



**TOWN OF WEDDINGTON
REGULAR PLANNING BOARD MEETING
MONDAY, JANUARY 26, 2026 – 7:00 P.M.
WEDDINGTON TOWN HALL
1924 WEDDINGTON ROAD
WEDDINGTON, NC 28104
AGENDA**

1. Call to Order
2. Determination of Quorum
3. Conflict of Interest Statement: *In accordance with the state government ethics act, it is the duty of every Board member to avoid conflicts of interest. Does any Board member have any known conflict of interest with respect to any matters on the agenda? If so, please identify the conflict and refrain from any participation in the matter involved.*
4. Approval of Minutes
 - A. December 15, 2025 Regular Planning Board Meeting
5. Public Comments: *Individuals are allowed 3 minutes to speak and must only comment on current agenda items. A maximum of 30 minutes is allocated to the Public Comment Period. The time limit may be extended at the discretion of the Chairman.*
6. Old Business
 - A. Discussion of Workshop regarding UDO Section D-917E Additional Specific Requirements for Conventional Residential Development
 - B. Discussion and Possible Recommendation of D-917 Text Changes as proposed from workshop.
7. New Business
 - A. Discussion and Possible Recommendation of an application by Toll Brothers requesting Conditional Zoning Approval for the development of a 39-lot Conventional subdivision located on Weddington-Matthews Road (Parcel Number 06120011)
8. Update from Town Planner and Report from the January Town Council Meeting
9. Board member Comments
10. Adjournment



**TOWN OF WEDDINGTON
REGULAR PLANNING BOARD MEETING
MONDAY, DECEMBER 15, 2025 – 7:00 P.M.
WEDDINGTON TOWN HALL
MINUTES
PAGE 1 OF 3**

1. Call to Order

Chairman Chris Faulk called the meeting to order at 7:00 p.m.

2. Determination of Quorum

Quorum was determined with Chairman Chris Faulk, Vice Chair Rusty Setzer, Board members Amanda Jarrell, Bill Deter, and Scott Buzzard present. Board member Steve Fellmeth was absent and there is one vacant seat on the Board.

Staff present: Town Planner Gregory Gordos, Town Administrator/Clerk Karen Dewey

Visitors: Christopher Neve, Tracy Stone, Jim Bell

3. Conflict of Interest Statement: *In accordance with the state government ethics act, it is the duty of every Board member to avoid conflicts of interest. Does any Board member have any known conflict of interest with respect to any matters on the agenda? If so, please identify the conflict and refrain from any participation in the matter involved.*

Chairman Faulk read the Conflict of Interest Statement. No Board member present had a conflict of interest.

4. Approval of Minutes

A. November 6, 2025 Special Planning Board Meeting

Motion: Board member Deter
Second: Board member Buzzard
Vote: The motion passed with a unanimous vote.

B. November 17, 2025 Regular Planning Board Meeting

Motion: Board member Deter
Second: Board member Buzzard
Vote: The motion passed with a unanimous vote.

5. Public Comments: *Individuals are allowed 3 minutes to speak and must only comment on current agenda items. A maximum of 30 minutes is allocated to the Public Comment Period. The time limit may be extended at the discretion of the Chairman.*

Christopher Neve, 110 Chasestone Court, addressed the Board regarding the meeting schedule discussion. He wanted to highlight that while the Board would be discussing when meetings would be held, he hadn't recalled hearing discussion about the time of evening for either council meetings or planning board meetings. While not advocating for a change, he suggested that as the board discussed the schedule, they consider the possibility of meeting at 6:00 or 6:30 PM instead of 7:00 PM.

6. Old Business

No old business was discussed.

7. New Business

A. Approval of 2026 Regular Meeting Schedule

Ms. Dewey stated draft schedule was in the Board packets. She noted there were adjustments for the holiday season where meetings would fall on the holiday, for example, Memorial Day week, when the meeting was moved to Tuesday. She indicated it was up to the board whether to keep these adjustments.

Chairman Faulk asked if anyone had issues with keeping the schedule as presented, to which there was general agreement. Board members confirmed they had already put the dates on their calendars and that the fourth Monday pattern worked well.

A discussion ensued about the 7:00 PM start time. It was clarified that the later start time accommodated situations when other boards like the Board of Adjustment or Historic Preservation Commission met beforehand. Board member Deter added that the 7:00 PM time also gave people time to get home from work before attending the meeting. He noted they generally liked to mirror what the town council does to keep meeting times consistent.

Ms. Dewey pointed out that the fourth Monday in December 2026 would fall on December 28th, the week after Christmas. Board members expressed concern about this date, after discussion, Chairman Faulk suggested addressing the December meeting date when the Board meets in November 2026, making a decision based on circumstances at that time. The Board agreed to leave the December 28th date and revisit it later.

The Board confirmed that the only non-Monday meeting would be Tuesday, May 26th, following Memorial Day on May 25th.

Motion: Board member Deter
Second: Board member Jarrell
Vote: The motion passed with a unanimous vote.

8. Update from Town Planner and Report from the December Town Council Meeting

Mr. Gordos provided the update, thanking the chairman and board members present. He reported that the December Town Council meeting primarily focused on the change in

administration with newly elected members. The town has two new council members and the mayor was reelected. This administrative transition was the primary business of that meeting.

Mr. Gordos informed the Board that several pending subdivisions would come before them in the new year, with actionable items expected for discussion in January, February, and March based on their current calendar. He also noted that new administrations typically bring new text amendments and proposed changes to policies and procedures. He expected quite a few text amendments to come forward. Mr. Gordos reminded the board that they had discussed some clerical items and text amendments in workshop and regular meetings in November, but these were paused for the holidays in December. These would be reintroduced in January, with plans to bundle multiple text amendments together rather than dealing with them during everyone's busy holiday schedules.

9. Board member Comments

Board member Deter wished everyone a Merry Christmas and thanked the staff for everything they do. He looks forward to continuing the progress made in the past year going into 2026.

Board member Setzer thanks to staff, stating it had been great working with them throughout the year. He wished everyone a Merry Christmas and a very safe holiday season.

Board member Jarrell agreed that staff was always awesome and thanked them for all they do. She acknowledged Chris Faulk and Rusty Setzer for their leadership of the board throughout the year, expressing appreciation for their work.

Board member Buzzard added "Merry Christmas to all, and to all, good night."

Chairman Faulk agreed with all the sentiments expressed and thanked staff.

10. Adjournment

- Motion:** Board member Deter made a motion to adjourn the December 12, 2025 Regular Planning Board meeting at 7:10 p.m.
- Second:** Board member Buzzard
- Vote:** The motion passed with a unanimous vote.

Approved: _____

D917 REQUIREMENTS FOR DEVELOPMENT

Proposed clarifying text changes

D917A Specific Requirements For All Residential Development:

D917A-(P) Open Space. Any major subdivision shall be required to provide a minimum of 20% of the gross area of the subdivision, exclusive of any required minimum buffers along thoroughfares, consists of common open space. Fifty percent of any rights-of-way for existing overhead utilities may be counted toward the minimum required open space. Open space may be used for limited purposes set forth in section D917B(1). [Note, this subsection ~~R~~ **P** is not applicable to conservation residential developments which have significantly higher open space requirement (Section D917B)]

D917B Additional Specific Requirements For Conservation Residential Development:

D917B-(B)(1) Minimum Open Space. At a minimum, fifty percent (50%) of the ~~net acreage~~ **adjusted tract acreage yield** of the tract will be required to be retained as **Secondary** Conservation Land. ~~Not more than zero percent (0%) of the minimum required area of conservation lands shall be comprised of wetlands, submerged lands, steep slopes, floodways, or land under high voltage electrical transmission lines (conducting 69 kilovolts or more).~~

D917B-(C) Priority of Secondary Conservation Lands. In delineating conservation areas, the applicant shall use the following tier system as a guide, with those lands included in Tier A having the highest priority for preservation; provided, however, that in certain portions of the town, the priorities defined may be altered by the town in order to maximize achievement of the goals and objectives of maintaining open space through conservation residential development projects:

1. Tier A, Highest Priority.
 - a. Forestlands
 - ~~b. Steep slopes (greater than twenty five percent (25%)).~~
 - e. Viewsheds from thoroughfares.**
2. Tier B, Medium Priority.
 - a. Farmlands, meadows, pastures, and grasslands.
 - b. Historic sites.
3. Tier C, Lowest Priority.
 - a. Moderate steep slopes fifteen to twenty five percent (15% to 25%).
 - b. Rock formations.
 - c. Land adjacent to parks.

D917B-(E) Primary Conservation Lands. ~~Stream Valleys, Swales, Springs, and Other Lowland Areas.~~ ~~Stream valleys, swales, springs and other lowland areas are resources that warrant restrictive land use controls because of flooding hazards to human life and property, their groundwater recharge functions, their importance to water quality and the health of aquatic communities, and their wildlife habitats. They are generally poorly suited for on-site subsurface sewage disposal systems. Accordingly, the following activities shall be minimized in such areas:~~

- ~~1. Disturbance to streams and drainage swells.~~
- ~~2. Disturbance to year-round wetlands, areas with seasonally highwater tables and areas of surface water concentration.~~
- ~~3. Because of their extreme limitations, stream valleys, swales, submerged land, floodplains, steep slopes greater than twenty five percent (25%) and other lowland areas may warrant designation as Primary Conservation Lands. They may also require adjoining buffer lands to be included as Conservation Lands to be determined by an analysis of the protection requirements as determined by~~

the Town Council on a case-by-case basis upon finding that designation of such areas as Conservation Land would have significant and long-term environmental impact on the Conservation Lands.

D917E Additional Specific Requirements For **Conventional Residential Subdivisions**, ~~or Major Subdivisions~~.

D917E-(B)(1) Minimum Open Space.

1. At a minimum, twenty percent (20%) of the gross acreage of the tract will be required to be retained as Common Open Space (COS). **Primary Open Space (POS) may count toward achieving the 20% Common Open Space requirement of this UDO.** ~~Not more than fifty percent (50%) of the minimum required area of open space shall be comprised of wetlands, submerged lands, steep slopes, floodways, or land under high voltage electrical transmission lines (conducting 69 kilowatts or more).~~

DEFINITIONS

Adjusted Tract Acreage Yield means the total gross tract acreage after excluding the primary conservation areas.

Conservation Land means that portion of a tract that is set aside for permanent and perpetual protection as required by this UDO.

- (1) Primary conservation land means that portion of the tract that consists of viewsheds, floodplains, wetlands, lakes, ponds, hydric soils, **and steep slopes greater than twenty five percent (25%).**
- (2) Secondary conservations land shall include that portion of the tract that consists of forestland, farmland, historic sites, ~~steep~~ **moderate slopes less than twenty five percent (25%),** rock formations, and land adjacent to parks.

Open Space means a land area or water feature that conserves, enhances, or creates a natural or scenic resources and wildlife habitat or that enhances or creates outdoor recreational opportunities. Open space may be dedicated for public **use (e.g. cluster mailboxes locations, entrance monuments, etc.)** or held under private ownership. Open space may be active (e.g. ~~soccer, baseball, or football fields,~~ **sports fields,** playgrounds, etc.) or passive (e.g. bicycle, walking, or jogging trails, etc.) recreation. All conservation land, as defined above, is open space. However, all open space is not necessarily conservation land. As defined, open space may be land left in its natural state or grass and planted medians with trees in a residential, commercial, or nonresidential development.

Primary Open Space means that portion of the tract set aside in Conventional developments for permanent and perpetual protection as required by this UDO.

D917 REQUIREMENTS FOR DEVELOPMENT

D917A Specific Requirements For All Residential Development:

P. Open Space. Any major subdivision shall be required to provide a minimum of 20% of the gross area of the subdivision, exclusive of any required minimum buffers along thoroughfares, consists of common open space. Fifty percent of any rights-of-way for existing overhead utilities may be counted toward the minimum required open space. Open space may be used for limited purposes set forth in section D917B(1). [Note, this subsection ~~R P~~ is not applicable to conservation residential developments which have significantly higher open space requirement (Section D917B)]

D917B Additional Specific Requirements For Conservation Residential Development:

B. Minimum Open Space. At a minimum, fifty percent (50%) of the ~~net acreage~~ **adjusted tract acreage yield** of the tract will be required to be retained as Conservation Land. ~~Not more than zero percent (0%) of the minimum required area of conservation lands shall be comprised of wetlands, submerged lands, steep slopes, floodways, or land under high voltage electrical transmission lines (conducting 69 kilovolts or more).~~

C. Priority of Conservation Lands. In delineating conservation areas, the applicant shall use the following tier system as a guide, with those lands included in Tier A having the highest priority for preservation; provided, however, that in certain portions of the town, the priorities defined may be altered by the town in order to maximize achievement of the goals and objectives of maintaining open space through conservation residential development projects:

1. Tier A, Highest Priority.
 - a. Forestlands
 - ~~b. Steep slopes (greater than twenty five percent (25%)).~~
 - e. **b.** Viewsheds from thoroughfares.
2. Tier B, Medium Priority.
 - a. Farmlands, meadows, pastures, and grasslands.
 - b. Historic sites.
3. Tier C, Lowest Priority.
 - a. Moderate steep slopes fifteen to twenty five percent (15% to 25%).
 - b. Rock formations.
 - c. Land adjacent to parks.

E. Primary Conservation Lands. ~~Stream Valleys, Swales, Springs, and Other Lowland Areas.~~ Stream valleys, swales, springs and other lowland areas are resources that warrant restrictive land use controls because of flooding hazards to human life and property, their groundwater recharge functions, their importance to water quality and the health of aquatic communities, and their wildlife habitats. They are generally poorly suited for on-site subsurface sewage disposal systems. Accordingly, the following activities shall be minimized in such areas:

- ~~1. Disturbance to streams and drainage swells.~~
- ~~2. Disturbance to year-round wetlands, areas with seasonally highwater tables and areas of surface water concentration.~~
- ~~3. Because of their extreme limitations, stream valleys, swales, submerged land, floodplains, steep slopes greater than twenty five percent (25%) and other lowland areas may warrant designation as Primary Conservation Lands. They may also require adjoining buffer lands to be included as Primary Conservation Lands., This is to be determined by an analysis of the protection requirements as determined by the Town Council Planning Board on a case-by-case basis upon finding that designation~~

UDO NOTES FOR ACTION

- 1.) Remove B17 from Appendix 2B as it is covered in B57.
- 2.) Add text to B41 on Appendix 2B to include *neighborhood green*.
- 3.) Change the text wording on D917B-(L) (9) to: *Neighborhood Green Required: ~~To the greatest extent possible, e~~Each conservation residential development should provide at least one neighborhood green, not less than 10,000 square feet in area, planted with shade trees at 40-foot intervals around the edge. Existing trees on the neighborhood green may count toward the shade tree planting requirement.*
- 4.) Change Appendix 2B requirement B44 to Final Plat only and not be a requirement for the Schematic Plan.
- 5.) Administrative correction to Tree Ordinance: D917A-Q(2)(b)(iv) that states 2” caliper and D917A-(6)(b) that states 2.5” caliper.
- 6.) Need a PB discussion to clarify and gain alignment on the terms *development site* and *buildable area* for Tree Save and Replenishment Requirements, D917A-(Q)(2)(b)(i,ii,iii). Development site should be the parcel. If RCD, Buildable Area should exclude the Primary Conservation land (flood planes, streams, ponds, steep slopes >25% but include the secondary conservation area and areas outside of the setbacks for the individual lots.
- 7.) D917A-G(2) Currently states *Before approval of a final plat . . .* This is now a requirement of Appendix 2B line B23. Text changes need to be made to align the two.
- 8.) D917B-B(1) refers to net acreage. Should this be replaced with the word adjusted tract acreage yield and the second sentence be deleted?
- 9.) D917B-E(3) should state *“Because of their extreme limitations, stream valleys, swales, and other lowland areas may warrant designation as Primary or Secondary Conservation Land.*
- 10.) D917E-B(1) Should the term gross acreage be replaced with adjusted tract acreage yield and the second sentence be deleted?
- 11.) D607C-3(b)(i) as part of a design charrette references D901(c)(20). This section does not exist in the UDO.
- 12.) Review proposed updates to Planning Board Rules of Procedure that were adopted 3/10/1986.
- 13.)

PREAPPLICATION CONSERVATION PLAN CHECKLIST (CONSERVATION RESIDENTIAL DEVELOPMENT ONLY)

The following items shall be incorporated into a conservation plan submitted as a part of the preapplication sketch plan, recognizing that this checklist of minimum requirements is not exhaustive and additional items may be requested depending on the nature of the proposed project.

PRIMARY CONSERVATION LAND:

_____ Identification of Primary Conservation Land as outlined in Definitions

(the portion of the tract consists of floodplains, wetlands, lakes, ponds, hydric soils, and steep slopes greater than twenty five percent (25%))

_____ Lists the acreage of Primary Conservation Land to be deducted from gross acreage

ADJUSTED TRACT ACERAGE YIELD:

_____ Calculates the adjusted tract acreage yield as outlined in Definitions

Adjusted Tract Acreage Yield = (Gross Acreage - Primary Conservation Land Acreage)

_____ Calculates the minimum percentage of Adjusted Tract Acreage Yield to be retained as Conservation Land for purpose of permanent preservation (at minimum 50%)

SECONDARY CONSERVATION LAND:

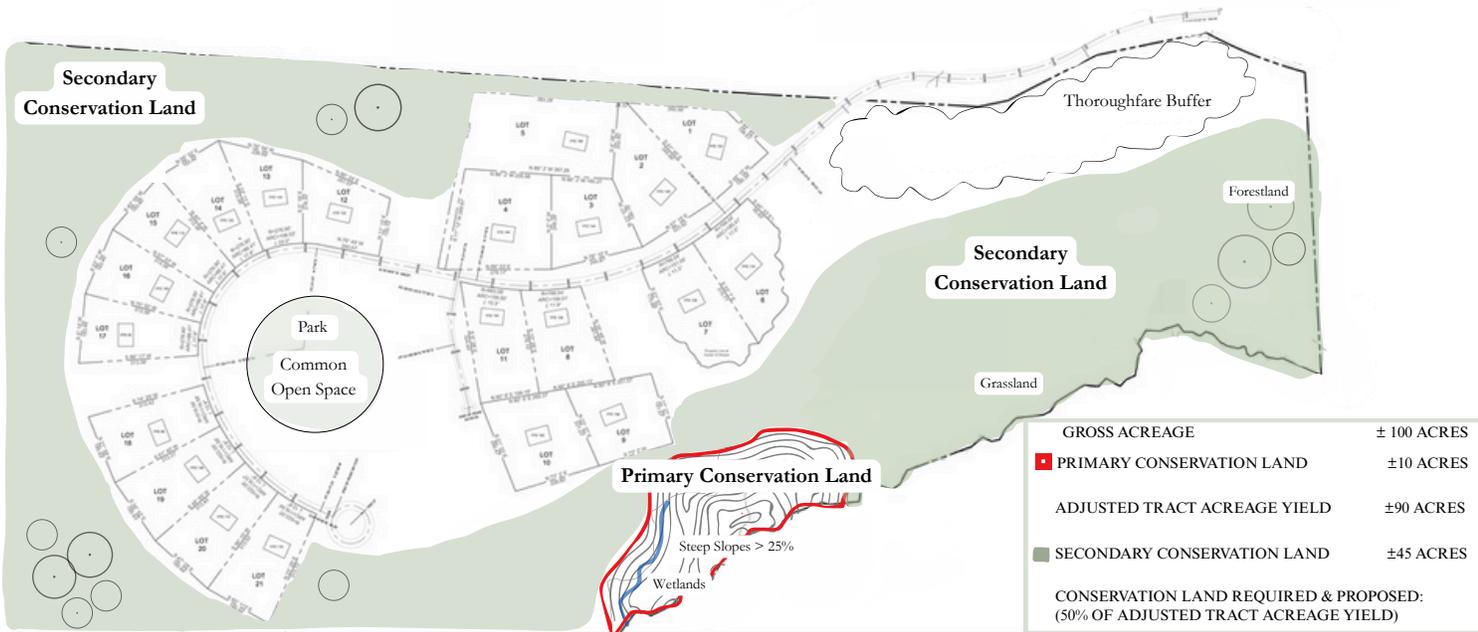
_____ Identification of Secondary Conservation Land as outlined in Definitions

(the portion of the tract consists of forestland, farmland, historic sites, moderate slopes less than twenty five percent (25%), and rock formations)

_____ Calculates the percentage of Secondary Conservation Land to be set aside for permanent and perpetual protection



R-CD Conservation Subdivision Open Space Plan Example



1 Display Adjusted Tract Acreage Yield to be Developed

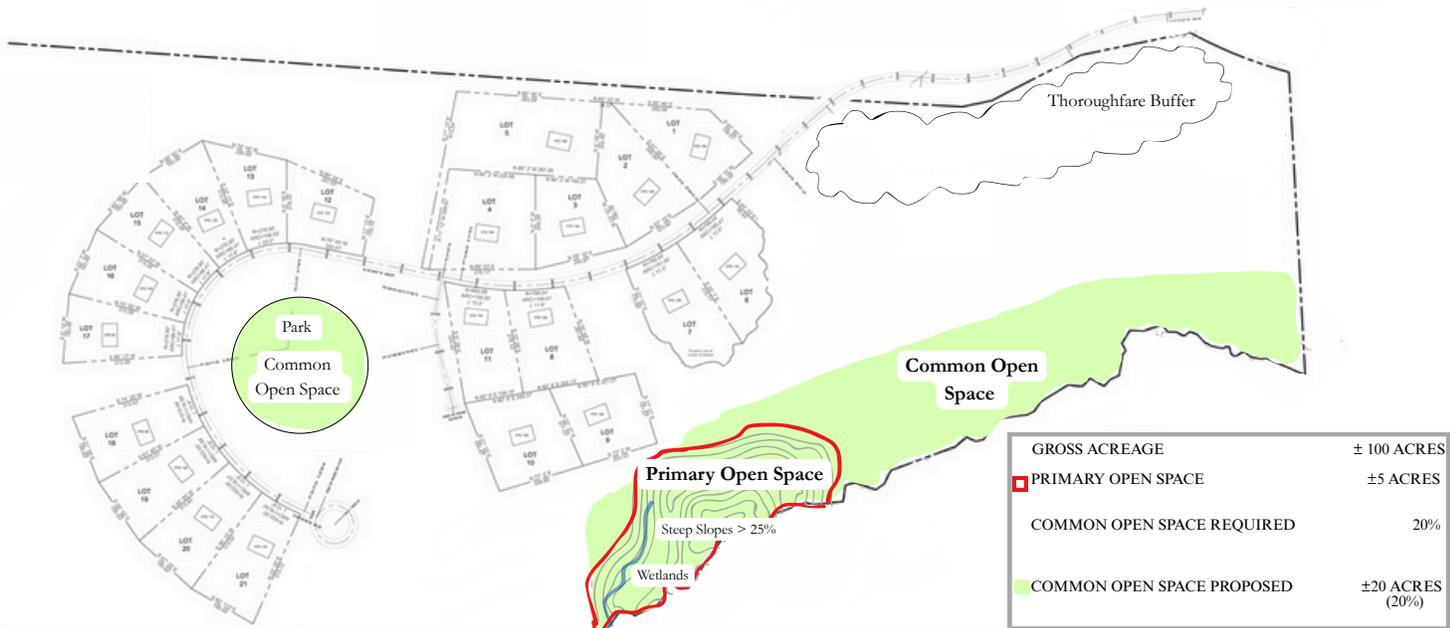
2 Mark Primary Conservation Land in Red

3 List acreage/percentages for designated conserved areas

Marshes, ponds, streams and stream beds, wetlands, steep slopes, and other natural features effecting the site.	X	X	B14
Existing Structures, watercourses, railroads, bridges, culverts, and storm drains both on the land to be subdivided and adjacent parcels		X	B15
Existing topography with vertical datum NAVD88 with 1' or 2' contours	X	X	B16
Existing tree locations per the UDO Tree Preservation Requirements	X		B17
Location of all easements and utilities	X		B18
Parcel description from Union County GIS	X		B19
Zoning classification of the tract to be subdivided and on adjoining properties.	X		B20
Proposed Site Improvements	Schematic Plan	Final Plat	Reference Number
Plans to be scale of not greater than 100' per inch and consistent between sheets. Listed in words and figures	X	X	B21
A traffic impact assessment per Appendix C and as required by the Traffic Impact and Analysis Manual.	X		B22
Entrances: Schematic plans shall include a detailed entrance design for all proposed access points. This design must illustrate the alignment and dimensions of the entrance road, pavement width, median layout (if applicable), and integration with existing public rights-of-way. Additionally, the plan shall identify monument sign locations, any landscape islands, lighting, and hardscape features associated with the entrance. All entrance designs should reflect the character of the proposed development and be consistent with applicable NCDOT and Town of Weddington access requirements and ordinance standards.	X		B23
Location and dimensions of required buffers and minimum building setback lines (berms, natural buffers, etc.)	X	X	B24
Percentage of open space required and provided, including the percentage of Primary Open Space incorporated in the open space calculation.	X		B25



R-CD Conventional (Traditional) Subdivision Open Space Plan Example



1 Display Acreage to be Developed

2 Mark Primary Open Space in Red

3 List acreage/percentages for designated open space

Plotted By: Loftin, Andrew Layout: CSP1-01 Brdr July 09, 2025 07:22:55am K:\CHL_PRA\012826085 Toll Brothers - Weddington\02 - DWG\Concept\DWG\Weddington Concept Plan_2025.06.03.dwg

ELDERBERRY CT

GLEN OAKS DRIVE

CARL LANE

BONNER DRIVE

VINTAGE CREEK DRIVE

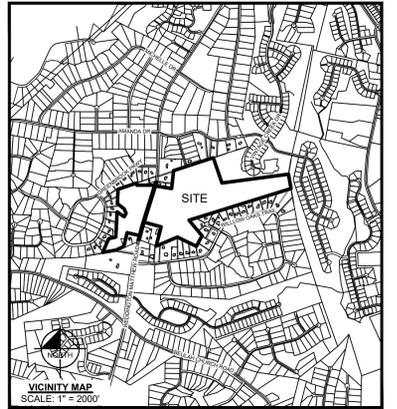
AMANDA DRIVE

GREENBROOK PKWY

WEDDINGTON MATTHEWS ROAD

CHERRY HOLLOW LANE

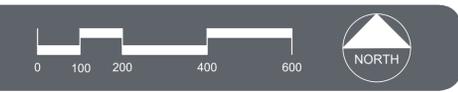
WILLOW OAKS TRAIL



SITE DATA TABLE	
DEVELOPMENT DATA:	
TAX PARCEL ID:	06120011
EXISTING LAND USE:	FARM
PROPOSED LAND USE:	RESIDENTIAL
LAND USE OF ADJOINING PROPERTIES:	RESIDENTIAL
TOTAL SITE AREA:	94.03± ACRES
ZONING DISTRICT:	R-CD (Town of Weddington)
FLOOD DATA:	
FEMA FLOOD PANEL:	3710447700L, 3710448700J
	ZONE X
LOT INFORMATION	
SINGLE FAMILY LOTS:	45
PROPOSED DENSITY:	0.48 DUA
TYPICAL LOT SIZE:	40,000 SF (120' Min. Width)
REQUIRED HOUSE SETBACKS:	
	FRONT: 50'
	SIDE: 15'
	REAR: 40'
COMMON OPEN SPACE:	
REQUIRED:	9.4 ± ACRES (10%)
PROVIDED:	33.2 ± ACRES (35%)
BUFFER YARDS	
50' PERIMETER BUFFER	
100' THOROUGHFARE BUFFER (CAN BE REDUCED TO 50' WITH PLANTED EVERGREEN MATERIAL)	
ESTIMATED IMPERVIOUS CALCULATIONS	
HOMES (70' x 70'):	±5.06 ACRES
DRIVEWAYS (20' x 60'):	±1.24 ACRES
ROW:	±7.94 ACRES
TOTAL:	14.2 ACRES (15% OF SITE)
SUBDIVIDER:	
ROBERT PRICE	
980-722-6715	
TOLL BROTHERS, INC.	
9130 KINGS PARADE BLVD	
CHARLOTTE, NC 28273	
PROFESSIONAL ENGINEER:	
ANDREW LOFTIN, PE	
704-954-8293	
KIMLEY-HORN AND ASSOCIATES, INC.	
200 S TRYON ST	
SUITE 200	
CHARLOTTE, NC 28202	
PROPERTY OWNER:	
MORRIS R S FAMILY LIMITED PARTNERSHIP	
5017 MATTHEWS WEDDINGTON RD	
MATTHEWS, NC 28114	
PROFESSIONAL LAND SURVEYOR	
JOHN W. STEVENS, PLS	
980-223-3873	
ESE OF NORTH CAROLINA, PC	
9130 KINGS PARADE BLVD	
CHARLOTTE, NC 28273	

LOT AREA TABLE			
LOT NUMBER	AREA (SF)	LOT NUMBER	AREA (SF)
1	72,395	16	40,080
2	72,240	17	41,070
3	52,435	18	41,420
4	44,540	19	44,840
5	43,820	20	40,090
6	41,600	21	40,010
7	42,170	22	42,120
8	49,470	23	40,320
9	40,070	24	40,310
10	40,030	25	40,738
11	40,030	26	54,056
12	40,010	27	43,830
13	40,110	28	41,615
14	40,750	29	40,790
15	40,230	30	42,620
		31	47,230
		32	40,290
		33	45,943
		34	51,030
		35	42,043
		36	41,664
		37	40,010
		38	40,061
		39	53,048
		40	77,580
		41	41,677
		42	40,250
		43	41,445
		44	46,230
		45	40,680

SMALLEST LOT: 40,010 SF
 LARGEST LOT: 77,580 SF
 AVERAGE LOT SIZE: 44,904 SF



THIS PLAN IS CONCEPTUAL IN NATURE AND HAS BEEN PRODUCED WITHOUT THE BENEFIT OF A SURVEY, CODE RESEARCH, OR CONTACT WITH THE CITY, COUNTY, ETC.



TO: Planning Board
FROM: Gregory Gordos, AICP, CZO, Town Planner
DATE: January 26, 2026
SUBJECT: Application by Toll Brothers requesting Conditional Zoning approval for a 39-lot Conventional subdivision located on Weddington-Matthews Rd.

APPLICATION INFORMATION:

SUBMITTAL DATE: June 4, 2025
BUILDER/DEVELOPER: Toll Brothers
ENGINEER/APPLICANT: Kimley Horn
PROPERTY LOCATION: 5017 Weddington-Matthews Road
PARCEL ID#: 06120011
ACREAGE: +/- 94 acres
EXISTING LAND USE: Agriculture
EXISTING ZONING: R-CD, Conservation District

PROPOSAL:

The applicant, Toll Brothers, is proposing the development of a new residential subdivision of 39 homes on approximately one acre lots. It is located on Weddington-Matthews Road, two miles north of Town Hall. Amanda Drive is north of the site while Hemby Road/Beulah Church road is the largest arterial road to the south. Bonner Oaks, Willow Oaks, and Providence Woods (west of Weddington Matthews Road) are directly adjacent to the farm site, with Providence Woods having an existing woodland buffer whereas Willow Oaks has less Willow Oaks Trail having less screening if the existing farmpond is removed. Road access is provided with one entrance to the east and one entrance to the west of Weddington-Matthews. Connectivity to Bonner Drive is also provided via ROAD D and as recommended in the TIA but may be subject to conditional approval based on feedback from adjacent residents and fire/safety considerations.

The unique horizontal dimensions of the site, combined with strict cul-de-sac design requirements not to exceed 500 feet of cul-de-sac length, led to multiple revisions which reduced lot count from 46 to 39.

Development Standards.

The development proposal does not include changes to the Development Standards already set forth in the Unified Development Ordinance (UDO) unless the required public road connection to Bonner Drive is waived by the Council. As accepted by the applicant the development shall be governed by the Schematic Plan and all applicable requirements of the UDO.

RELATION TO THE UNIFIED DEVELOPMENT ORDINANCE:

UDO Section D-607(C), Conditional Rezoning.

As required by UDO Section D-607(C)(5), the applicant held their in-person Community Meeting on June 18th at the Weddington Raquet and Swim Club and a presentation to the Town Council on August 11, 2025. A TIA and concept plan was submitted first and approved on April 23rd, while the final Schematic Plan and associated documents were submitted for application completeness January 5th, 2026.

The Town Council is tentatively scheduled to hold a public hearing regarding this application on Monday, January 26, 2026, at 7:00 pm. The Conditional Zoning process allows the developer and the town to ask for conditions which could include special exceptions to rules or additional improvements. The town and the developer must agree on a condition for it to become a part of an approval.

UDO Section D-703(D), Permitted Uses (by zoning district).

Pursuant to Table 1, Permitted Uses, as contained within UDO Section D-703(D), Traditional Residential Development (> 6 Lots) is specifically listed as a permissible use within the R-CD, subject to Conditional Zoning approval.

UDO Section D-703(E), Lot and Building Standards Table.

Pursuant to Table 2, Lot and Building Standards, as contained within UDO Section D-703(E), all development within the R-CD is required to meet certain standards. The following table identifies those standards, as well as how the subject development proposal complies:

Lot and Building Standards		Standard	Proposed
Minimum Lot Size		40,000 sq. ft.	40,023 – 85,468 sq. ft.
Minimum Lot Width		120'	120' (min)
Minimum Setbacks	Front	50'	50'
	Side	15'	15'
	Rear	40'	40'
Maximum Height		35'	35'
Maximum Floor Area Ratio		N/A	N/A

UDO Section D-917A, Specific Requirements for All Residential Development.

UDO Section D-917A, establishes numerous rules for how residential development is intended to occur within the Town. These rules include, but are not limited to, the location of house sites, easements, the requirement of lots to abut public roads, street design and layout, cul-de-sacs, open space, buffering, and

tree requirements. While not all these rules are appropriate to be included at this stage of the development process, there are many that must be considered.

UDO Section D-917A(A) Side lot lines shall be substantially at right angles or radial to street lines, and double frontage lots are to be avoided wherever possible.

The lots proposed with the subdivision are generally consistent with this provision. Several irregular or panhandle lots east of Weddington Matthews Road have been removed. Positive findings of compliance can be made.

UDO Section D-917A(D) Lots partially subject to flooding. No proposed residential building lot that is partially subject to flooding as defined herein shall be approved unless there is established on the lot plan a contour line representing an elevation no lower than two feet above the base flood line as defined in Appendix 7. Floodplain Regulations.

Proposed lots farthest east (Lot 12, 13) south of Vintage Creek, requiring crossing a stream and steep slopes, has been removed in the Schematic Plan. The second on-site stream retains a 100' buffer and the pond shall be removed.

UDO Section D-917A (F)(1) All subdivision lots shall abut public roads.

All lots within the subdivision shall abut a public road as submitted. If the Bonner Drive connection is made private or removed Lot 4 and Lot 5 shall retain public access via ROAD C.

UDO Section D-917A(J)(1) Cul-de-sacs shall not exceed 500 feet. Measurement shall be from the point where the centerline of the dead-end street intersects with the center of a through street to the center of the turnaround of the cul-de-sac.

Three cul-de-sac roads are proposed and near but do not exceed 500 feet. ROAD C and ROAD F intersect at a 90 degree angle and other roads contain stub-out/turnarounds rather than utilizing cul-de-sacs. After several revisions, staff requests the Board confirm compliance with the spirit of Section D-917A(J)(1) as definitive findings of compliance would result in additional dead end streets and public roads leading to no destination e.g. ROAD C to 4851 Weddington Matthews Road to the north.

UDO Section D-917A(J)(2) When cul-de-sacs end in the vicinity of an adjacent undeveloped property capable of being developed in the future, a right-of-way or easement shall be shown on the final plan to enable the street to be extended when the adjoining property is developed.

A public connection, ROAD D, out is provided to property to the north (Bonner Drive). ROAD F does not connect to adjacent property to the east; however, this is owned by the Vintage Creek HOA and can't be developed.

UDO Section D-917A(K)(2) The proposed street layout shall be coordinated with the street system of the surrounding area. Where possible, existing principal streets shall be extended. Street connections shall be designed so as to minimize the number of new cul-de-sacs and to facilitate easy access to and from homes in different part of the tract (and on adjoining parcels).

Bonner Drive would be extended as ROAD D. The majority of traffic would be entering or existing Weddington-Matthews Road. Adjacent property owners have expressed concerns of creating a “cut-through”. Findings of compliance can be made but can be waived by the discretion of Council.

UDO Section D-917(K)(5) Two points of ingress and egress onto an adjoining public road from subdivision containing more than 15 lots is required.

As the subdivision consists of 39 lots, there will be two main points of ingress/egress along the primary thoroughfare as well as secondary access to Bonner Drive. Findings of compliance can be made. Public comments questioned if two more entrances could be added to Weddington-Matthews but this is not recommended by NCDOT or in the Traffic Impact Analysis.

UDO Section D-917(K)(6) Developable lots shall be accessed from interior streets, rather than from roads bordering the tract.

All lots will be accessed via internal streets. The existing farm at 5017 Weddington-Matthews Road is not including in the 94 acre proposal.

Section D-917A(O)(1)(b) Where the side or rear yards of lots may be oriented toward existing thoroughfare roads, a buffer at least 100 feet wide of existing woodland providing adequate visual screening throughout the year is required.

The development includes a 100’ roadside buffer both east and west on Weddington Matthews Road. As this property is currently used for agriculture rather than forested land, this one hundred feet must be supplemented with extensive new trees and shrubs in accordance with Section D-918.I (Screening and Landscaping). As staff has frequently recommended, a landscape plan or rendering should be provided by the applicant of what this would look like prior to final development approval.

UDO Section D-917(P) Any major subdivision shall be required to provide that a minimum of twenty percent of the gross area of the subdivision, exclusive of any required minimum buffers along thoroughfares, consists of common open space.

Positive findings of compliance can be made as the site well exceeds the requirement. Common open space along the thoroughfare (100’), the site perimeter (50’), 11 acres to the west, 3.75 acres to the center, and 24.20 all account for COS. Streams and overhead utilities are present but account for far less than Primary Open Space threshold. See Section D-917E.(B)(1).

UDO Section D-917D, Supplemental Requirements for Certain Uses.

UDO Section D-917D, establishes supplemental requirements for certain uses; however, no uses other than conventional residential apply to this case. As such, this Section is not applicable.

UDO Section D-918, General Requirements.

The various provisions set forth in UDO Section D-918, including, but not limited to visibility at intersections, lighting, screening, and landscaping, fences and walls, signs, and off-street parking and loading, as applicable, shall be reviewed for compliance with the submittal of plans for a Construction Permit.

RELATION TO THE CODE OF ORDINANCES:

Appendix C, Traffic Impact Analysis.

Pursuant to Sec. II (A) (1), a Traffic Impact Analysis (TIA) is required for any CZ which is expected to create 50 or more peak hour vehicle trips or 500 or more daily vehicle trips. The proposal met the threshold of requiring a TIA to be completed and approved by the Town. This document was reviewed and found satisfactory by LaBella Engineering on April 23th, 2025 after one revision sent to the Town. Note: this review was conducted prior to the final lot count of 39 units and does maintain connection to Bonner Dr.

LAND USE PLAN CONSISTENCY:

NOTE: On June 3rd 2024 the Weddington Town Council adopted the new Comprehensive Land Use Plan, which established new goals and policies from those previously used by the Planning Board. Since then, numerous text amendments have been made to better match the plan (

Land Use Goals:

Goal 1: New development and redevelopment activities shall be consistent with the Future Land Use Map and categories.

