct inquiries to this RFQ can be directed to David Cheek, City Manager, via email or phone.

Date	Day	Milestone	Days
9/14/2020	Monday	City Council Approves RFQ	-
9/30/2020	Wednesday	Pre-RFQ Informational Meeting	16
10/16/2020	Friday	RFQ Response Deadline	16
10/21/2020	Wednesday	Best Firms Interviewed	5
10/23/2020	Friday	Firm Notified of Selection	2
10/28/2020	Wednesday	Contract & Fee Agreed Upon	5
11/2/2020	Monday	City Council Approves Firm	5
2/3/2021	Wednesday	Study Completed	93
2/17/2021	Wednesday	Firm Presents Study at Budget Work Session	14

Thank you for your interest in working with the City of Mebane.

Sincerely,

David S. Cheek, CPA
City Manager

Mebane
Positively Charming

106 E Washington Street
Mebane, NC 27302
919-512-0929
dcheek@cityofmebane.com

1 INTRODUCTION

A. OVERVIEW

The City of Mebane is currently serving approximately 18,000 residents. The City's Comprehensive Land Development Plan, *Mebane by Design*, projects the City will have over 32,000 residents by 2035. With 144 current employees, we are beginning to experience growing pains in several departments. In this RFQ, the City is requesting an assessment of nine (9) facilities with an estimated square footage of 113,714. These spaces house the City's various operational departments as well as other agencies supported by the City, including:

1. City Hall
2. Planning and Inspections Office
3. Police Station
4. 3 Fire Stations
5. Public Works Office
6. Old Recreation Center (Mebane Historical Museum & Tommy Long Train Group)
7. Lake Michael Office
8. Mebane Arts and Community Center (MACC)

As for departments and employees, the City is requesting an assessment, review, and projection of all departments' personnel needs, including:

1. Administration (Managers, Clerk, Human Resources, Finance, Legal) – 10 employees
2. Information Technology – 2 employees
3. Police – 40 employees
4. Fire – 28 employees
5. Planning – 4 employees
6. Inspections – 5 employees
7. Public Works (Streets, Sanitation, Public Works, Public Facilities) – 27 employees
8. Parks and Recreation – 9 employees
9. Utility – 11 employees
10. Water Resource Recovery Facility – 8 employees

As the City of Mebane prepares for mounting growth, departments are expressing the need for significant facility additions. In the 2021-2025 Capital Improvement Plan, a police station and two new fire stations made their inaugural debut into the plan. The police station was requested for the current year and the fire stations for 2023 and 2025. Also, Planning and Inspections are in dire need of space and are requesting a building addition for the 2021 year. With the expected domino effect that occurs when constructing new facilities and freeing up old facilities, the City is seeking a qualified firm to perform a Facilities Assessment and Capital Plan (FACP). The last time the City performed such an assessment was twenty years ago in 2000. The City is seeking a 15-year plan that will provide the following at a minimum:

1. Identify and assess current space occupied by City departments and agencies (including the Train Group and the Mebane Historical Museum).

2. Identify and assess each department's or agency's current space, current space needs, and identified space deficits.
3. Identify and assess each department's or agency's current employees against industry standards, similar-sized cities, or other recommended methodology, and identify current deficits.
4. Project future facility needs to be based on assessing population projections and determining employee needs by department, particularly as relates to Police and Fire.
5. Prioritize needs based on (1) the identified space deficit; (2) the most significant need; and (3) functionality, responsibilities assigned, and efficiency of operations.
6. Recommend a 15-year plan of action based on these priorities.
7. Estimate the probable costs of the study's recommendations.

The FACP must lay out the most efficient, effective, and functional plan for space needed by City employees for the provision of City and related agencies services. The FACP will evaluate the best and highest use for our existing and projected space and offer alternatives for the use of any vacated City-owned space.

B. Deadline

Sealed RFQ responses will be submitted no later than Friday, October 16, 2020, at 2:00 pm to:

Stephanie Shaw, City Clerk
City of Mebane
106 E Washington Street
Mebane, NC 27302

C. Informational Meeting

All interested firms are invited to attend an informational meeting to be held on September 30, 2020, at 2:00 in the City Council Chambers, 106 E. Washington St., Mebane, NC 27302 in person or via Zoom. Representatives of the City will be on hand to review the RFQ and answer any questions about project requirements.

D. Questions

Any questions concerning this RFQ should be directed to David Cheek, City Manager.

2 Scope of Services

A. General Overview

The City of Mebane is requesting the services of an experienced, qualified, government planning/consulting firm to review and update current data while studying and documenting the specific space needs of the City and its related agencies. This study will include City/agency functions that occupy space in City-owned/leased buildings out to the year 2035. The study will show the most efficient, effective, and functional analysis of space allocations of current and possible future facilities. The deliverable must provide a comprehensive vision of the development alternatives, the probable cost, and timeline of each option, and must give the advantages and disadvantages of each option to establish objective information for the City to choose among the alternatives the best course for the comprehensive vision. The general scope of the services requested will include at a minimum:

1. The identification & assessment of the current space occupied by various City departments and agencies.
2. The assessment of current employees by department compared to some industry standard, similar-sized cities, or other recommended methodology.
3. The identification of projected space needs to house projected employees through the year 2035, considering currently identified space deficits.
4. The recommendations regarding the identified needs for space.
5. An estimate of probable costs.

B. Specific Tasks

1. Meet with Director/Department Heads to discuss immediate as well as long-term operational requirements and associated space needs, including but not limited to parking, storage, security, privacy, etc. For Police and Fire, the FACP Committee will be included in such discussions to facilitate agreement on personnel and operational projection methodologies, as well as associated space needs with agreed-upon methods.
2. Assess all specifically listed City-owned/leased space(s) and document and quantify the conditions found with regards to existing space and space needs observed as well as their impact on:

    a. Operational efficiency.
    b. Staff and visitor safety & building security if necessary.
    c. Access & circulation to and from as well as within the building.
    d. Quantity and type of specific space needed now.
    e. Accessibility to and use of technology and building limitations as to use and access.
    f. Visitor and staff parking, including quantity, accessibility, and security.

3. Assess the impact of growth and apply results based on general population growth projections, as well as the interviews mentioned above.
4. Develop a detailed summary of space needs at least to 2035 and identify the allocation of total building space by department and agency.
5. Identify options for providing the total projected space needs:

    a. Expansion on site
    b. New construction
    c. Restoration of existing
    d. Other

6. Suggest alternative uses for vacated City-owned space.
7. Provide estimates of probable costs for each of the developed options identified and or created.
8. Prepare a written report of findings and be prepared to present a summary of all findings and recommendations to the City Manager, Staff, and the City Council.
9. Other Considerations:

    a. The Planning and Inspections Departments have a critical and imminent need for space.

b. City Hall will be evaluated for renovation to improve the efficiency of space, add windows to office environments, and determine departments best suited for occupancy. Currently, Administration (including City Manager, Legal, Human Resources), Finance, Information Technology, the City Engineer, and Public Facilities Manager occupy the space.
c. The Old Recreation Center will be evaluated for other potential uses or expansion of its existing programs. It currently houses the Train Group and the Mebane Historical Museum and a practice gym.
d. Recreation and Parks will only be evaluated for office facilities. A separate Recreation and Parks Master Plan has been completed for recreational and park capital plans.
e. The Water Resource and Recovery Facility will only be evaluated for office facilities.
f. The coronavirus pandemic has introduced the potential for remote work, platooning, and virtual meetings. Creative ideas for reducing space needs are welcome.

C. Time Frame and Goal

The City's goal is to have a completed study presented to the City Council by Monday, February 1, 2021.

3 RESPONSIBILITIES OF THE CITY

A. Project Manager

David Cheek is designated the City's Project Manager, to act as its representative concerning the services to be rendered under any subsequent Agreements. He will have complete authority to transmit instructions, receive information, and interpret and define City's policies and decisions concerning the Firm's services for the Project.

B. City Information

The City will assist the Firm by placing at its disposal all available information pertinent to the Project. This information may include property, boundary, building plans, easement, right-of-way, topographic and utility maps, zoning, and deed restrictions, all of which the Firm may rely upon in performing his services under this Agreement.

C. Access

The City will guarantee access to and make all provisions for the Firm to enter upon public and private property as required for the Firm to perform its services under this Agreement.

D. Scope and Timing

Give prompt written notice to the Firm whenever the City observes or otherwise becomes aware of any development that affects the scope or timing of the Firm's services.