Policy: LU 1.1: The following Future Land Use categories, along with their intended uses, densities, and intensities, are hereby established (floor area ratio (FAR) only applies to non-residential uses): Agriculture: This category is intended to accommodate very low-density residential development to retain rural character and agricultural activity. Maximum density: 1 dwelling unit per 1.5 acres.

The subject property is identified as *Agriculture* (in green) in the 2024 Future Land Use Map (Map 4). This is the least dense density allowance. At 0.4 dwelling units per acre, this meets the intended low density residential development standards having only 1 dwelling unit per every two acres.

Policy: LU 1.4: Ensure that land uses abutting residential development are compatible with the scale, intensity and overall character of existing and planned neighborhoods.

Lots are equivalent in size, 40,000 sq. ft or greater, to those zoned R-40 in Providence Woods and Willow Oaks. All are convention subdivision designs despite the (vacant land) zoning of R-CD. The thoroughfare buffer requirements, tree ordinance, and road design standards (cul-de-sacs) all exceed standards for developments prior to 2025.

Transportation Goals:

Goal 1: Encourage the development of well-designed streets that are safe, connected, and welcoming for all users.

Policy: T 1.1: Major thoroughfares and key entryways shall be given the highest priority for beautification efforts and corridor design.

Weddington Matthews Road Road (NC-84) is a significant north-south thoroughfare in Weddington and up to Stallings. The 100' thoroughfare buffer requirement shall be upheld without exception and a full landscape plan is recommended as the roadway is devoid of trees.

Policy: *T 1.3: Encourage roads be designed and constructed to provide a high level of safety and comfort for all users (pedestrians, bicyclists and motorists), in a manner consistent with the character of the neighborhood through which the road travels.*

Sidewalks are shown on the exhibit TYPICAL SECTION RESIDENTIAL LOCAL STREET on Sheet C-301 of the schematic plan and would be located on one side of the internal streets. Should the requirement for Bonner Drive connection be waved, this connection should still provide pedestrian access as well as emergency access to adjacent neighborhoods.

Housing Goals:

Goal 2: *Maintain the Town's strong single-family residential character.*

Policy: *H 1.1: Retain the residential character of the community by ensuring that new residential development consists of single-family homes with a maximum density of one (1) dwelling unit per 40,000 sq feet.*

Positive findings of compliance can be made.

Conservation Goals:

Goal 1: *Ensure that all new development takes place in a manner that conserves open space and scenic views.*

Policy: *C 1.1: Preserve open space and scenic views through zoning regulations that require open space preservation in both conventional and conservation subdivisions, as well as commercial developments. and minimize the visual impact of development from surrounding properties and roadways.*

Over one-third of the 94 acres will be preserved as open space, including sensitive lands such as the existing pond, several streams, and areas with significant existing tree coverage. In reviews with Planning Board members and staff areas of concern such as the far eastern and western portions of the site were removed from private ownership and placed into COS.

Goal: *Limit development activities on environmentally sensitive land.*

Policy: *C 3.3: Limit development in designated 100-year floodplains, wetlands and along natural waterways to reduce the risk of significant damage and injury to life and property, as well as preserving the natural areas and habitats.*

The existing pond (to be removed) and eastern stream drain south towards to the Oliver Creek and Weddington Creek watersheds. The current Schematic Plan no longer crosses these streams and land disturbance is limited 100' to centerline as well as Town sediment control standards. Per the developer, grading shall be performed in separate phases: one for road infrastructure and stormwater ponds, the other for house pads. Mass-clearing is not permitted and would not adhere to the new tree protection standards of Section D-917(A)(Q).

Infrastructure Goals:

Goal 1: *Ensure that all existing and future developments in Weddington are served by adequate water, wastewater, drainage and emergency services.*

Policy: *I 1.1: Require water, wastewater, and drainage system improvements to be constructed concurrent with new development and that they provide adequate capacity to meet demands from existing and new users.*

Water to be provided by Union County Water. Wastewater shall be private, served by individual septic systems and repair fields for each of the 39 homes. a2 permits are issued and provided in your submittal packet for your review and consideration. A soil scientist hired by Toll Brothers applied for and received approval for these permits which are roughly equivalent to Improvement Permits (public) as specified in Appendix 2B, item B27. By providing these approvals the applicant is requesting verification from this Board that they have adequately identified and delineated their proposed septic system as required by this Appendix 2B.

Based upon the above, staff provides the following Land Use Plan Consistency Statement for consideration:

While the development proposal can be found to be generally consistent with the adopted Land Use Plan, there are Goals and Policies for which compliance cannot be determined at the present time based upon the level of plans required to be submitted for this phase of development. In addition, while there may also be Goals and Policies for which there may be reason for concern, positive findings can nonetheless be made in support of this development proposal.

The site plan as submitted meets all requirements for cul-de-sac length, lot size, thoroughfare buffer, open space requirements, and maximum density. Compliance with Section D-917A.(J). Cul-de-sacs., due to the odd intersections and turnaround portions of several roads, should be specified on records prior to a vote. A decision on whether it is in the public interest to connect to Bonner Drive shall be at your discretion – it meets UDO standards as submitted and staff recommends it to remain for connectivity land use goals.

RECOMMENDATION:

It is the recommendation of staff that the request for Conditional Zoning to allow for the development of a 39-Lot Conventional Subdivision located on Weddington Matthews Road, known as Morris Farm, be recommended for **approval with conditions**.

- A Landscape Plan be submitted and approved prior to Construction Document approval of the Town, with preference for an exhibit to be provided to the Weddington Town Council prior to the Public Hearing.

ATTACHMENTS:

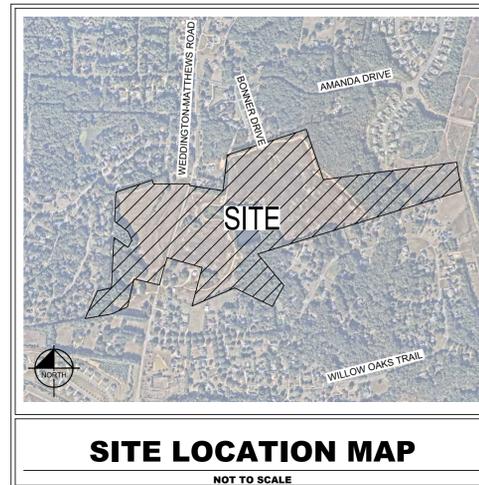
Application
Schematic Plan
Land Use Map
Zoning Map
Community Meeting Report
Traffic Impact Analysis
a-2 (septic) Permit Approvals

APPENDIX 2B 30% SET for

MORRIS FARM

5017 WEDDINGTON-MATTHEWS ROAD

TOWN OF WEDDINGTON, UNION COUNTY, NORTH CAROLINA



KIMLEY-HORN SHALL HAVE NO LIABILITY WHATSOEVER FOR ANY COSTS ARISING OUT OF THE CLIENT'S DECISION TO OBTAIN BIDS OR PROCEED WITH CONSTRUCTION BEFORE KIMLEY-HORN HAS ISSUED FINAL, FULLY-APPROVED PLANS AND SPECIFICATIONS. THE CLIENT ACKNOWLEDGES THAT ALL PRELIMINARY PLANS ARE SUBJECT TO SUBSTANTIAL REVISION UNTIL PLANS ARE FULLY APPROVED AND ALL PERMITS OBTAINED.

NOTICE TO CONTRACTOR:

ALL WORK AND MATERIALS SHALL CONFORM TO THE MOST CURRENT STANDARDS AND SPECIFICATIONS AS PROVIDED IN THE:

TOWN OF WEDDINGTON ROADWAY MANUAL
 TOWN OF WEDDINGTON UNIFIED DEVELOPMENT ORDINANCE
 TOWN OF WEDDINGTON STORM WATER DESIGN MANUAL
 NCDOT STANDARDS SPECIFICATIONS FOR ROADS AND STRUCTURES
 OR THE MORE RESTRICTIVE OF ANY STANDARDS THAT CONFLICT.

Sheet No.	Sheet Title	REV. No.
C-001	COVER SHEET	
C-002	EXISTING CONDITIONS PLAN	
C-200	OVERALL EROSION CONTROL PLAN - PHASE 1	
C-201	EROSION CONTROL PLAN - PHASE 1	
C-202	EROSION CONTROL PLAN - PHASE 1	
C-300	OVERALL SITE PLAN	
C-301	SITE PLAN	
C-302	SITE PLAN	
C-400	OVERALL GRADING PLAN	
C-401	GRADING PLAN	
C-402	GRADING PLAN	
C-403	PRE-DEVELOPMENT DRAINAGE MAP	
C-404	POST-DEVELOPMENT DRAINAGE MAP	
C-405	STORM DETAILS	
C-500	ROAD G WEST PLAN AND PROFILE	
C-501	ROAD A WEST PLAN AND PROFILE	
C-502	ROAD B PLAN AND PROFILE	
C-503	ROAD A EAST PLAN AND PROFILE	
C-504	ROAD A EAST PLAN AND PROFILE	
C-505	ROAD C PLAN AND PROFILE	
C-506	ROAD D PLAN AND PROFILE	
C-507	ROAD E PLAN AND PROFILE	
C-508	ROAD F PLAN AND PROFILE	
C-700	OVERALL LANDSCAPE PLAN	
C-701	LANDSCAPE PLAN	
C-702	LANDSCAPE PLAN	



PROJECT OWNER AND CONSULTANT INFORMATION			
<p>DEVELOPER: TOLL BROTHERS 9130 KINGS PARADE BLVD CHARLOTTE, NC 28273 PHONE (828) 446-0104</p> <p>CONTACT: ANDREW LOFTIN</p>	<p>ENGINEER: KIMLEY-HORN AND ASSOCIATES, INC. 532 PATTERSON AVENUE SUITE 106 MOORESVILLE, NORTH CAROLINA 28115 PHONE (980) 346- 6746</p> <p>CONTACT: AUSTIN POPE, P.E.</p>	<p>SURVEYOR: ESE CONSULTANTS 1140 VIRGINIA DR. FORT WASHINGTON, PA 19034 PHONE (215) 914-2050</p>	<p>SEPTIC: PIEDMONT ENVIRONMENTAL ASSOCIATES, P.A. 216 SOUTH SWING ROAD GREENSBORO, NORTH CAROLINA 27409 PHONE (336) 215-88220</p> <p>CONTACT: JIM BEESON</p>

PROGRESS SET

GEOMETRIC CONTROL

HORIZONTAL DATUM:
NAD 83 (2011)

VERTICAL DATUM:
NAVD 88

DRAWING UNITS:
U.S. SURVEY FEET



No.	REVISIONS	DATE	BY

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 NC LICENSE #P-102

NORTH CAROLINA PROFESSIONAL ENGINEER

SEAL 058235
 AUSTIN M. POPE
 01/05/2026

KH PROJECT 012826085	DATE 01/05/2025	SCALE AS SHOWN	DESIGNED BY TTF
			DRAWN BY TTF
			CHECKED BY AMP

COVER SHEET

MORRIS FARM
 PREPARED FOR
 TOLL BROTHERS, INC.
 NORTH CAROLINA
 WEDDINGTON

SHEET NUMBER
C-001

Plotted By: Dillon, Juliana Sheet: Ssm-Morris Farm Layout: C-001 January 05, 2026 04:55:56pm K:\CHL_PRJ\1012826085 Toll Brothers - Weddington02 - DWG\PlanSheets\C001 - COVER SHEET.dwg

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EXISTING CONDITIONS DATA	
SITE INFORMATION:	
TAX PARCEL ID:	06120011
NAME:	MORRIS R S FAMILY LIMITED PARTNERSHIP
ADDRESS:	5017 MATTHEWS WEDDINGTON ROAD WEDDINGTON, NC 28104
DEVELOPER INFORMATION:	
NAME:	TOLL BROTHERS, INC.
ADDRESS:	9130 KINGS PARADE BOULEVARD CHARLOTTE, NC 28273
CONTACT:	ANDREW LOFTIN (828) 446-0104
SITE DATA:	
FEMA FLOOD PANEL:	3710447700L, 3710448700J
ZONE:	ZONE X
WATERSHED CLASSIFICATION:	WEST FORK TWELVE MILE CREEK
ZONING:	R-40
TOTAL TRACT ACREAGE:	92.29± ACRES
NAME AND LOCATION OF EXISTING PROPERTIES ON PROPOSED SUBDIVISION:	N/A
PARCEL DESCRIPTION FROM UNION COUNTY GIS:	MORRIS

NO.	REVISIONS	DATE	BY

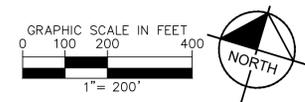
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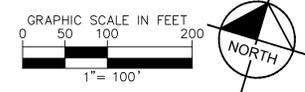
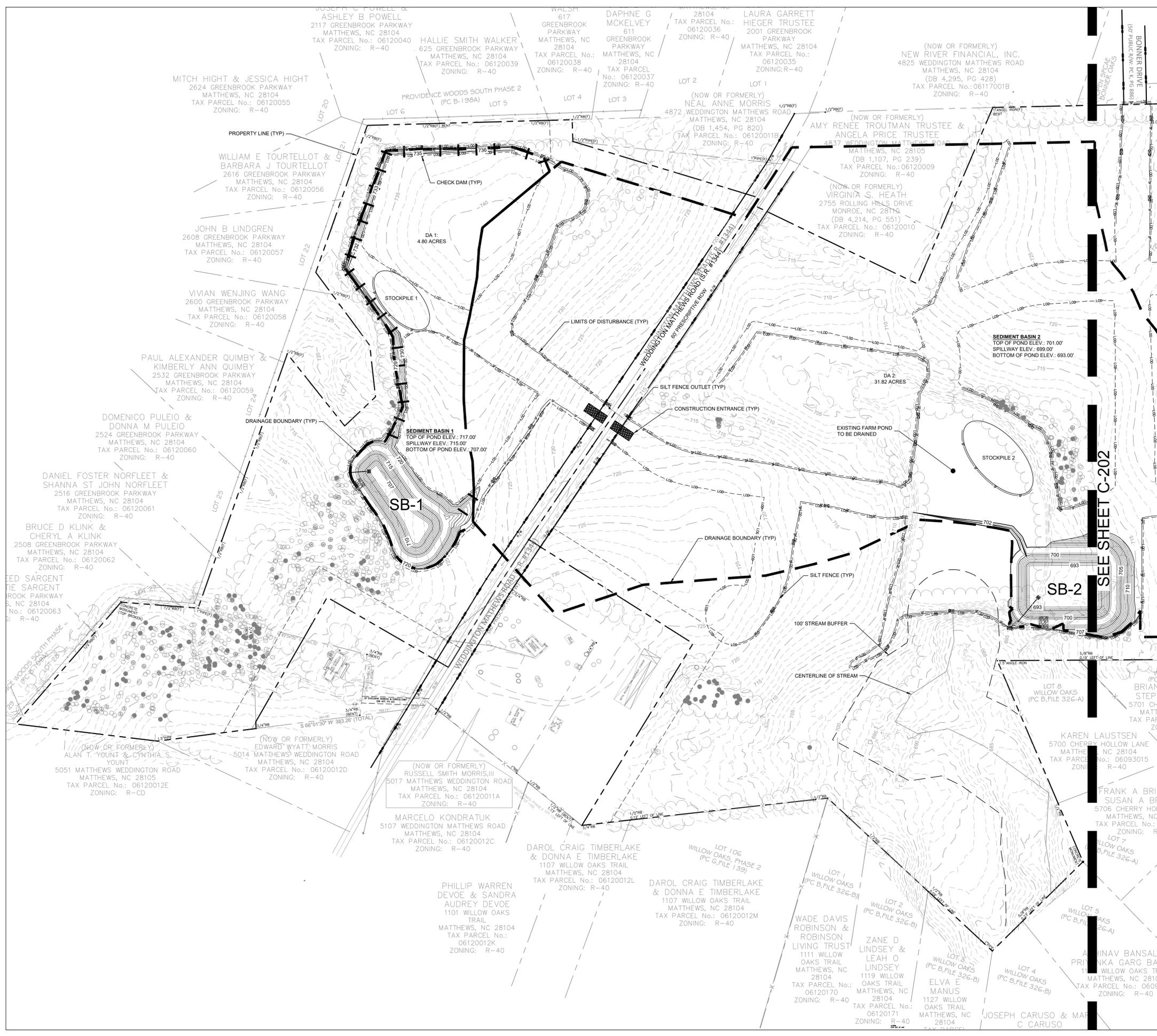
KH PROJECT	012826085
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SCALE	AS SHOWN
DESIGNED BY	TTF
DRAWN BY	TTF
CHECKED BY	AMP

EXISTING CONDITIONS PLAN

MORRIS FARM
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TOLL BROTHERS, INC.
 WEDDINGTON, NORTH CAROLINA



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NORTH CAROLINA PROFESSIONAL ENGINEER

SEAL 058235

AUSTIN M. POPE

01/05/2026

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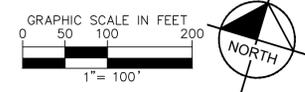
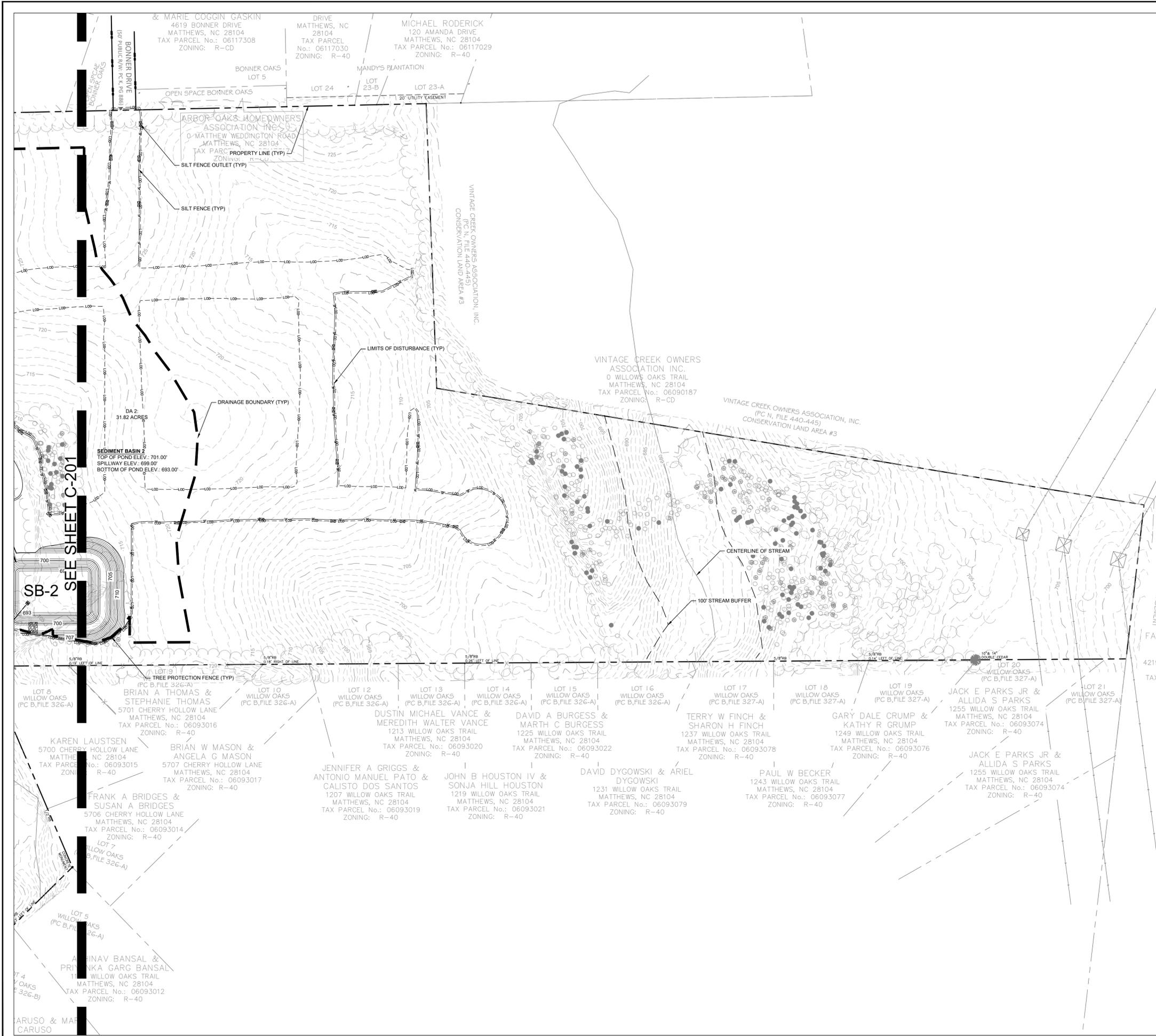
EROSION CONTROL PLAN - PHASE 1

MORRIS FARM

PREPARED FOR
TOLL BROTHERS, INC.
 NORTH CAROLINA
 WEDDINGTON

SHEET NUMBER
C-201

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EROSION CONTROL PLAN - PHASE 1

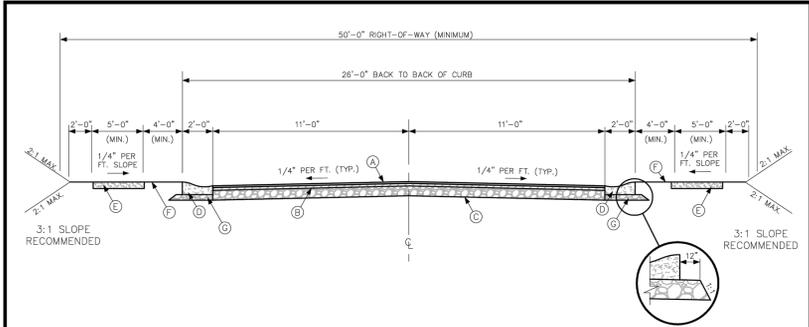
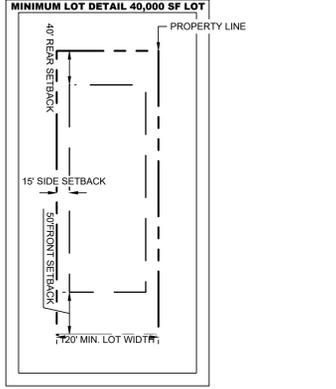
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 WEDDINGTON NORTH CAROLINA

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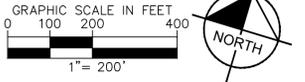


SITE DATA TABLE	
OWNER INFORMATION:	
TAX PARCEL ID:	06120011
NAME:	MORRIS R S FAMILY LIMITED PARTNERSHIP
ADDRESS:	5017 WEDDINGTON MATTHEWS ROAD WEDDINGTON, NC 28104
DEVELOPER INFORMATION:	
NAME:	TOLL BROTHERS, INC.
ADDRESS:	9130 KINGS PARADE BOULEVARD CHARLOTTE, NC 28273
CONTACT:	ANDREW LOFTIN (828) 446-0104
SITE DATA:	
SITE AREA EXCLUDING ROW:	90.80 ± ACRES
TOTAL SITE AREA:	92.26 ± ACRES
EXISTING LAND USE:	RESIDENTIAL
PROPOSED LAND USE:	RESIDENTIAL
ZONING DISTRICT:	R-CD (TOWN OF WEDDINGTON)
ZONING DATA:	
FEMA FLOOD PANEL:	3710447700L, 3710448700J
WATERSHED CLASSIFICATION:	WEST FORK TWELVEMILE CREEK
LOT INFORMATION	
TOTAL ACREAGE:	92.26 ± ACRES
LOT ACREAGE:	46.99 ± ACRES
TOTAL UNITS:	39
PROPOSED DENSITY:	0.41 DUA
MINIMUM LOT SIZE:	40,000 SF (120' MIN WIDTH)
SMALLEST LOT SIZE:	40,262 SF
AVERAGE LOT SIZE:	46,374 SF
PROPOSED BUILT UPON AREA:	12.01 ± ACRES (13.02%)
MAX. BUILDING HEIGHT:	35'
REQUIRED SETBACKS:	FRONT: 50' SIDE: 15' REAR: 40'
COMMON OPEN SPACE:	
REQUIRED OPEN SPACE:	9.2 ± ACRES (10%)
PROVIDED OPEN SPACE:	40.8 ± ACRES (43%)
BUFFER YARDS	
50' PERIMETER BUFFER	
100' THOROUGHFARE BUFFER (CAN BE REDUCED TO 50' WITH PLANTED EVERGREEN MATERIAL)	



- NOTES:**
- SUBGRADE SHALL BE COMPACTED TO A DENSITY OF 100% IN ACCORDANCE WITH AASHTO-199 AND NCDOT SPECIFICATIONS SECTION 500.
 - AGGREGATE BASE COURSE SHALL BE COMPACTED TO A DENSITY OF 100%.
 - ASPHALT COMPACTON SHALL BE IN ACCORDANCE WITH NCDOT SPECIFICATION SECTION 610.
 - IF REQUIRED BY THE TOWN, TESTS SHALL BE CONDUCTED BY AN INDEPENDENT TESTING FIRM AT THE DEVELOPERS EXPENSE.
 - FINAL LIFT OF PAVEMENT SHALL NOT BE PLACED UNTIL BOX OF HOME SITES ARE DEVELOPED. THE FINAL LIFT OF PAVEMENT SHALL NOT BE PLACED FOR STREETS THAT WILL BE USED TO ACCESS FUTURE PHASES UNTIL THOSE PHASES REACH BOX BUILD-OUT.
- (A) 1 1/2" BITUMINOUS CONCRETE SURFACE COURSE, 59.59
 - (B) 1 1/2" BITUMINOUS CONCRETE SURFACE COURSE, 59.59
 - (C) 10" COMPACTED AGGREGATE BASE COURSE OR 5" BITUMINOUS CONCRETE BASE COURSE, B25.0C
 - (D) 2'-0" VALLEY GUTTER
 - (E) 4" CONCRETE SIDEWALK (OPTIONAL)
 - (F) 4'-0" PLANTING STRIP
 - (G) 6" MINIMUM COMPACTED AGGREGATE BASE COURSE

DATE: SEPTEMBER 2014	SCALE: NTS	TOWN OF WEDDINGTON STANDARD DETAILS
REVISIONS		
TYPICAL SECTION RESIDENTIAL LOCAL STREET WITH CURB AND GUTTER		WEDDINGTON, N.C. ROADWAY STD. NO. R 102



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KH PROJECT 012826085	DATE 01/05/2025	SCALE AS SHOWN DESIGNED BY TTF DRAWN BY TTP CHECKED BY AMP
OVERALL SITE PLAN		
MORRIS FARM PREPARED FOR TOLL BROTHERS, INC. NORTH CAROLINA WEDDINGTON		
SHEET NUMBER C-300		

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SEPTIC INFORMATION LEGEND:

	SEPTIC TANK
	SUPPLY LINE
	INITIAL AREA
	REPAIR AREA
	REPAIR AREA

SEE SHEET C-302



NO.	REVISIONS	DATE	BY

Kimley

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KH PROJECT	012826085
DATE	01/05/2025
SCALE	AS SHOWN
DESIGNED BY	TTP
DRAWN BY	TTP
CHECKED BY	AMP

SITE PLAN

MORRIS FARM
PREPARED FOR
TOLL BROTHERS, INC.
NORTH CAROLINA
WEDDINGTON

SHEET NUMBER
C-301

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- SEPTIC INFORMATION LEGEND:**
- SEPTIC TANK
 - SUPPLY LINE
 - INITIAL AREA
 - REPAIR AREA
 - REPAIR AREA

SEE SHEET C-301

SEE SHEET C-302

NO.	REVISIONS	DATE	BY

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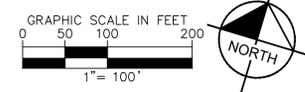
KH PROJECT	012826085
DATE	01/05/2025
SCALE	AS SHOWN
DESIGNED BY	TTF
DRAWN BY	TTP
CHECKED BY	AMP

SITE PLAN

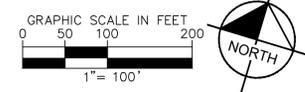
MORRIS FARM

PREPARED FOR
TOLL BROTHERS, INC.
 WEDDINGTON, NORTH CAROLINA

SHEET NUMBER
C-302



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 NC LICENSE #P-0102

PROFESSIONAL ENGINEER

AUSTIN M. POPE
 SEAL 058235
 01/05/2026

KH PROJECT	012826085
DATE	01/05/2025
SCALE	AS SHOWN
DESIGNED BY	TTP
DRAWN BY	TTP
CHECKED BY	AMP

GRADING PLAN

MORRIS FARM

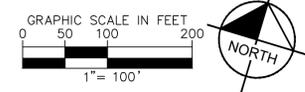
PREPARED FOR
TOLL BROTHERS, INC.
 NORTH CAROLINA
 WEDDINGTON

SHEET NUMBER
C-401

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DATE	01/05/2025
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DESIGNED BY	TTP
DRAWN BY	TTP
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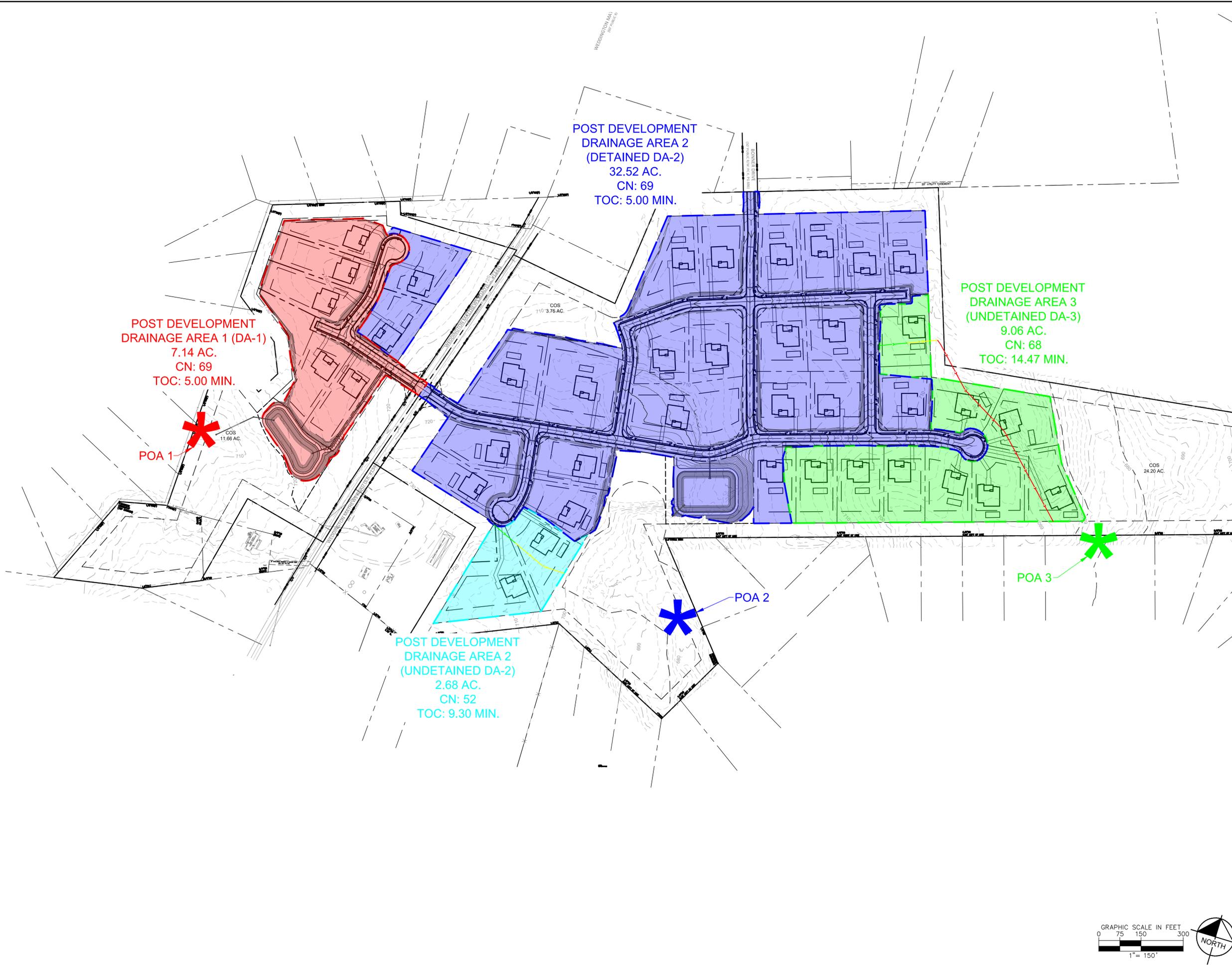
GRADING PLAN

MORRIS FARM

PREPARED FOR
TOLL BROTHERS, INC.
 WEDDINGTON, NORTH CAROLINA

SHEET NUMBER
C-402

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POST DEVELOPMENT
DRAINAGE AREA 1 (DA-1)
7.14 AC.
CN: 69
TOC: 5.00 MIN.

POST DEVELOPMENT
DRAINAGE AREA 2
(DETAINED DA-2)
32.52 AC.
CN: 69
TOC: 5.00 MIN.

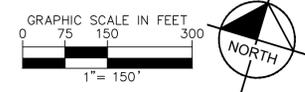
POST DEVELOPMENT
DRAINAGE AREA 3
(UNDETAINED DA-3)
9.06 AC.
CN: 68
TOC: 14.47 MIN.

POST DEVELOPMENT
DRAINAGE AREA 2
(UNDETAINED DA-2)
2.68 AC.
CN: 52
TOC: 9.30 MIN.