4 Evaluation Criteria

A. Evaluation Criteria

The FACP Committee will evaluate each RFQ response based on the following criteria:

1. Proposed approach and methodology for conducting the requested study.
2. Experience of the Firm and individuals assigned to the project.
3. References and previous project descriptions.
4. Proposed schedule for completing the tasks identified.

5 Award Procedures

A. FACP Committee

The RFQ responses received by the submittal deadline will be evaluated by the FACP Committee comprised of representatives of the City. The FACP Committee will review the responses submitted and select two or more best-qualified firms based on the Firm's approach to meeting the City's needs.

B. Presentation to FACP Committee

Each of the selected firms will be expected to conduct a presentation on its RFQ response and answer questions of the FACP Committee.

C. Start Date

The Firm will be expected to initiate work on the project within five (5) days of the execution of a contract.

D. Right to Reject

The City reserves the right to reject any or all responses submitted and waive any informality in the responses. The City also reserves the right to award the contract where it appears to be in the best interest of the City of Mebane.

6 RFQ Response Requirements

A. Number of Responses

The RFQ response submitted should be specific and complete. It should provide a straight-forward, concise delineation of the Firm's capabilities to perform the services sought by the City of Mebane. The Firm will submit five (5) original copies of its RFQ response and a digital file in a portable document format (PDF). The RFQ response is not to exceed fifteen (15) pages (not including cover page).

B. Response Content

All RFQ responses will provide the following information for review in the order detailed:

1. Letter of Transmittal – Limit to two (2) pages. Make a positive commitment to perform the required work within the time requested. Also, please provide the name(s) of the person(s) who will be authorized to make representation for the Firm, their title, and telephone number.
2. Firm Experience – Indicate prior experience of the Firm in performing work of this nature, especially for public agencies in North Carolina (including references). Include a brief statement of the qualifications of the Firm that pertain specifically to this project. Brief resumes and relevant experience of the key principal(s) and any staff that will be associated with the project will be included. If the proposing Firm intends to have an associate firm or other non-firm personnel on the project, describe the purpose and roles of those members.
3. Approach – Indicate your understanding as to the scope of the work requested and describe the Firm's approach and give specific illustrations of the procedures that will be employed. A detailed description of the project approach and work plan proposed to complete the services requested will be included.
4. Previous Similar Work - Brief descriptions of no less than two (2) projects, similar in scope and context to that requested, will be provided. Please include the name and contact information for the person that will be familiar with the work performed, including a phone number or email address. Any other references used for the Firm will be welcomed.
5. Time Projection – RFQ responses will include a workforce availability chart to show the ability of the Firm to initiate and complete the work on this project on time. A project schedule estimating when specific tasks will be accomplished within the timeline proposed will be provided.
6. Special Work – Indicate any special work the Firm perceives as potentially necessary to complete the project successfully.

Office of the Mayor

PROCLAMATION

In Recognition of Indigenous Peoples' Day 2020

WHEREAS, American Indians, who have inhabited this continent since long before their first contact with English settlers, shared their knowledge of the land and its resources, and have continued to play a vital role in the development of our local communities, the state of North Carolina, and the nation; and

WHEREAS, the idea of Indigenous Peoples Day was proposed first in 1977 by the International Conference on Discrimination Against Indigenous Population in the Americas, a delegation sponsored by the First Nations leaders to the United Nations; and

WHEREAS, our community has enjoyed a positive relationship with indigenous peoples and continues to grow in our shared progress; we honor and respect the heritage, and the many cultural and economic contributions of our American Indian tribes and people; and

WHEREAS, on February 4, 2002, the Occaneechi Band of the Saponi Nation, located in Alamance, Orange and Caswell Counties, became the eighth state recognized Indian tribe in North Carolina, and is one of 556 Indigenous Nations in the United States; and

NOW, THEREFORE, I, Ed Hooks, Mayor of the City of Mebane, do hereby proclaim the second Monday in October, as Indigenous Peoples' Day in Mebane and commend its observance to all citizens.

This the 14th day of September, 2020.

ATTEST:

_____

City Clerk, City of Mebane

_____

Mayor, City of Mebane

DRAFT

AGENDA ITEM #5I

Board of Adjustment (BOA) Recommended Appointments

Presenter
Cy Stober, Development Director

Public Hearing
Yes ☐ No ☒

Summary

Per North Carolina General Statute 160D, all municipalities are charged with appointing a Board of Adjustment (BOA) that, at minimum, "…decides appeals, variance requests, and requests for interpretations from the Ordinance." The Mebane BOA is the decision-making body in numerous special use requests as well. The Mebane BOA is served by the members of the City Council as well as "…two members [*of*] citizens and residents of the area lying outside the corporate limits, appointed by the boards of Alamance and Orange Counties, respectively." The terms of these two members from the extraterritorial jurisdiction are three (3) years.

The City Planning Department requested applications for the expired term of the former Alamance County representative to the BOA and for the long-unfilled Orange County representative to the BOA. The Orange County three-year term expires December 2020, so a recommendation for appointment to fill the existing term as well as for the coming three-year term is advised by staff. One eligible applicant from each county applied for each of the positions by the application deadline. Both applicants have relevant experience to the positions.

Financial Impact

N/A. BOA members serve without monetary compensation.

Recommendation

Staff recommends that the applicant Genice Akins, 5041 Mrs. White Lane, be recommended for appointment by the Alamance County Board of Commissioners for present three-year term that began July 2020.

Staff recommends that the applicant David Ferraro, 401 Hoover Road, be recommended for appointment by the Orange County Board of Commissioners for both the remainder of the existing term as well as the coming three-year term that begins January 2021.

Suggested Motion

Motion to request that the Alamance County Board of Commissioners appoint Genice Akins, 5041 Mrs. White Lane, to the City of Mebane Board of Adjustment as their representative of the City's extraterritorial jurisdiction.

Motion to request that the Orange County Board of Commissioners appoint David Ferraro, 401 Hoover Road, for both the remainder of the present term as well as the term beginning January 2021, to the City of Mebane Board of Adjustment as their representative of the City's extraterritorial jurisdiction.

Attachments

1. Genice Akins application
2. David Ferraro application

City of Mebane

Boards and Commissions Application

The Mebane City Council has adopted this application for use by individuals interested in appointment to the City's advisory boards and commissions. To ensure that your application will receive full consideration, please answer all questions completely. Return this application either in person, by mail, or by fax to the Mebane Municipal Building, 106 East Washington Street, Mebane, NC 27302, Fax (919) 563-9506.

Personal Information

Name: David Ferraro

Home Address: 401 Hoover Rd Mebane NC 27302

Mailing Address (if different): _____

Home Phone: (443) 386-7278 Business Phone: 919-302-7059(cell)

Do you live inside the Mebane City Limits? Yes____ No X

In Alamance or Orange County? Orange

Board Preference

Are you currently serving on a board or commission of the City of Mebane? Yes____ No X
If so, which one(s)? _____

Please list the name(s) of the board(s) to which you are applying or seeking reappointment (you may apply to more than one): Board of Adjustment ETJ (Orange County)

Why do you wish to serve the City in this capacity? If additional space is needed please attach a separate sheet:

After being a resident of Mebane for 12 years I would like to see Mebane preserve its small town charming appeal while continuing to grow. I am confident that my 20 years of experience in land surveying will be valuable to the board. Having a vast knowledge of boundary law and land development will be of value when working with the board to reach decisions. As a stakeholder in the community I would bring to the board knowledge of zoning regulations while listening to the interest of community members who reside there.

Education

Please list your educational background. Include name of all schools attended:

Frostburg State University – B.S. Geography, concentration in Cartography

Employment

Please list the names and address of your current employer, the title of your current position, and a brief description of your job duties.

Name of Employer: North Carolina Geodetic Survey

Address: 4105 Reedy Creek Road Raleigh, NC 27607

Title and Duties:
Engineering Technician / Professional Land Surveyor
My main duty at the North Carolina Geodetic Survey is to work on all aspects of State and County line boundary projects.

Civic Involvement

Please list the names of all civic organizations in which you currently hold membership:

Thank you for your interest in appointment to the City of Mebane's Advisory Boards and Commissions. Individuals selected for appointment will be notified by mail within 5 working days from the City Council meeting at which they have been appointed.

City of Mebane

Boards and Commissions Application

The Mebane City Council has adopted this application for use by individuals interested in appointment to the City's advisory boards and commissions. To ensure that your application will receive full consideration, please answer all questions completely. Return this application either in person, by mail, or by fax to the Mebane Municipal Building, 106 East Washington Street, Mebane, NC 27302, Fax (919) 563-9506.

Personal Information

Name: Grenice AKINS

Home Address: 5041 Mrs White LN Mebane NC 27302

Mailing Address (if different): _____

Home Phone: 919 357-1658 Business Phone: _____

Do you live inside the Mebane City Limits? Yes____ No X

In Alamance or Orange County? Alamance

Board Preference

Are you currently serving on a board or commission of the City of Mebane? Yes____ No X
If so, which one(s)? _____

Please list the name(s) of the board(s) to which you are applying or seeking reappointment (you may apply to more than one): _____

Mebane Board of Adjustment

Why do you wish to serve the City in this capacity? If additional space is needed please attach a separate sheet:

It would be an honor to serve if I am given the opportunity on this Board to give back to my hometown with my career experiences, knowledge and the ability to work as a team member. I will bring new ideas, energy and a listening spirit.

Education

Please list your educational background. Include name of all schools attended:

Eastern High Graduate 1973

Hardbarger Business College Raleigh NC 73-75 Graduate

Alamance Community College NC Real Estate Broker

USPS Postal Academy

Employment

Please list the names and address of your current employer, the title of your current position, and a brief description of your job duties.

Name of Employer: United States Postal Service – Retired 2017

Address: Efland NC

Title and Duties:
Postmaster - 33 years

Civic Involvement

Please list the names of all civic organizations in which you currently hold membership:

United PMA/ Postmasters of America
Warrens Chapel Church

Thank you for your interest in appointment to the City of Mebane's Advisory Boards and Commissions. Individuals selected for appointment will be notified by mail within 5 working days from the City Council meeting at which they have been appointed.

AGENDA ITEM #5J

Budget Ordinance Amendment – Carryforwards from 2019-20

Presenter
Jeanne Tate – Finance Director

Public Hearing
Yes ☐ No ☒

Summary

The amendment would re-appropriate unencumbered amounts carried forward from the prior fiscal year in the General Fund, Capital Fund and Utility Funds.

Background

At the end of the prior fiscal year, there were a number of appropriations that were not complete and were not yet encumbered, so they did not carry forward automatically. In addition, there are a number of allocations that we would request to re-appropriate for slightly different purposes in light of more recent developments. To carry out the projects, it is necessary to re-appropriate fund balance in the current fiscal year.

Allocations to restore in FY21 include Federal Equitable Sharing Funds approved in prior year ($12,674), unspent CARES Act Funding from the counties ($178,225), continuation of Train Collection expenses ($10,027), branding and wayfinding signs ($48,106), Cates Farm Park project ($305,961) and funding related to NCDOT projects ($130,000) and oversizing agreements ($134,601). In addition, there are projects to enhance security and efficiency of remote document-handling in light of COVID and increased reliance on remote services ($75,996) and to carry out much-needed repairs at Lake Michael deck, pier and docks ($140,000) at a time when the water level will be dropped for the dam assessment anyway. Finally, we would make repairs and upgrade Community Park lights now ($166,000) while repairing the lighting strike, and let the potential insurance settlement reimburse us later. With citizens looking for safe outdoor recreation, these improvements are needed.

Financial Impact

The appropriation of carryforward budget each year is commonplace to account for projects under way but not complete at year-end, and the amounts are available in fund balance for the three funds.

Recommendation

Recommend that the Council approve the attached budget ordinance amendments appropriating the carryforward amounts from fund balance and any transfers between funds to carry out the projects.

Suggested Motion

Motion to adopt the budget ordinance amendments as presented.

Attachments

1. Budget Ordinance Amendment

BE IT ORDAINED by the Council of the City of Mebane that the Budget Ordinance for the Fiscal Year Beginning July 1, 2020 as duly adopted on June 1, 2020, is hereby amended as follows:

ARTICLE I

APPROPRIATIONS	Current Budget	Change	Revised Budget
GENERAL FUND			
IT	$ 409,775	$ 46,996	$ 456,771
Planning	612,697	30,000	642,697
Public Works	1,677,322	80,000	1,757,322
Public Facilities	806,593	226,331	1,032,924
Police	4,422,041	12,674	4,434,715
Recreation and Parks	1,806,158	388,904	2,195,062
Non-Departmental:			
Train Collection Expenses	-	10,027	10,027
CAPITAL FUND			
Cates Farm Park	$ 375,000	$ 305,961	$ 680,961
UTILITY FUND			
DOT Projects	$ 105,000	$ 50,000	$ 155,000
UTILITY CAPITAL FUND			
Oversizing Utilities	$ 175,000	$ 134,601	$ 309,601

ARTICLE II

APPROPRIATIONS	Current Budget	Change	Revised Budget
GENERAL FUND			
Appropriated Fund Balance	$ 2,100,589	$ 794,932	$ 2,895,521
CAPITAL FUND			
Appropriated Fund Balance	$ 373,715	$ 305,961	$ 679,676
UTILITY FUND			
Appropriated Fund Balance	$ 2,075,618	$ 50,000	$ 2,125,618
UTILITY CAPITAL FUND			
Appropriated Fund Balance	$ 100,000	$ 134,601	$ 234,601

This is the 14th day of September, 2020.

AGENDA ITEM #6

Hazard Pay – Police and Fire

Presenter
David Cheek, City Manager

Public Hearing
Yes ☐ No ☒

Summary

The Police Department recently requested hazard pay that I did not recommend (see attached request), but I am now asking the City Council to consider the payment of hazard pay with different parameters outlined below. Funds from Coronavirus Relief Fund (CRF) would cover the cost of this hazard pay.

Background

The City has received (or will receive) funding from the Alamance CRF of $187,040 and the Orange County CRF of $55,473 for total available funding of $242,514. Applications for these funds show that our initial plan to spend these funds includes the following:

- PPE - $96,657
- Technology and Other - $40,816
- Payroll - $105,040

Recommendation

I recommend the Council consider the following parameters for funding Police and Fire:

1. To be eligible, must be a "front-line employee" (i.e. patrol, firefighter, etc.) that is exposed to close interaction with the public.
2. Pay should be limited to a one-time, lump-sum amount.
3. Pay should be the same for all employees.
4. The amount should be limited to between $500-$1,500.

Other departments were asked if they had any employees that might be considered "front-line employees" and none were put forward.

Financial Impact

Based on the above parameters, staff has determined that 35 police and 27 fire employees qualify for hazard pay. The financial impact, including taxes & benefits) will range between $41,445 and $124,332, depending on the amount authorized by the Council.

Suggested Motion

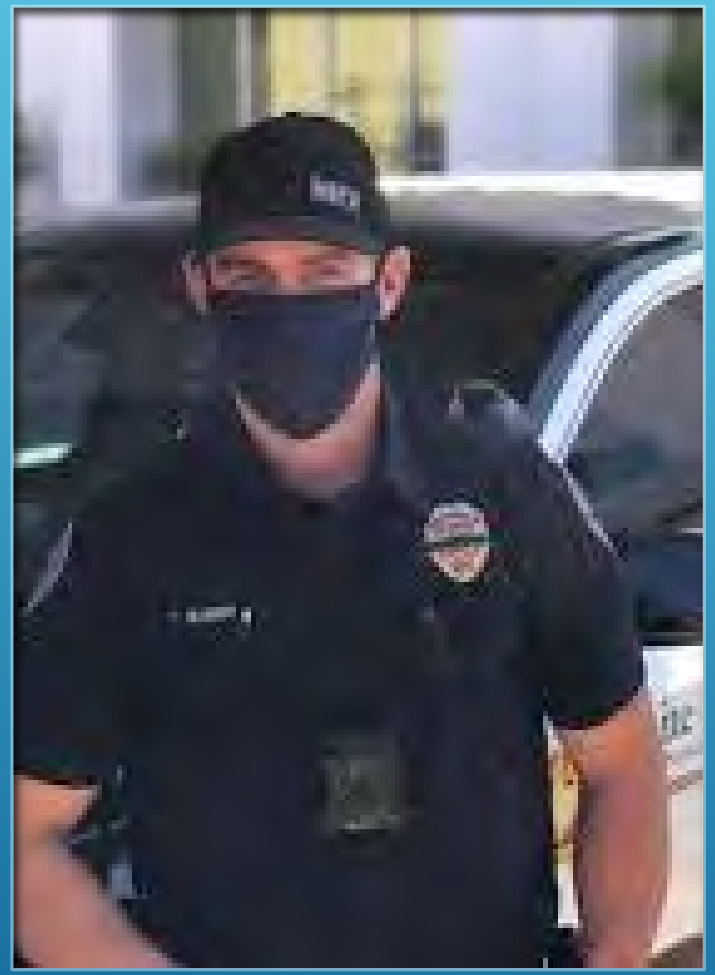
1. I make a motion that qualifying police and fire employees receive hazard pay in the form of a one-time bonus of $_____ in first pay period in October 2020.