POA 1

POA 2

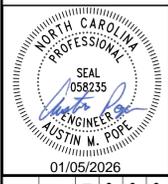
POA 3



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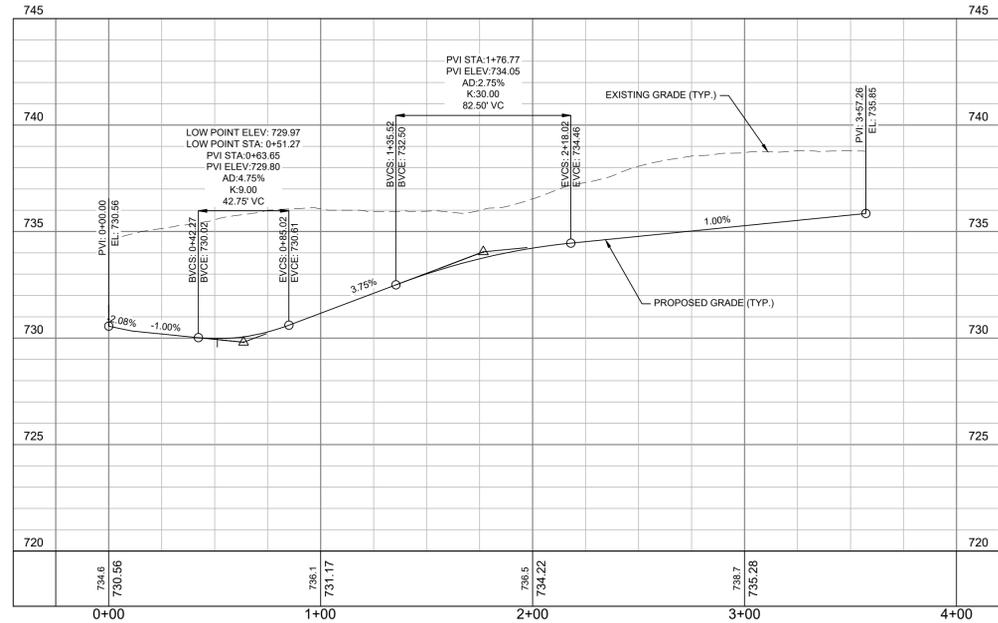
KH PROJECT	012826085
DATE	01/05/2025
SCALE	AS SHOWN
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DRAWN BY	TTP
CHECKED BY	AMP

**POST-DEVELOPMENT
DRAINAGE MAP**

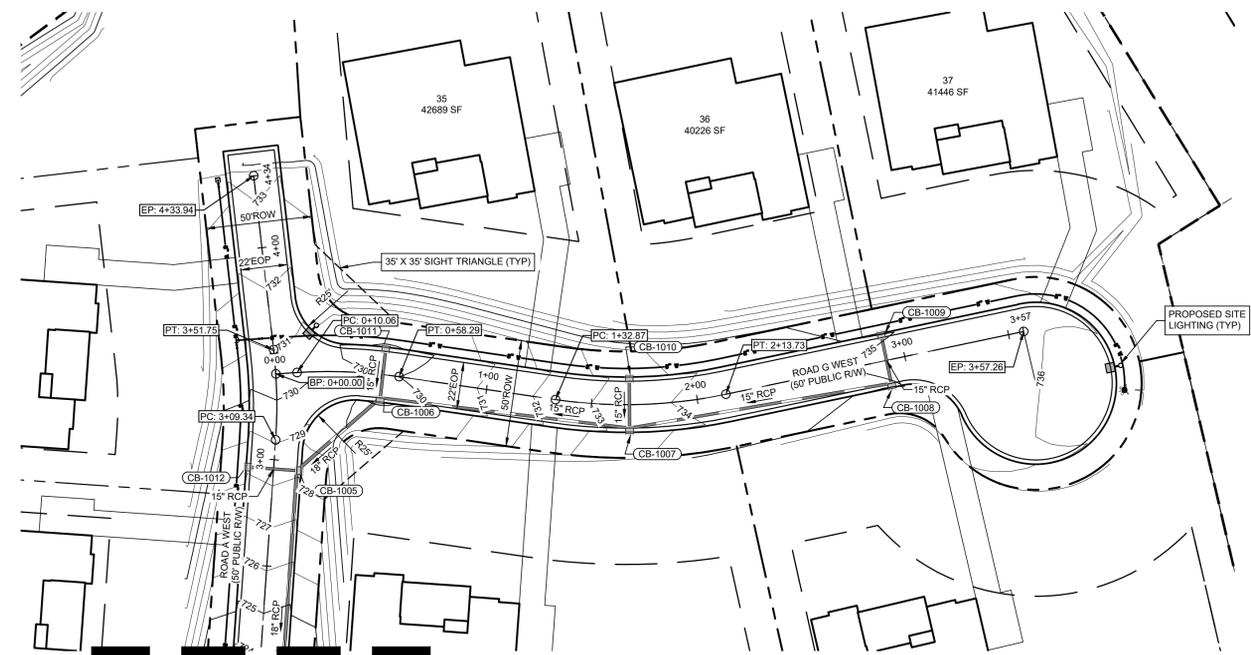
MORRIS FARM
PREPARED FOR
TOLL BROTHERS, INC.
NORTH CAROLINA
WEDDINGTON

SHEET NUMBER
C-404

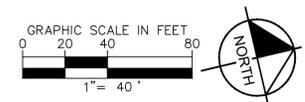
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ROAD G WEST
H. Scale: 1"=40' | V. Scale: 1"=4'



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NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 058235
AUSTIN M. POPE
01/05/2026

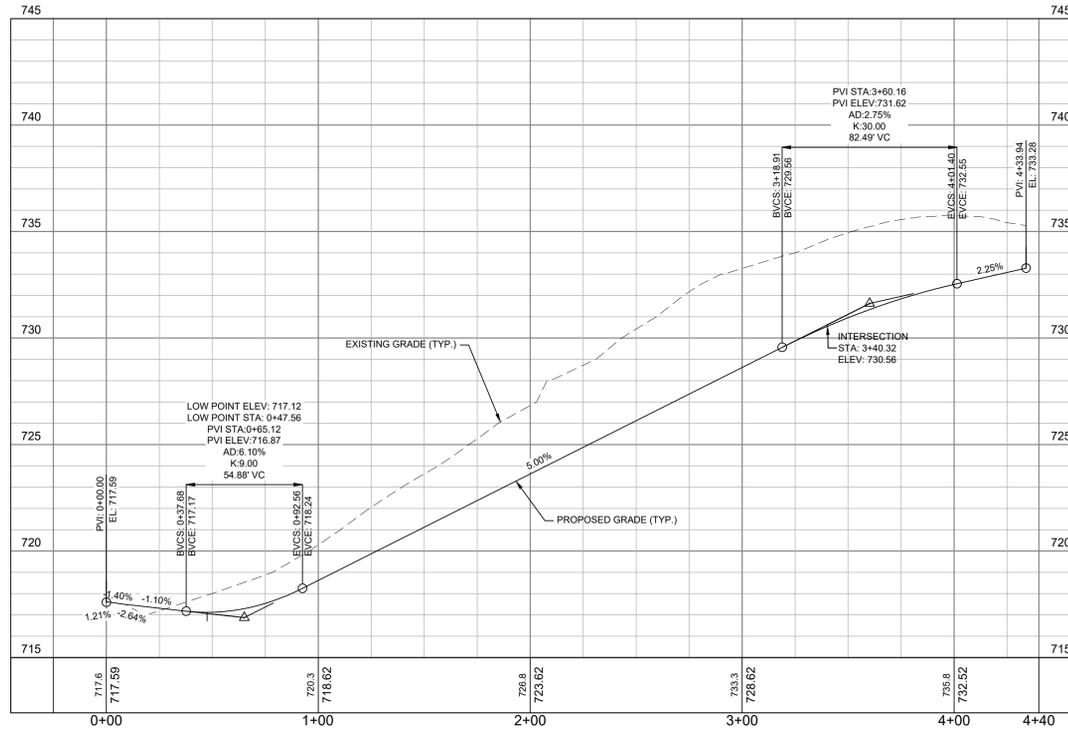
KH PROJECT	DATE	SCALE	DESIGNED BY	DRAWN BY	CHECKED BY
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ROAD G WEST PLAN AND PROFILE

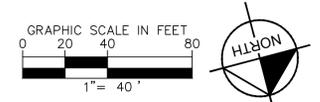
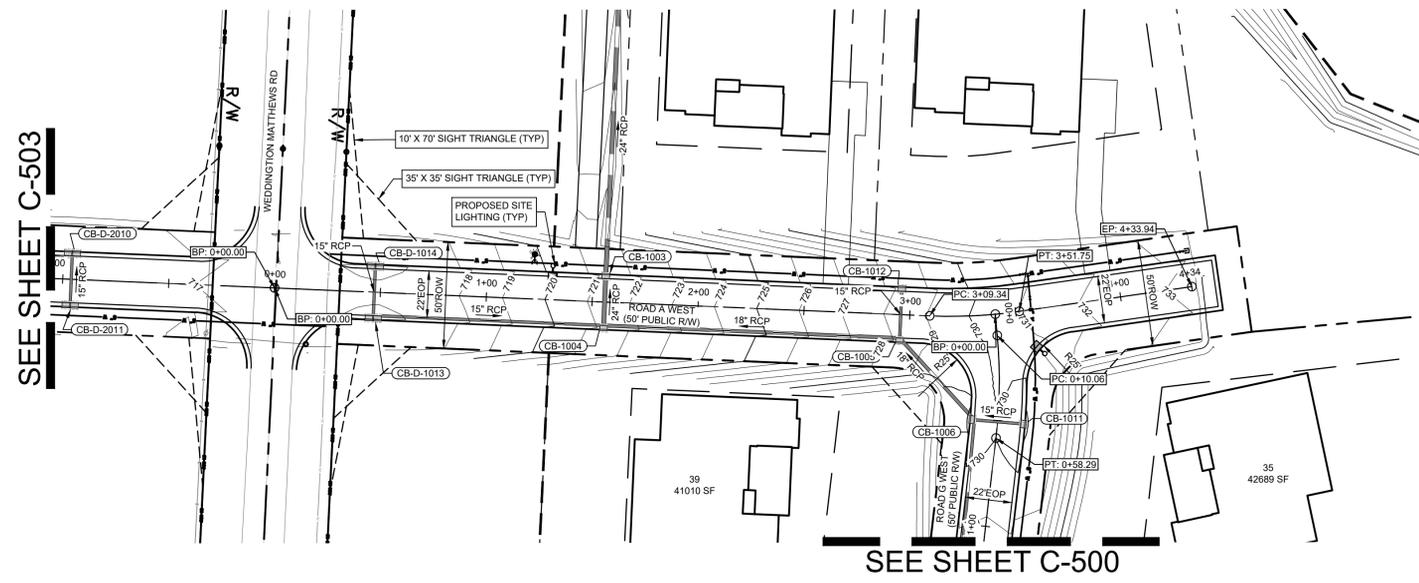
MORRIS FARM
PREPARED FOR
TOLL BROTHERS, INC.
WEDDINGTON NORTH CAROLINA

SHEET NUMBER
C-500

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ROAD A WEST
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NORTH CAROLINA PROFESSIONAL ENGINEER

SEAL 058235

AUSTIN M. POPE

01/05/2026

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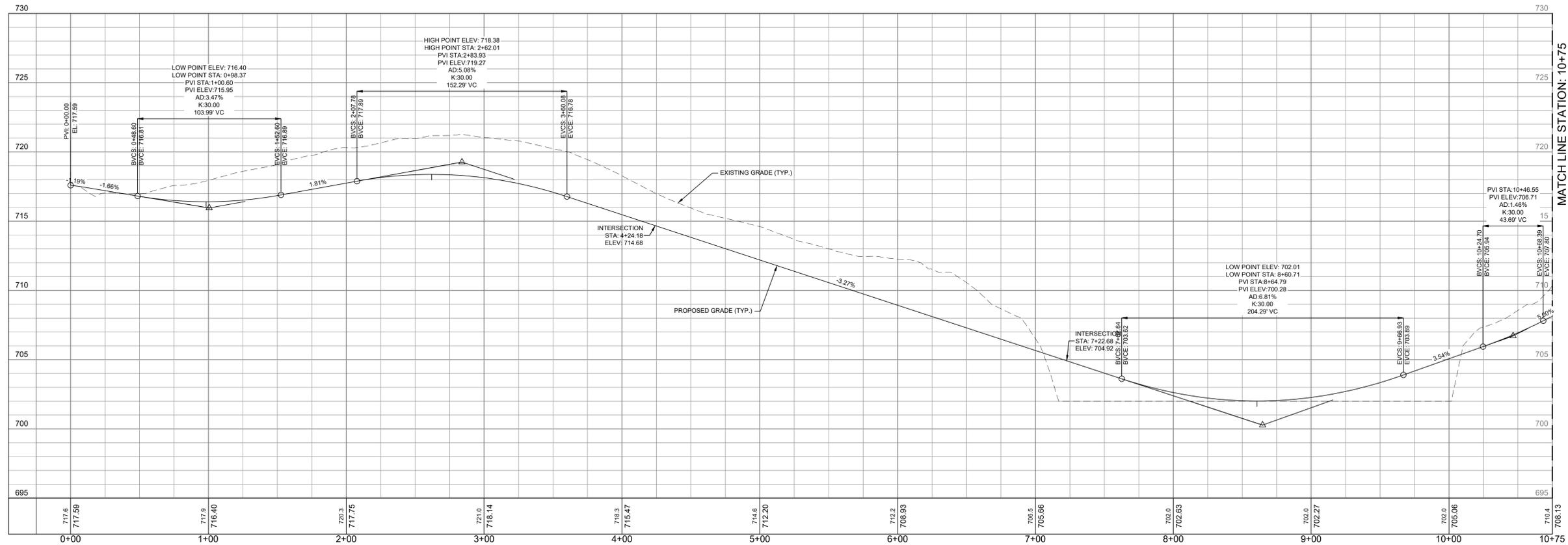
ROAD A WEST PLAN AND PROFILE

MORRIS FARM

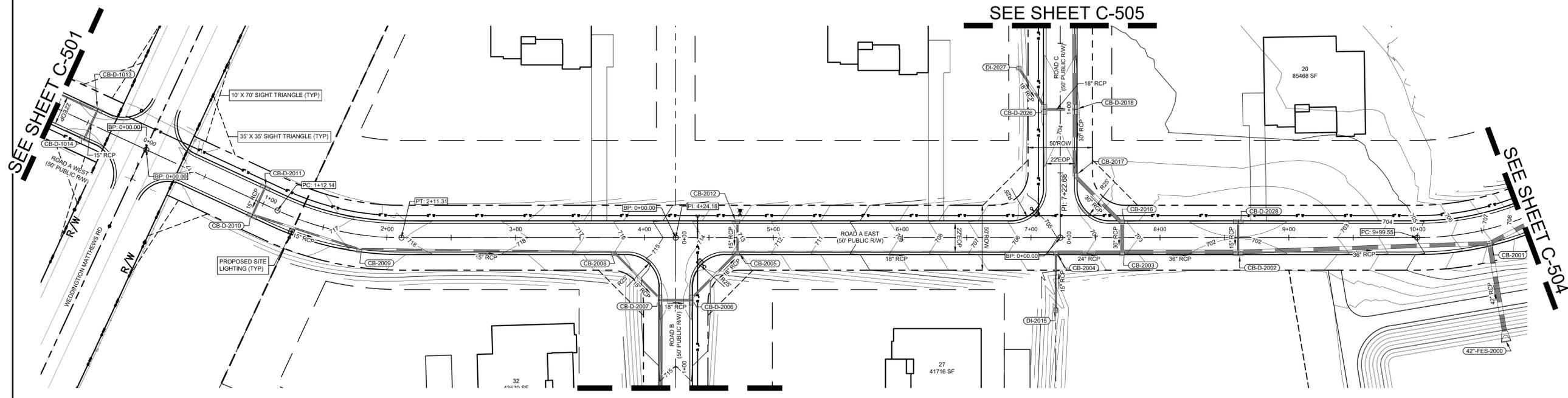
PREPARED FOR
TOLL BROTHERS, INC.
NORTH CAROLINA
WEDDINGTON

SHEET NUMBER
C-501

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ROAD A EAST
STA: -0+25 to STA: 10+75
 Horiz. Scale: 1"=40' | Vert. Scale: 1"=4'

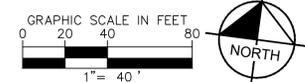


SEE SHEET C-501

SEE SHEET C-505

SEE SHEET C-504

SEE SHEET C-502



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 SEAL 058235
 AUSTIN M. POPE
 01/05/2026

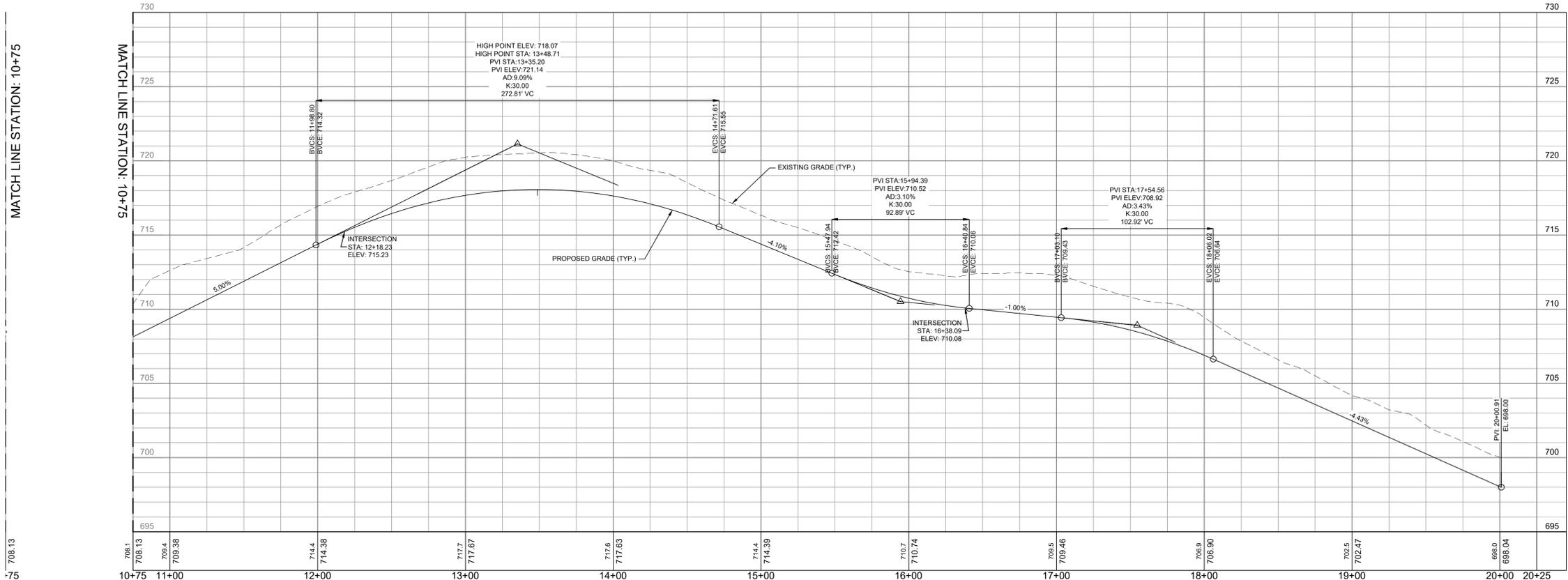
KH PROJECT	012826085
DATE	01/05/2025
SCALE	AS SHOWN
DESIGNED BY	TTF
DRAWN BY	TTP
CHECKED BY	AMP

ROAD A EAST PLAN AND PROFILE

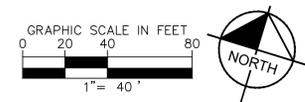
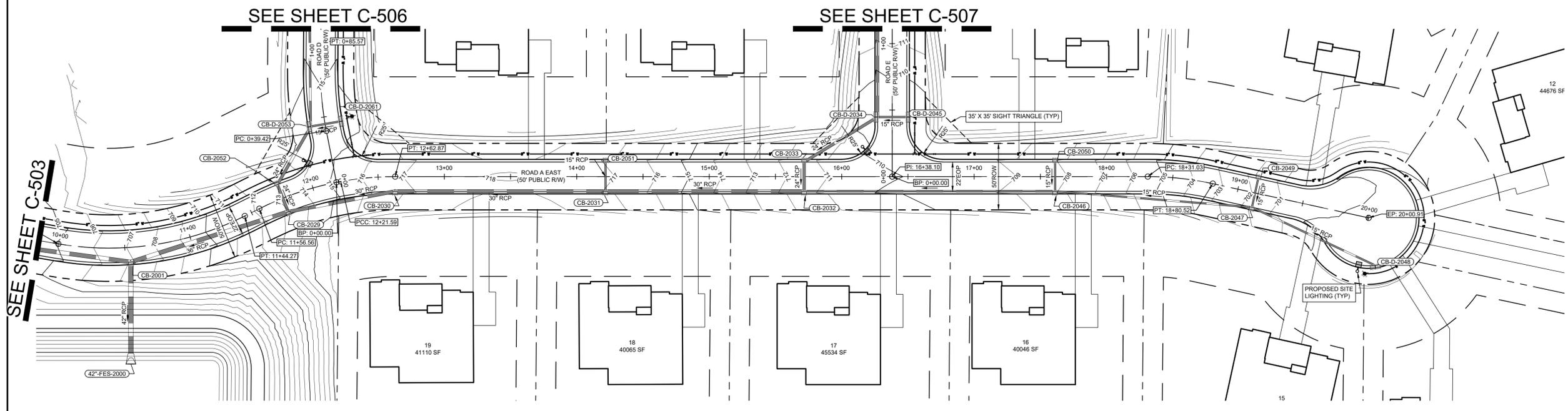
MORRIS FARM
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TOLL BROTHERS, INC.
 NORTH CAROLINA
 WEDDINGTON

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ROAD A EAST
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 058235
 ENGINEER
 AUSTIN M. POPE
 01/05/2026

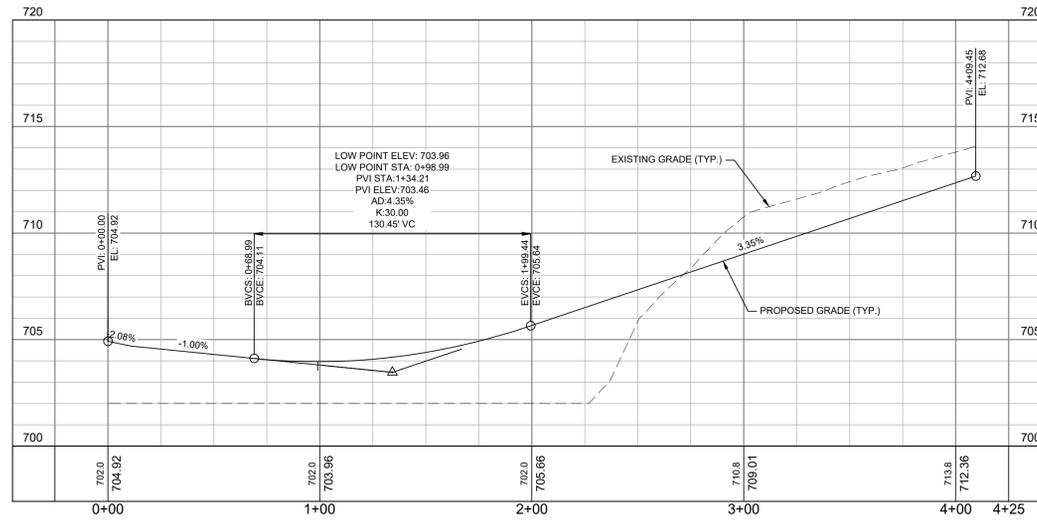
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SCALE	AS SHOWN
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DRAWN BY	TTP
CHECKED BY	AMP

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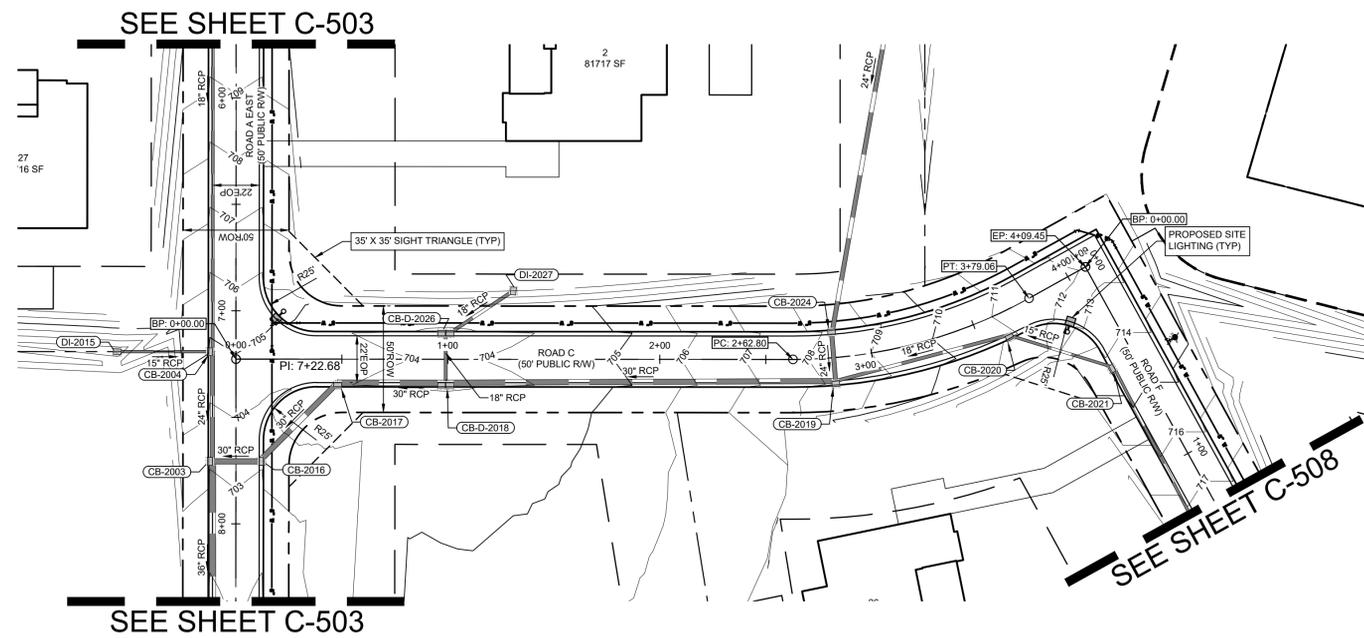
MORRIS FARM
 PREPARED FOR
TOLL BROTHERS, INC.
 WEDDINGTON, NORTH CAROLINA

SHEET NUMBER
C-504

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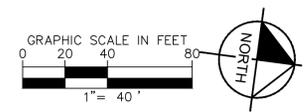
ROAD C
H. Scale: 1"=40' | V. Scale: 1"=4'



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SEE SHEET C-503

SEE SHEET C-508



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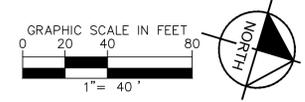
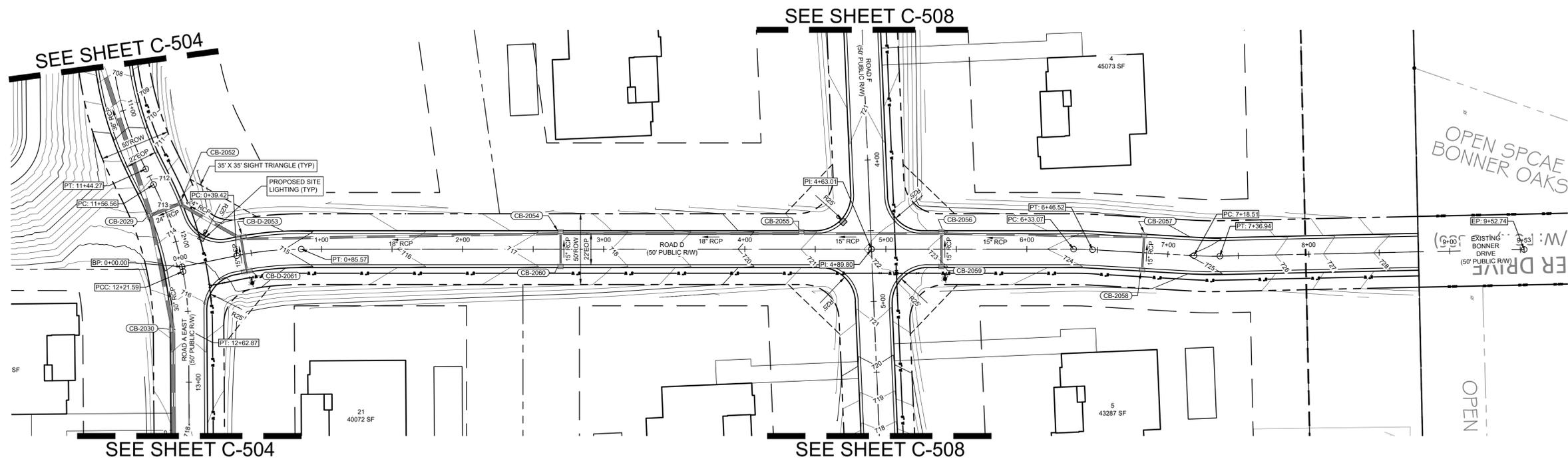
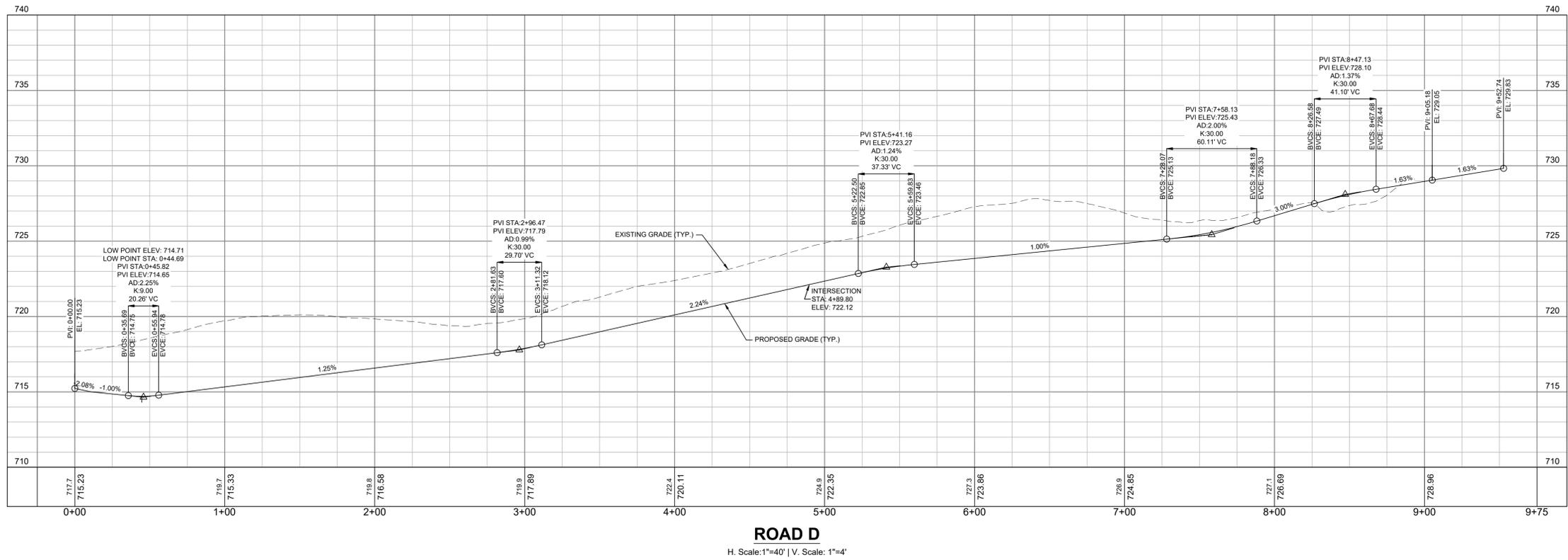
KH PROJECT	012826085
DATE	01/05/2025
SCALE	AS SHOWN
DESIGNED BY	TTF
DRAWN BY	TTP
CHECKED BY	AMP

ROAD C PLAN AND PROFILE

MORRIS FARM
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TOLL BROTHERS, INC.
WEDDINGTON
NORTH CAROLINA

SHEET NUMBER
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SEAL
058235
ENGINEER
AUSTIN M. POPE
01/05/2026

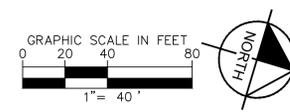
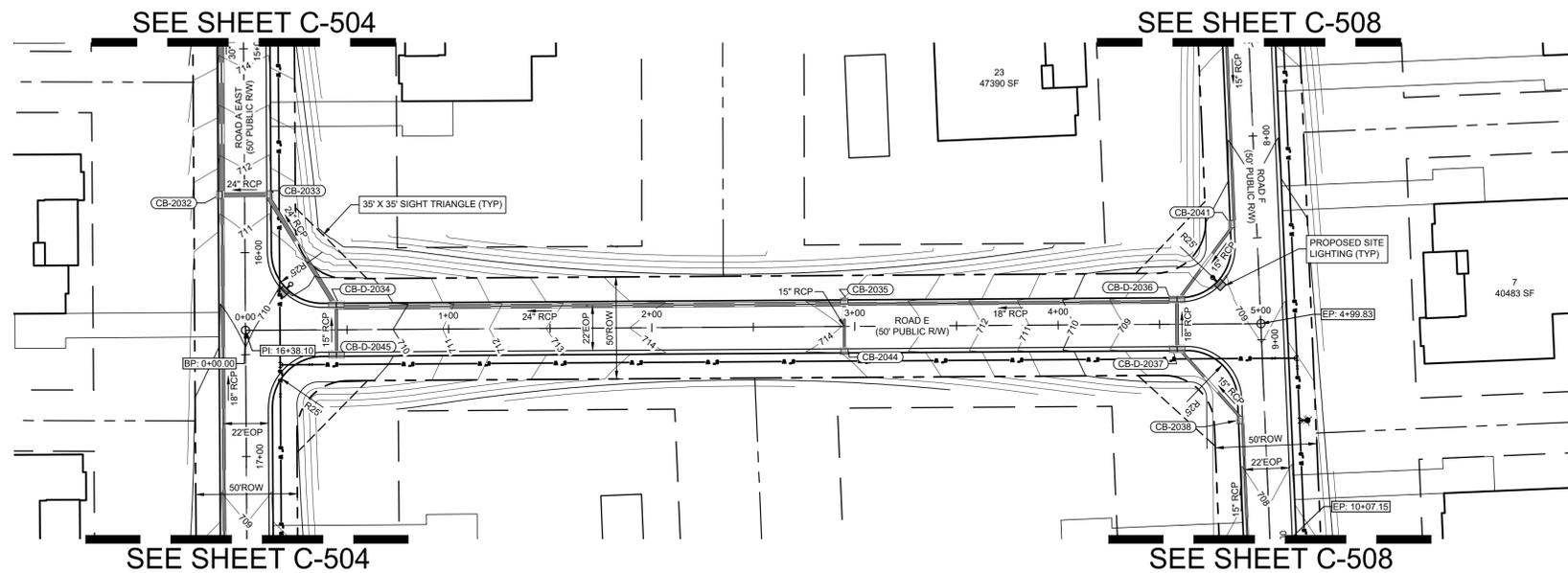
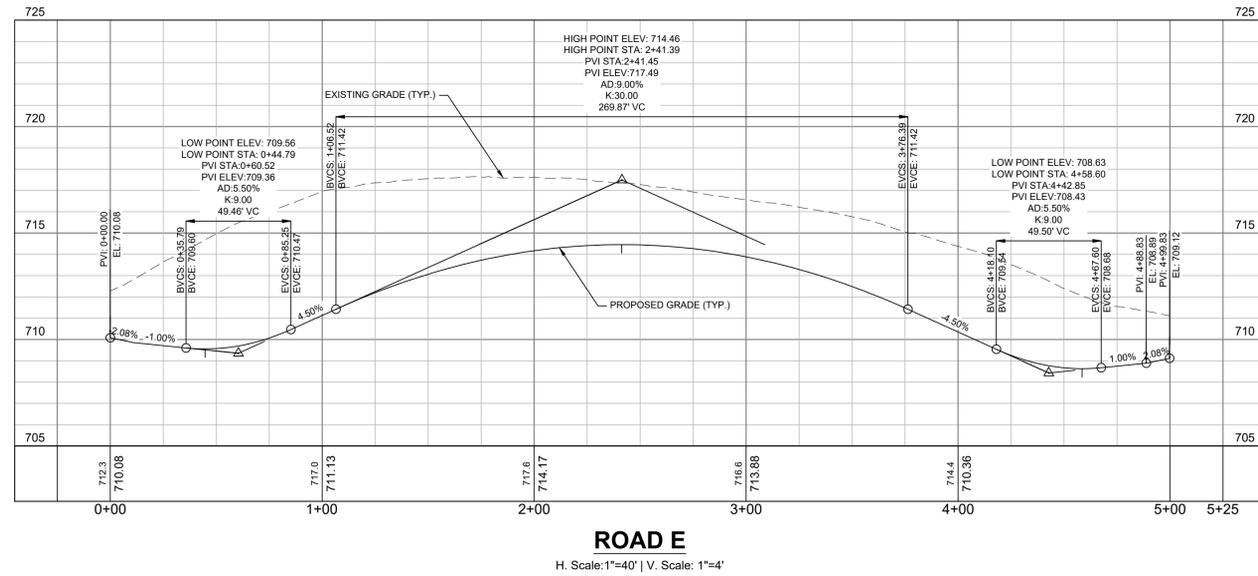
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ROAD PLAN AND PROFILE

MORRIS FARM
PREPARED FOR
TOLL BROTHERS, INC.
WEDDINGTON, NORTH CAROLINA

SHEET NUMBER
C-506

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PROFESSIONAL
SEAL
058235
ENGINEER
AUSTIN M. POPE
01/05/2026

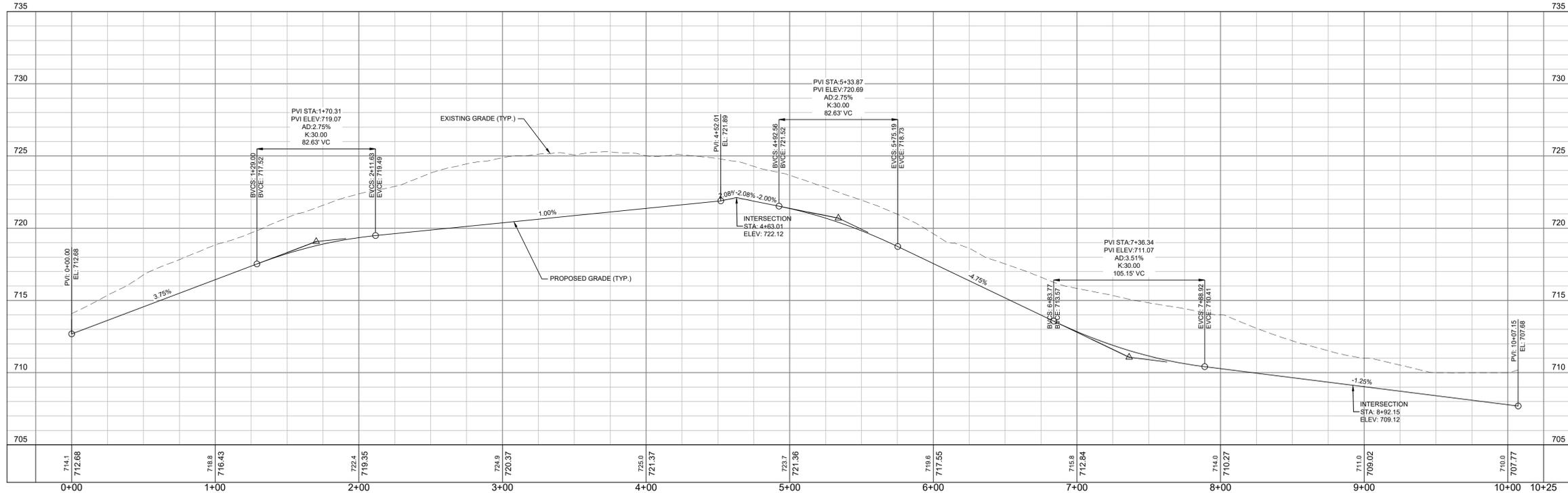
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DESIGNED BY	TTF
DRAWN BY	TTP
CHECKED BY	AMP

**ROAD E PLAN AND
PROFILE**

MORRIS FARM
PREPARED FOR
TOLL BROTHERS, INC.
WEDDINGTON NORTH CAROLINA

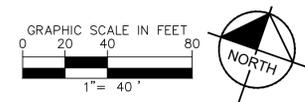
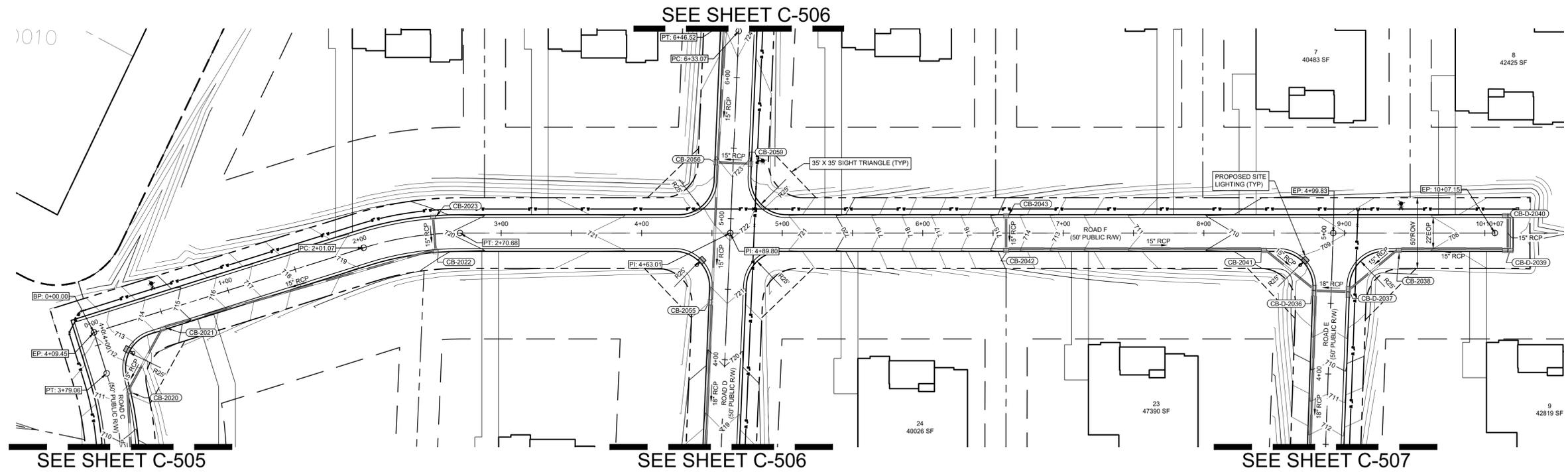
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ROAD F

H. Scale: 1"=40' | V. Scale: 1"=4'



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NORTH CAROLINA PROFESSIONAL ENGINEER

SEAL 058235

AUSTIN M. POPE

01/05/2026

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DATE	01/05/2025
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CHECKED BY	AMP

ROAD F PLAN AND PROFILE

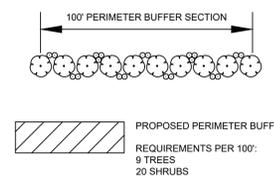
MORRIS FARM

PREPARED FOR
TOLL BROTHERS, INC.
 WEDDINGTON, NORTH CAROLINA

SHEET NUMBER
C-508

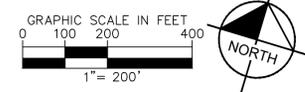


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DEVELOPER TO PROVIDE FEE-IN-LIEU PAYMENT AS HERITAGE TREE REMOVAL MITIGATION.
STREET TREES TO BE ON AVERAGE 40' O.C.

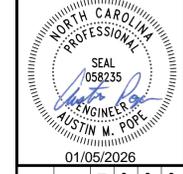
LEGEND	
	HERITAGE TREE TO REMAIN
	HERITAGE TREE TO BE REMOVED



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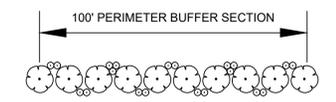
OVERALL LANDSCAPE PLAN

MORRIS FARM

PREPARED FOR
TOLL BROTHERS, INC.
WEDDINGTON, NORTH CAROLINA

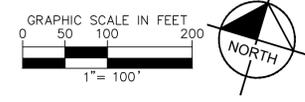
SHEET NUMBER
C-700

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PROPOSED PERIMETER BUFFER
 REQUIREMENTS PER 100':
 9 TREES
 20 SHRUBS

LEGEND
 ● HERITAGE TREE TO REMAIN
 ○ HERITAGE TREE TO BE REMOVED



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NORTH CAROLINA PROFESSIONAL ENGINEER

SEAL 058235
 AUSTIN M. POPE
 01/05/2026

KH PROJECT	012826085
DATE	01/05/2025
SCALE	AS SHOWN
DESIGNED BY	TTF
DRAWN BY	TTP
CHECKED BY	AMP

LANDSCAPE PLAN

MORRIS FARM

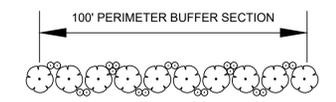
PREPARED FOR
TOLL BROTHERS, INC.
 NORTH CAROLINA
 WEDDINGTON

SHEET NUMBER
C-701

811

Know what's below.
 Call before you dig.