Attachments

2. Police Department Request for Hazard Pay

MEBANE POLICE DEPARTMENT ESSENTIAL EMPLOYEE HAZARD PAY

A joint submission by Sergeant's P. Davis, T. Crowder, R .Cook, C. Snell and D. Rosencrans



PURPOSE

To propose that those deemed as essential workers be considered for additional compensation during this state and local state of emergency and pandemic known as the COVID-19/SARS virus.

Many refer to any extra consideration as hazard pay, and many agencies across the country are providing either monetary or time consideration or both for their personnel. Hazard pay may not be a fair description as all sworn officers perform their duties almost flawlessly daily knowing that the very nature of police work is hazardous. The difference, as outlined below, is that officers acknowledge and accept the inherent risks of general first responder work, even to the point of losing their life to save another. However, the difference with this pandemic is that the highly contagious nature, minimal testing and the nature of policing and contact with infected persons may unintentionally harm the families of first responders. Unlike the flu, there is no vaccine and other than social distancing and avoiding contact with the public, there is no way to minimize exposure other than PPE's, which even at this time, it is unknown as to the surety of protection with those.



EXAMPLES AND EXPECTATIONS

Sworn personnel are serving and protecting the citizens of the City of Mebane and stand ready to engage anyone when necessary, even to their own detriment. Danger is something officers are no stranger to, however, exposure to a deadly and highly contagious disease could certainly be recognized as outside of any usual expectations.

Officers are required to submit to exposure due to the nature of the job. Additionally, they are required to don protective gear such as masks for both their protection and the communities protection.

Officers are on the front lines daily setting the example for the community in terms of protection and reducing spread of the disease.

THOUGHTS AND IDEAS ABOUT HAZARDOUS DUTY

- “I believe hazard pay can be justified by the logic of the situation. The city has sent many personnel home or modified their schedules. The logic behind this decision is that there is an infectious disease in the community and the less contact an employee has with the public, the less likely they will be infected. With that, I believe that employees who must contact the public on a regular basis should receive hazard pay because of the risks the City has deemed viable”

- “I have had the honor and privilege to serve as a law enforcement officer for many years. When I took the oath to serve and protect the community, may family and I were fully aware of the dangers that this job entails. However, since this outbreak of COVID-19, this badge carries another level of danger, responsibility and stress that was not something ever thought of. The main difference is that what happens in this line of work has never had the potential to put everyone in my family and every law enforcement family at risk of serious illness or death”

Justification

WHAT IS IT THAT MAY MAKE LAW ENFORCEMENT FEEL THAT THEY DESERVE MORE THAN JUST THEIR SALARY DURING THIS TIME? AFTER ALL, WOULD ADDITIONAL PAY OR PERHAPS A COMBINATION OF PAY AND PTO ADDED SAVE ANYONE? NO, CLEARLY THAT WOULD MAKE NO DIFFERENCE. WHAT IT DOES DO THOUGH IS SHOW THAT THE DEDICATION AND RELENTLESS DETERMINATION TO COME TO WORK AND FACE THE NEVER BEFORE KNOWN CHALLENGES OF THIS VIRUS HEAD ON, WITHOUT REGARD FOR PERSONAL SACRIFICE AND POSSIBLY TO THE DETRIMENT OF THEIR FAMILY, IS FULLY RECOGNIZED AND APPRECIATED. AND, MANY MUNICIPALITIES HAVE RECOGNIZED AND ACKNOWLEDGED THIS AS WELL.

ONLY LAW ENFORCEMENT REMAINS THE AGENCY WITHIN THE CITY WITHOUT THE ABILITY TO FOLLOW THE CDC GUIDELINES FOR SELF-PROTECTION SUCH AS SIX FEET OF SOCIAL DISTANCE FROM THIS VIRUS THAT HAS KILLED MORE POLICE OFFICERS IN THE CITY OF NEW YORK THAN DURING 9/11.

THOUGHTFUL CONSIDERATION

Below are some ideas and thoughts on potential compensation considerations

-1 time payment of $3500 which would include through December 2020 under hazardous conditions. (Formula=$389/month*9months)

-40 hours per month credited to sick and vacation each per month of hazardous duty from March through December

WHAT ARE OTHERS DOING?

Agencies in Alamance County have decided to forego paying first responders for their service during the COVID 19 Pandemic.

Some agencies are allowing two weeks of 12-hour days per pay cycle added into their vacation hour for hour rather than 8 hours for a 12-hour shift. One agency provides pay which is less than overtime rate, but more than the regular hourly rate, while one agency compensates at one and a half times the ordinary hourly rate for all hours worked during a regularly scheduled shift. Many agencies anticipate reimbursement through FEMA for hours paid in conjunction with the National State of Emergency, State and Local Declarations of Emergency.

In the surrounding areas, Durham Fire and Police have received 5% increase during the state of emergency; Greensboro Police Department provides "Hero Pay" at 5% and for those working from home, they are allowed the pay if called into work.

ADDITIONAL BACKGROUND AND COMMENTARY

Disasters require exceptional flexibility in standard work schedules and assignments and often put first responders and essential workers in dangerous situations. To ensure this critical workforce is compensated appropriately, there are precedents for funding hazard premium pay and worker incentives through a federal program.

FEMA, through the Robert T. Stafford Disaster Response and Emergency Assistance Act and the Disaster Relief Fund is currently authorized to reimburse state, local and tribal governments for straight-time and premium pay associated with disaster response. Extraordinary costs (such as call-back pay, night time or weekend differential pay and hazardous duty pay) for essential workers who are called back to duty during administrative leave to perform eligible Emergency Work are eligible for reimbursement in certain circumstances. Past usage illustrates precedent for federal funding of critical state, local and tribal employees performing essential response functions that keep communities safe and operational during times of disaster.

ESSENTIAL DEFINITIONS

According to fema.gov and under the COVID-19 Emergency Declaration which occurred on January 27, 2020, FEMA may provide assistance for emergency measures including but not limited to the following:

-Emergency center operation costs

-Disinfection of eligible public facilities

-Purchase and distribution of food, water, medication and other consumable supplies to include personal protective equipment and hazardous material suits

-Security and law enforcement

-Reimbursement for state and local government account overtime costs

AGENDA ITEM #7

New Street Naming and Signage related to the NC Hwy. 119 relocation project

Meeting Date
September 14, 2020

Presenter
Franz Holt, City Engineer

Public Hearing
Yes ☐ No ☒

Summary

Staff is seeking City Council approval for the naming of two new streets and new sign installation for intersecting roads related to road changes with the NC 119 relocation project. An exhibit map is attached.

Background

The NC 119 relocation project from the I-40/85 ramps to the new connection of South Third Street requires that two new streets be named and several new street signs installed. NCDOT has installed their related directional signs for the project. Staff has reviewed a proposed street naming and sign plan with Chuck Edwards, District Engineer with NCDOT and Katie Harper, GIS Analyst with Alamance County. As multiple streets have been affected by the NC 119 project, street names with the majority of street addresses are unchanged. It appears that new addresses will be needed for 3 properties that connect to the new street between South Fifth Street and Holmes Road.

Financial Impact

Public Works will be installing the new street signs related to the NC 119 relocation project at an estimated cost of $2,000.00.

Recommendation

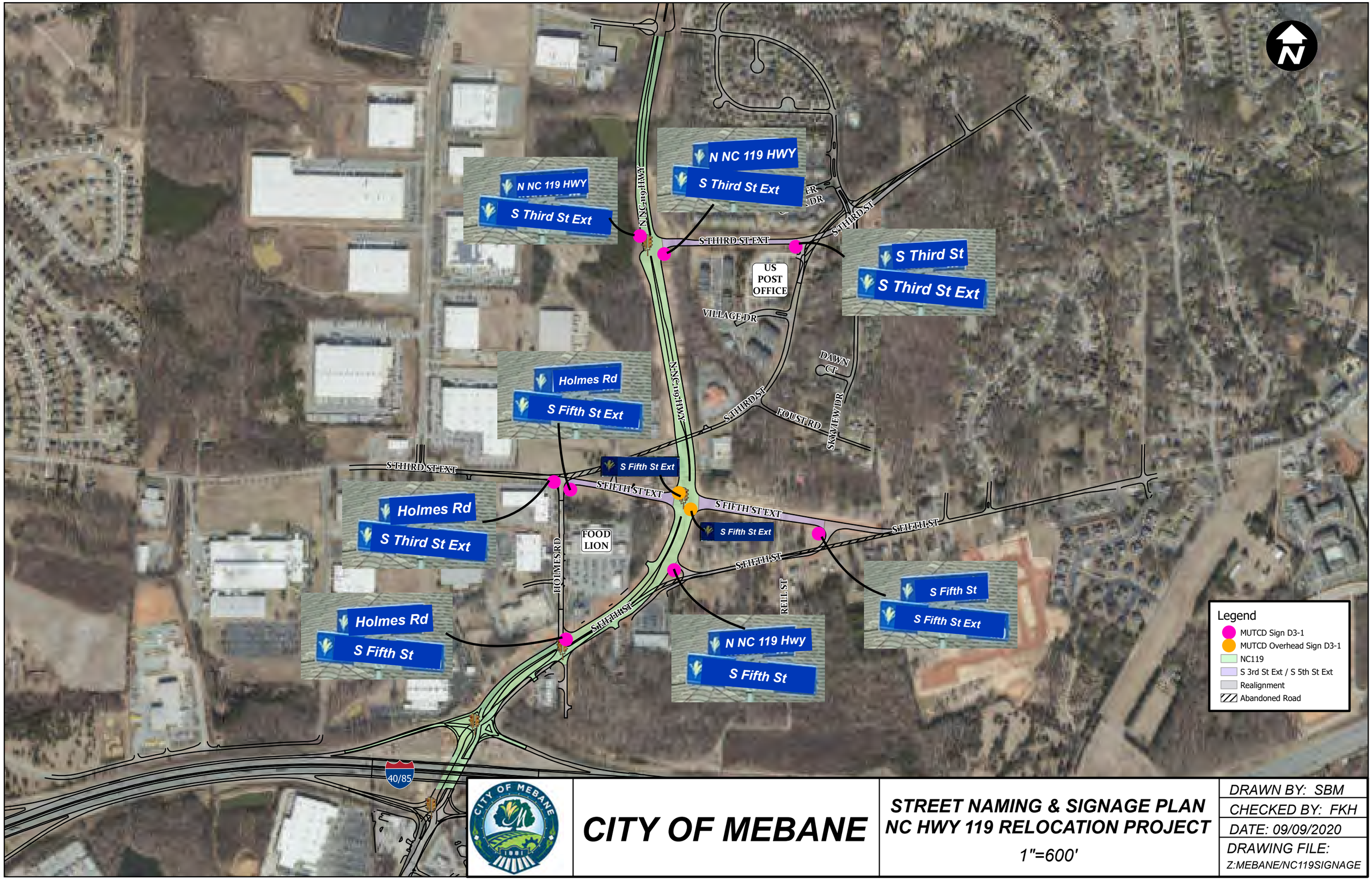
Staff recommends approval of the naming of two new streets and related sign installation as shown on the attached exhibit map.

Suggested Motion

Motion to approve the naming of the newly created street that connects South Fifth Street to Holmes Road as South Fifth Street Extension. Motion to approve the naming of the newly created street that connects South Third Street to the new NC 119 as South Third Street Extension. Motion to approve the installation of new street signs as proposed by staff.

Attachments

1. Exhibit map



CITY OF MEBANE

STREET NAMING & SIGNAGE PLAN
NC HWY 119 RELOCATION PROJECT

1"=600'

DRAWN BY: SBM
CHECKED BY: FKH
DATE: 09/09/2020
DRAWING FILE: Z:MEBANE/NC119SIGNAGE

AGENDA ITEM #8

Post-Listening Session Discussion

Presenter
David Cheek, City Manager

Public Hearing
Yes ☐ No ☒

Summary
The Council will discuss issues brought up in the Listening Session held on August 5, 2020.

Background
As the City of Mebane held a Listening Session to provide the public a forum to speak on any issues of their choosing. Four (4) speakers registered for the session. The minutes from this session are provided in the agenda packet.

Financial Impact
None.

Recommendation
Staff has no specific recommendation; however, if this discussion leads to any directives from Council, we stand ready to begin working on them.

Suggested Motion
None.

Attachments
No attachments.

Mebane Fire Dept. Monthly Report

		July		Year to Date		% Change from 2019
Structural Response						
Totals		**15**		**129**		**-10%**
Average Personnel Per Response		**12**		**12**		
Average Volunteer Response		**4**		**4**		
Non Structural Responses						
Totals		**54**		**382**		**-2%**
Total Fire Response		**69**		**511**		**-5%**
Location (Year to Date)		**North**		**South**		
Total Number/Precentage		**262/51%**		**249/49%**		
		North		**South**		
Average Fire Response Time		**5:16**		**5:55**		
Precentage of Calls Inside City		**46%**		**50%**		
Precentage of Calls Outside City		**39%**		**34%**		
Precentage of Calls for Mutual Aid		**15%**		**16%**		
EMT Response		**131**		**954**		**-20%**
Location (Year to Date)		**North**		**South**		
Total Number/ Precentage		**517/54%**		**437/46%**		
CPS Seats Checked		**5**		**75**		
Seats Distributed		**0**		**0**		
Smoke Alarms Checked/Installed		**3**		**18**		
Station Tours/Programs		**0**		**4**		
# of Participants		**0**		**80**		
Events Conducted/Attended		**1**		**13**		

Planning Board
Minutes to the Meeting
Glendel Stephenson Municipal Building
August 10, 2020
6:30 p.m.

Members Present: Kevin Brouwer, Keith Hoover, Lori Oakley, Kurt Pearson, Gale Pettiford, Vice Chairman Judy Taylor, Larry Teague, Chairman Edward Tulauskas, Thomas Vinson

Also Present: Ashley Ownbey, Planner; Cy Stober, Development Director; Chris Rollins, Assistant City Manager; Kirk Montgomery, IT Director

1. **Call to Order**
   At 6:30 p.m. Chairman Edward Tulauskas called the meeting to order.

   The Planning Board meeting was held virtually and livestreamed via YouTube. The video can be accessed through the following link:

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

2. **Approval of May 11, 2020 Minutes**
   Gale Pettiford made a motion to approve the minutes from the May 11, 2020 meeting. Lori Oakley seconded the motion, which passed unanimously (8-0).

3. **Rezoning Request: B-2(CD) to R-6(CD) ("The Artisan at Mebane") for +/-12.17-ac area of a +/-50.89-ac property located at 4000 Arrowhead Boulevard (Alamance County GPIN 9824166394), by Mebane NC TH, LLC)**
   RZ 20-10
   Staff presented an application/tax map from Mebane NC TH, LLC c/o Brett Basnight, 111 South Spring St, Spartanburg, SC 29306 requesting the conditional rezoning of +/- 12.17 acres of a +/- 50.89-acre property located at 4000 Arrowhead Boulevard from B-2(CD) (General Business, Conditional Zoning District) to R-6(CD) (Residential Conditional Zoning District) to allow "The Artisan at Mebane" an 85-unit townhome subdivision developed as a Residential Cluster Development. All units in this proposed development are to be for rent, not sale. The property is located in Alamance County within the City limits. Mebane NC TH, LLC, has the property under contract to purchase, contingent upon approval of the conditional rezoning.

   The applicant proposed to provide site-specific plan onsite amenities & dedications including the following:
   - The construction of all internal roads;
   - The construction of 5' sidewalks along all roads except for Roads C & D;

- The construction of an 8' gravel-surfaced privately-maintained walking trail internal to the development and connected to the City's publicly-maintained sidewalk along Arrowhead Boulevard; and
- The construction of a clubhouse and pool to exclusively serve development residents.

Requested waivers:

- A reduced municipal street right of way for Roads C & D to 35' and featuring no sidewalks, unless otherwise shown on the site plan;
- A minimum lot size of 1,900 s.f. for the proposed individual townhome lots;
- The UDO requires that this development provide 213 parking spaces total and the applicant is requesting to provide 195;
- The UDO requires a minimum lot size of 6,000 s.f. with an allowed 40% reduction to 3,600 s.f. and the applicant is requesting a minimum lot size of 1,900 s.f.;
- The UDO establishes a maximum lot coverage of 40% and the applicant is requesting to develop up to 55% of the lot area;
- The UDO requires front setbacks of 30' and the applicant is requesting that they be reduced to 25';
- The UDO requires corner side setbacks of 18' and the applicant is requesting that they be reduced to 10' minimum, with a minimum building separation of 20';
- The UDO requires rear setbacks of 25' and the applicant is requesting that they be reduced to 15'; and,
- The UDO requires a minimum lot width of 85' with a maximum reduction to 40' wide, and the applicant is requesting that they be reduced to 20'.