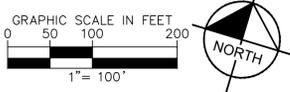
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PROPOSED PERIMETER BUFFER
 REQUIREMENTS PER 100':
 9 TREES
 20 SHRUBS

LEGEND	
○	HERITAGE TREE TO REMAIN
○	HERITAGE TREE TO BE REMOVED

SEE SHEET C-701



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NORTH CAROLINA PROFESSIONAL SEAL
 058235
ENGINEER
 AUSTIN M. POPE
 01/05/2026

KH PROJECT	012826085
DATE	01/05/2025
SCALE	AS SHOWN
DESIGNED BY	TTF
DRAWN BY	TTF
CHECKED BY	AMP

LANDSCAPE PLAN

MORRIS FARM
 PREPARED FOR
TOLL BROTHERS, INC.
 WEDDINGTON, NORTH CAROLINA

SHEET NUMBER
C-702

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

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April 23, 2025

Mr. Greg Gordos
Town Planner
Town of Weddington
1924 Weddington Road
Weddington, NC 28104

RE: Review of Traffic Impact Analysis (TIA)
5017 Weddington Matthews Road
Town of Weddington, NC

Mr. Gordos:

Pursuant to your request, LaBella Associates has reviewed the Updated Traffic Impact Analysis (TIA) for the proposed development, prepared for Toll Brothers, by Laura Reid, PE, Kimley Horn & Associates, dated March 2025 and the response to comment letter submitted with the TIA.

This updated TIA is essentially the same as the TIA submitted in January 2025 with the exception of the revisions to the Roundabout analysis and clarification about the mitigation proposed.

The revised TIA includes an updated SIDRA analysis for the roundabout at the intersection of Tilley Morris Road and Weddington-Matthews Road. The analysis indicates that, with the addition of site-generated traffic, operational conditions under Build scenarios remain comparable to those under Background conditions.

The 95th percentile queue lengths do not exceed the existing lane storage capacities, with one exception. During the AM peak hour, the southbound right-turn movement exiting Union Day School is expected to exceed available storage under both Background and Build conditions. As this condition is unrelated to the proposed project's traffic, no mitigation is recommended.

Additionally, the response-to-comments letter submitted with the updated TIA clarifies that mitigation for the westbound left-turn movement at the intersection of Tilley Morris Road and Weddington-Matthews Road was not identified. The file included with the January 2025 TIA was intended solely as a test case to evaluate whether extending the westbound left-turn lane would impact queue lengths. The results indicated no significant change.



All the requested updates are included appropriately in the Updated TIA, dated March 2025 and are considered acceptable.

We trust the information herein is sufficient for your immediate needs. Please do not hesitate to contact me at 914-269-5610 or Mr. Wilson at 704-941-2139 should you have any questions.

Respectfully submitted,

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Senior Civil Engineer

5017 Weddington-Matthews Road

Traffic Impact Analysis

Weddington, North Carolina

Prepared for:

Toll Brothers, Inc.

March 2025

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Kimley»Horn

Traffic Impact Analysis for
5017 Weddington-Matthews Road
Weddington, North Carolina

Prepared for:

Toll Brothers, Inc.
Charlotte, North Carolina



Updates in March 2025

Prepared by:

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January 2025
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1.0 Executive Summary

The purpose of this Traffic Impact Analysis (TIA) is to evaluate the vehicular traffic impacts on the surrounding transportation infrastructure as a result of the proposed 5017 Weddington-Matthews Road development. The primary objectives of the study are:

- To estimate trip generation and distribution for the proposed development.
- To perform intersection capacity analyses for the identified study area.
- To determine the potential traffic impacts of the proposed development.
- To identify improvements to mitigate the proposed development's traffic impacts.

The proposed 5017 Weddington-Matthews Road development is located along both sides of Weddington-Matthews Road between Willow Oaks Trail and Greenbrook Parkway in Weddington, North Carolina. Based on the site plan, the proposed development is currently envisioned to consist of 47 single-family detached homes; 9 single-family detached homes on the west side of Weddington-Matthews Road and 38 single-family detached homes on the east side of Weddington-Matthews Road.

For the purposes of this TIA, a build-out year of 2029 was considered. Based on the site plan, the proposed development will be accessed via two external access points:

- Bonner Drive Extension – the northbound leg of an existing, unsignalized, full-movement intersection of Bonner Drive and Amanda Drive
- Access A – an unsignalized, full-movement connection to Weddington-Matthews Road approximately 1,580 feet south of the intersection of Amanda Drive and Weddington-Matthews Road; this access serves both sides of the development.

North Carolina Department of Transportation (NCDOT) TIA Scoping Checklist was prepared based on the provided site plan that documented the scoping parameters to be used for the TIA and was reviewed and agreed upon by NCDOT and Town of Weddington staff. The approved TIA Scoping Checklist, along with NCDOT and Town scoping comments and approval emails, are included in the **Appendix**. The analysis in this TIA is based on the updated development plan and build-out year described above and is included in the **Appendix**. The development plan was revised after approval of the TIA Scoping Checklist to reduce density from 49 units (12 west and 37 east) to 47 units (9 west and 38 east) and the build-out year from 2027 to 2029.

The following AM, Midday (MID), and PM peak-hour scenarios were analyzed to determine the proposed development's transportation impacts on the surrounding network:

- 2024 Existing Conditions
- 2029 Background Conditions
- 2029 Build-out Conditions

Based on coordination with the Town and NCDOT, this TIA evaluated operations under each of the AM, MID, and PM peak-hour scenarios above for the following study area intersections:

1. Weddington-Matthews Road and Tilley Morris Road
2. Weddington-Matthews Road and Amanda Drive
3. Amanda Drive and Bonner Drive
4. Hemby Road/Beulah Church Road and Weddington-Matthews Road
5. Weddington-Matthews Road and Access A

Kimley-Horn was retained to determine the potential traffic impacts of this development (in accordance with the traffic study guidelines in the [NCDOT Policy on Street and Driveway Access to North Carolina Highways](#) and set forth by the [Town of Weddington Traffic Impact Analysis \(TIA\) Process and Procedures Manual](#), and to identify transportation improvements that may be required to mitigate these impacts.

Based on the capacity analyses performed at each of the identified study intersections, along with review of the auxiliary turn-lane warrants contained herein, *and feedback from NCDOT and Town Staff*, the following site and mitigation improvements are identified for the proposed 5017 Weddington-Matthews Road development:

Amanda Drive and Bonner Drive

- Extension of the northbound approach of Bonner Drive into the proposed development with one ingress lane and one egress lane.

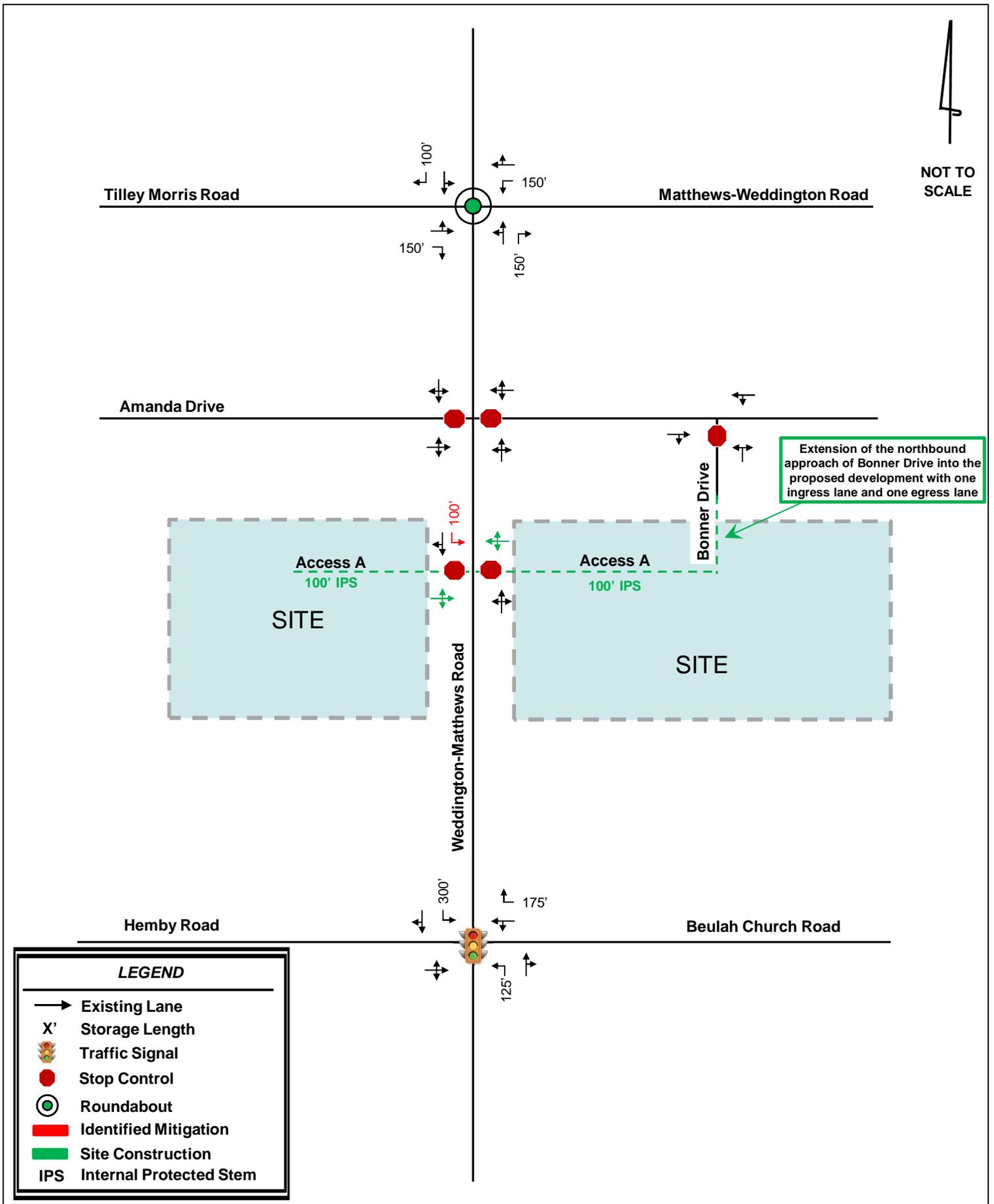
Weddington-Matthews Road and Access A

- Construction of the eastbound and westbound approaches of Access A with one ingress lane, one egress lane, stop-control, and an internal protected stem (IPS) of 100 feet.
- *Construct a southbound left-turn lane with 100 feet of storage and appropriate taper.*

No additional improvements are identified to mitigate other study area intersections.

The site improvements identified within the study area is shown in **Figure 1.1**. The improvements shown on these figures are subject to approval by NCDOT and the Town of Weddington. All additions and attachments to the State and Town roadway system shall be properly permitted, designed, and constructed in conformance to standards maintained by the agencies.

Note that changes from the original TIA submittal (sealed 1/21/2025) are shown in italics throughout the study.



2.0 Introduction

The proposed 5017 Weddington-Matthews Road development is located along both sides of Weddington-Matthews Road between Willow Oaks Trail and Greenbrook Parkway in Weddington, North Carolina. Based on the site plan, the proposed development is currently envisioned to consist of 47 single-family detached homes; 9 single-family detached homes on the west side of Weddington-Matthews Road and 38 single-family detached homes on the east side of Weddington-Matthews Road.

For the purposes of this TIA, a build-out year of 2029 was considered. Based on the site plan, the proposed development will be accessed via two external access points:

- Bonner Drive Extension – the northbound leg of an existing, unsignalized, full-movement intersection of Bonner Drive and Amanda Drive
- Access A – an unsignalized, full-movement connection to Weddington-Matthews Road approximately 1,580 feet south of the intersection of Amanda Drive and Weddington-Matthews Road; this access serves both sides of the development.

North Carolina Department of Transportation (NCDOT) TIA Scoping Checklist was prepared based on the provided site plan that documented the scoping parameters to be used for the TIA and was reviewed and agreed upon by NCDOT and Town of Weddington staff. The approved TIA Scoping Checklist, along with NCDOT and Town scoping comments and approval emails, are included in the **Appendix**. The analysis in this TIA is based on the updated development plan and build-out year described above and is included in the **Appendix**. The development plan was revised after approval of the TIA Scoping Checklist to reduce density from 49 units (12 west and 37 east) to 47 units (9 west and 38 east) and the build-out year from 2027 to 2029.

Kimley-Horn was retained to determine the potential traffic impacts of this development (in accordance with the traffic study guidelines in the [NCDOT Policy on Street and Driveway Access to North Carolina Highways](#) and set forth by the [Town of Weddington Traffic Impact Analysis \(TIA\) Process and Procedures Manual](#), and to identify transportation improvements that may be required to mitigate these impacts.

3.0 Existing Traffic Conditions

Existing traffic conditions were coordinated with Town of Weddington and NCDOT staff and collected through field observations, review of available online data, and turning-movement counts to establish the existing conditions baseline analysis.

3.1 STUDY AREA

Based on coordination with the Town and NCDOT, the study area for this TIA includes the following existing intersections:

1. Weddington-Matthews Road and Tilley Morris Road
2. Weddington-Matthews Road and Amanda Drive
3. Amanda Drive and Bonner Drive
4. Hemby Road/Beulah Church Road and Weddington-Matthews Road

Figure 3.1 shows the study area intersections and the site location, **Figure 3.2** shows the proposed site plan for the development, and **Figure 3.3** shows the existing roadway geometry at the study intersections.

The primary roadways in the vicinity of the site are Weddington-Matthews Road, Tilley Morris Road, Matthews-Weddington Road, Hemby Road, Beulah Church Road, Amanda Drive, and Bonner Drive.

Weddington-Matthews Road is a two-lane, undivided major collector with a posted speed limit of 45 miles per hour (mph) in the vicinity of the proposed development. Weddington-Matthews Road carries an annual average daily traffic (AADT) volume of 6,100 vehicles per day (vpd) south of Hemby Road based on 2024 NCDOT AADT data and 7,900 vpd south of Tilley Morris Road based on 2023 NCDOT AADT data.

Tilley Morris Road is a two-lane, undivided minor collector with a posted speed limit of 45 mph in the vicinity of the proposed development. Tilley Morris Road carries an AADT volume of 14,400 vpd west of Weddington-Matthews Road based on 2024 NCDOT AADT data.

The westbound leg of Matthews-Weddington Road at the intersection with Tilley Morris Road is an undivided minor arterial with a posted speed of 45 mph in the vicinity of the proposed development. This leg carries an AADT volume of 15,900 vpd east of the intersection of Tilley Morris Road and Matthews-Weddington Road based on 2024 AADT data.

Hemby Road is a two-lane, undivided local road with a posted speed limit of 45 mph in the vicinity of the proposed development. Hemby Road carries an AADT volume of 6,600 vpd west of Weddington-Matthews Road based on 2023 NCDOT AADT data.

Beulah Church Road is a two-lane, undivided local road with a posted speed limit of 45 mph in the vicinity of the proposed development. Beulah Church Road carries an AADT volume of 7,900 vpd east of Weddington-Matthews Road based on 2023 NCDOT AADT data.

Amanda Drive is a two-lane, undivided local road with a posted speed limit of 25 mph in the vicinity of the proposed development. NCDOT AADT data is not available for Amanda Drive.

Bonner Drive is a two-lane, undivided local road with a posted speed limit of 25 mph in the vicinity of the proposed development. NCDOT AADT data is not available for Bonner Drive.

3.2 EXISTING TRAFFIC VOLUME DEVELOPMENT

AM (7:00-9:00 AM), MID (2:00-4:00 PM), and PM (4:00-6:00 PM) intersection turning-movement, heavy-vehicle, pedestrian, and bicycle counts were collected by Quality Counts on Wednesday, November 13, 2024, at the following intersections:

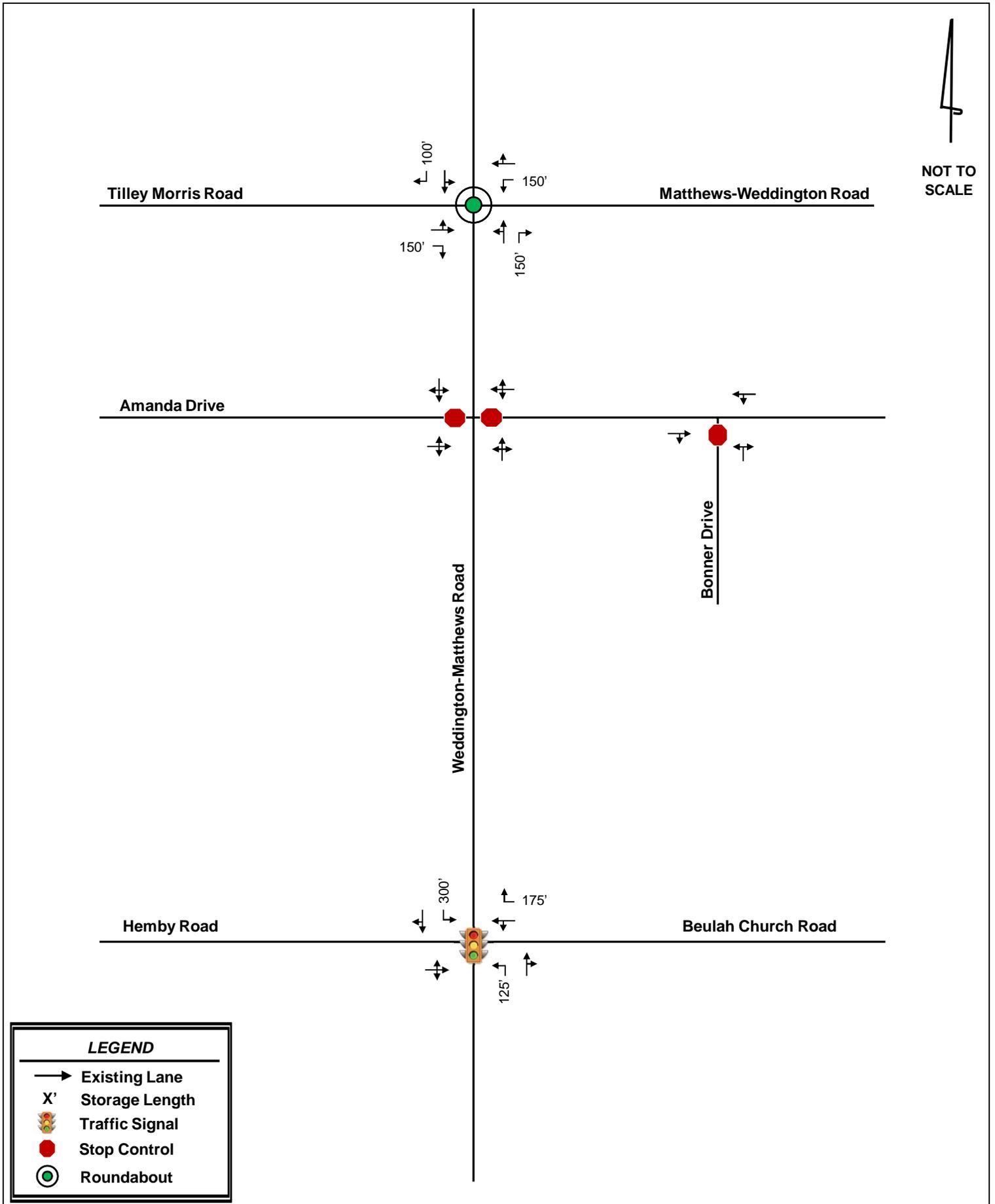
- Weddington-Matthews Road and Tilley Morries Road
- Weddington-Matthews Road and Amanda Drive
- Amanda Drive and Bonner Drive
- Hemby Road/Beulah Church Road and Weddington-Matthews Road
- Weddington-Matthews Road and Greenbrook Parkway

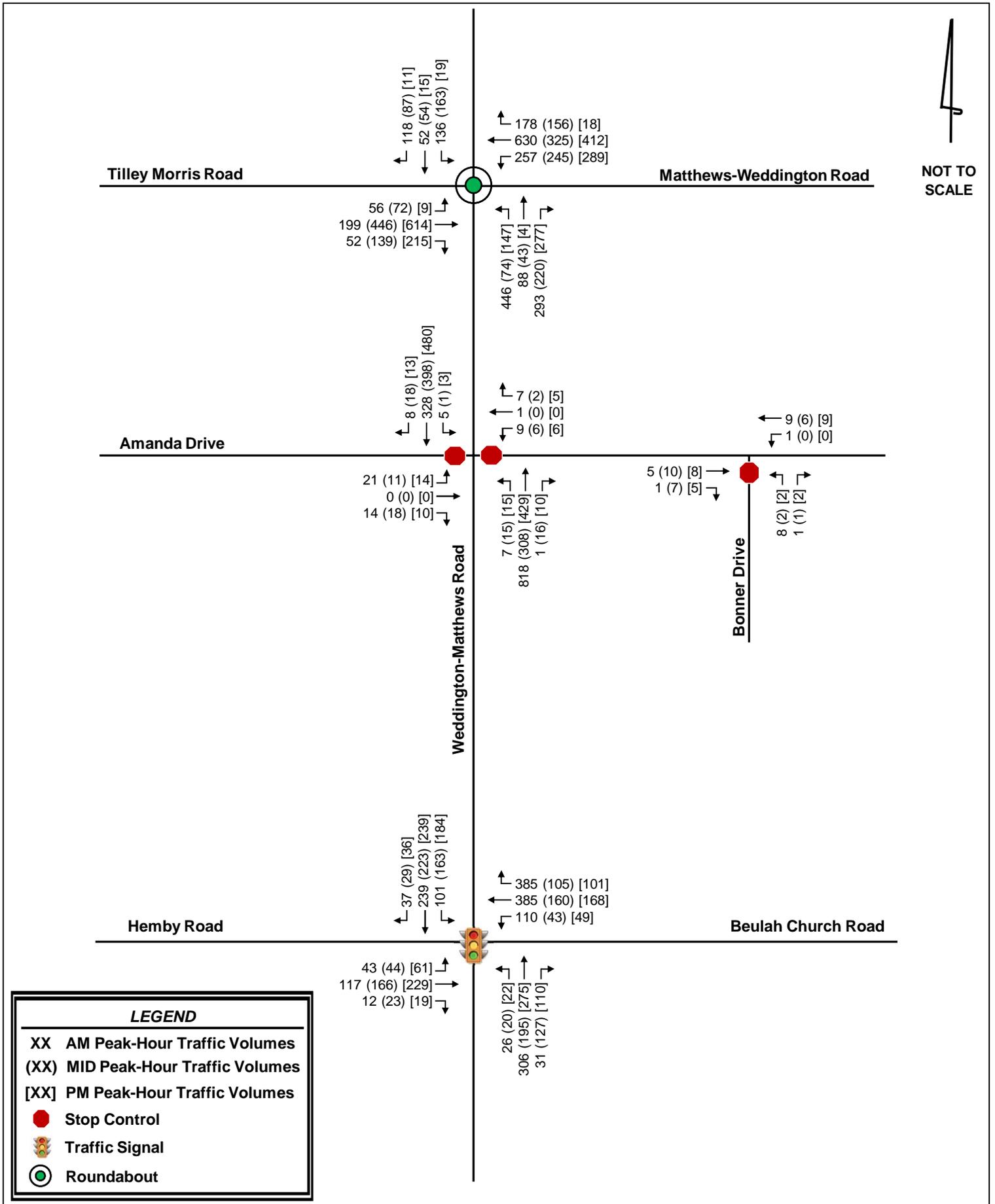
The turning-movement counts collected by Quality Counts were utilized for the existing volumes at the study area intersections. The turning-movement counts collected at the intersection of Weddington-Matthews Road and Greenbrook Parkway, a non-study area intersection, were used to establish northbound and southbound traffic at Access A.

Volume balancing was performed along Amanda Drive between Weddington-Matthews Road and Bonner Drive. No volume balancing was performed between the remaining study area intersections due to the presence of side streets and/or multiple residential driveways. Peak-hour intersection turning-movement count data is provided in the Appendix.

Figure 3.4 illustrates the 2024 existing AM, MID, and PM peak-hour traffic volumes.







NOT TO SCALE

4.0 Background Traffic Volume Development

Projected background (non-project) traffic is defined as the expected growth or change in traffic volumes on the surrounding roadway network between the year the existing counts were collected (2024) and the expected build-out year (2029) absent the construction and opening of the proposed project. This includes both non-specific general growth based on historical increase in local traffic volumes (historical background growth), along with specific growth and/or change in traffic volumes caused by either approved, but not yet fully-constructed, off-site developments and/or planned transportation projects specifically identified within the vicinity of the proposed development.

4.1 HISTORICAL BACKGROUND GROWTH TRAFFIC

Historical background growth is the increase in existing traffic volumes due to usage increases and non-specific growth throughout the area, and accounts for growth that is independent of specific off-site developments or planned transportation projects. Historical background growth traffic is calculated using an annual growth rate, which is applied to the existing traffic volumes up to the future horizon years. As shown in the approved NCDOT scoping checklist, an annual growth rate of two percent (2%) was applied to the 2024 existing peak-hour traffic volumes to calculate base 2029 background traffic volumes. This growth rate was determined based on review of historical NCDOT AADT maps in coordination with NCDOT and Town of Weddington.

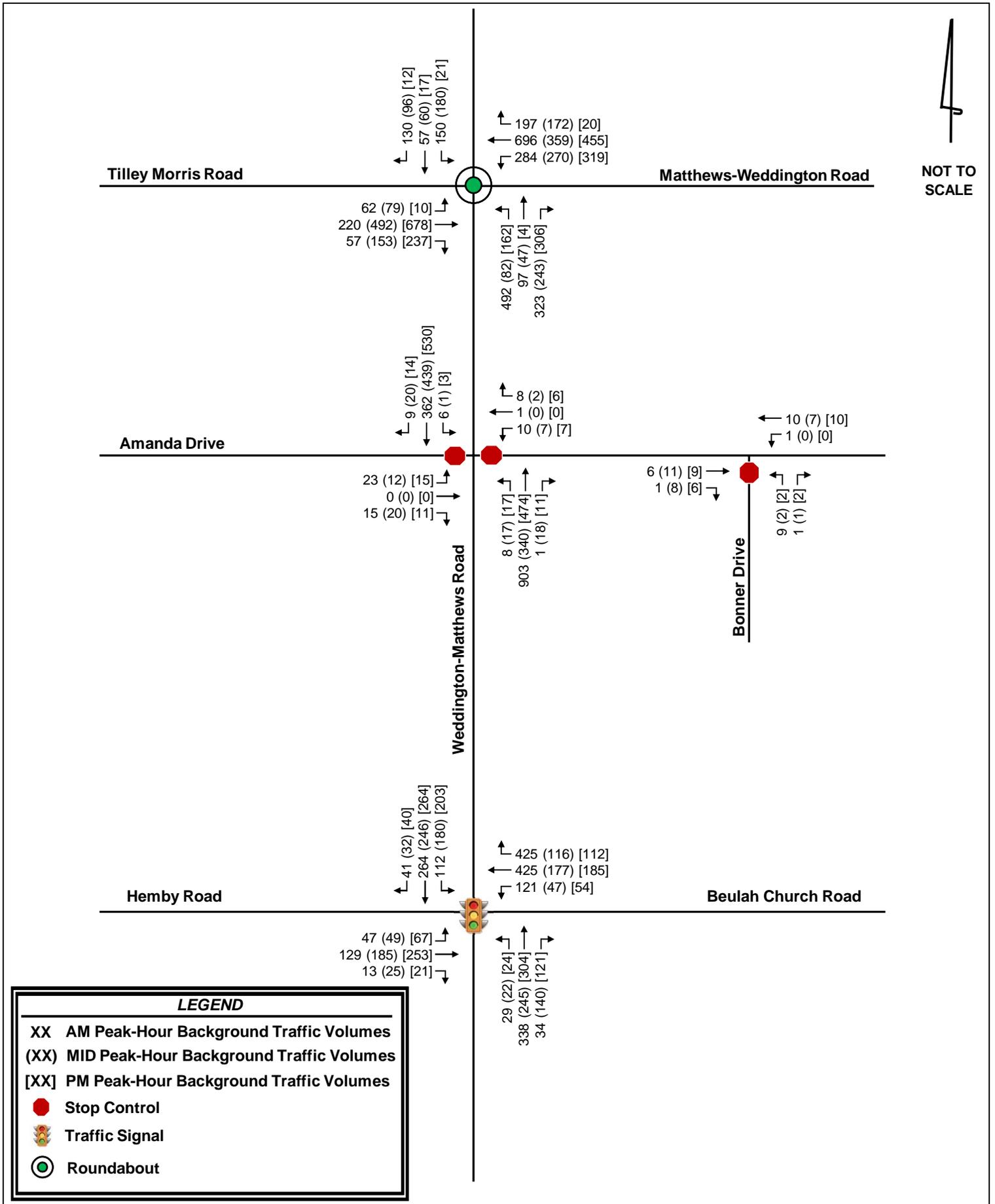
4.2 APPROVED DEVELOPMENTS

At the direction of the Town of Weddington and NCDOT staff, no approved developments were identified for inclusion in this TIA at the time of the scoping process.

4.3 PLANNED TRANSPORTATION PROJECTS

No funded transportation projects impacting vehicular capacity have been identified within the study area based on review NCDOT's State Transportation Improvement Program (STIP).

Figure 4.1 shows the projected 2029 background AM, MID, and PM peak-hour traffic volumes.



5.0 Site Traffic Volume Development

Site traffic developed for this TIA is defined as the vehicle trips expected to be generated and added to the study area by construction of the proposed development, and the distribution and assignment of that traffic throughout the surrounding network.

5.1 SITE ACCESS

For the purposes of this TIA, a build-out year of 2029 was considered. Based on the site plan, the proposed development will be accessed via two external access points:

- Bonner Drive Extension – the northbound leg of an existing, unsignalized, full-movement intersection of Bonner Drive and Amanda Drive
- Access A – an unsignalized, full-movement connection to Weddington-Matthews Road approximately 1,580 feet south of the intersection of Amanda Drive and Weddington-Matthews Road; this access serves both sides of the development.

5.2 TRAFFIC GENERATION

The traffic generation potential of the proposed development was determined using the trip generation rates published in *Trip Generation* (Institute of Transportation Engineers, Eleventh Edition, 2021).

To obtain the MID peak-hour trip generation volumes, a MID factor was calculated. This factor was determined by dividing the network-wide MID peak-hour (3:00 PM to 4:00 PM) hourly distribution by the network-wide PM peak-hour (4:30 PM to 5:30 PM) hourly distribution for the chosen land use. These hourly distribution values are reported in *Trip Generation Manual* (Institute of Transportation Engineers, Eleventh Edition, 2023). This factor was then multiplied by the PM peak-hour trips to determine the MID peak-hour trips. For these calculations, it was assumed that the in/out percentages in the MID peak-hour are the same as the PM peak-hour.

Based on the site plan, the proposed development is currently envisioned to consist of 47 single-family detached homes; 9 single-family detached homes on the west side of Weddington-Matthews Road and 38 single-family detached homes on the east side of Weddington-Matthews Road.

Table 5.1 summarizes the projected trip generation for the proposed development. During a typical weekday, it has the potential to generate 39, 43, and 50 net new external trips during the AM, MID, and PM peak hours, respectively. As noted previously, the values in this trip gen table have been reduced from what was shown in the scoping document based on the current site plan.

Land Use	Intensity	Units	Daily	AM Peak Hour			MID Peak Hour			PM Peak Hour		
				Total	In	Out	Total	In	Out	Total	In	Out
210 - Single-Family Detached Housing (West Parcel)	9	DU	110	8	2	6	9	6	3	10	6	4
210 - Single-Family Detached Housing (East Parcel)	38	DU	414	31	8	23	34	21	13	40	25	15
Total Net New External Trips			524	39	10	29	43	27	16	50	31	19

5.3 SITE TRAFFIC DISTRIBUTION AND ASSIGNMENT

The proposed development's trips were assigned to the surrounding network based on AADT, surrounding land uses, locations of similar land use, and population densities in the area. The following site traffic distribution was reviewed and approved as part of the TIA Scoping Checklist by the Town of Weddington and NCDOT:

- 25% to/from the west along Tilley Morris Road
- 35% to/from the east along Matthews-Weddington Road
- 15% to/from the west along Hemby Road
- 15% to/from the east along Beulah Church Road
- 10% to/from the south along Weddington-Matthews Road

The overall site traffic distribution and assignment can be seen in **Figure 5.1**.

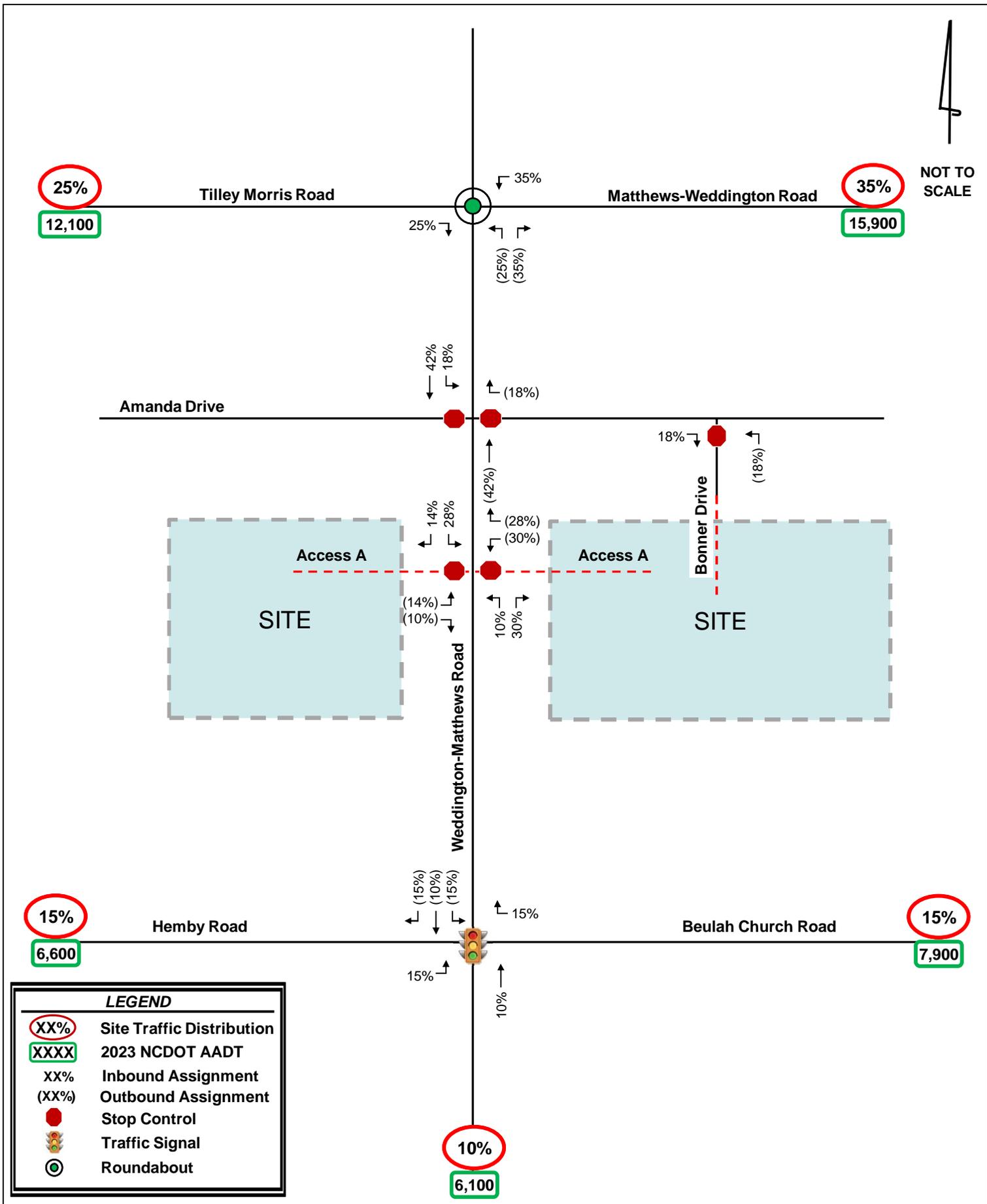
Trips were balanced to match the number of vehicles entering and exiting the development on either side of Weddington-Matthews Road shown in **Table 5.1**.