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

Ashley Ownbey, Planner, provided a brief overview and PowerPoint of the request.

Paul Koonts, attorney with Oertel, Koonts & Oertel PLLC, 3493 Forestdale Dr, Suite 103, Burlington, NC, 27215, provided a brief overview of the rezoning request. He also introduced Beth Blackmon, P.E., with Timmons Group, 5410 Trinity Rd, Suite 102, Raleigh, NC 27607; Brett Basnight, with Longbranch Development, 111 South Spring St, Spartanburg, SC 29306; and, Charles Worsham, Senior Vice President of Development and Construction with Tanger Outlet Centers, 3200 Northline Avenue, Suite 360, Greensboro, NC 27408. During his presentation, Mr. Koonts showed members of the Planning Board pictures of a similar development by Longbranch Development while describing the proposed 85-unit townhome development.

Ashley Ownbey, Planner, shared additional slides reviewing the Planning staff's recommendation to approve the project. She also read aloud written comment from two Mebane residents submitted via email prior to the virtual meeting.

Deborah Greer
700 Applecross Drive
Mebane, NC 27302

To the members of the planning board, thank you for allowing me the opportunity to present my comments. My name is Deborah Greer and I live at 700 Applecross Drive in the Arrowhead Greens Subdivision. We've owned this home for almost seven years. My concerns with the rezoning request have to do with the portion on the site map that appears to be the overflow parking for Tanger.

Every year during Thanksgiving holiday weekend or Black Friday, that overflow parking lot becomes necessary for the large volume of shoppers that come for holiday shopping at the outlet.

However, with the Arrowhead Greens community right across the street, we have become an overflow parking lot for shoppers as well. Depending on what Tanger establishes as their shopping hours, we begin to have people parking in our neighborhood late afternoon on Thanksgiving. Usually after the two vacant lots off Arrowhead Blvd have filled up with cars. Then it is non-stop with shoppers coming to park in Arrowhead Greens throughout the Thanksgiving holiday, Black Friday, and most of the day on Saturday. By Sunday morning it tends to taper off.

But when the people come and park in our neighborhood, they park in front of our homes, often with barely enough clearance to enter and exit our driveways safely. They park in front of our mailboxes, which delays or prevents the mail carrier from delivering mail on Friday and Saturday. We don't have sidewalks on both sides of the streets, so people are walking on our grass and in many instances are leaving their trash behind.
My neighbor at 702 Applecross Drive has repeatedly had people drive across his front lawn trying to exit from parking in the vacant lot located next to his home. He works very hard to have a nice yard, so we're all upset to see the damage left behind.

So the thing is, if the overflow parking lot goes away, I feel like the parking situation will become even worse for Arrowhead Greens. Where else will all the additional shoppers park?

I can't begin to explain our level of frustration with this. I believe, three years ago, the city, or maybe it was the police department, had placed a partial barrier at the Applecross Drive entrance and this helped considerably with the parking. But it was just the one time.

The overflow parking lot should stay and my hope is that Tanger, with the city's help, can find a solution for their customers to park outside of Arrowhead Greens.

I respectfully asked that the planning board take this request into consideration before making a final decision.

I do thank you for allowing me the opportunity to share my concerns and hope that you will share this with the Mebane City Council as well.

Sincerely,

Deborah Greer

Corey Trimpey
521 Applecross Drive
Mebane, NC 27302

My name is Corey Trimpey. I am a resident at 521 Applecross Dr in the Arrowhead Greens "AHG" neighborhood across the street from this proposed building plan.

I have been a resident of AHG since July 2015. Over the past 5 years I have seen the overflow lot full during the holiday shopping season. This is great for business at Tanger, but has caused challenges when the overflow lot has reached maximum capacity.

During Black Friday our neighborhood has seen heavy pass through traffic from Arrowhead Blvd to 8th St via Applecross Dr, minor property damage e.g. nonresidents damaging grass in homeowners yards with vehicles, and irregularly heavy parking along Applecross Dr.

If the overflow lot is removed and built upon with this job then I am requesting that Mebane PD be available to monitor Applecross Dr while within shopping season. Their purpose is to limit parking/traffic to increase safety for AHG residents including our children and reduce the possibility for property damage. This Mebane PD monitoring should be conducted each weekend starting Black Thursday/Friday through December 25. These weekends always have consumers utilizing that parking lot which is planned to be built upon.

Another proposal could be to purchase the lots across from this job on Applecross Dr to be made into parking lots

AHG streets are public, but they are not engineered for the type of heavy traffic or public parking as the Tanger parking lot is designed to accomplish.

Attached are two images of comments from the private AHG Facebook page. These images create the picture for the importance of governing our neighborhood with safety when the overflow lot is full and when there is a large volume of shoppers. These screenshots are what we experience when the lot is full and Tanger is busy.

I expect no positive outcomes for our neighborhood when the lot is no longer there and shoppers want to park. I expect your decision has already considered this challenge.

Sincerely,

Corey Trimpey

Text of attachments from Corey Trimpey's email:

November 29, 2019 Facebook post to private AHG Facebook page: *"Is our neighborhood now becoming the new Tanger Outlet parking lot? Why was the entrance not blocked the way it used too?"*

November 24, 2016 Facebook post to private AHG Facebook page: *"This evening at 6pm, the Mebane PD will be placing cones at the front entrance to our neighborhood. In an effort to protect our safety, these cones will prevent people from parking in our neighborhood for Black Friday and keep people from using our neighborhood to cut through to Tanger. Once Tanger parking lots are full, police officers will be stationed at the front of the neighborhood to monitor access to the neighborhood. Please use the back entrance until cones are removed and be sure to pass this message along to neighbors not on FB. Have a safe and Happy Thanksgiving!"*

Paul Koonts asked Charles Worsham with Tanger to help address the public comments regarding parking. He remarked that Tanger parking was one of the first things discussed with this project. Mr. Koonts stated that he believes Tanger is considering plans to help alleviate the parking situation.

Charles Worsham introduced himself and Jeff Johnson, on-site General Manager for the Tanger Outlets at 4000 Arrowhead Boulevard, Mebane, NC 27302. He recognized that one of the downsides of being a very successful retail center is the parking. Mr. Worsham clarified the use of the phrase "overflow parking" in the discussion, noting that the parking provided in the lot in

question was intended to serve a retail building that Tanger elected not to build with original construction. He stated that Tanger meets code and requirements and recognized that during the holiday season the excess parking does tend to fill up. Mr. Worsham remarked on Tanger's efforts to address parking needs during the holiday season, including the lease of parking from Cone Health, use of a shuttle, and a valet service option. He referenced cooperation between Tanger and the City of Mebane Police Department to try and prevent the parking that spills over and recognized that some customers are not cognizant of being a good neighbor and may park on residential streets. Mr. Worsham remarked that parking during the holiday season is a primary focus for Mr. Johnson, particularly the Black Friday weekend and the second Saturday in December. He stated those peaks do tend to lead to spillovers, and Tanger has gone to great efforts to try to mitigate those spillovers, as was previously described. Mr. Worsham asked Jeff Johnson to speak to the mitigation efforts.

Jeff Johnson remarked that every year Tanger looks at the parking challenge and talks with the Police Chief and Assistant Chief early on. He noted that having the police help once the overflow lot fills up has helped a tremendous amount. Mr. Johnson stated that the use of Cone Health parking has allowed for employees to park there, or be dropped off, and use the provided shuttle system. He stated he believes the biggest thing now is to push that options are available and that if the overflow parking is to go, Tanger still has plenty of space over at Cone Health. Mr. Johnson remarked that having the Mebane Police out with cones has contributed to use of parking at Cone Health and recognized that one of the residents of the nearby subdivision is the Police Chief and he keeps Tanger informed.

Paul Koonts recognized a note in an email inquiring if the Tanger site would meet all parking requirements. He stated that the site in question was always proposed as commercial, mixed-use and was never proposed for parking. Mr. Koonts remarked that this project was started pre-COVID, and he recalled conversation about a future parking deck across from Tanger or somewhere nearby. He stated if the parking deck happens, it happens, and he did not want to tie this potential project with Tanger.