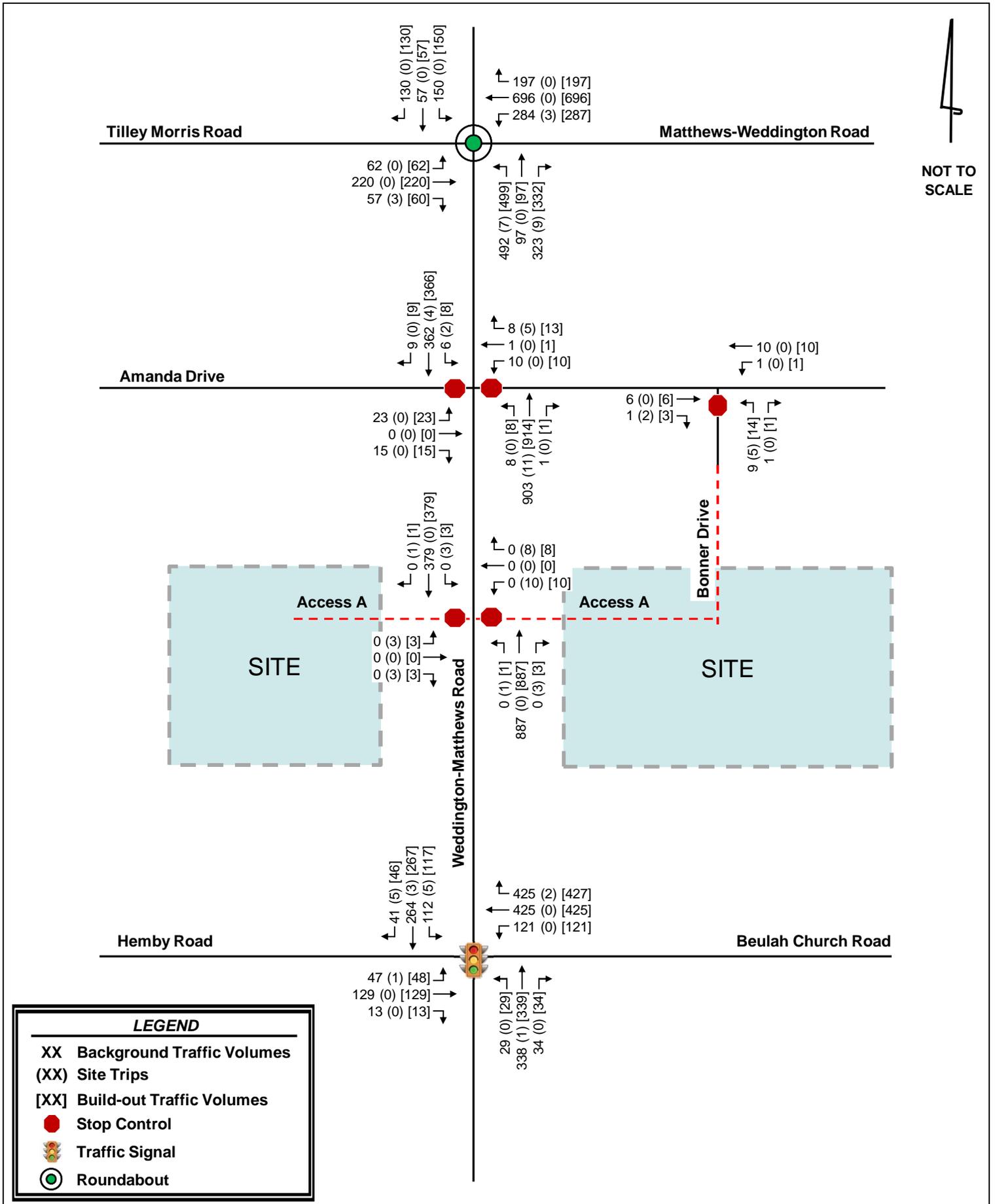
5.4 BUILD-OUT TRAFFIC VOLUMES

The build-out traffic volumes include the assignment of the projected site traffic generation added to the appropriate background traffic volumes. Build-out traffic volumes are shown in the following figures:

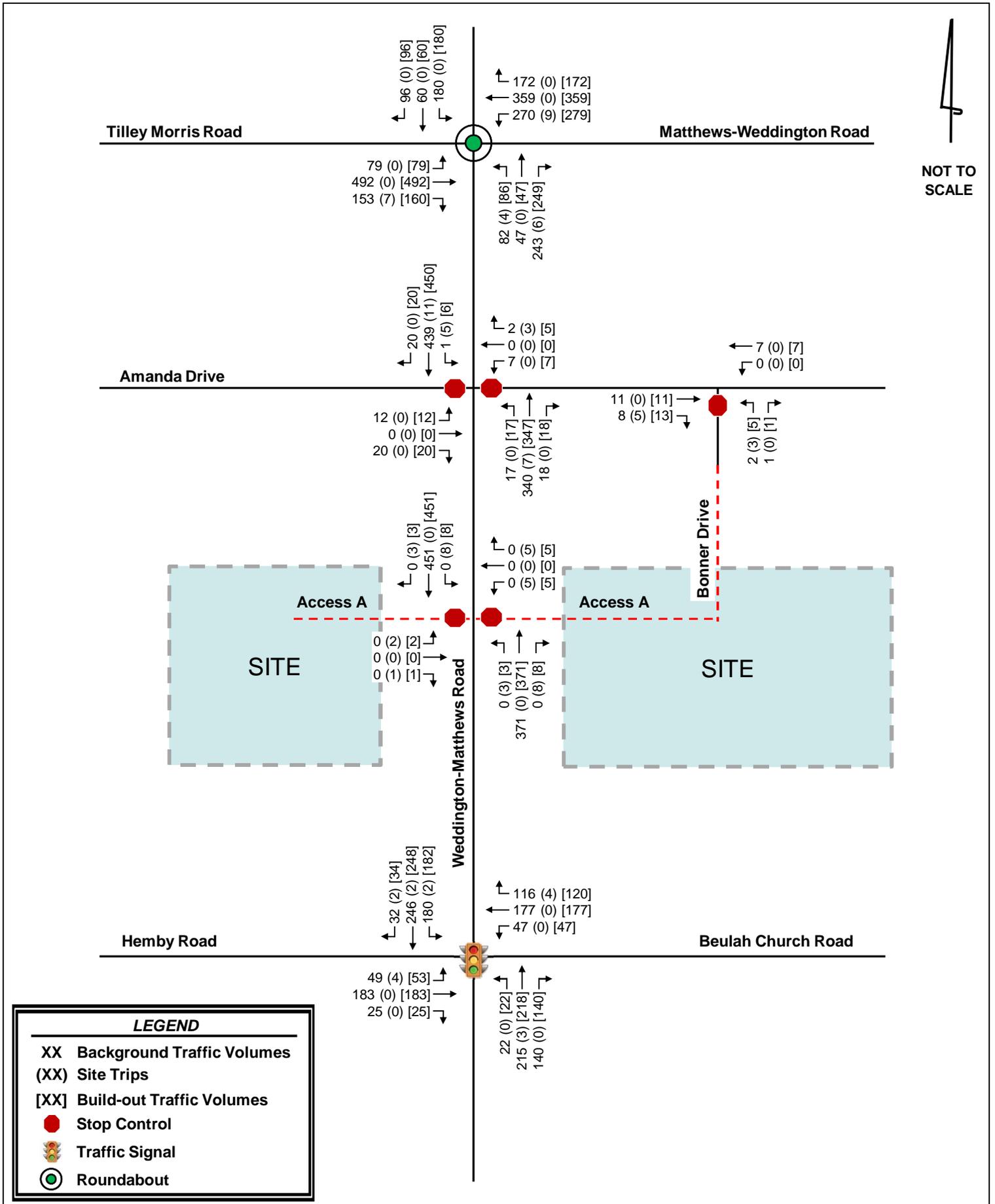
- **Figure 5.2** – 2029 Build-out AM Peak-Hour Traffic Volumes
- **Figure 5.3** – 2029 Build-out MID Peak-Hour Traffic Volumes
- **Figure 5.4** – 2029 Build-out PM Peak-Hour Traffic Volumes

Intersection volume development worksheets for all intersections within the study network are provided in the **Appendix**.

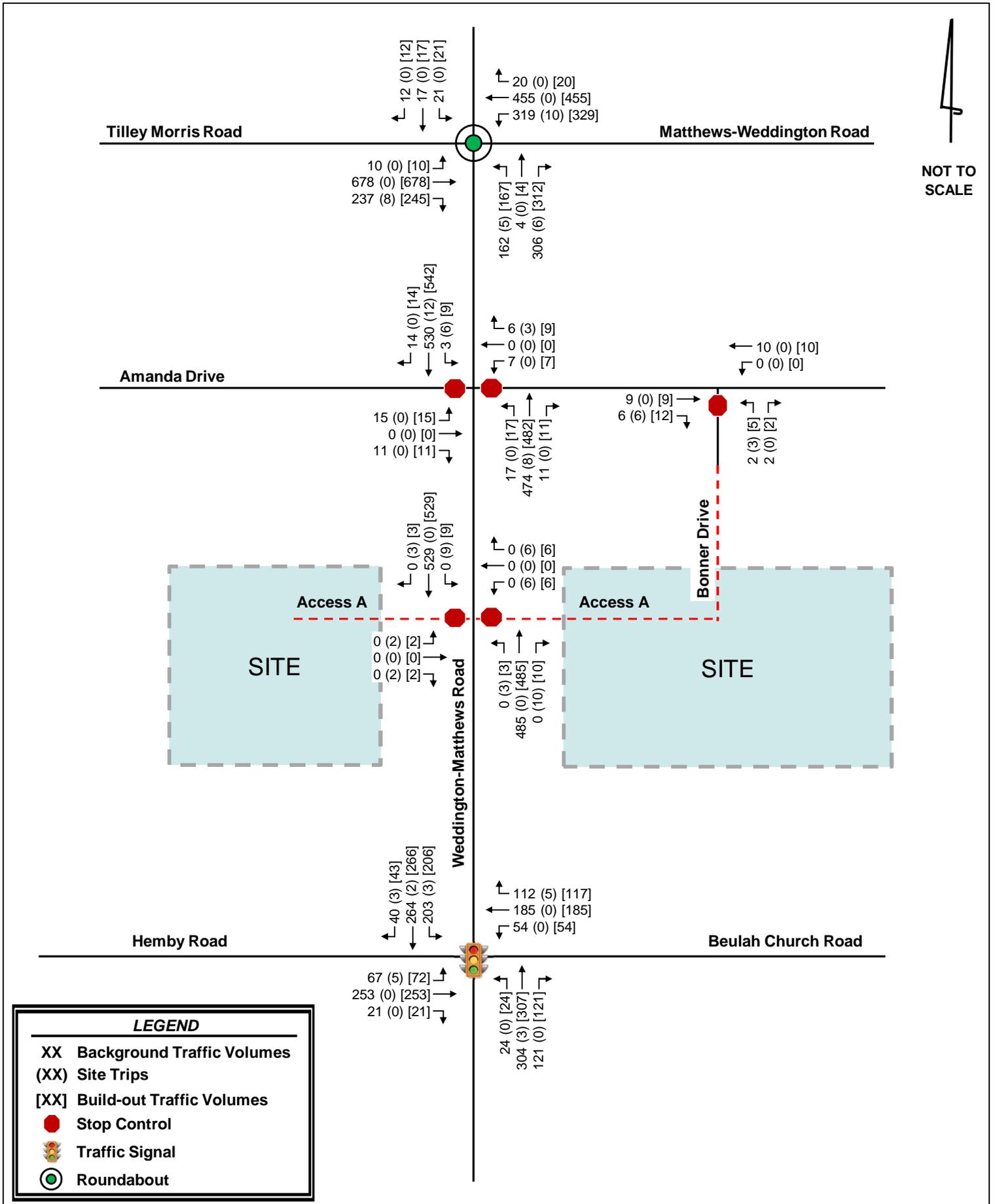




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6.0 Capacity Analysis

Based on the requirements set forth by the [Town of Weddington Traffic Impact Analysis \(TIA\) Process and Procedures Manual](#) and in accordance with the traffic study guidelines in the [NCDOT Policy on Street and Driveway Access to North Carolina Highways](#), capacity analyses were performed at the study area intersections for each of the following AM, MID, and PM peak-hour scenarios:

- 2024 Existing Conditions
- 2029 Background Conditions
- 2029 Build-out Conditions

Capacity analyses were performed for the AM, MID, and PM peak hours using Synchro Version 12 and SIDRA Version 9.1 software to determine the operating characteristics at the study area intersections of the adjacent street network and to evaluate the impacts of the proposed development. Although Synchro Version 12 was utilized for analysis, files have been saved down and submitted as Synchro Version 11 for compatibility with the software possessed by the reviewing agencies. Capacity is defined as the maximum number of vehicles that can pass over a particular road segment, or through a particular intersection, within a specified period of time under prevailing operational, geometric and controlling conditions within a set time duration. This software program uses methodologies contained in the *Highway Capacity Manual* (HCM) to determine the operating characteristics of an intersection.

The HCM 6th Edition defines LOS as a “quantitative stratification of a performance measure or measures representing quality of service” and is used to “translate complex numerical performance results into a simple A-F system representative of travelers’ perceptions of the quality of service provided by a facility or service”. The HCM defines six levels of service, LOS A through LOS F, with A having the best operating conditions from the traveler’s perspective and F having the worst. However, it must be understood that “the LOS letter result hides much of the complexity of facility performance”, and that “the appropriate LOS for a given system element in the community is a decision for local policy makers”. According to the HCM, “for cost, environmental impact, and other reasons, roadways are typically designed not to provide LOS A conditions during peak periods but instead to provide some lower LOS that balances individual travelers’ desires against society’s desires and financial resources. Nevertheless, during low-volume periods of the day, a system element may operate at LOS A.”

LOS for a two-way stop-controlled (TWSC) intersection is determined by the control delay at the side-street approaches, typically during the highest volume periods of the day, the AM and PM peak periods. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. With respect to field measurements, control delay is defined as the total elapsed time from the time a vehicle stops at the end of the queue to the time the vehicle departs from the stop line. It is typical for stop sign-controlled side streets and driveways intersecting major streets to experience long delays during peak hours, particularly for left-turn movements. The majority of the traffic moving through the intersection on the major street experiences little or no delay.

LOS for signalized intersections is reported for the intersection as a whole, and typically during the highest volume periods of the day. One or more movements at an intersection may experience a low level-of-service, while the intersection as a whole may operate acceptably.

LOS for roundabout intersections is reported for the intersection as a whole but uses the same control delay thresholds as unsignalized intersections. However, if the volume-to-capacity ratio on an approach of the intersection is greater than 1.0, that approach or intersection is reported as LOS F regardless of the reported control delay.

Table 6.0-A and **Table 6.0-B** list the LOS control delay thresholds published in the HCM for unsignalized/roundabout and signalized intersections, respectively, as well as the unsignalized operational descriptions assumed herein.

Table 6.0-A Vehicular LOS Control Delay Thresholds for Unsignalized/Roundabout Intersections		
Level-of-Service	Average Control Delay per Vehicle [sec/veh]	
A	≤ 10	Short Delays
B	> 10 – 15	
C	> 15 – 25	
D	> 25 – 35	Moderate Delays
E	> 35 – 50	
F	> 50	Long Delays

Table 6.0-B Vehicular LOS Control Delay Thresholds for Signalized Intersections	
Level-of-Service	Average Control Delay per Vehicle [sec/veh]
A	≤ 10
B	> 10 – 20
C	> 20 – 35
D	> 35 – 55
E	> 55 – 80
F	> 80

The signal geometric plans for the signalized intersection of Hemby Road/Beulah Church Road and Weddington-Matthews Road was obtained from NCDOT’s signal plan database and was used in the development of the existing conditions Synchro network.

Based on the provided signal plans, the intersection of Hemby Road/Beulah Church Road and Weddington-Matthews Road is isolated and not part of a coordinated signal system. Using the signal plans provided by NCDOT, cycle lengths and splits were optimized in existing, background, and build-out conditions. The signal plans are included in the **Appendix**.

The following modifications from the background data collected were applied to the capacity analyses to meet [NCDOT Congestion Management Capacity Analysis Guidelines](#):

- Right-turn-on-red (RTOR) operations were not allowed.
- Lost time adjust was added to the yellow and all-red times provided in the existing signal and time-of-day plans to maintain a total lost time of 5 seconds for each movement.
- A minimum of 4 vehicles per hour were used for permissible movements, excluding movements into and out of the proposed site and the intersection of Amanda Drive and Bonner Drive under all analysis scenarios

In the existing condition, the observed peak hour factor (PHF) was used in the analysis, whereas a 0.9 PHF was used for all future conditions with the exception of the Wedding-Matthews Road and Tilley Morris intersection. A weighted PHF was used in the AM and MID peak hours to account for the impacts of existing school traffic.

In the existing condition, the observed heavy vehicle percentage was used in the analysis, subject to a 2% minimum. A weighted heavy vehicle percentage was calculated for future conditions for movements over 10% that had site trips assigned to them.

A reduction in delay is shown for certain approaches between the existing and background conditions due to the use of a 0.9 PHF in the background scenario (unless otherwise noted). Compared to the observed PHFs, an increase in PHF to 0.9 causes the traffic volume to be more evenly distributed throughout the 60-minute peak-hour in the model, which results in a reduction in the average approach delay.

Mitigation for traffic impacts caused by the proposed development were noted and recommended based on NCDOT and Town of Weddington mitigation requirements. When determining the proposed development's traffic impact to the study area intersections, the background and build-out conditions were compared. The mitigation requirements for each agency are outlined below.

NCDOT Mitigation Requirements

Based on the [NCDOT's Policy on Street and Driveway Access to North Carolina Highways](#), "the applicant shall be required to identify mitigation improvements to the roadway network if at least one of the following conditions exists when comparing background to build-out conditions:

- The total average delay at an intersection or individual approach increases by 25% or greater, while maintaining the same level of service (LOS),
- The LOS degrades by at least one level,
- Or the LOS is "F".

Town of Weddington Mitigation Requirements

Based on the [Town of Weddington Traffic Impact Analysis \(TIA\) Process and Procedures Manual](#), the following are the Town of Weddington mitigation requirements:

- "Determination of turn lane storage lengths for signalized intersections shall be based on the SimTraffic Maximum Queue or Synchro 95th Percentile Queue, whichever is greater.
- Determination of turn lane storage lengths for unsignalized intersections shall be based on the Warrant for Left and Right-Turn lanes graph published by the [NCDOT].
- The baseline LOS for unsignalized intersections at build-out shall be LOS C.
- Unsignalized access locations at project build-out shall be mitigated (if needed) to obtain LOS C."

Synchro LOS results and 95th percentile queues are reported in the following subsections. Capacity analysis reports generated by Synchro Version 12 and Sidra Version 9.1 software and queuing and blocking reports generated by the SimTraffic microsimulation model are included in the **Appendix**.

6.1 WEDDINGTON-MATTHEWS ROAD AND TILLEY MORRIS ROAD

Table 6.1 summarizes the LOS, control delay, and 95th percentile queue lengths at the unsignalized, roundabout intersection of Weddington-Matthews Road and Tilley Morris Road. *Results in the Table below have been updated, per Town comments on the original TIA.*

Table 6.1 - Weddington-Matthews Road and Tilley Morris Road										
Condition	Measure	EB		WB		NB		SB		Intersection
		EBLT	EBR	WBL	WBTR	NBLT	NBR	SBLT	SBR	LOS (Delay)
AM Peak Hour										
2024 Existing	LOS (Delay)	B (10.7)		F (301.3)		C (24.4)		E (46.5)		F (141.7)
	SIDRA 95th Q	64'	10'	84'	4262'	430'	83'	167'	81'	
2029 Background	LOS (Delay)	B (12.9)		F (418.4)		E (44.4)		F (70.2)		F (200.7)
	SIDRA 95th Q	83'	11'	112'	5526'	822'	111'	323'	106'	
2029 Build-out	LOS (Delay)	B (12.9)		F (419.5)		E (46.2)		F (71.4)		F (201.1)
	SIDRA 95th Q	83'	12'	115'	5537'	865'	117'	330'	107'	
MID Peak Hour										
2024 Existing	LOS (Delay)	D (28.6)		A (9.5)		C (15.9)		C (16.7)		C (17.6)
	SIDRA 95th Q	301'	32'	28'	149'	30'	72'	154'	29'	
2029 Background	LOS (Delay)	F (56.7)		B (11.2)		C (20.6)		D (25.1)		D (28.8)
	SIDRA 95th Q	648'	41'	32'	229'	37'	95'	238'	38'	
2029 Build-out	LOS (Delay)	F (58.8)		B (11.3)		C (21.0)		D (26.3)		D (29.7)
	SIDRA 95th Q	673'	43'	34'	231'	39'	99'	246'	38'	
PM Peak Hour										
2024 Existing	LOS (Delay)	B (11.9)		A (6.4)		A (9.7)		A (6.7)		A (9.4)
	SIDRA 95th Q	223'	26'	32'	57'	23'	55'	5'	2'	
2029 Background	LOS (Delay)	C (16.9)		A (7.2)		B (12.2)		A (7.7)		B (12.3)
	SIDRA 95th Q	373'	31'	39'	70'	28'	74'	6'	2'	
2029 Build-out	LOS (Delay)	C (17.4)		A (7.3)		B (12.4)		A (7.8)		B (12.6)
	SIDRA 95th Q	381'	33'	40'	71'	30'	77'	6'	2'	
Background Storage			175'	150'			150'		100'	
Exceeds storage										

As shown in **Table 6.1**, under 2024 existing conditions, the overall intersection currently operates at LOS F during the AM peak hour, LOS C during the MID peak hour, and LOS A during the PM peak hour.

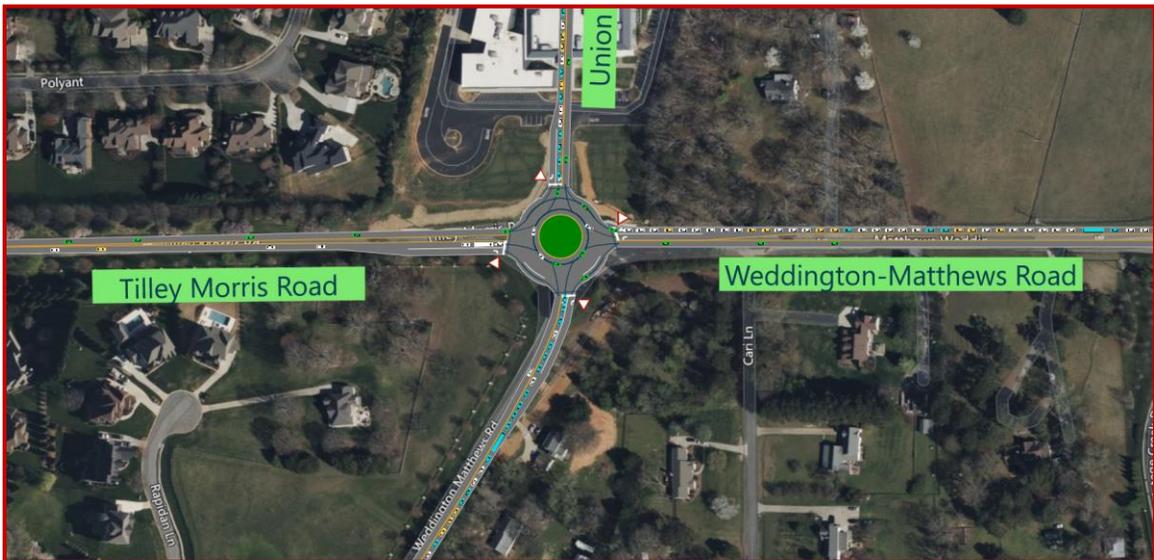
Under 2029 background conditions, the overall intersection is expected to operate at LOS F during the AM peak hour and drop to LOS D and LOS B during the MID and PM peak hours respectively. With the addition of site traffic, the overall intersection is expected to continue to operate LOS F during the AM peak hour, LOS D during the MID peak hour, and LOS B during PM peak hour. Given the overall intersection and approach delays increase by no more than two seconds from background to build-out conditions, no improvements are identified for capacity purposes.

Based on review of the SIDRA 95th percentile queues, the westbound through-right and northbound left-through lane queues are projected to be long during the AM peak hour. Since the addition of site traffic by the proposed site is not expected to significantly increase the projected queue lengths beyond background conditions, developer improvements are not recommended.

Additionally, based on review of the SIDRA 95th percentile queues, the southbound right-turn queue exiting Union Day School is expected to exceed available storage under background and build-out conditions during the AM peak hour. Given that the proposed site is not expected to significantly

increase the queue and queues exceed the storage by less than one car length, extension of this turn lane is not recommended as developer responsibility.

Based on a review of the SimTraffic maximum queues, the northbound right-turn, southbound right-turn, and westbound left-turn queues are expected to exceed the available storage under existing, background, and build-out conditions in the AM peak hour. As shown in the screenshot below during AM background conditions, the northbound right-turn and westbound left-turn lane storages are under-utilized due to starvation caused by the northbound left-through and westbound through-right lane queues, respectively. As this condition exists with and without the proposed development and the site is not proposed to add significant additional traffic to these movements, extension of the turn lanes at this intersection is not recommended as a developer improvement.



Long SimTraffic maximum queues are also projected along the southbound approach during the MID peak hour under existing, background, and build-out conditions.

Long SimTraffic maximum queues are projected along the eastbound approach during the MID and PM peak hours under existing, background, and build-out conditions. As this condition exists with and without the proposed development and the site is not proposed to add significant additional traffic to the eastbound right-turn movement, extension of this turn lane is not recommended as a developer improvement.

Video footage from existing TMC collection at the intersections of Weddington-Matthews Road and Tilley Morris Road and Weddington-Matthews Road and Amanda Drive confirms that the northbound queue does not extend as far as the SimTraffic model reflects; however, the exact location of maximum queue cannot be determined from video footage.

6.2 WEDDINGTON-MATTHEWS ROAD AND AMANDA DRIVE

Table 6.2 summarizes the LOS, control delay, and 95th percentile queue lengths at the unsignalized, stop-controlled intersection of Weddington-Matthews Road and Amanda Drive.

Table 6.2 - Weddington-Matthews Road and Amanda Drive							
Condition	Measure	EB	WB	NB		SB	
		EBLTR	WBLTR	NBL*	NBTR	SBL*	SBTR
AM Peak Hour							
2024 Existing	LOS (Delay)	F (56.3)	F (58.9)	A (8.1)	A (0.0)	B (11.3)	A (0.0)
	Synchro 95th Q	48'	43'	0'	0'	3'	0'
2029 Background	LOS (Delay)	E (41.5)	E (42.5)	A (8.2)	A (0.0)	B (11.3)	A (0.0)
	Synchro 95th Q	33'	18'	0'	0'	0'	0'
2029 Build-out	LOS (Delay)	E (44.7)	E (40.8)	A (8.2)	A (0.0)	B (11.1)	A (0.0)
	Synchro 95th Q	35'	20'	0'	0'	0'	0'
MID Peak Hour							
2024 Existing	LOS (Delay)	C (19.0)	C (20.4)	A (8.7)	A (0.0)	A (8.3)	A (0.0)
	Synchro 95th Q	15'	10'	3'	0'	0'	0'
2029 Background	LOS (Delay)	C (16.5)	C (19.4)	A (8.6)	A (0.0)	A (8.1)	A (0.0)
	Synchro 95th Q	10'	5'	3'	0'	0'	0'
2029 Build-out	LOS (Delay)	C (16.9)	C (19.4)	A (8.6)	A (0.0)	A (8.1)	A (0.0)
	Synchro 95th Q	10'	5'	3'	0'	0'	0'
PM Peak Hour							
2024 Existing	LOS (Delay)	C (20.6)	C (22.7)	A (8.5)	A (0.0)	A (8.4)	A (0.0)
	Synchro 95th Q	13'	8'	3'	0'	0'	0'
2029 Background	LOS (Delay)	D (25.6)	C (23.1)	A (8.8)	A (0.0)	A (8.5)	A (0.0)
	Synchro 95th Q	15'	8'	3'	0'	0'	0'
2029 Build-out	LOS (Delay)	D (27.1)	C (22.6)	A (8.8)	A (0.0)	A (8.6)	A (0.0)
	Synchro 95th Q	15'	8'	3'	0'	0'	0'

*Conflicting left-turn movements are broken out per NCDOT guidelines under unsignalized conditions

As shown in **Table 6.2**, under 2024 existing conditions, the stop-controlled eastbound and westbound approaches of Amanda Drive currently operate with long delays during the AM peak hour and short delays during the MID and PM peak hours.

Under 2029 background conditions, the stop-controlled eastbound and westbound approaches are expected to operate with short to moderate delays during the AM and PM peak hours and short delays during the MID peak hour. The decrease in delay can be attributed to the PHF being 0.9, as describe in **Section 6.0**.

With the addition of site traffic, the stop-controlled eastbound and westbound approaches are expected to continue to operate with short to moderate delays during the AM and PM peak hours and short delays during the MID peak hour with minimal increases in Synchro 95th queueing. Therefore, no improvements are identified for capacity purposes at this intersection.

Review of auxiliary turn-lane warrants at this intersection are included in **Section 7.0**

6.3 AMANDA DRIVE AND BONNER DRIVE

Table 6.3 summarizes the LOS, control delay and 95th percentile queue lengths at the unsignalized, stop-controlled intersection of Amanda Drive and Bonner Drive.

Table 6.3 - Amanda Drive and Bonner Drive					
Condition	Measure	EB	WB		NB
		EBTR	WBL*	WBT	NBLR
AM Peak Hour					
2024 Existing	LOS (Delay)	A (0.0)	A (8.1)	A (0.0)	A (8.9)
	Synchro 95th Q	0'	0'	0'	3'
2029 Background	LOS (Delay)	A (0.0)	A (8.1)	A (0.0)	A (8.7)
	Synchro 95th Q	0'	0'	0'	0'
2029 Build-out	LOS (Delay)	A (0.0)	A (8.1)	A (0.0)	A (8.7)
	Synchro 95th Q	0'	0'	0'	3'
MID Peak Hour					
2024 Existing	LOS (Delay)	A (0.0)	A (0.0)	A (0.0)	A (9.0)
	Synchro 95th Q	0'	0'	0'	0'
2029 Background	LOS (Delay)	A (0.0)	A (0.0)	A (0.0)	A (8.9)
	Synchro 95th Q	0'	0'	0'	0'
2029 Build-out	LOS (Delay)	A (0.0)	A (0.0)	A (0.0)	A (8.8)
	Synchro 95th Q	0'	0'	0'	0'
PM Peak Hour					
2024 Existing	LOS (Delay)	A (0.0)	A (0.0)	A (0.0)	A (8.9)
	Synchro 95th Q	0'	0'	0'	0'
2029 Background	LOS (Delay)	A (0.0)	A (0.0)	A (0.0)	A (8.7)
	Synchro 95th Q	0'	0'	0'	0'
2029 Build-out	LOS (Delay)	A (0.0)	A (0.0)	A (0.0)	A (8.7)
	Synchro 95th Q	0'	0'	0'	0'

*Conflicting left-turn movements are broken out per NCDOT guidelines under unsignalized conditions

As shown in **Table 6.3**, under 2024 existing conditions, the stop-controlled northbound approach of Bonner Drive currently operate with short delays during all peak hours.

Under 2029 background conditions, the stop-controlled northbound approach is expected to continue to operate with short delays during all peak hours. The decreases in delay can be attributed to the PHF being 0.9, as describe in **Section 6.0**.

With the addition of site traffic, the stop-controlled northbound approach is expected to continue to operate with short delays during all peak hours with minimal increases in queueing. Therefore, no improvements are identified for capacity purposes at this intersection.

Based on the anticipated SimTraffic maximum queues (reports included in the **Appendix**), the northbound approach of Bonner should be extended into the proposed site with one ingress lane and one egress lane.

Review of auxiliary turn-lane warrants at this intersection are included in **Section 7.0**.

6.4 HEMBY ROAD/BEULAH CHURCH ROAD AND WEDDINGTON-MATTHEWS ROAD

Table 6.4 summarizes the LOS, control delay, and 95th percentile queue lengths at the signalized intersection of Hemby Road/Beulah Church Road and Weddington-Matthews Road.

Table 6.4 - Hemby Road/Beulah Church Road and Weddington-Matthews Road									
Condition	Measure	EB	WB		NB		SB		Intersection
		EBLTR	WBLT	WBR	NBL	NBTR	SBL	SBTR	LOS (Delay)
AM Peak Hour									
2024 Existing	LOS (Delay)	B (11.7)	B (18.2)		C (21.9)		C (24.0)		B (19.6)
	Synchro 95th Q	93'	#311'	178'	18'	174'	70'	148'	
2029 Background	LOS (Delay)	B (10.6)	B (17.9)		C (23.8)		C (24.8)		B (19.8)
	Synchro 95th Q	83'	#342'	204'	24'	209'	#103'	169'	
2029 Build-out	LOS (Delay)	B (10.7)	B (17.9)		C (23.9)		C (26.0)		C (20.2)
	Synchro 95th Q	84'	#343'	205'	24'	210'	#111'	174'	
MID Peak Hour									
2024 Existing	LOS (Delay)	B (19.0)	B (17.8)		B (12.6)		B (16.2)		B (15.9)
	Synchro 95th Q	145'	141'	63'	9'	97'	73'	88'	
2029 Background	LOS (Delay)	B (16.4)	B (14.7)		B (13.4)		B (14.2)		B (14.5)
	Synchro 95th Q	146'	127'	69'	14'	148'	98'	110'	
2029 Build-out	LOS (Delay)	B (16.8)	B (14.8)		B (13.5)		B (14.4)		B (14.7)
	Synchro 95th Q	151'	128'	71'	14'	149'	99'	112'	
PM Peak Hour									
2024 Existing	LOS (Delay)	C (24.1)	B (16.4)		B (15.4)		C (20.9)		B (19.2)
	Synchro 95th Q	184'	131'	60'	14'	174'	112'	104'	
2029 Background	LOS (Delay)	C (22.5)	B (16.5)		B (14.4)		B (18.6)		B (17.8)
	Synchro 95th Q	#240'	142'	68'	15'	175'	#153'	115'	
2029 Build-out	LOS (Delay)	C (22.9)	B (16.5)		B (14.7)		B (19.5)		B (18.3)
	Synchro 95th Q	#238'	138'	70'	15'	184'	#161'	123'	
Background Storage				175'	125'		300'		
Exceeds storage									
# 95th percentile volume exceeds capacity, queue may be longer									

As shown in **Table 6.4**, under 2024 existing conditions, the overall intersection operates at LOS B for all peak hours with each approach operating at LOS C or better.

Under 2029 background conditions, the overall intersection is expected to continue to operate at LOS B for all peak hours with each approach operating at LOS C or better. The decreases in delay can be attributed to the PHF being 0.9 and the optimization of splits as describe in **Section 6.0**. Adjustments in the proportion of traffic utilizing each movement at an intersection leads to different relative amounts of green time being assigned to each movement after optimizing.

With the addition of site traffic, the overall intersection and its approaches are expected to operate at LOS C or better during all peak hours. The LOS is expected to drop from LOS B to LOS C during the AM peak hour with the addition of site traffic; however, this is an increase of 0.4 seconds of delay. Therefore, no improvements are identified for capacity purposes.

Based on review of the Synchro 95th percentile queues, the westbound right-turn queue along Beulah Church Road is expected to exceed the available storage under existing, background, and build-out conditions during the AM peak hour. Given that the proposed site is not expected to

significantly increase the queue, extension of this turn lane is not recommended as developer responsibility.

Based on a review of the SimTraffic maximum queues, the westbound right-turn queue is expected to exceed the available storage in the AM peak hour under existing, background, and build-out conditions. However, the westbound right-turn storage is under-utilized due to starvation caused by the westbound through lane queues. As this condition exists with and without the proposed development and the site is not proposed to add significant additional traffic to these movements, extension of the turn lane is not recommended as a developer improvement.

6.5 WEDDINGTON-MATTHEWS ROAD AND ACCESS A

Table 6.5 summarizes the LOS, control delay, and 95th percentile queue lengths at the proposed unsignalized, stop-controlled intersection of Weddington-Matthews Road and Access A.

Table 6.5 - Weddington-Matthews Road and Access A							
Condition	Measure	EB	WB	NB		SB	
		EBLTR	WBLTR	NBL*	NBTR	SBL*	SBTR
AM Peak Hour							
2029 Build-out	LOS (Delay)	D (25.0)	D (31.4)	A (8.2)	A (0.0)	B (10.2)	A (0.0)
	Synchro 95th Q	3'	10'	0'	0'	0'	0'
MID Peak Hour							
2029 Build-out	LOS (Delay)	C (17.4)	C (15.7)	A (8.4)	A (0.0)	A (8.2)	A (0.0)
	Synchro 95th Q	0'	3'	0'	0'	0'	0'
PM Peak Hour							
2029 Build-out	LOS (Delay)	C (19.7)	C (19.8)	A (8.7)	A (0.0)	A (8.6)	A (0.0)
	Synchro 95th Q	3'	5'	0'	0'	0'	0'

*Conflicting left-turn movements are broken out per NCDOT guidelines under unsignalized conditions

As shown in **Table 6.5**, the stop-controlled eastbound and westbound approaches of Access A are projected to operate with moderate delays during the AM peak hour and short delays during the MID and PM peak hours under build-out conditions.

It is typical for stop sign-controlled side streets and driveways intersecting major streets to experience long delays during peak hours, particularly for left-turn movements. The majority of the traffic moving through the intersection on the major street experiences little to no delay. Additionally, given minimal turning traffic, additional turn lane improvements yield little improvement to side-street approach delay. Therefore, no additional improvements are identified for capacity purposes.

Based on the projected SimTraffic maximum queues (reports included in the **Appendix**), the eastbound and westbound approaches of Access A are recommended to be constructed with one ingress lane, one egress lane, stop-control, and the NCDOT minimum IPS of 100 feet.

Based on feedback from NCDOT TIA review, a 100' southbound left-turn lane is recommended along Weddington-Matthews Road at Access A. This improvement is not included in the analysis above, as it is not necessary for capacity purposes.

Review of auxiliary turn-lane warrants at this intersection are included in **Section 7.0**.

7.0 Auxiliary Turn Lane Warrants

Warrants for additional turn-lane improvements for unsignalized intersection beyond those necessary for capacity were determined based on a review of the figure titled 'Warrant for Left and Right-Turn Lanes' found on page 80 in the [NCDOT Policy On Street And Driveway Access to North Carolina Highways](#). The results of the warrants for left and right-turn lanes under the 2029 build-out conditions indicate that turn lanes are not warranted at the proposed site accesses and unsignalized intersection of Weddington-Matthews Road and Amanda Drive. The turn-lane warrant figures are included in the **Appendix**.

8.0 Identified Mitigation Improvements

Based on the capacity analyses performed at each of the identified study intersections, along with review of the auxiliary turn-lane warrants contained herein, *and feedback from with NCDOT and Town staff*, the following site improvements are identified for the proposed 5017 Weddington-Matthews Road development:

Amanda Drive and Bonner Drive

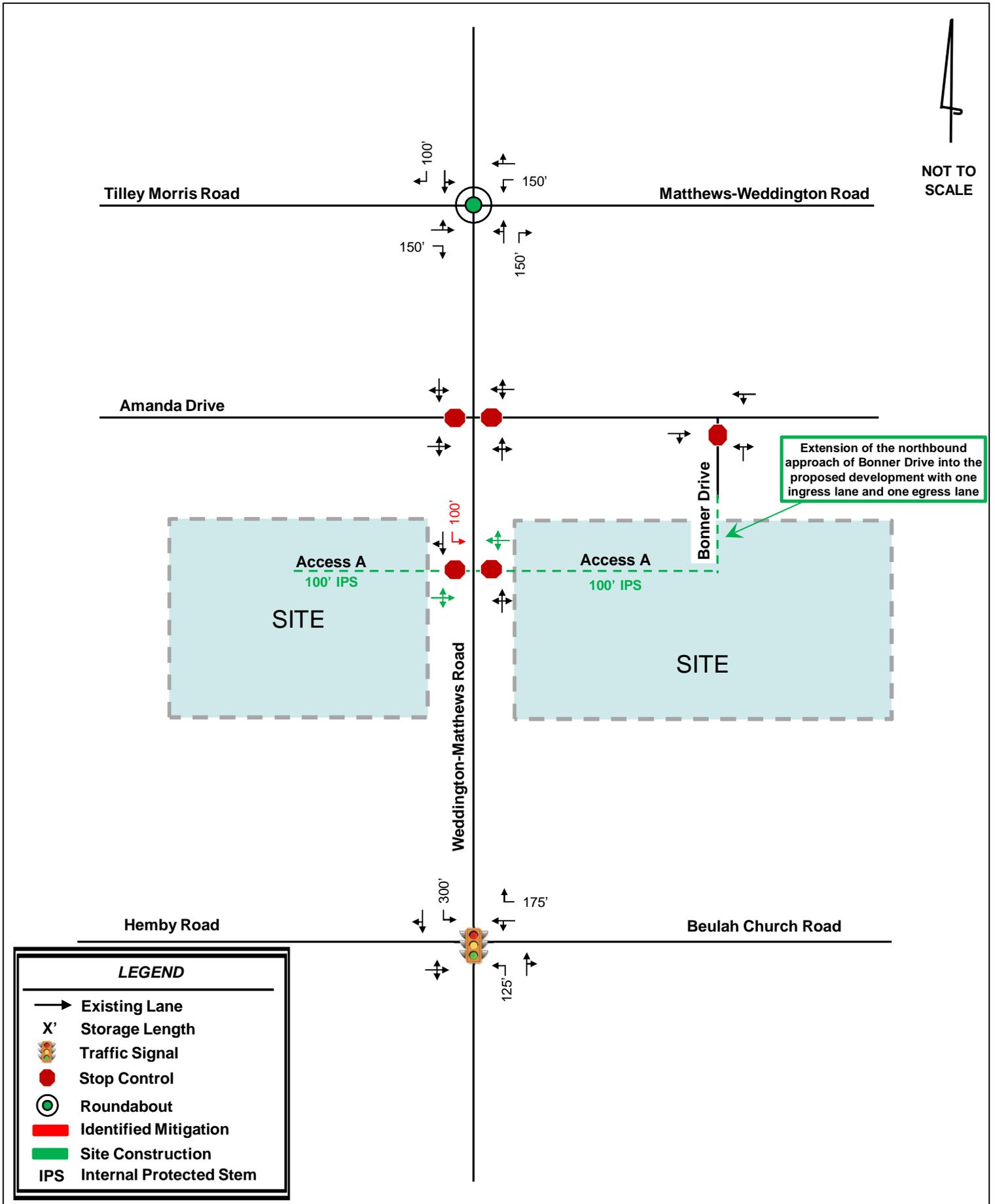
- Extension of the northbound approach of Bonner Drive into the proposed development with one ingress lane and one egress lane.