Charles Worsham replied that the parking provided at Tanger is roughly four (4) per thousand (1,000), and may be a little above that, as far as parking ratio. He said this is seen across the board as Tanger develops throughout the country – a less parking-intensive construction. Mr. Worsham noted that it is difficult to mitigate the parking problems that occur four to five days out of the year and remarked that Tanger has found that at four per thousand, they operate efficiently and it is a trend within the industry, in retail environments, and typical requirements for Tanger tenants. He stated that the key thing Tanger can do is be the best neighbors they can be and manage the situation on heavy traffic days, especially during the holiday season. Mr. Worsham stated it does Tanger no good for people to not have a place to park and for Tanger not to be able

to manage turnover efficiently, as the last thing Tanger wants is a frustrated customer that does not come back a second time. He stated Tanger has thought about parking extensively, discussed it internally when first looking at this project and considering the sale of the land, and was able to get comfortable with it operationally and make it work. Mr. Worsham referenced Tanger's relationship with the City of Mebane and the Police Department for future management of the few peak days throughout the year.

Ashley Ownbey read from the approval letter for Tanger Outlets, dated October 12, 2007, confirming Mr. Worsham's previous reference to required parking of four parking spaces per every 1,000 square feet of gross leasable area.

Lori Oakley asked Ashley Ownbey if she had confirmed that by removing what has been called the "overflow" parking lot Tanger would be meeting the required four per 1,000.

Ashley Ownbey replied that she and Cy Stober, Development Director, were working on confirming the square footage of Tanger but encountered some difficulty with different records. She asked Mr. Stober to help address Ms. Oakley's question.

Cy Stober replied that the Planning Department does not have an exact figure now. He explained that Alamance County Tax Records has a low building square footage, possibly an underestimate, on the tax records available through the GIS website and he did not have the time to investigate additional records. Mr. Stober estimated the building as roughly 400,000 square feet, give or take 25,000 to 50,000 square feet, and the on-site parking – without the overflow lot – as 11.5 acres. He did not have the number of spaces in the parking lot.

Ashley Ownbey asked if Jeff Johnson might be able to speak to this question as well.

Charles Worsham responded that, if helpful, Tanger could share the survey that has the exact parking calculation. He believed an estimate of 1,100 parking spaces is correct and stated that Tanger looks at gross leasable area, so the estimate of overall building square footage of some 400,000 overstates it. Mr. Worsham stated that he did not know the gross leasable area off the top of his head and asked Jeff Johnson if it was around 350-something.

Jeff Johnson replied it was actually around 318,000.

Charles Worsham stated that Tanger may be in excess of 20-something parking stalls with the removal of the parking east of the creek. He stated the details could be provided as a follow-up to the hearing.

Jeff Johnson remarked that they had actually added a couple of spaces, so they would need to get the surveyed numbers adjusted.

Kurt Pearson asked if it was okay to ask a general question for Ashley Ownbey, to which she agreed. Mr. Pearson noted that the Planning Department recommends approval, the project has already been through TRC and the plan has been revised accordingly, but the applicant is asking for a lot of waivers. He asked if any of the waivers listed would cause any heartburn for the staff or any others. He emphasized there are a lot of waivers, with some being very substantial, and asked for a feel of how the staff went about getting comfortable with so many waivers and some very substantial waivers, such as the lot size reduction to 1,900 square feet. He noted that is a big difference and is just one example. Mr. Pearson asked for a feel of staff's approach and recognized Cy Stober may also address the question. He asked for an idea of how the waivers were discussed.

Cy Stober replied the dimensional waivers for townhomes are standard, such as what has been seen with Mebane Towne Center, Villages at Lake Michael, and Townes at Oakwood Square, in terms of the setbacks and lot size reductions. He stated the coverage is larger, certainly when compared to the Villages at Lake Michael, but is comparable to some of the townhome projects in the city, certainly the more recent projects. He explained that the road width reductions and right-of-way reductions were something staff worked very hard with the applicant on to identify a road width that would be reduced in size but also would accommodate the public services needed to serve those residents as taxpaying residents of Mebane. Mr. Stober recognized the road width reduction as a compromise from what was initially proposed, which was an alleyway approach, and the public service optimum of a wider road width. He noted the compromise allows Fire and EMS to access all of the lots from the main road as well as having smaller roads to the rear-loading units to still allow trash pickup. Mr. Stober stated that to his recollection those were the main waivers discussed with the applicant. He asked Kurt Pearson if there was anything in particular he had a question about or concerns.

Kurt Pearson replied he did not have concerns about particular waivers but noted there were quite a few, with some of the waivers being substantial. He stated he was interested in staff's perspective and in how the City Council would feel about the waivers.

Cy Stober responded that during the review process by the Technical Review Committee (TRC) there is always the optimal number of units an applicant desires and City of Mebane standards. He remarked that this is a high-density project unlike most seen in the city and staff tried to think outside of the box while also maintaining what the Unified Development Ordinance (UDO) tries to accomplish. Mr. Stober noted the waivers associated with this project indicate a request from the applicant for relief from the stated intentions of the UDO.

Brett Basnight thanked the Planning Board and staff for considering the project. He noted that the plan shows a series of compromises City staff and the project's design team reached. Mr. Basnight described that each lot includes a 20-foot townhome with an attached garage, and the townhomes include kitchen and living space on the bottom floors and bedrooms on the second floor. He stated that providing value-oriented products is important to his team and drives the 20-foot townhome, with maximum square footage of 1,600. These aspects drive the waiver requests. Mr. Basnight stated that waivers also emerged because the units are rear-loading and staff wanted to see a larger public right-of-way for emergency vehicles to access units that front Arrowhead Boulevard. He noted that although there are many waiver requests, he thinks the end result will be a very attractive design aesthetic.

Kurt Pearson responded that he liked the rear-loading units and noted they appear in places nearby. He shifted the parking conversation from Tanger to the project, asking if the project would be providing two parking spaces per unit.

Brett Basnight responded that at a minimum, Mr. Pearson was correct. He stated there is one pull-in space, which is the garage, and a tandem space behind the garage. He noted the plan is also showing a tapered driveway strip so you could potentially fit two small cars or one SUV. At minimum the units will park two vehicles, and some units will accommodate enough parking for three vehicles.

Kurt Pearson stated that he had noticed the taper and remarked that one of the waivers is to provide 195 parking spaces instead of 213. He reviewed that at a minimum of two spaces per unit, there would be 170 parking spaces and inquired about available parking for guests. Mr. Pearson stated that he would not want to be in a situation where parking woes already exist at Tanger and new parking woes are created in this location, leading to parking on the street. He asked the applicant to address those concerns.

Beth Blackmon offered clarification, replying that with the parking calculation of 195 spaces only includes two spaces per unit – one in the garage and one in the driveway – plus the parking lot at the amenity center.

Kurt Pearson responded that the calculation explanation emphasizes the lack of parking available for guests within the development and asked if that was not a concern.

Brett Basnight responded that the calculation could be revised. He noted that Ms. Blackmon's description indicates the plan is actually showing more parking than what is included in the calculation because of the drive's taper.

Beth Blackmon replied that they did not account for the taper area, not knowing what type of cars residents would have. She noted the two spaces/unit plus amenity center parking is fairly standard and the taper does add extra parking. Ms. Blackmon stated that units able to be set back by 30 feet received extra driveway length, noting the waiver request for less setback is to fit the wider right-of-way worked out with City Engineering to change from a 20-foot alley to a 35-foot right-of-way.

Lori Oakley asked if Road A allows any on-street parking. She stated that since we are in the South, people do not always park in their garages and asked where the overflow and visitor parking would be located and if room existed on Road A for on-street parking.

Beth Blackmon clarified that all of the roads are the same pavement width, noting the right-of-way as the only thing that is different on Roads C and D. She stated the pavement width is 31-foot back-to-back. Ms. Blackmon noted that it comes back to whether Mebane allows on-street parking.

Cy Stober responded that the City does not regulate on-street parking unless requested by petition of the local residents.

Lori Oakley responded that it is good to know Roads C and D would be the same profile as other roads, noting a street profile was not included and one of her questions was if those roads were the same as Road A.

Beth Blackmon replied the only difference is sidewalk does not exist along all of Roads C and D and the right-of-way width is narrower.

Kurt Pearson asked if there would be a subdivision regulation to allow parking in the yard.

Brett Basnight responded that they would not allow parking in the yard. He noted that part of the program/amenity is to have staff on-site, seven days a week. Mr. Basnight stated a property manager would be on site to make sure yards are not left unsightly and yards would be managed through contract services provided by the property management team.

Kurt Pearson asked if anyone had anything else on the parking before moving on.