Weddington-Matthews Road and Access A

- Construction of the eastbound and westbound approaches of Access A with one ingress lane, one egress lane, stop-control, and an IPS of 100 feet.
- *Construct a southbound left-turn lane with 100 feet of storage and appropriate taper.*

No additional improvements are identified to mitigate other study area intersections.

The site improvements identified within the study area is shown in **Figure 8.1**. The improvements shown on these figures are subject to approval by NCDOT and the Town of Weddington. All additions and attachments to the State and Town roadway system shall be properly permitted, designed, and constructed in conformance to standards maintained by the agencies.



Appendix

NCDOT Scoping Checklist



NCDOT Traffic Impact Analysis Need Screening / Scoping Request



Site Plan/Vicinity Map Requirement for TIA Need Screening: While the site plan may not be finalized during the TIA scoping stage, the graphic representation of the proposed development shall provide adequate details on the development scope and context. More specifically, the site plan/map shall clearly show the location and type of each access point, spacing to adjacent and opposing driveways or intersections, internal street network, proposed buildings/parcels with their anticipated uses and sizes at full build-out and, if applicable, any nearby interstate, US, NC or Secondary Roads (SR).

Project Name: 5017 Weddington-Matthews Road **Project Reference Number:** _____

A TIA is Required by the Local Government. In addition, the study area is expected to include NCDOT maintained transportation facilities.

A TIA is Required by NCDOT, per the [Policy on Street and Driveway Access to North Carolina Highways](#).

If either or both of the boxes above are checked, the Applicant/TIA Consultant is hereby requested to fill out as much as possible of the following TIA scoping checklist, and return it along with the supporting documents to NCDOT prior to the scoping meeting.

A TIA is NOT required. This decision is based on the development information presented above. Changes in the development plan will require re-evaluation of the TIA need, and may necessitate a TIA. The Applicant should inform the District Engineer of any significant changes in a timely fashion to avoid delays or rejections of the driveway permit / encroachment agreement applications.

Additional Comments:

The TIA need decision is made by the NCDOT Division _____ District _____ on _____.

 NCDOT District Representative's Signature
 Email concurrence may be used in lieu of the signature.

 Print Name



NCDOT TIA Scoping Checklist



Project Name: 5017 Weddington-Matthews Road

TIA Scoping Date: 08/14/24

TIA Need Screening Forms are Attached. Project Reference #: _____ Decision Date: _____

Site Plan and Access

Provide a site plan illustrating site access, internal and external roadways, buildings and land uses.
Refer to NCDOT's [Policy on Street and Driveway Access to North Carolina Highways](#) pages 14 and 15 for site plan requirements.

Identify site access.

New Access	On Road	Access Type		Driveway Spacing		
	Road Name	Permitted Movements	Traffic Control	Distance (ft)	Direction	Nearest Intersection / Access
Access A	Wedd-Matt Rd	Conventional Full-Mvmt	2-Way Stop	1580	South	Amanda/W-M Rd
Access B						
Access C						
Access D						
Access E						
Access F						
Access G						
Access H						
Existing Access	Existing Intersection of		Access Modification	Proposed Interconnectivity (If Applicable)		
	Road A	Road B		Connector #	Road Connected	Adjacent Development
Access 1	Amanda Dr	Bonner Dr	N/A	Connector 1		
Access 2				Connector 2		
Access 3				Connector 3		
Access 4				Connector 4		

Additional access clarifications and provisions (e.g., proposed control-of-access or median breaks, modifications of existing access, loading/unloading area access, bike/pedestrian accommodation).
Bonner Drive is being extended south of its current terminus as part of the proposed development

Proposed K-12 School Site

- NCDOT [MSTA School Traffic Calculator](#) for _____ shall be used.
- Peak Hour Factors (PHFs) shall be adjusted/weighted for new school trips (0.5 PHF by default).
- Internal school circulation analysis is required, and should be submitted in advance or concurrent with the TIA submittal.
- Clarify traffic operation plans (e.g. traffic circulation pattern, pedestrian access, drop-off/pick-up zone location and configuration, queue storage area and, if applicable, staggered start times).



NCDOT TIA Scoping Checklist



Trip Generation

The TIA Consultant shall prepare trip generation estimates following the current [NCDOT Congestion Management Capacity Analysis Guidelines](#), and submit the calculation sheets and supporting information to the District Engineer for approval prior to capacity analysis.

ITE LUC	Proposed Land Use	Size	Unit	Daily Trips	Peak Hour Type	AM Peak Hour Trips			PM Peak Hour Trips			Data Source
						Enter	Exit	Total	Enter	Exit	Total	
210	SF Det. (West)	12	DU	143	Adj. Street	3	8	11	9	5	14	ITE Equation
210	SF Det. (East)	37	DU	404	Adj. Street	8	22	30	25	14	39	ITE Equation
Unadjusted Site Trips				547		11	30	41	34	19	53	X
Internal Capture Trips (Attach Calculation Sheets)												
Internal Capture % of Unadjusted Site Trips				%		%			%			X
LUC	Proposed Land Use	Any Internal Trips?		Pass-By % of External Trips								
				%		%			%			
				%		%			%			
				%		%			%			
				%		%			%			
				%		%			%			
Pass-By Trips (Attach Calculation Sheets)												X
Adjacent Street Volumes												
Non-Pass-By Primary Trips				547		11	30	41	34	19	53	X
Diverted Trips, if Applicable and Justifiable												

**Explain local or other data sources, if used:

See attached for MD Trip Gen

Existing Site Trip Information for Redevelopment Projects (Attach separate sheets as needed)

ITE LUC	Existing Land Use	Size	Unit	Daily Trips	Peak Hour Type	AM Peak Hour Trips			PM Peak Hour Trips			Data Source
						Enter	Exit	Total	Enter	Exit	Total	
Total Existing Site Trips												X



NCDOT TIA Scoping Checklist



Trip Distribution

- Trip distribution diagrams are submitted concurrently with this document (attach separate sheets).
- Trip distribution diagrams will be submitted separately, along with supporting information, to the District Engineer for review and approval prior to capacity analysis. The trip distribution shall be based on the current and anticipated traffic patterns, as well as instructions noted below.

If required by the District Engineer, the following additional diagrams shall also be submitted:

- Mixed-Use Developments (separate diagrams for residential, commercial, and office trips)
- Inter-Development Trips (if 'internal' trips cross public streets)
- Pass-By Trips
- Diverted Trips
- Each Analysis Period

Mode Split

- Provide Data Source and Justification

Mode Period	Auto		
AM Peak	%	%	%
PM Peak	%	%	%
Daily	%	%	%
	%	%	%

- Identify proper infrastructure and accommodation for other modes of travel.

Analysis Peak Periods:

- Weekday AM Peak 7:00 - 9:00 AM
- Weekday PM Peak 4:00 - 6:00 PM
- Weekday Midday Peak _____
- Weekday PM School Peak 2:00 - 4:00 PM
- Weekend _____ Peak _____
- Other _____



NCDOT TIA Scoping Checklist



Study Area Intersections and Data Collection

The study area shall include the site access intersections (both new and existing) identified under “Site Plan and Access” on page 1, as well as the following external and, if applicable, internal intersections.

External Intersection	Intersection of		Traffic Control	Intersection Turning Movement Counts			Notes
	Road A	Road B		New / Existing	Date of Counts	Growth Adjustment	
#1	Wedd-Matt Rd	Tilley Morris Rd	Yield	Require New Counts			
#2	Wedd-Matt Rd	Amanda Dr	2-Way Stop	Require New Counts			
#3	Amanda Dr	Bonner Dr	2-Way Stop	Require New Counts			
#4	Hemby/Beulah	Wedd-Matt Rd	Signal	Require New Counts			
#5							
#6							
#7							
#8							
#9							
#10							
#11							
#12							

Internal Intersection	Intersection of		Access Type		Intersection Spacing		
	Road A	Road B	Traffic Control	Permitted Movements	Distance (ft)	Direction	Nearest Intersection
#101							
#102							
#103							
#104							
#105							

The following data will be collected:

- New traffic turning movement counts in 15-min intervals 5-min intervals (near schools)
 Unless otherwise noted above, new traffic counts shall be collected at the existing study intersections during the analysis periods. Weekday counts shall avoid Mondays, Fridays, holidays, school breaks, road closures, and major weather events.
- To account for the impact of existing and/or proposed school traffic, PHFs will be adjusted for:
 intersections numbered: #1 - AM and school peak hours _____
 and access points numbered: _____
- Traffic Forecast Data for TIP: _____
- Roadway/Intersection Configuration & Traffic Control
- Traffic Signal Phasing & Timing Data
- Crash Data: _____ Period: _____
- Other: _____



NCDOT TIA Scoping Checklist



Future Year Conditions

Project Build-Out Year: _____ 2027 _____

Future Analysis Year(s): _____ 2027 _____

Identify below any funded/committed future transportation improvements, as well as any approved but incomplete developments near the site.

Funded STIP / Local CIP Project	Project Description		Year Complete
None			
Nearby Approved Development	Location	Future Land Use (exclude any completed phases)	Committed Improvements
None			

Annual Growth Factor: 2 %

Justification/Data Source: NCDOT AADT data

Local Comprehensive Transportation Plan Compliance

Identify Applicable Local Transportation Planning Documents

CRTPO MTP/CTP

Identify Applicable Roadways inside the Study Area

Road Name	Classification	Speed Limit	Proposed Cross-Section	Proposed Right-of-Way	Compliance Requirements	Affect Study Intersection #
Weddington-Matthews Rd	Major Collector	45				
Hemby/Beulah	Local	45				
Amanda Dr	Local	25				
Bonner Dr	Local	25				
Tilley Morris Dr	Minor Collector	45				



NCDOT TIA Scoping Checklist



Study Method

The traffic analysis shall follow the current [NCDOT Congestion Management Capacity Analysis Guidelines](#), [Policy on Street and Driveway Access to North Carolina Highways](#), and use the current approved version of analysis software (e.g. Synchro/SimTraffic, HCS, Sidra Intersection, TransModeler).

The study shall include the following analysis scenarios for each analysis period.

1. Existing Conditions
2. Future No-Build Conditions (existing + background growth + approved developments + committed or funded improvements)
3. Future Build Conditions (future no-build + site trips)
4. Future Build with Improvements Conditions (future build traffic with improvements to mitigate the proposed development's impacts) and, if applicable:
5. TIP Design Year Analysis _____
6. Alternative Access Scenario (without proposed control-of-access or median break / modification)

The following additional analysis/outputs should be provided as warranted:

- Signal Warrant Analysis for accesses/intersections _____
- Multi-Modal Level of Service Analysis
- School Loading Zone Traffic Simulation
- Phasing Analysis (scope separately as needed)
- Safety/Crash Analysis
- Control-of-Access Modification Justification
- Median Break / Modification Justification
- Other _____

Submittals

In addition to the hardcopies required below, the TIA Consultant shall provide the District Engineer and, if required, the local government an electronic copy of the study documents, including the latest site plan, figures and appendices, in searchable PDF files and the original traffic analysis files (e.g., Synchro, HCS).

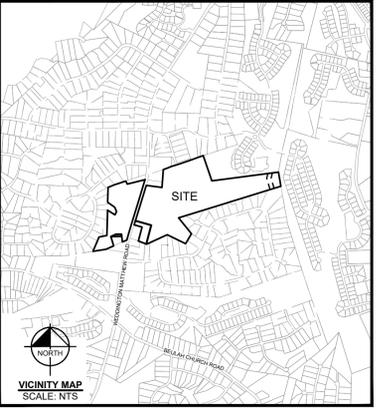
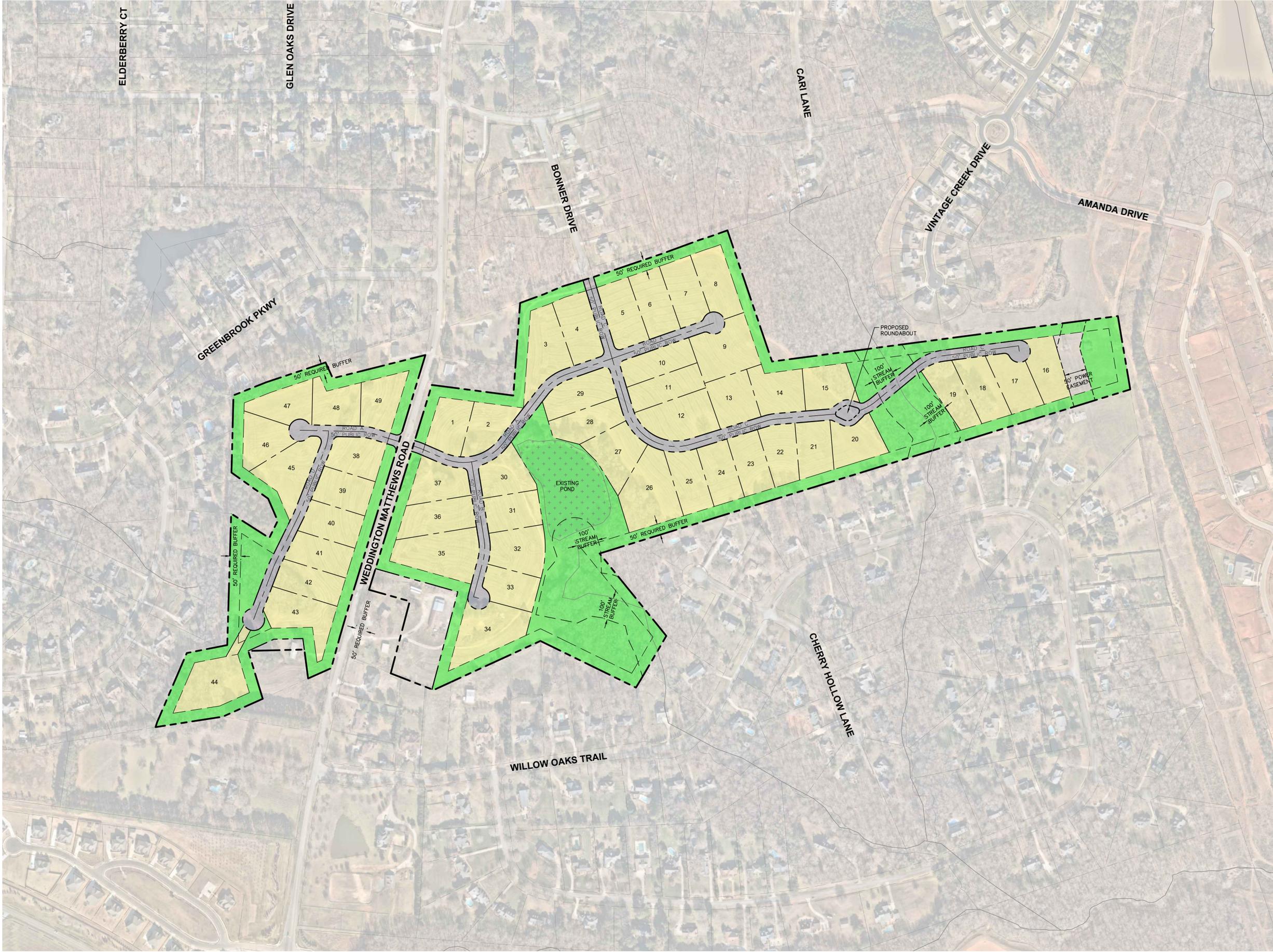
To expedite review, the NCDOT electronic submittals shall also be delivered concurrently to:

- Div. Traffic Engr Regional Traffic Engr Congestion Management Other _____

Submittals	NCDOT		Local Government	
	Electronic	Hardcopy	Electronic	Hardcopy
Trip Generation & Distribution	Required			
Draft TIA Report	Required			
Final Sealed TIA Report	Required			

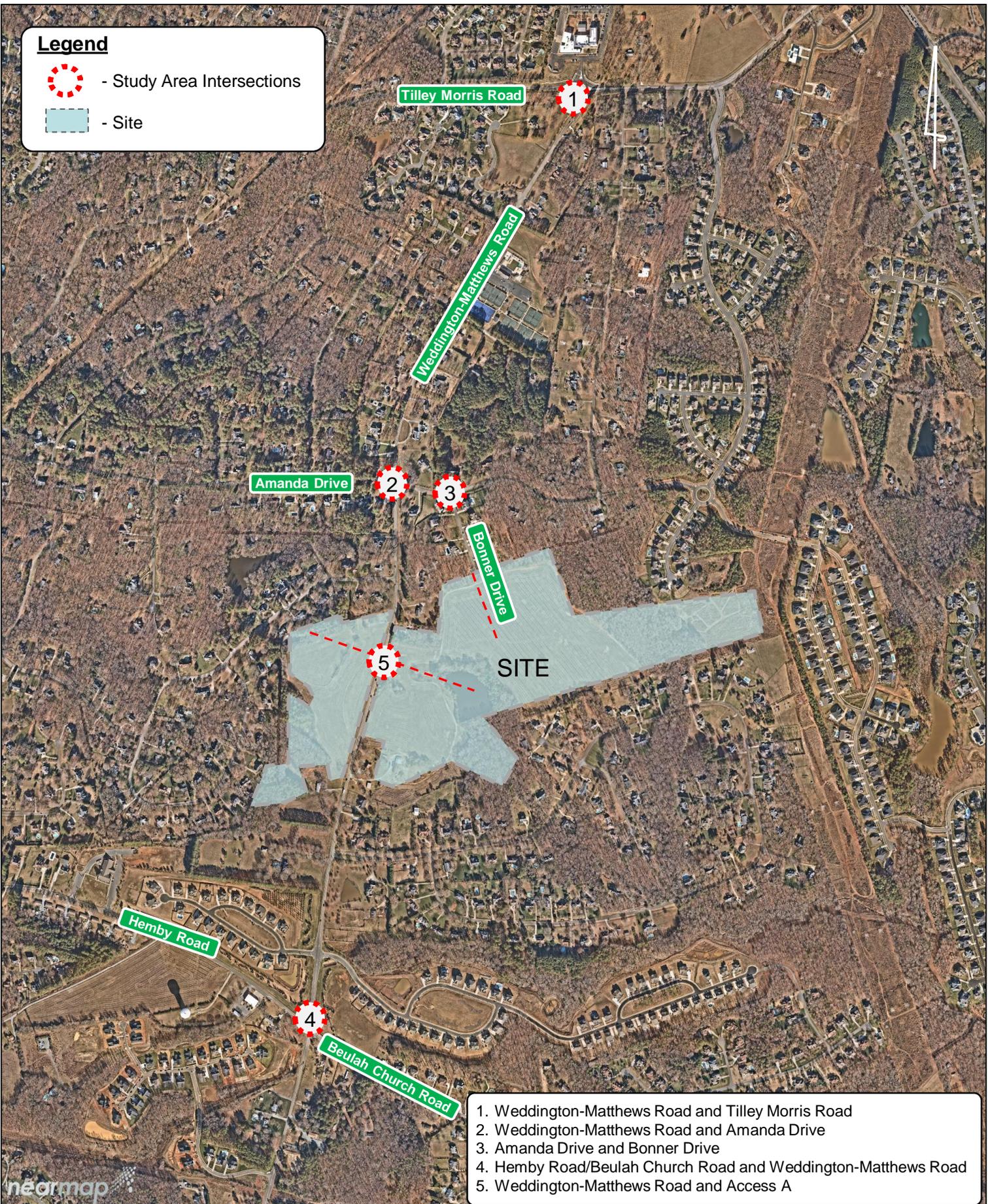
- Additional Comments** (municipal TIA requirements, approved variations from NCDOT guidelines)

Plotted By: Pouch, Tete Layout: CSP1-01 Brdr April 05, 2024 09:55:36am K:\CHL_P\1\012826085 Toll Brothers - Weddington - Weddington_V02 - DWG\Concept\DWG\Weddington Concept Plan_2024.04.02.dwg



SITE DATA TABLE

DEVELOPMENT DATA:	
TAX PARCEL ID:	06120011
LAND USE:	RESIDENTIAL/VACANT
TOTAL SITE AREA:	94.03± ACRES
ZONING DISTRICT:	R-CD (Town of Weddington)
ZONING DATA:	
FEMA FLOOD PANEL:	3710447700L, 3710448700J
LOT INFORMATION	
SINGLE FAMILY LOTS:	49
PROPOSED DENSITY:	0.5 DUA
TYPICAL LOT SIZE:	40,000 SF (120' Min. Width)
REQUIRED HOUSE SETBACKS:	
	FRONT: 50'
	SIDE: 15'
	REAR: 40'
COMMON OPEN SPACE:	
REQUIRED:	9.4 ± ACRES (10%)
PROVIDED:	29.8 ± ACRES (32%)
BUFFER YARDS	
50' PERIMETER BUFFER	
100' THOROUGHFARE BUFFER (CAN BE REDUCED TO 50' WITH PLANTED EVERGREEN MATERIAL)	
ESTIMATED IMPERVIOUS CALCULATIONS	
HOMES (70' x 70'):	45.51 ACRES
DRIVEWAYS (20' x 60'):	41.36 ACRES
ROW:	47.94 ACRES
TOTAL:	14.8 ACRES (16% OF SITE)



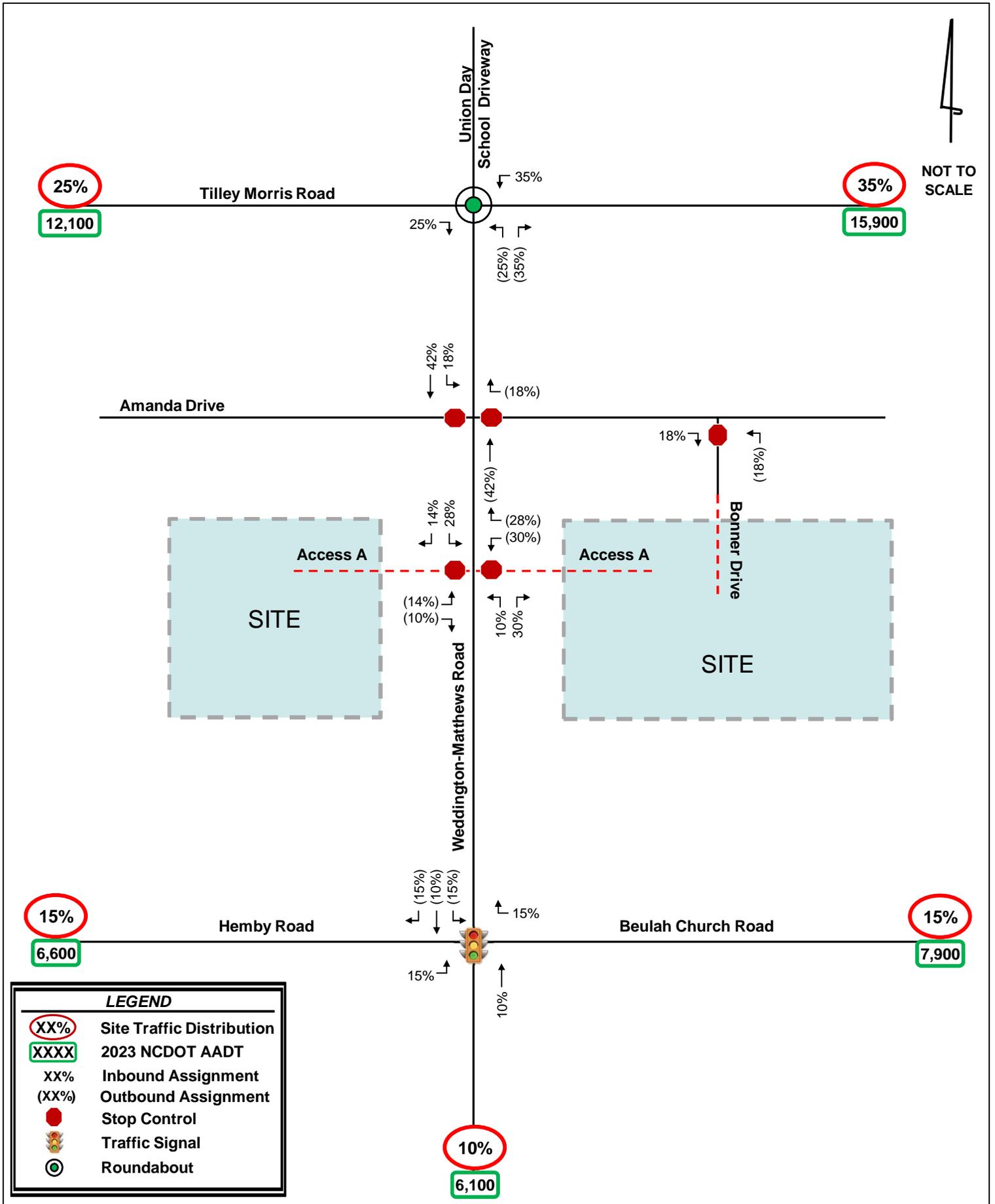


Table 1 - Trip Generation

Land Use	Intensity	Units	Daily	AM Peak Hour			MD Peak Hour			PM Peak Hour		
				Total	In	Out	Total	In	Out	Total	In	Out
210 - Single-Family Detached Housing (West Parcel)	12	DU	143	11	3	8	12	8	4	14	9	5
210 - Single-Family Detached Housing (East Parcel)	37	DU	404	30	8	22	33	21	12	39	25	14
Total Net New External Trips			547	41	11	30	45	29	16	53	34	19

Zuend, Lauren

From: Gardner, Zachary L <zlgardner@ncdot.gov>
Sent: Friday, September 6, 2024 8:04 AM
To: Reid, Laura; Gregory Gordos; Helms, Amelia C; Weltner, Robert C
Cc: Robert Price; Zuend, Lauren; Fisher, Bonnie
Subject: RE: [External] 5017 Weddington Matthews Road - TIA Scoping

Good morning,

NCDOT will provide a cursory review of the TIA.

No further comments from NCDOT on this scoping document. I'll defer to the Town for any comments they may have.

Thanks,
Zach Gardner, PE
Division 10 Traffic Engineer
North Carolina Department of Transportation

704-983-4400 office
zlgardner@ncdot.gov

716 W. Main Street
Albemarle, NC 28001



Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

From: Reid, Laura <laura.reid@kimley-horn.com>
Sent: Thursday, August 29, 2024 8:57 AM
To: Gregory Gordos <ggordos@townofweddington.com>; Helms, Amelia C <achelms@ncdot.gov>; Weltner, Robert C <rcweltner@ncdot.gov>; Gardner, Zachary L <zlgardner@ncdot.gov>
Cc: Robert Price <rprice1@tollbrothers.com>; Zuend, Lauren <Lauren.Zuend@kimley-horn.com>; Fisher, Bonnie <BFisher@LaBellaPC.com>
Subject: [External] 5017 Weddington Matthews Road - TIA Scoping

CAUTION: External email. Do not click links or open attachments unless verified. Report suspicious emails with the Report Message button located on your Outlook menu bar on the Home tab.

Hi all,

See attached for the TIA scoping document for 5017 Weddington Matthews Road located in Weddington, NC. We've included Town and NCDOT on this email chain, but note that the trip generation for this site falls below the NCDOT TIA threshold.

Please let us know if you have any questions/comments as you review or if you'd like to get a meeting scheduled to discuss.

Thanks,

Laura Reid, PE (NC & SC)

Kimley-Horn | 200 South Tryon Street, Suite 200, Charlotte, NC 28202

Direct: 704 319 7696 | Mobile: 443 804 7984 | www.kimley-horn.com

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Celebrating 17 years as one of FORTUNE's 100 Best Companies to Work For

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Zuend, Lauren

From: Gregory Gordos <ggordos@townofweddington.com>
Sent: Friday, October 25, 2024 9:26 AM
To: Reid, Laura
Cc: Zuend, Lauren; Robert Price
Subject: RE: 5017 Weddington Matthews Road - TIA Scoping

That is correct.



Greg Gordos
Town Planner
Phone: 704-846-2709
Cell: 980-210-1822
ggordos@townofweddington.com
1924 Weddington Road
Weddington, NC 28104
www.townofweddington.com
Rural Living Redefined

From: Reid, Laura <laura.reid@kimley-horn.com>
Sent: Thursday, October 24, 2024 10:04 PM
To: Gregory Gordos <ggordos@townofweddington.com>
Cc: Zuend, Lauren <Lauren.Zuend@kimley-horn.com>; Robert Price <rprice1@tollbrothers.com>
Subject: RE: 5017 Weddington Matthews Road - TIA Scoping

Hi Greg,

Based on a review of these comments, it appears that there are no significant concerns identified in the LaBella review. Can you confirm that the scoping is approved by the Town? Once we confirm, we can check back in with NCDOT on any additional comments from them.

Thanks,

Laura Reid, PE (NC & SC)
Kimley-Horn | 200 South Tryon Street, Suite 200, Charlotte, NC 28202
Direct: 704 319 7696 | Mobile: 443 804 7984 | www.kimley-horn.com
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Celebrating 17 years as one of FORTUNE's 100 Best Companies to Work For

From: Gregory Gordos <ggordos@townofweddington.com>
Sent: Thursday, October 24, 2024 11:37 AM
To: Reid, Laura <laura.reid@kimley-horn.com>
Cc: Zuend, Lauren <Lauren.Zuend@kimley-horn.com>; Robert Price <rprice1@tollbrothers.com>
Subject: RE: 5017 Weddington Matthews Road - TIA Scoping

Laura,

Please see attached letter.



Greg Gordos
Town Planner
Phone: 704-846-2709
Cell: 980-210-1822
ggordos@townofweddington.com
1924 Weddington Road
Weddington, NC 28104
www.townofweddington.com
Rural Living Redefined

From: Gregory Gordos
Sent: Wednesday, October 23, 2024 11:46 AM
To: Reid, Laura <laura.reid@kimley-horn.com>
Cc: Zuend, Lauren <Lauren.Zuend@kimley-horn.com>; Robert Price <rprice1@tollbrothers.com>
Subject: RE: 5017 Weddington Matthews Road - TIA Scoping

(LaBella) will check in with our Traffic Engineer and find out status and get back to you as soon as possible.



Greg Gordos
Town Planner
Phone: 704-846-2709
Cell: 980-210-1822
ggordos@townofweddington.com
1924 Weddington Road
Weddington, NC 28104
www.townofweddington.com
Rural Living Redefined

From: Reid, Laura <laura.reid@kimley-horn.com>
Sent: Tuesday, October 22, 2024 3:52 PM
To: Gregory Gordos <ggordos@townofweddington.com>
Cc: Zuend, Lauren <Lauren.Zuend@kimley-horn.com>; Robert Price <rprice1@tollbrothers.com>
Subject: RE: 5017 Weddington Matthews Road - TIA Scoping

Hi Greg,

Any updates from LaBella on their review of this scope?

Thanks!

Laura Reid, PE (NC & SC)
Kimley-Horn | 200 South Tryon Street, Suite 200, Charlotte, NC 28202
Direct: 704 319 7696 | Mobile: 443 804 7984 | www.kimley-horn.com
Connect with us: Twitter | LinkedIn | Facebook | Instagram

Celebrating 17 years as one of FORTUNE's 100 Best Companies to Work For

From: Gregory Gordos <ggordos@townofweddington.com>
Sent: Wednesday, October 2, 2024 3:55 PM
To: Reid, Laura <laura.reid@kimley-horn.com>
Cc: Zuend, Lauren <Lauren.Zuend@kimley-horn.com>; Robert Price <rprice1@tollbrothers.com>
Subject: RE: 5017 Weddington Matthews Road - TIA Scoping

Hi Laura,

Emailing LaBella now to confirm.
The last I spoke with Bonnie, she stated review was underway but 3-4 weeks out.



Greg Gordos
Town Planner
Phone: 704-846-2709
Cell: 980-210-1822
ggordos@townofweddington.com
1924 Weddington Road
Weddington, NC 28104
www.townofweddington.com
Rural Living Redefined

From: Reid, Laura <laura.reid@kimley-horn.com>
Sent: Wednesday, October 2, 2024 3:46 PM
To: Gregory Gordos <ggordos@townofweddington.com>
Cc: Zuend, Lauren <Lauren.Zuend@kimley-horn.com>; Robert Price <rprice1@tollbrothers.com>
Subject: RE: 5017 Weddington Matthews Road - TIA Scoping

Hi Greg,

Hope you've been having a great week! Just wanted to follow-up on the scoping review for this site. Let us know if there's anything else we can provide as LaBella wraps up their comments.

Thanks,

Laura Reid, PE (NC & SC)
Kimley-Horn | 200 South Tryon Street, Suite 200, Charlotte, NC 28202
Direct: 704 319 7696 | Mobile: 443 804 7984 | www.kimley-horn.com
Connect with us: Twitter | LinkedIn | Facebook | Instagram

Celebrating 17 years as one of FORTUNE's 100 Best Companies to Work For

From: Reid, Laura
Sent: Wednesday, September 18, 2024 1:23 PM
To: Gregory Gordos <ggordos@townofweddington.com>
Cc: Zuend, Lauren <Lauren.Zuend@kimley-horn.com>; Robert Price <rprice1@tollbrothers.com>
Subject: RE: 5017 Weddington Matthews Road - TIA Scoping

Hi Greg,

Appreciate your patience while we coordinated on our end. The project team would like to proceed with the LaBella review of the TIA scoping document for this site.

Please let us know if you need anything else from us to keep that process moving forward.

Thanks,

Laura Reid, PE (NC & SC)

Kimley-Horn | 200 South Tryon Street, Suite 200, Charlotte, NC 28202

Direct: 704 319 7696 | Mobile: 443 804 7984 | www.kimley-horn.com

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Celebrating 17 years as one of FORTUNE's 100 Best Companies to Work For

From: Gregory Gordos <ggordos@townofweddington.com>

Sent: Monday, September 9, 2024 3:51 PM

To: Reid, Laura <laura.reid@kimley-horn.com>

Subject: RE: 5017 Weddington Matthews Road - TIA Scoping

Hi Laura,

This is town staff's first introduction to this project/we have not had a pre-application meeting to discuss. Are you and the client ready for a Scoping document review for by LaBella Associates? It would be invoiced upon the review's completion.



From: Reid, Laura <laura.reid@kimley-horn.com>

Sent: Thursday, August 29, 2024 8:57 AM

To: Gregory Gordos <ggordos@townofweddington.com>; Helms, Amelia C <achelms@ncdot.gov>; Weltner, Robert C <rcweltner@ncdot.gov>; Gardner, Zachary L <zlgardner@ncdot.gov>

Cc: Robert Price <rprice1@tollbrothers.com>; Zuend, Lauren <Lauren.Zuend@kimley-horn.com>; Fisher, Bonnie <bfisher@labellapc.com>

Subject: 5017 Weddington Matthews Road - TIA Scoping

Hi all,

See attached for the TIA scoping document for 5017 Weddington Matthews Road located in Weddington, NC. We've included Town and NCDOT on this email chain, but note that the trip generation for this site falls below the NCDOT TIA threshold.

Please let us know if you have any questions/comments as you review or if you'd like to get a meeting scheduled to discuss.

Thanks,

Laura Reid, PE (NC & SC)

Kimley-Horn | 200 South Tryon Street, Suite 200, Charlotte, NC 28202

October 23, 2024

Mr. Greg Gordos, AICP
Town Planner
Town of Weddington
1924 Weddington Road
Weddington, NC 28104

RE: Review of the Scoping for Traffic Impact Analysis (TIA)
5017 Weddington-Matthews Road
Town of Weddington, NC
Project No. 2242731

Mr. Gordos:

In accordance with your request, the following is our review of the Scoping document prepared for Toll Brothers, by Laura Reid, P.E., Kimley Horn & Associates, dated, August 14, 2024.

The Applicant is proposing to develop 49 single-family residential units on two parcels of approximately 94.03 acres of vacant land located on Weddington-Matthews Road between Amanda Drive and Hemby Road. The west parcel is proposed to contain 12 single-family units, and the east parcel is proposed to contain 37 single-family dwelling units. The applicant proposes to study five (5) intersections consisting of: Tilley Morris Road and Weddington-Matthews Road; Weddington-Matthews Road and Amanda Drive; Amanda Drive and Bonner Drive; Weddington-Matthews Road and Hemby Road/Beulah Church Road; and Weddington-Matthews Road and Access "A."

A. Intersections to be Studied.

From an overall transportation perspective, the intersections to be studied appear to be appropriate to determine the traffic impacts of the proposed development.

B. Trip Generation.

The Scoping document identifies the Single-family Housing as Land-use 210 which is considered appropriate for this application. Further, the Scoping Document appropriately indicates that the two Sites will be treated separately for analysis purposes.

C. TIA Trip Threshold

The Scoping Document indicates that the trip generation meets Weddington Municipal TIA threshold of >500 daily trips or >50 peak hour trips, but do not meet the NCDOT's TIA threshold of > 3000 daily trips.



D. Trip Distribution and Assignment

The Scoping Document indicates that the Horizon Year is 2027. Trips distribution is based on the 2023 NCDOT AADT.

E. Analysis Peak Periods

The Scoping Document indicates three time periods for analysis purposes; AM peak hour, PM peak hour and the school dismissal period of 2:00 to 4:00 p.m.

E. Conclusion

We trust the information herein is sufficient for your immediate needs. Please do not hesitate to contact me at 914-269-5610 or Mr. Watson at 704-941-2112 should you have any questions.

Respectfully submitted,

Bernard Adler, P.E.
Senior Transportation Consultant

LaBella Associates

One North Broadway, Suite 803
White Plains, NY 10601

Danny L. Watson, PE, CFM, PMP
Senior Civil Engineer
Project Manager

NCDOT and Town of Weddington
(LaBella) Comments

Zuend, Lauren

From: Helms, Amelia C <achelms@ncdot.gov>
Sent: Thursday, February 20, 2025 2:23 PM
To: Zuend, Lauren; Gregory Gordos; Reid, Laura; Gardner, Zachary L; Weltner, Robert C; Lee, Tou Y
Cc: Robert Price; Loftin, Andrew; Richard, Elizabeth; Wilson, Robert
Subject: RE: [External] RE: 5017 Weddington Matthews Road - TIA Submittal
Attachments: 2025-01-21 S&S 5017 Weddington-Matthews_REPORT+APPENDIX.pdf

Lauren,

Our comments are listed below:

- Section 3.2 states that no volume balancing was performed between the study area intersections, however the volumes in Figure 3.4 appear to have been balanced.
- The District will require a 100' southbound left turn lane on Weddington Matthews Rd at Access A.