Charles Worsham responded that he pulled the Tanger numbers. Tanger's gross leasable area is 318,886 square feet, which at four per thousand would require 1,276 parking spaces. He stated that with the removal of the parking lot for the townhome project, Tanger will have 1,308 on-site parking spaces.

Kurt Pearson noted Tanger exceeds what is required and asked if anyone else had anything to add to the parking conversation.

Chairman Edward Tulauskas replied with concerns that individuals may straddle the curb or park vehicles over the sidewalk along Arrowhead Boulevard and asked how that would be prevented.

Beth Blackmon responded that a streetscape buffer is required there that would be landscaped. She stated there is room for someone to jump the curb and noted the sidewalk is in the right-of-way and a berm would be further back.

Chairman Edward Tulauskas replied that although parking there could not be eliminated, it could be deterred.

Kurt Pearson stated that over the last few years he has shared concerns with Planning Board and staff about the number of apartments in Mebane. He noted the project does not propose apartments, but the townhomes are rental units. He recognized that Larry Teague had asked prior to the meeting for an updated count and ratio of rentals. Mr. Pearson stated that the updated number received was 37% rental, which he has found for a long time to be really high. He stated he was not sure that was healthy. Mr. Pearson noted that Planning staff computed the numbers before and after the development, and the ratio did not change. He proposed for staff and City Council to consider what is enough rental units and at what percentage does the ratio of rental-to-own become unhealthy. Mr. Pearson reflected that as a former practicing planner he believes Mebane has stepped over the boundary. He expressed concern of the city becoming a rental haven, noting his comment has little to do with the proposed development and that he liked the townhome design. He stated he wanted to bring up the discussion again and remarked Mebane has stepped over the line with the percentage of rentals in the city.

Larry Teague seconded Mr. Pearson's comments.

Kurt Pearson suggested the Planning Board and staff sit down for a discussion. He recalled during a previous review of the UDO, the City compared itself to peers such as Knightdale and Gastonia and was off the charts with the number of apartments. Since that review, other apartments have been approved. Mr. Pearson reiterated his concern and asked for further discussion with staff to get a better idea of what is enough.

Cy Stober replied that Mr. Pearson's questions can be reviewed by the Planning Department, which will be fully staffed by the end of August. He remarked the two newest planners have background with affordable housing, which is not exactly the same topic Mr. Pearson brings up

but the rental-ownership discussion does interplay with affordability. Mr. Stober stated the Planning Department could do more research and return to the Planning Board for a more robust discussion, perhaps in a separate work session. He stated that to address staff findings an amendment to the Comprehensive Land Development Plan or a separate planning document adopted by the City may be required. Mr. Stober remarked the study should go hand-in-hand with current UDO revisions.

Kurt Pearson clarified that adding 85 rental units to the specific location with the townhome design is not something he is leaning toward voting against because it is so different. He stated his appreciation for setting up a discussion with staff.

Charles Worsham responded that Tanger has been looking to develop the property for some time and they wanted to make sure they had the right fit and product. He remarked that the uniqueness of this project was attractive to Tanger along with the amenities, partnering with a national builder, and seeing similar developments to what is being proposed.

Lori Oakley commented that seeing townhomes as rental units did strike her as odd, especially given the units exist on individual lots. She noted her appreciation of the neo-traditional planning design and having the lots front Arrowhead. She commented that the buffer appears to encroach into Lot 1A, and Lots 1A and 82A-85A do not appear to have front yards.

Beth Blackmon responded that was correct and the landscaping would have gaps for sidewalk and access in and out. She noted that in reverse, the other side comes out and there is parking.

Lori Oakley questioned why there was not a request for an additional waiver to give those lots a front yard.

Beth Blackmon noted that Lot 1A is one of the smaller lots in order to accommodate a larger right-of-way for Roads C and D. She noted no discussion of reducing the buffer.

Lori Oakley noted that the streetscape buffer also goes to the front of the townhomes for Lots 82A-85A.

Beth Blackmon responded that it may be possible to have the same number of plantings typically required but in a different arrangement, with some plantings pushed together and gaps for sidewalk.

Lori Oakley inquired about a gap in sidewalk to the north of Road A. She asked it that was missing due to topography and the floodplain.

Beth Blackmon replied it was a constructability issue with the right-of-way width crossing an existing culvert.

Lori Oakley asked if permeable pavers might be a possibility as she foresees individuals living on the western side of the property wanting to stay on the northern side of Road A to travel to the amenity center.

Cy Stober asked Ms. Oakley if she is asking for the trail to be looped on the north side of Road A.

Lori Oakley responded that she was curious if anything could fit on that side.

Brett Basnight replied that they could look into the sidewalk gap and suggested a possible crosswalk between Lots 43 and 44.

Lori Oakley advised to consider if anything will work on the northern side and if nothing works then add the suggested crosswalk.

Lori Oakley noted a typo on Sheet 2.0, with the typical lot layout still identifying an alley. She also commented that Sheet 5.0 still has Roads C and D depicted as a private right-of-way. Ms. Oakley then asked about the location of cluster mailboxes.

Brett Basnight replied those would be placed under direction from the U.S. Postal Service.

Cy Stober stated staff is silent on the placement of the mailboxes given direction from the local postmaster that the City has no jurisdictional authority as to where mailboxes are located.

Lori Oakley responded she has had different experiences with local postmasters and remarked that some mailbox clusters are poorly located.

Larry Teague commented that flooding is already occurring on the south side of the Interstate and asked the applicant how they are ensuring the new development does not contribute additional water.

Beth Blackmon replied a study and report would be completed with the construction drawings. She remarked the site was initially designed for commercial use, which would have been more impervious than what is currently proposed. Ms. Blackmon stated the existing stormwater ponds were designed to handle the more impervious, commercial site design.

Larry Teague asked Ms. Blackmon if she felt a need to make any improvements would not exist.

Beth Blackmon responded there should not be a need for improvements if the stormwater ponds are functioning as they should. She stated more studies would determine if improvements are necessary.

Larry Teague stated flooding was occurring and remarked water from the site flows into the drinking water for Chapel Hill and Pittsboro.

Cy Stober asked Ashley Ownbey to read an email from the City's engineering firm.

Ashley Ownbey read from an email that the existing detention pond will require significant work in order to be considered acceptable. The pond was built for erosion control and has not been converted to a stormwater pond. If the project moves forward, a conversion is required and the pond will need to be certified and as-builts provided to confirm compliance.

Chairman Edward Tulauskas asked for any other comments or questions.

Thomas Vinson asked for a response from staff regarding the list of waivers.

Cy Stober responded staff negotiated the waivers with the applicant and, as stated before, the result is a compromised vision. He commented this is a new type of project for Mebane and the waivers generally reflect the higher density of the development. Staff considered surrounding land uses, the proximity to the Interstate and Arrowhead Boulevard, and reviewed consistency needs in *Mebane By Design*. Mr. Stober commented staff was satisfied that even with the waivers, the applicant met the intentions of the City's adopted plans and was not proposing anything inconsistent with surrounding land uses.

Kurt Pearson made a motion to approve the R-6 conditional zoning as presented and a 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* and 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).

Lori Oakley seconded the motion, which passed with a split vote.

Cy Stober asked Chairman Edward Tulauskas for a roll call vote due to the virtual nature of the meeting. Chairman Edward Tulauskas called for a roll call vote. Mr. Teague and Ms. Pettiford,

nays. Vice Chairman Taylor, Mr. Pearson, Ms. Oakley, Mr. Brouwer, Mr. Vinson, and Mr. Hoover, ayes. The motion passed with a 6-2 vote.

Chairman Edward Tulauskas stated the request will go to City Council on Monday, September 14.

4. New Business

Ashley Ownbey provided a brief update on the Lowes Boulevard Corridor Plan and invited the members of the Planning Board to participate in the planning effort.

Kurt Pearson thanked Cy Stober for offering to facilitate a discussion with the Planning Board about the number of rentals in Mebane. He stated his interest in scheduling the discussion quickly so that it can occur before the Planning Board receives future requests for multifamily development.

Cy Stober thanked Ashley Ownbey for her preparation and presentation to the Planning Board and asked Ms. Ownbey to briefly introduce herself.

Larry Teague thanked the Planning Board for the questions and concerns discussed during the meeting and remarked on growth in Mebane and the continued need for careful consideration of requests by the Planning Board.

Cy Stober responded that although delayed, the widening project on Mebane Oaks Road is expected to begin soon.

5. Adjournment

There being no further business, the meeting was adjourned at 7:45 p.m.