Thank you,

Amelia Helms, P.E.
District Engineer
Division 10 - District 3
North Carolina Department of Transportation

704 218 5100 office
704 292 1800 fax
achelms@ncdot.gov

130 South Sutherland Avenue
Monroe, NC 28112



Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

From: Zuend, Lauren <Lauren.Zuend@kimley-horn.com>
Sent: Thursday, February 20, 2025 9:19 AM
To: Gregory Gordos <ggordos@townofweddington.com>; Reid, Laura <laura.reid@kimley-horn.com>; Gardner, Zachary L <zlgardner@ncdot.gov>; Helms, Amelia C <achelms@ncdot.gov>; Weltner, Robert C <rcweltner@ncdot.gov>
Cc: Robert Price <rprice1@tollbrothers.com>; Loftin, Andrew <Andrew.Loftin@kimley-horn.com>; Richard, Elizabeth <Elizabeth.Richard@kimley-horn.com>; Wilson, Robert <RWilson@LaBellaPC.com>
Subject: [External] RE: 5017 Weddington Matthews Road - TIA Submittal

Some people who received this message don't often get email from lauren.zuend@kimley-horn.com. [Learn why this is important](#)

CAUTION: External email. Do not click links or open attachments unless verified. Report suspicious emails with the Report Message button located on your Outlook menu bar on the Home tab.

Thank you for providing the comments, we'll take a look and let you know if we have any questions. NCDOT do you have any additional comments or do you concur with the Town?

Lauren Zuend | EIT

Kimley-Horn | 200 South Tryon Street, Ste. #200, Charlotte, NC 28202

Direct: 704 936 0114

Celebrating 17 years as one of FORTUNE's 100 Best Companies to Work For

From: Gregory Gordos <ggordos@townofweddington.com>
Sent: Wednesday, February 19, 2025 4:36 PM
To: Zuend, Lauren <Lauren.Zuend@kimley-horn.com>; Reid, Laura <laura.reid@kimley-horn.com>; Gardner, Zachary L <zlgardner@ncdot.gov>; Helms, Amelia C <achelms@ncdot.gov>; Weltner, Robert C <rcweltner@ncdot.gov>
Cc: Robert Price <rprice1@tollbrothers.com>; Loftin, Andrew <Andrew.Loftin@kimley-horn.com>; Richard, Elizabeth <Elizabeth.Richard@kimley-horn.com>; Wilson, Robert <RWilson@LaBellaPC.com>
Subject: RE: 5017 Weddington Matthews Road - TIA Submittal

You don't often get email from ggordos@townofweddington.com. [Learn why this is important](#)

Good afternoon,

Please see attached document.

 <p>WEDDINGTON <i>North Carolina</i></p>	<p>Greg Gordos Town Planner Phone: 704-846-2709 Cell: 980-210-1822 ggordos@townofweddington.com 1924 Weddington Road Weddington, NC 28104 www.townofweddington.com <i>Rural Living Redefined</i></p>
---	---

From: Zuend, Lauren <Lauren.Zuend@kimley-horn.com>
Sent: Wednesday, February 19, 2025 4:06 PM
To: Reid, Laura <laura.reid@kimley-horn.com>; Gardner, Zachary L <zlgardner@ncdot.gov>; Gregory Gordos <ggordos@townofweddington.com>; Helms, Amelia C <achelms@ncdot.gov>; Weltner, Robert C <rcweltner@ncdot.gov>
Cc: Robert Price <rprice1@tollbrothers.com>; Loftin, Andrew <Andrew.Loftin@kimley-horn.com>; Richard, Elizabeth <Elizabeth.Richard@kimley-horn.com>
Subject: RE: 5017 Weddington Matthews Road - TIA Submittal

Hi Everyone,

Checking back in regarding the 5017 Weddington-Matthews Road TIA study. Please let us know if you have any questions or need anything else as you review.

Hope everyone is staying safe and warm during the snow day today!

February 14, 2025

Mr. Greg Gordos
Town Planner
Town of Weddington
1924 Weddington Road
Weddington, NC 28104

RE: Review of Traffic Impact Analysis (TIA)
5017 Weddington Matthews Road
Town of Weddington, NC

Mr. Gordos:

Pursuant to your request, LaBella Associates has reviewed the Traffic Impact Analysis (TIA) for the proposed development, prepared for Toll Brothers, by Laura Reid, PE, Kimley Horn & Associates, dated January 2025.

The Applicant is proposing to develop 47 single-family residential units on two parcels located on either side of Weddington-Matthews Road between Greenbrook Parkway and Willow Oaks Trail. The west side parcel is proposed to contain 9 single-family detached units, and the east side parcel is proposed to contain 38 single-family detached units. The access for the proposed development will be via two accesses: a full movement access at the intersection of Bonner Drive and Amanda Drive for east side development. Bonner Drive is proposed to be extended to the internal roadway of the proposed project. Second access, Access A, a full movement unsignalized connection to Weddington-Matthews Road which will serve both east side and west side parcels.

It is noted that the proposed development plan is revised compared to the TIA scoping checklist previously submitted dated August 14, 2024. The proposed development has reduced the number of units from 49 units in the scoping checklist to 47 units in the TIA and the build year is changed from 2027 to 2029.

The following are our findings and comments in response to the Traffic Impact Analysis

A. Study Intersections

The traffic Impact Analysis (TIA) analyzed five (5) intersections consisting of: 1. Weddington-Matthews Road and Tilley Morris Road; 2. Weddington-Matthews Road and Amanda Drive; 3. Amanda Drive and Bonner Drive; 4. Hemby Road/Beulah Church Road and Weddington-Matthews Road; 5. Weddington-Matthews Road and Access A. The study intersections are as per the Scope.



B. Traffic Volume Turning-Movement Counts

The TIA states that the turning-movement count was conducted by Quality Counts on November 13, 2024, during AM peak hours of 7:00 a.m. to 9:00 a.m., Midday peak hours of 2:00 p.m. to 4:00 p.m. and PM peak hours of 4:00 p.m. to 6:00 p.m. The day and time of data collection are appropriate since they are typical of regular highway peak hours.

C. Background Traffic Volumes

The TIA indicates that Background volumes are the projected background traffic volumes with a 2% per growth rate to the year 2029. No other developments in the vicinity of the site that may generate traffic on Weddington-Matthews Road were considered.

D. Trip Generation

Traffic generated by the 47 single family detached homes was determined from data contained in the ITE publication, Trip Generation, 11th Edition, Single Family (Detached) LUC 210. The traffic distribution was determined based on the regional roadway network and is acceptable.

E. Operating Conditions

The Existing, Background and Build capacity analysis was performed using Synchro, Version 12 and SIDRA Version 9.1 software. The maximum queue lengths at the intersections studied are based on Sim Traffic, a traffic simulation software.

Based on the Synchro analyses, with the proposed development the operating conditions remain similar in the Build condition when compared to the Background condition. Additionally, the 95th percentile queue does not exceed the storage capacity of the existing lane geometry. However, the SIDRA analysis is incorrectly analyzed.

The SIDRA analysis for the roundabout at the intersection of Tilley Morris Road and Weddington-Matthews Road is incorrectly interpreting the eastbound and northbound right-turn lanes as bypass lanes. The right turn lanes do not act as a bypass lane, they enter the roundabout and must YEILD to the through traffic. The Applicant needs to re-analyze the roundabout analyses and update all the queue lengths for the Existing, Background and Build conditions.

Further, Applicant states that the Roundabout analysis states that at the intersection of Tilley Morris Road and Weddington-Matthews Road, the overall intersection operates with LOS F during the AM peak hour for Existing, Background and Build conditions. With the proposed development the delay increases by no more than two seconds from Background to Build conditions and hence no improvement measures were proposed. However, included with the submission package were Synchro files that depict an extended westbound left-turn bay. It is possible that the mitigation would through/right turning vehicles the opportunity to not queue behind left turning vehicles. This mitigation is not discussed in the report. Is this mitigation that could be explored?



F. Identified Mitigation Improvements

TIA identifies the access to the development as mitigation measures. However, since these are a part of the access to the development, they are not considered mitigation but necessary components of the development.

G. Summary

The following are actions needed to be taken to prepare an acceptable TIA

- Revise SIDRA analyses for the Existing, Background and Build conditions.
- Update the Queue lengths based on the revised SIDRA for the intersection of Tilley Morris Road and Weddington-Matthews Road.

We trust the information herein is sufficient for your immediate needs. Please do not hesitate to contact me at 914-269-5610 or Bob Wilson at 704-941-2139 should you have any questions

Respectfully submitted,

LaBella Associates

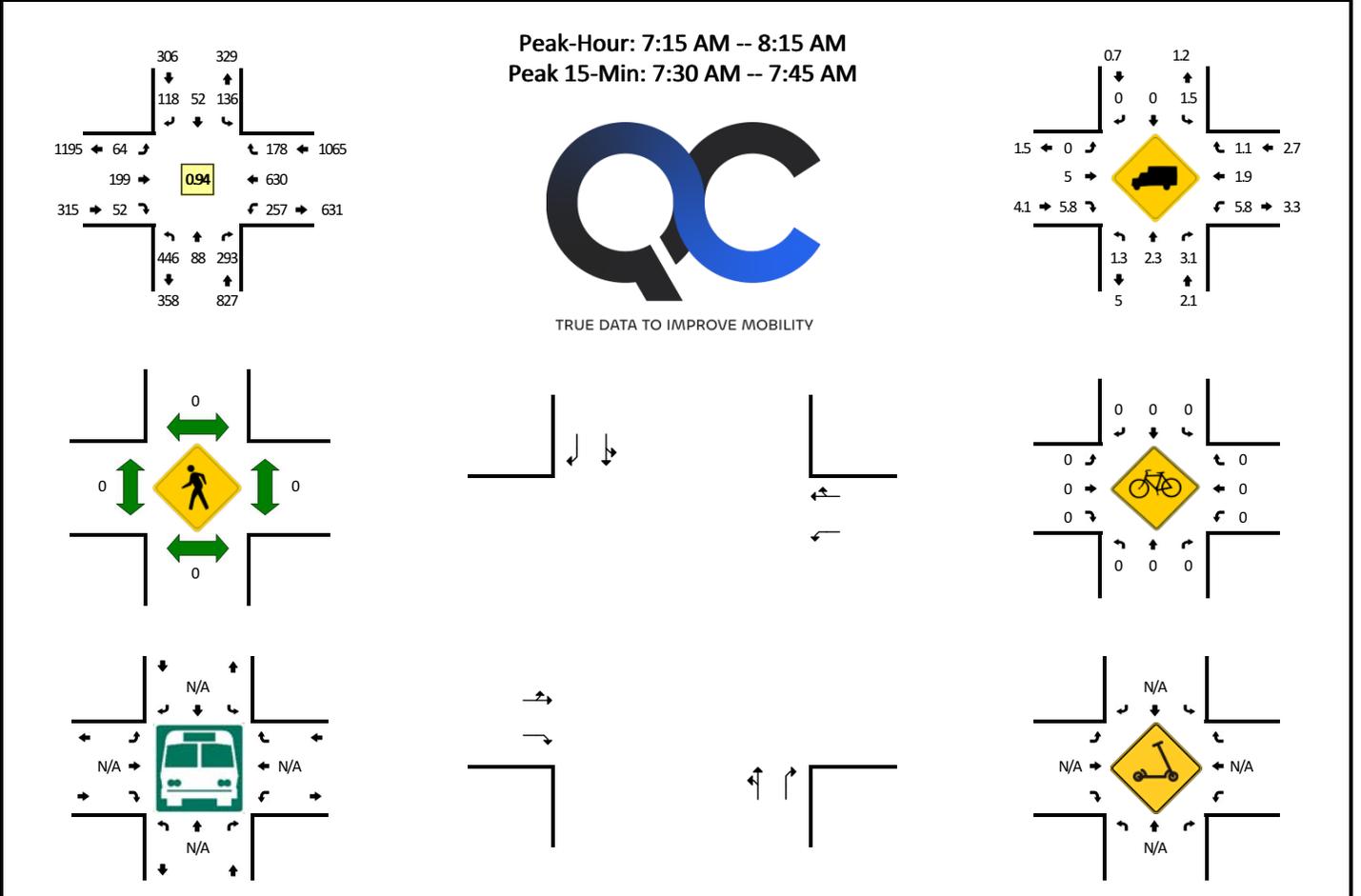
Bernard Adler, P.E.
Senior Transportation Consultant

Robert E. Wilson, PE
Senior Civil Engineer

Turning Movement Counts

LOCATION: Matthews Weddington Rd -- Tilley Morris Rd/Matthews Weddington Rd
CITY/STATE: Weddington, NC

QC JOB #: 16824001
DATE: Wed, Nov 13 2024

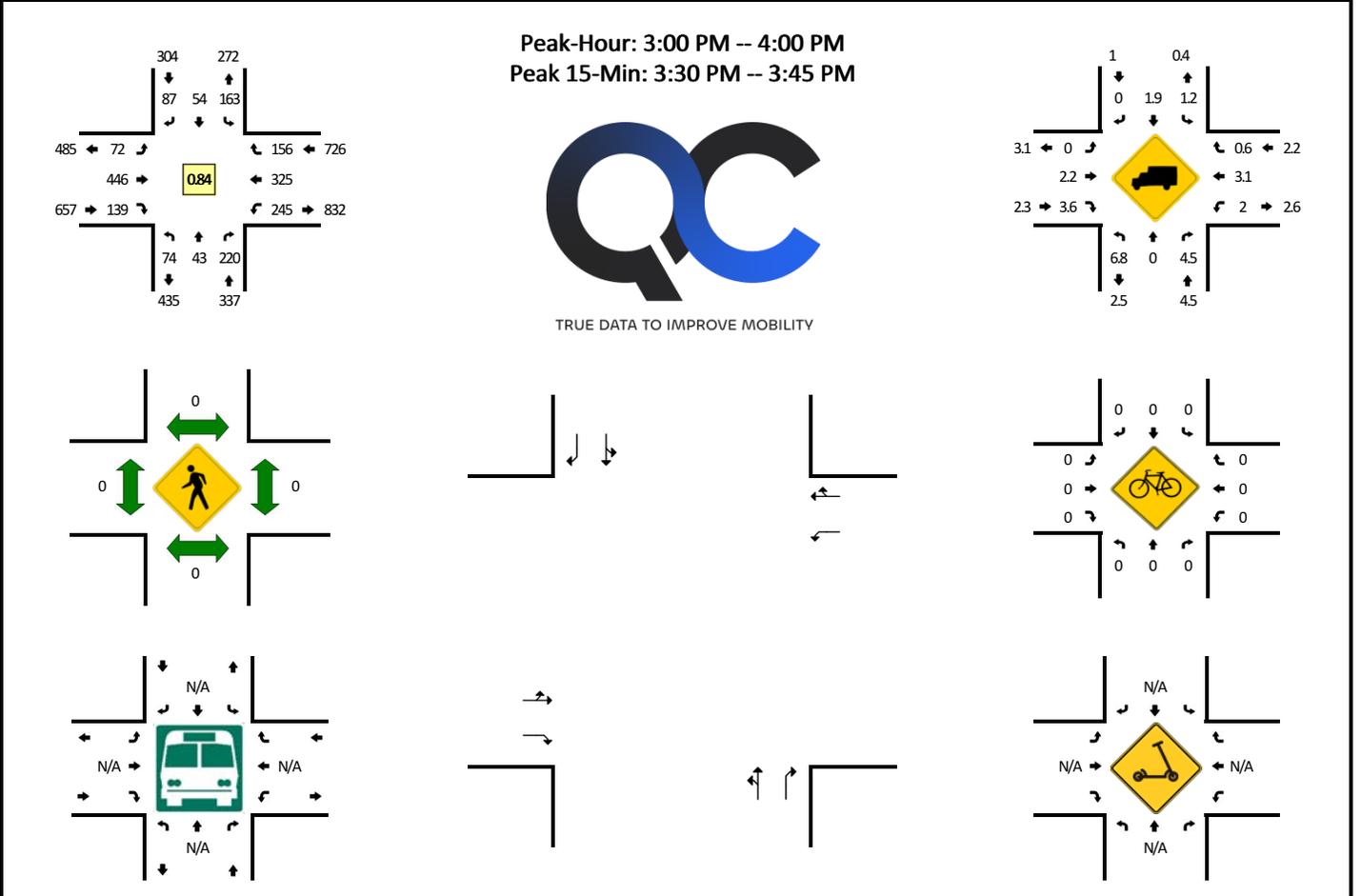


15-Min Count Period Beginning At	Matthews Weddington Rd (Northbound)				Matthews Weddington Rd (Southbound)				Tilley Morris Rd/Matthews Weddington Rd (Eastbound)				Tilley Morris Rd/Matthews Weddington Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	76	11	113	0	2	0	3	0	6	28	4	0	59	152	18	1	473	
7:15 AM	123	19	101	0	2	1	0	0	13	57	8	0	85	160	31	0	600	
7:30 AM	149	32	78	0	36	16	36	0	17	42	9	0	73	120	57	1	666	
7:45 AM	103	32	49	0	61	23	56	0	26	44	17	0	47	128	66	0	652	2391
8:00 AM	71	5	65	0	37	12	26	0	7	56	18	1	49	222	24	2	595	2513
8:15 AM	65	2	66	0	6	2	1	0	1	40	12	0	52	173	5	1	426	2339
8:30 AM	60	0	56	0	3	1	0	0	2	52	10	0	61	190	1	1	437	2110
8:45 AM	32	0	65	0	3	1	0	0	3	58	16	0	64	167	2	1	412	1870
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	596	128	312	0	144	64	144	0	68	168	36	0	292	480	228	4	2664	
Heavy Trucks	4	0	16		4	0	0		0	8	4		16	4	0		56	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

LOCATION: Matthews Weddington Rd -- Tilley Morris Rd/Matthews Weddington Rd
CITY/STATE: Weddington, NC

QC JOB #: 16824003
DATE: Wed, Nov 13 2024

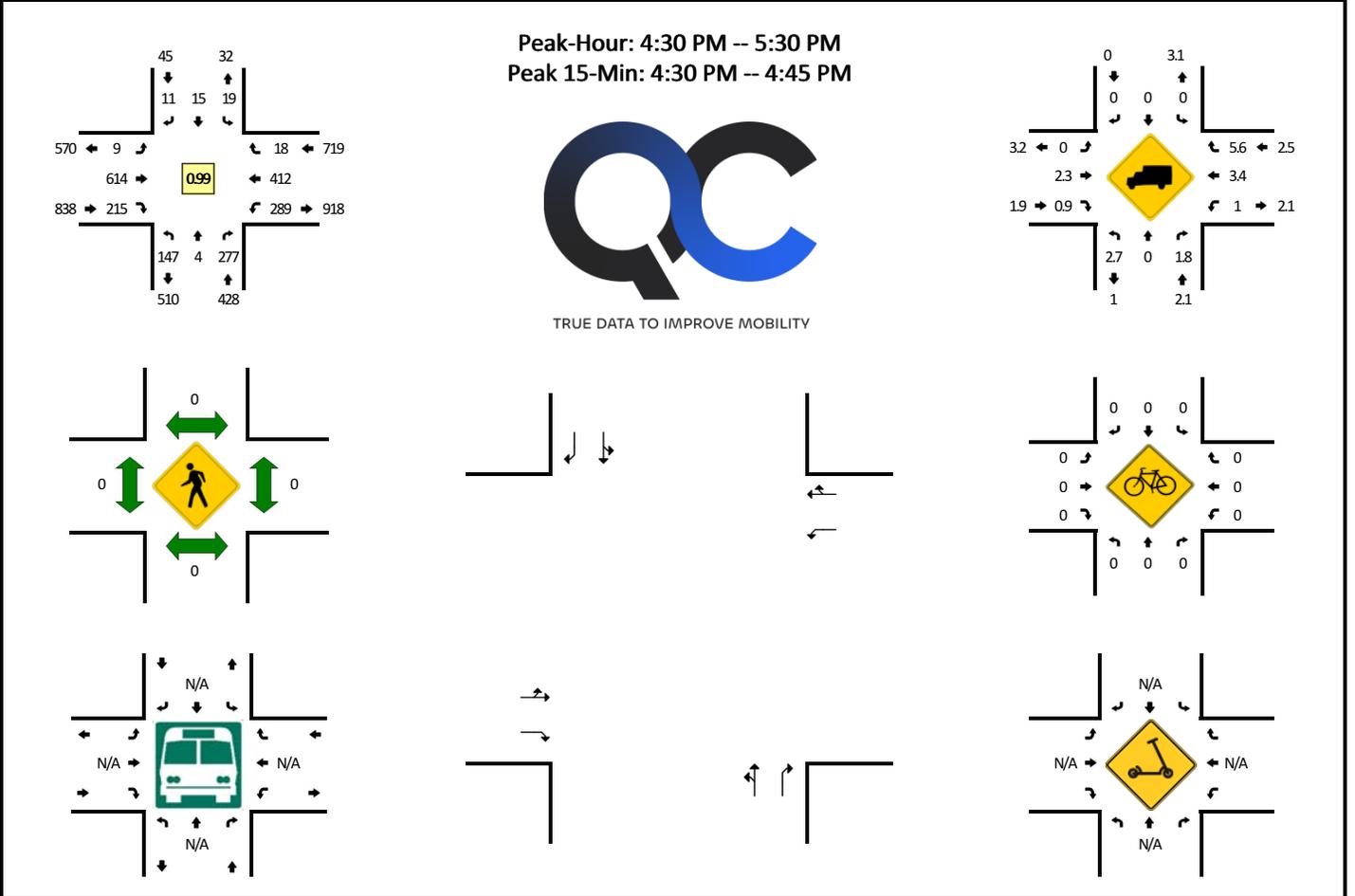


15-Min Count Period Beginning At	Matthews Weddington Rd (Northbound)				Matthews Weddington Rd (Southbound)				Tilley Morris Rd/Matthews Weddington Rd (Eastbound)				Tilley Morris Rd/Matthews Weddington Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	11	1	48	0	3	2	1	0	2	76	28	1	74	70	3	3	323	
2:15 PM	12	0	30	0	3	0	0	0	1	93	19	0	54	54	2	1	269	
2:30 PM	20	1	42	0	0	0	1	0	2	81	21	0	41	75	0	2	286	
2:45 PM	16	1	47	0	0	1	1	0	4	83	31	0	54	80	4	1	323	1201
3:00 PM	13	10	54	0	0	0	1	0	27	111	16	0	54	86	63	1	436	1314
3:15 PM	20	15	71	1	16	5	5	0	22	120	29	0	65	78	47	1	495	1540
3:30 PM	22	18	50	0	97	28	47	0	21	103	44	0	65	64	43	1	603	1857
3:45 PM	18	0	45	0	49	21	34	1	2	112	50	0	57	97	3	1	490	2024
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	88	72	200	0	388	112	188	0	84	412	176	0	260	256	172	4	2412	
Heavy Trucks	12	0	4		4	0	0		0	8	0		8	4	0		40	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

LOCATION: Matthews Weddington Rd -- Tilley Morris Rd/Matthews Weddington Rd
CITY/STATE: Weddington, NC

QC JOB #: 16824002
DATE: Wed, Nov 13 2024

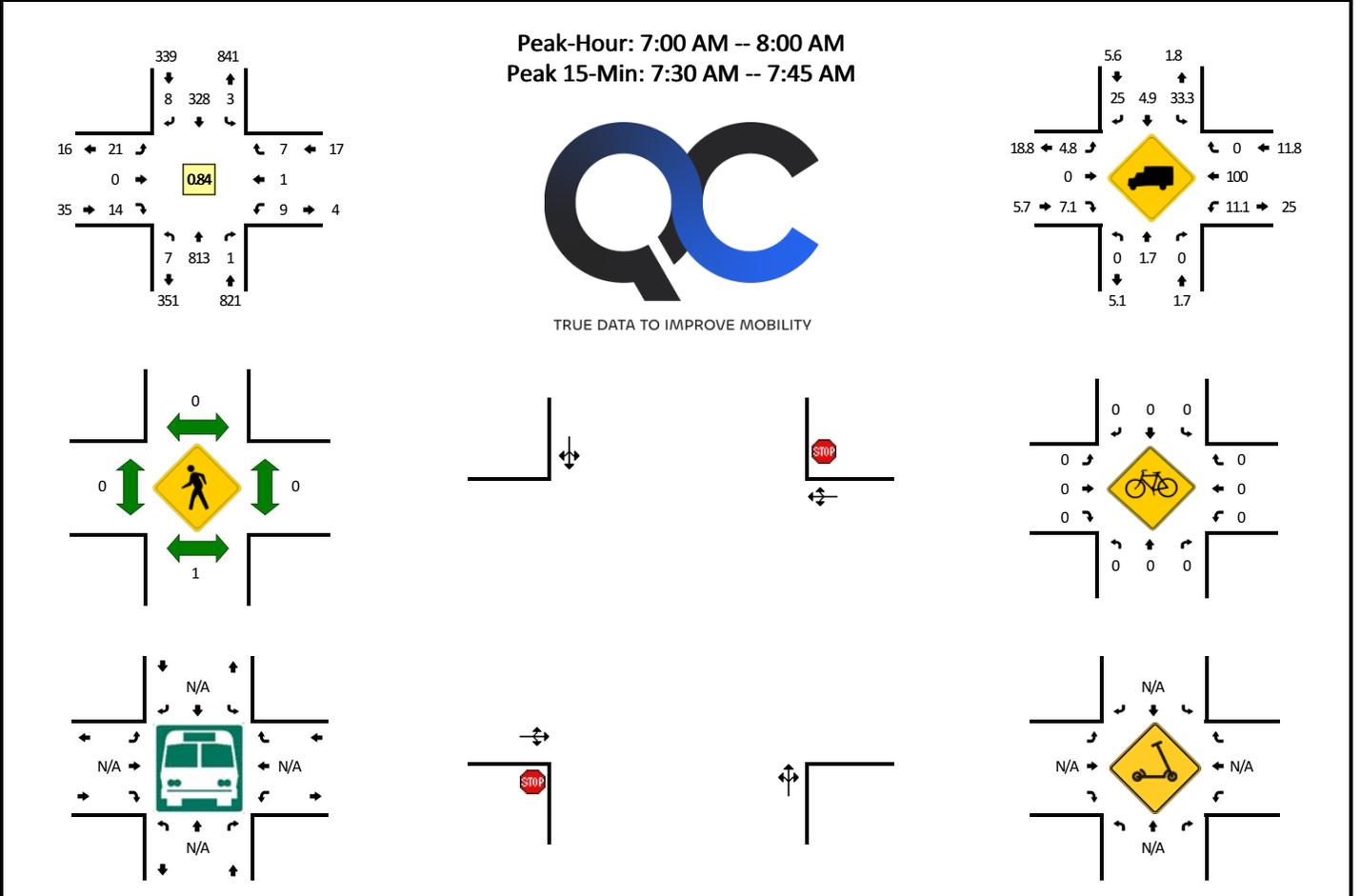


15-Min Count Period Beginning At	Matthews Weddington Rd (Northbound)				Matthews Weddington Rd (Southbound)				Tilley Morris Rd/Matthews Weddington Rd (Eastbound)				Tilley Morris Rd/Matthews Weddington Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	15	1	60	0	12	2	5	0	3	116	47	0	72	72	3	2	410	
4:15 PM	26	2	58	0	3	3	4	0	1	145	42	1	58	82	5	2	432	
4:30 PM	31	2	62	0	9	7	7	0	1	153	55	0	69	105	9	4	514	
4:45 PM	39	0	62	0	1	5	2	0	3	160	55	0	70	108	4	1	510	1866
5:00 PM	41	0	78	0	6	1	0	0	2	161	57	0	61	94	2	2	505	1961
5:15 PM	36	2	75	0	2	2	2	1	3	140	48	0	80	105	3	2	501	2030
5:30 PM	32	1	77	0	6	1	0	1	2	129	52	0	72	104	8	1	486	2002
5:45 PM	16	7	69	1	1	1	4	0	2	149	54	1	86	90	11	0	492	1984
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	124	8	248	0	36	28	28	0	4	612	220	0	276	420	36	16	2056	
Heavy Trucks	0	0	8		0	0	0		0	12	4		0	28	4		56	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

LOCATION: Weddington Matthews Rd -- Amanda Dr
CITY/STATE: Weddington, NC

QC JOB #: 16824004
DATE: Wed, Nov 13 2024

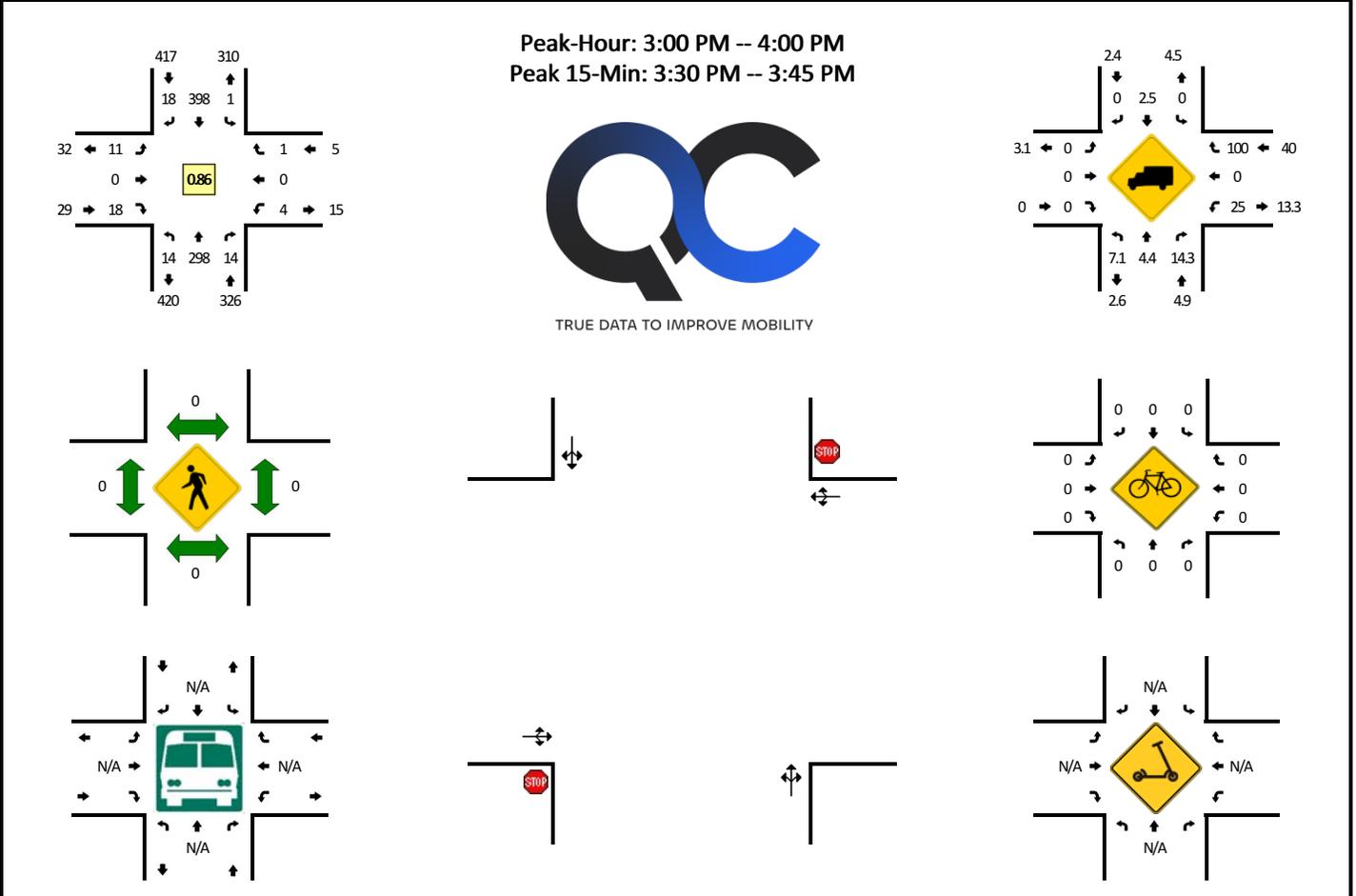


15-Min Count Period Beginning At	Weddington Matthews Rd (Northbound)				Weddington Matthews Rd (Southbound)				Amanda Dr (Eastbound)				Amanda Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	169	0	0	0	62	0	0	8	0	3	0	1	0	1	0	245	
7:15 AM	2	233	0	0	0	81	3	0	8	0	4	0	1	1	2	0	335	
7:30 AM	2	245	0	0	2	96	3	0	4	0	3	0	4	0	1	0	360	
7:45 AM	2	166	1	0	1	89	2	0	1	0	4	0	3	0	3	0	272	1212
8:00 AM	2	133	1	0	2	78	2	0	4	0	2	0	0	0	2	0	226	1193
8:15 AM	2	119	0	0	1	62	1	0	3	0	2	0	2	0	2	0	194	1052
8:30 AM	3	108	1	0	0	70	2	0	5	0	3	0	1	0	3	0	196	888
8:45 AM	1	96	1	0	0	79	1	0	2	0	6	0	0	0	0	0	186	802
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	8	980	0	0	8	384	12	0	16	0	12	0	16	0	4	0	1440	
Heavy Trucks	0	12	0	0	4	12	0	0	4	0	0	0	4	0	0	0	36	
Buses																		
Pedestrians		0				0					0				0		0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

LOCATION: Weddington Matthews Rd -- Amanda Dr
CITY/STATE: Weddington, NC

QC JOB #: 16824006
DATE: Wed, Nov 13 2024

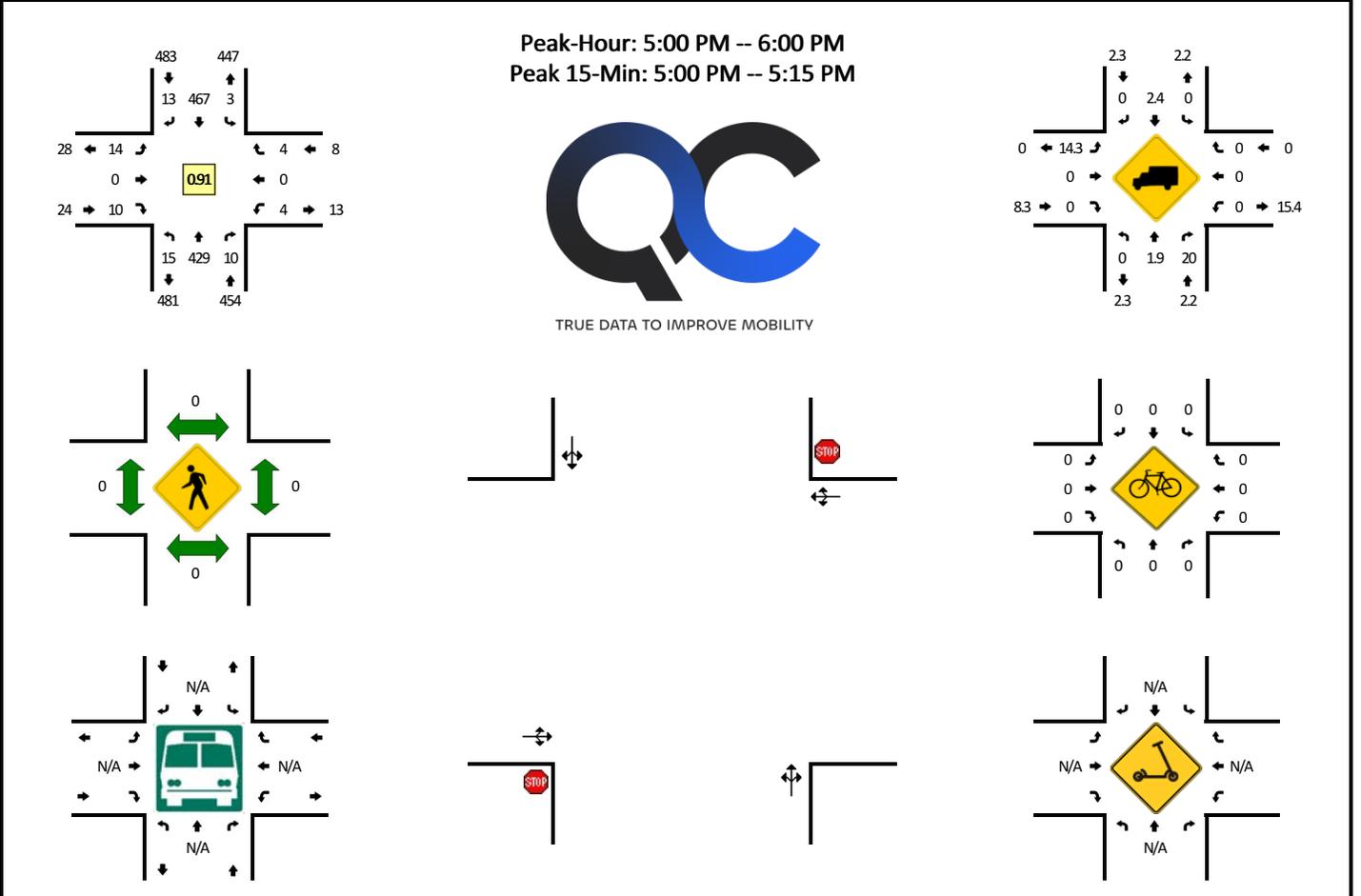


15-Min Count Period Beginning At	Weddington Matthews Rd (Northbound)				Weddington Matthews Rd (Southbound)				Amanda Dr (Eastbound)				Amanda Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	2	36	1	0	0	87	2	0	5	0	2	0	0	0	0	0	135	
2:15 PM	4	29	0	0	1	76	1	0	2	1	3	0	1	0	0	0	118	
2:30 PM	1	40	1	0	0	54	4	0	2	1	2	0	2	1	0	0	108	
2:45 PM	1	52	1	0	2	79	4	0	1	0	5	0	1	1	1	0	148	509
3:00 PM	3	62	3	0	0	61	4	0	2	0	4	0	0	0	0	0	139	513
3:15 PM	4	102	8	0	1	86	3	0	4	0	3	0	2	0	0	0	213	608
3:30 PM	7	78	1	0	0	128	6	0	3	0	4	0	0	0	0	0	227	727
3:45 PM	0	56	2	0	0	123	5	0	2	0	7	0	2	0	1	0	198	777
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	28	312	4	0	0	512	24	0	12	0	16	0	0	0	0	0	908	
Heavy Trucks	4	12	4	0	0	8	0	0	0	0	0	0	0	0	0	0	28	
Buses																	0	
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																	0	

Comments:

LOCATION: Weddington Matthews Rd -- Amanda Dr
CITY/STATE: Weddington, NC

QC JOB #: 16824005
DATE: Wed, Nov 13 2024

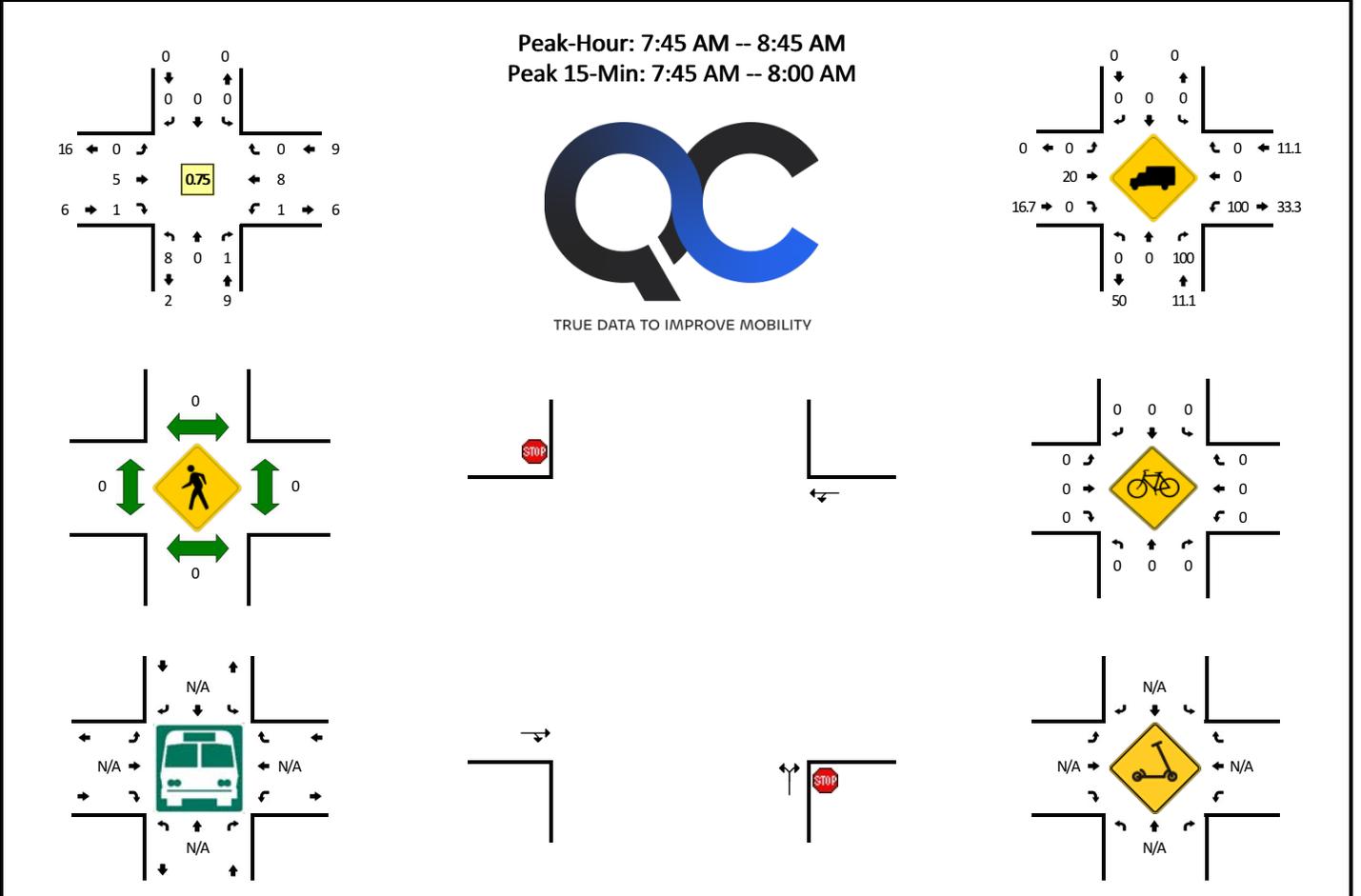


15-Min Count Period Beginning At	Weddington Matthews Rd (Northbound)				Weddington Matthews Rd (Southbound)				Amanda Dr (Eastbound)				Amanda Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	74	1	0	0	110	0	0	3	0	2	0	1	0	0	0	191	
4:15 PM	6	79	1	0	4	95	4	0	3	0	7	0	0	0	1	0	200	
4:30 PM	3	94	0	0	1	125	2	0	2	0	3	0	0	0	1	0	231	
4:45 PM	3	94	1	0	1	120	2	0	3	0	3	0	1	0	4	0	232	854
5:00 PM	3	118	3	0	1	123	6	0	5	0	4	0	3	0	1	0	267	930
5:15 PM	3	109	1	0	0	109	3	0	3	0	2	0	0	0	1	0	231	961
5:30 PM	4	105	1	0	1	119	3	0	2	0	1	0	0	0	1	0	237	967
5:45 PM	5	97	5	0	1	116	1	0	4	0	3	0	1	0	1	0	234	969
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	12	472	12	0	4	492	24	0	20	0	16	0	12	0	4	0	1068	
Heavy Trucks	0	4	0		0	8	0		4	0	0		0	0	0		16	
Buses																	0	
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																	0	

Comments:

LOCATION: Bonner Dr -- Amanda Dr
CITY/STATE: Weddington, NC

QC JOB #: 16824007
DATE: Wed, Nov 13 2024

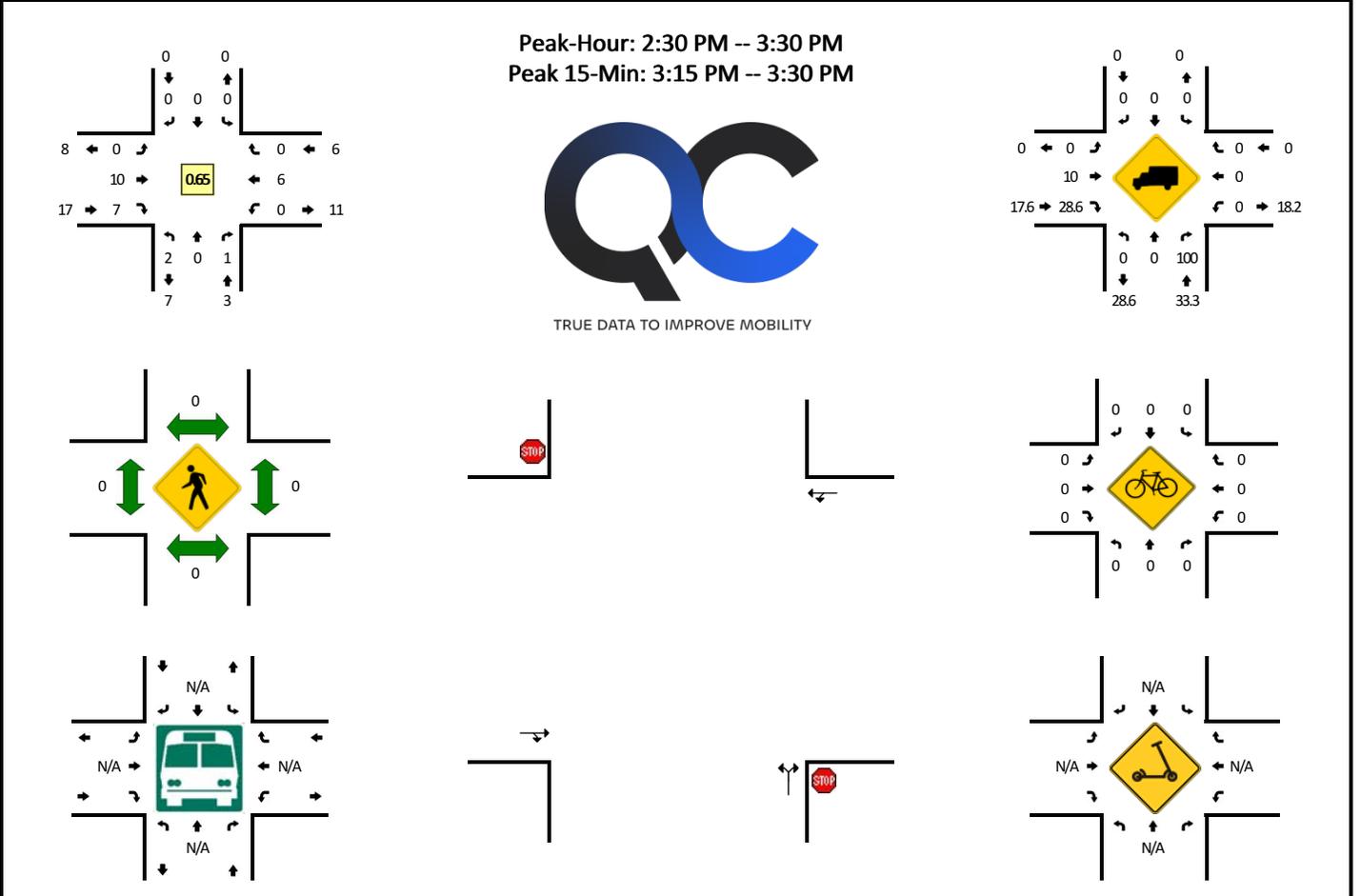


15-Min Count Period Beginning At	Bonner Dr (Northbound)				Bonner Dr (Southbound)				Amanda Dr (Eastbound)				Amanda Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	
7:15 AM	1	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	5	
7:30 AM	2	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	5	
7:45 AM	2	0	0	0	0	0	0	0	0	1	1	0	0	4	0	0	8	20
8:00 AM	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	4	22
8:15 AM	3	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	5	22
8:30 AM	1	0	1	0	0	0	0	0	0	1	0	0	1	3	0	0	7	24
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	17
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	8	0	0	0	0	0	0	0	0	4	4	0	0	16	0	0	32	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: Bonner Dr -- Amanda Dr
CITY/STATE: Weddington, NC

QC JOB #: 16824009
DATE: Wed, Nov 13 2024

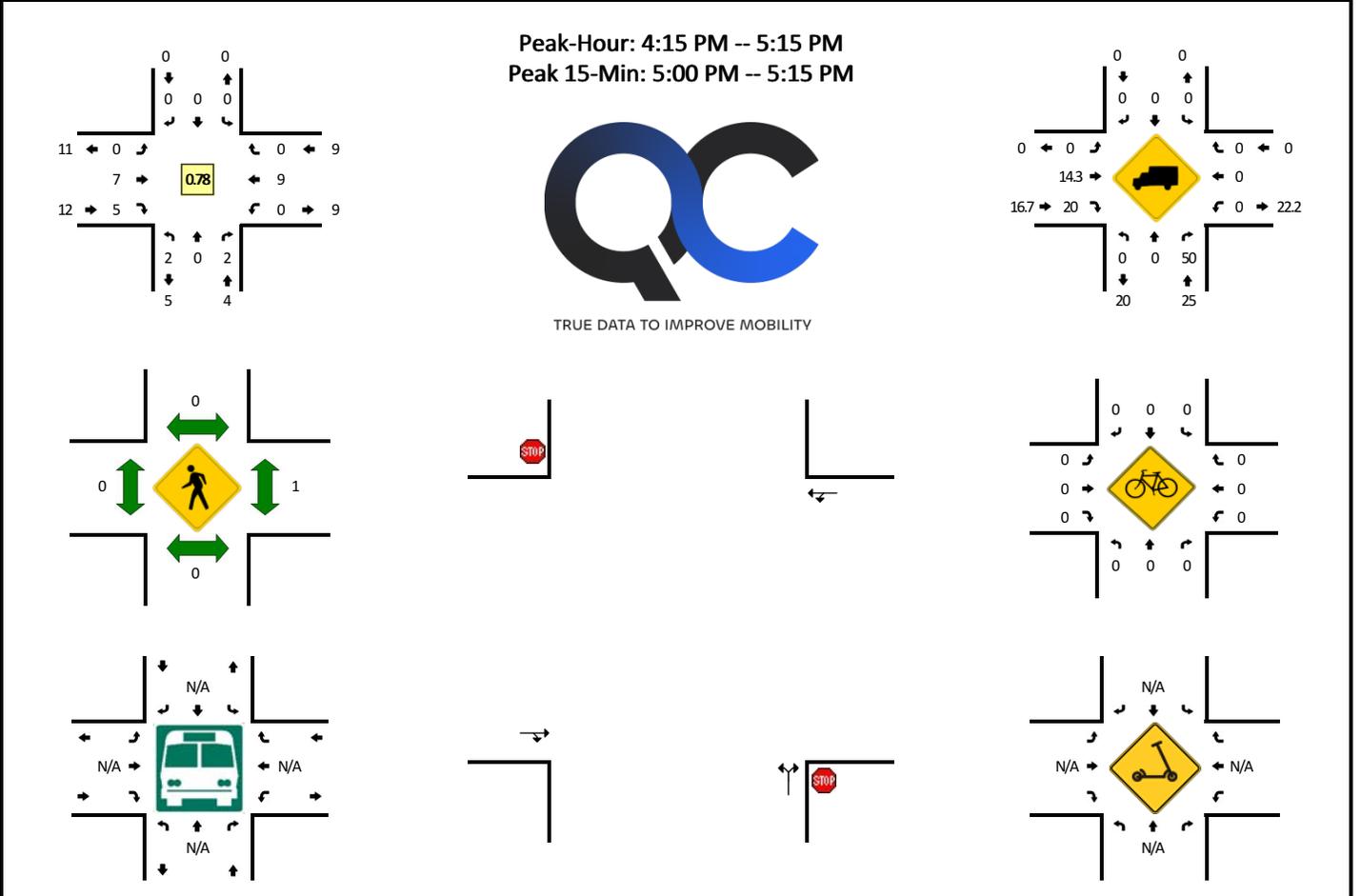


15-Min Count Period Beginning At	Bonner Dr (Northbound)				Bonner Dr (Southbound)				Amanda Dr (Eastbound)				Amanda Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
2:15 PM	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	3	
2:30 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	0	5	
2:45 PM	2	0	1	0	0	0	0	0	0	0	3	0	0	1	0	0	7	16
3:00 PM	0	0	0	0	0	0	0	0	0	1	2	0	0	1	0	0	4	19
3:15 PM	0	0	0	0	0	0	0	0	0	7	2	0	0	1	0	0	10	26
3:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	22
3:45 PM	1	0	0	0	0	0	0	0	0	1	1	0	0	2	0	0	5	20
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	0	0	0	0	0	28	8	0	0	4	0	0	40	
Heavy Trucks	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: Bonner Dr -- Amanda Dr
CITY/STATE: Weddington, NC

QC JOB #: 16824008
DATE: Wed, Nov 13 2024

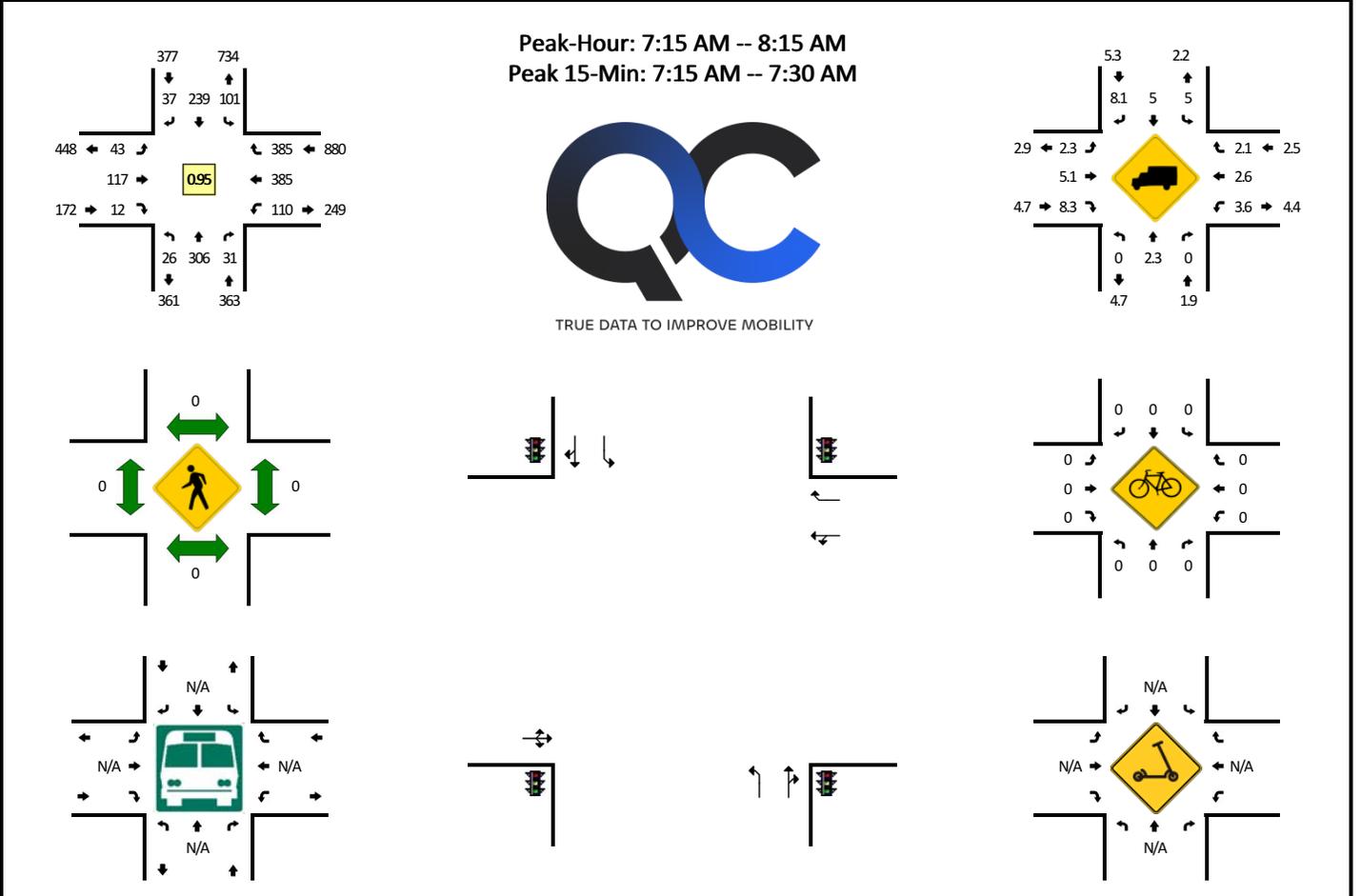


15-Min Count Period Beginning At	Bonner Dr (Northbound)				Bonner Dr (Southbound)				Amanda Dr (Eastbound)				Amanda Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	
4:15 PM	1	0	0	0	0	0	0	0	0	2	3	0	0	0	0	0	6	
4:30 PM	0	0	2	0	0	0	0	0	0	1	0	0	0	1	0	0	4	
4:45 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	5	0	0	7	19
5:00 PM	1	0	0	0	0	0	0	0	0	3	1	0	0	3	0	0	8	25
5:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2	21
5:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	19
5:45 PM	1	0	0	0	0	0	0	0	0	3	1	0	0	1	0	0	6	18
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	4	0	0	0	0	0	0	0	0	12	4	0	0	12	0	0	32	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: Weddington Matthews Rd -- Hemby Rd/Beulah Church Rd
CITY/STATE: Weddington, NC

QC JOB #: 16824010
DATE: Wed, Nov 13 2024

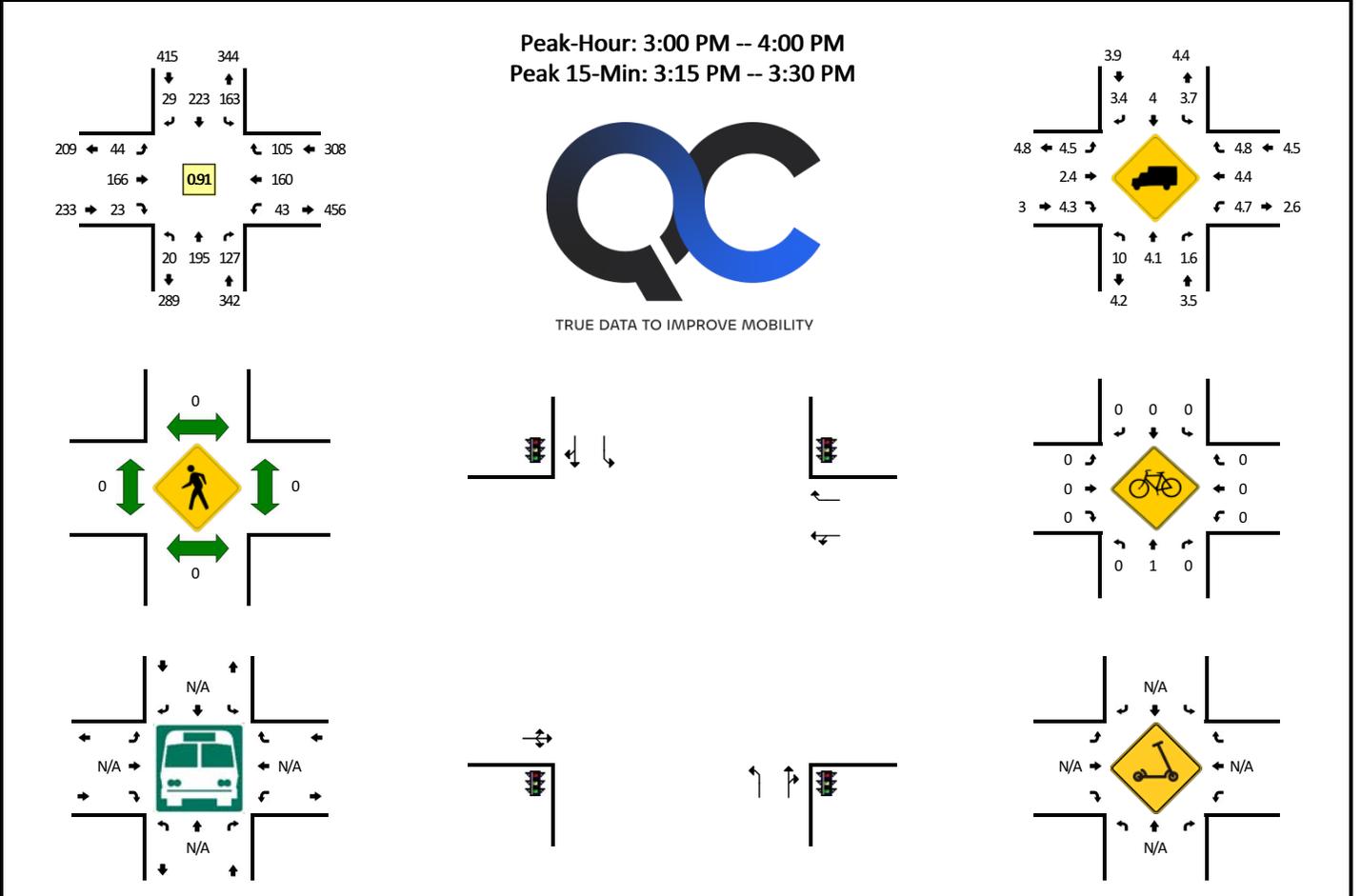


15-Min Count Period Beginning At	Weddington Matthews Rd (Northbound)				Weddington Matthews Rd (Southbound)				Hemby Rd/Beulah Church Rd (Eastbound)				Hemby Rd/Beulah Church Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	52	13	0	13	29	17	0	17	8	0	0	8	109	99	0	367	
7:15 AM	2	80	7	0	18	53	11	0	12	32	6	0	24	104	122	0	471	
7:30 AM	12	93	6	0	26	69	11	0	16	23	2	0	24	73	116	0	471	
7:45 AM	6	68	9	0	35	67	12	0	3	31	3	0	29	109	90	0	462	1771
8:00 AM	6	65	9	0	22	50	3	0	12	31	1	0	33	99	57	0	388	1792
8:15 AM	4	46	11	0	22	52	8	0	11	37	2	0	23	78	56	0	350	1671
8:30 AM	4	43	9	0	21	47	10	0	6	28	2	0	23	57	54	0	304	1504
8:45 AM	6	59	19	0	20	57	6	0	7	31	4	0	21	67	35	0	332	1374
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	8	320	28	0	72	212	44	0	48	128	24	0	96	416	488	0	1884	
Heavy Trucks	0	0	0		12	20	0		0	4	4		0	4	8		52	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

LOCATION: Weddington Matthews Rd -- Hemby Rd/Beulah Church Rd
CITY/STATE: Weddington, NC

QC JOB #: 16824012
DATE: Wed, Nov 13 2024

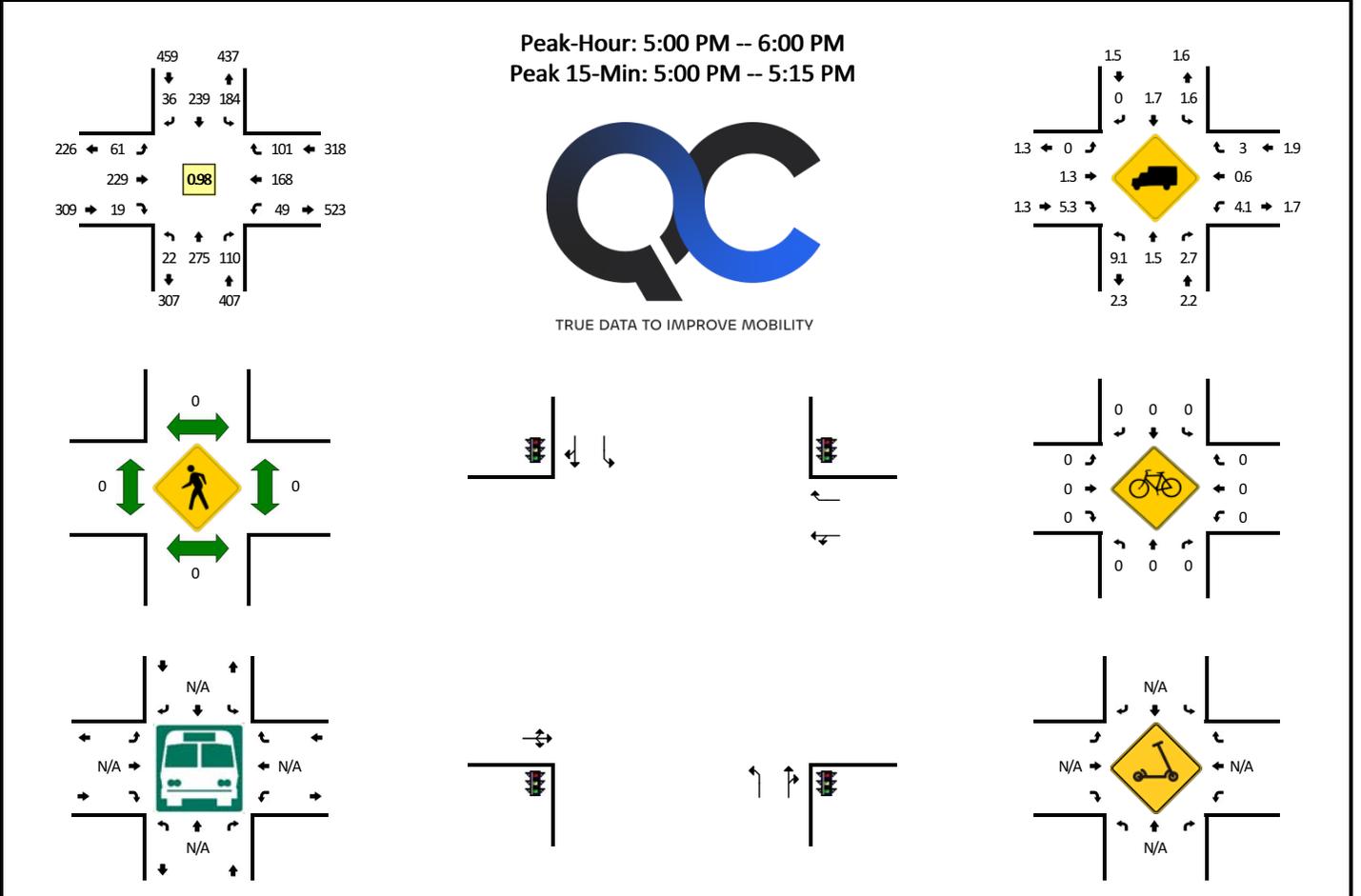


15-Min Count Period Beginning At	Weddington Matthews Rd (Northbound)				Weddington Matthews Rd (Southbound)				Hemby Rd/Beulah Church Rd (Eastbound)				Hemby Rd/Beulah Church Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	2	27	6	0	29	30	15	0	5	33	3	0	12	33	17	0	212	
2:15 PM	2	14	9	0	21	47	7	0	5	31	1	0	17	28	16	0	198	
2:30 PM	2	27	12	0	10	34	4	0	11	46	4	0	15	33	15	0	213	
2:45 PM	0	35	21	0	32	43	4	0	3	37	4	0	12	34	21	0	246	869
3:00 PM	3	41	16	0	16	42	5	0	13	48	7	0	7	34	21	0	253	910
3:15 PM	11	75	33	0	33	56	7	0	11	35	5	0	9	44	39	0	358	1070
3:30 PM	4	44	38	0	54	62	8	0	12	43	5	0	18	44	26	0	358	1215
3:45 PM	2	35	40	0	60	63	9	0	8	40	6	0	9	38	19	0	329	1298
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	44	300	132	0	132	224	28	0	44	140	20	0	36	176	156	0	1432	
Heavy Trucks	8	16	4		8	16	0		0	12	0		0	16	8		88	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: Weddington Matthews Rd -- Hemby Rd/Beulah Church Rd
CITY/STATE: Weddington, NC

QC JOB #: 16824011
DATE: Wed, Nov 13 2024

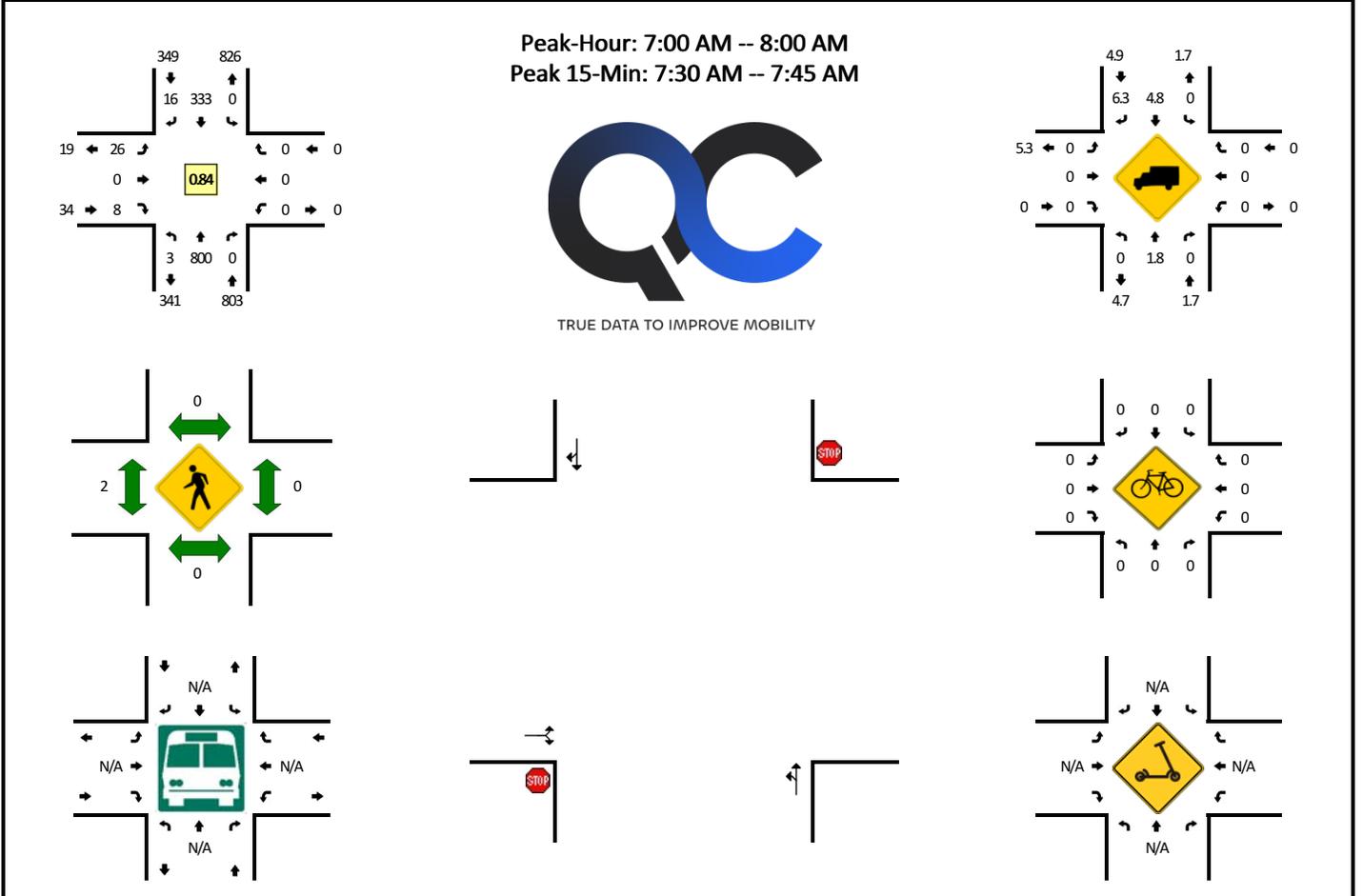


15-Min Count Period Beginning At	Weddington Matthews Rd (Northbound)				Weddington Matthews Rd (Southbound)				Hemby Rd/Beulah Church Rd (Eastbound)				Hemby Rd/Beulah Church Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	45	15	0	46	54	3	0	7	48	5	0	5	40	20	0	291	
4:15 PM	7	49	12	0	37	56	4	0	5	47	5	0	14	46	38	0	320	
4:30 PM	4	57	16	0	53	58	10	0	6	54	1	0	13	37	32	0	341	
4:45 PM	2	71	21	0	55	58	9	0	11	52	5	0	14	41	26	0	365	1317
5:00 PM	4	72	26	0	51	66	9	0	16	61	4	0	4	42	27	0	382	1408
5:15 PM	4	78	25	0	32	47	9	0	11	74	4	0	18	39	30	0	371	1459
5:30 PM	7	74	38	0	57	54	8	0	12	37	3	0	14	37	17	0	358	1476
5:45 PM	7	51	21	0	44	72	10	0	22	57	8	0	13	50	27	0	382	1493
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	16	288	104	0	204	264	36	0	64	244	16	0	16	168	108	0	1528	
Heavy Trucks	0	0	4		8	4	0		0	4	0		4	0	8		32	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

LOCATION: Weddington Matthews Rd -- Greenbrook Pkwy
CITY/STATE: Weddington, NC

QC JOB #: 16824013
DATE: Wed, Nov 13 2024

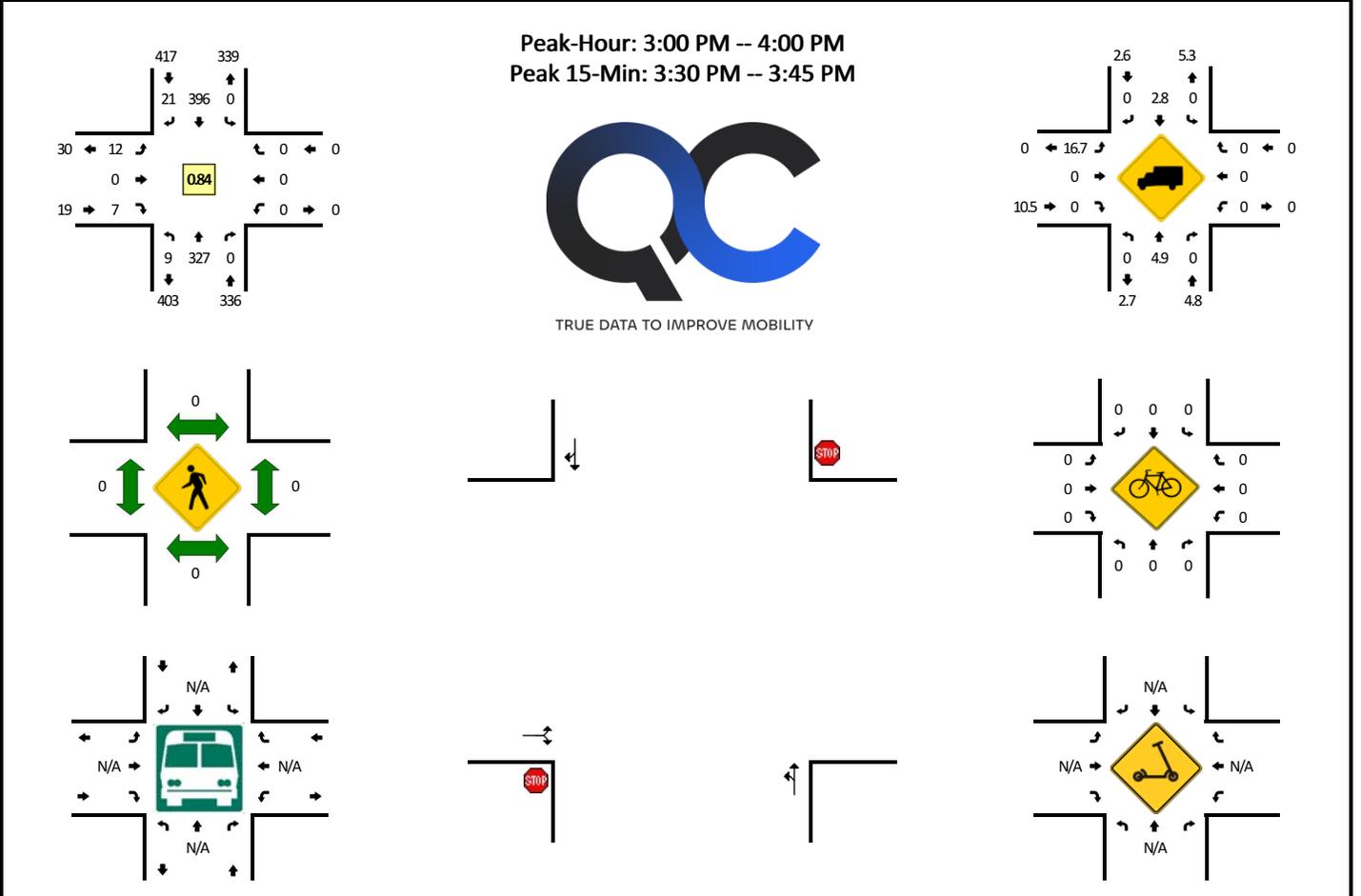


15-Min Count Period Beginning At	Weddington Matthews Rd (Northbound)				Weddington Matthews Rd (Southbound)				Greenbrook Pkwy (Eastbound)				Greenbrook Pkwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	158	0	0	0	65	2	0	11	0	1	0	0	0	0	0	237	
7:15 AM	3	229	0	0	0	79	5	0	10	0	2	0	0	0	0	0	328	
7:30 AM	0	243	0	0	0	95	7	0	4	0	2	0	0	0	0	0	351	
7:45 AM	0	170	0	0	0	94	2	0	1	0	3	0	0	0	0	0	270	1186
8:00 AM	4	131	0	0	0	76	4	0	3	0	1	0	0	0	0	0	219	1168
8:15 AM	1	120	0	0	0	63	1	0	3	0	1	0	0	0	0	0	189	1029
8:30 AM	0	103	0	0	0	73	3	0	10	0	4	0	0	0	0	0	193	871
8:45 AM	2	87	0	0	0	79	5	0	7	0	5	0	0	0	0	0	185	786
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	972	0	0	0	380	28	0	16	0	8	0	0	0	0	0	1404	
Heavy Trucks	0	8	0	0	0	12	0	0	0	0	0	0	0	0	0	0	20	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: Weddington Matthews Rd -- Greenbrook Pkwy
CITY/STATE: Weddington, NC

QC JOB #: 16824015
DATE: Wed, Nov 13 2024

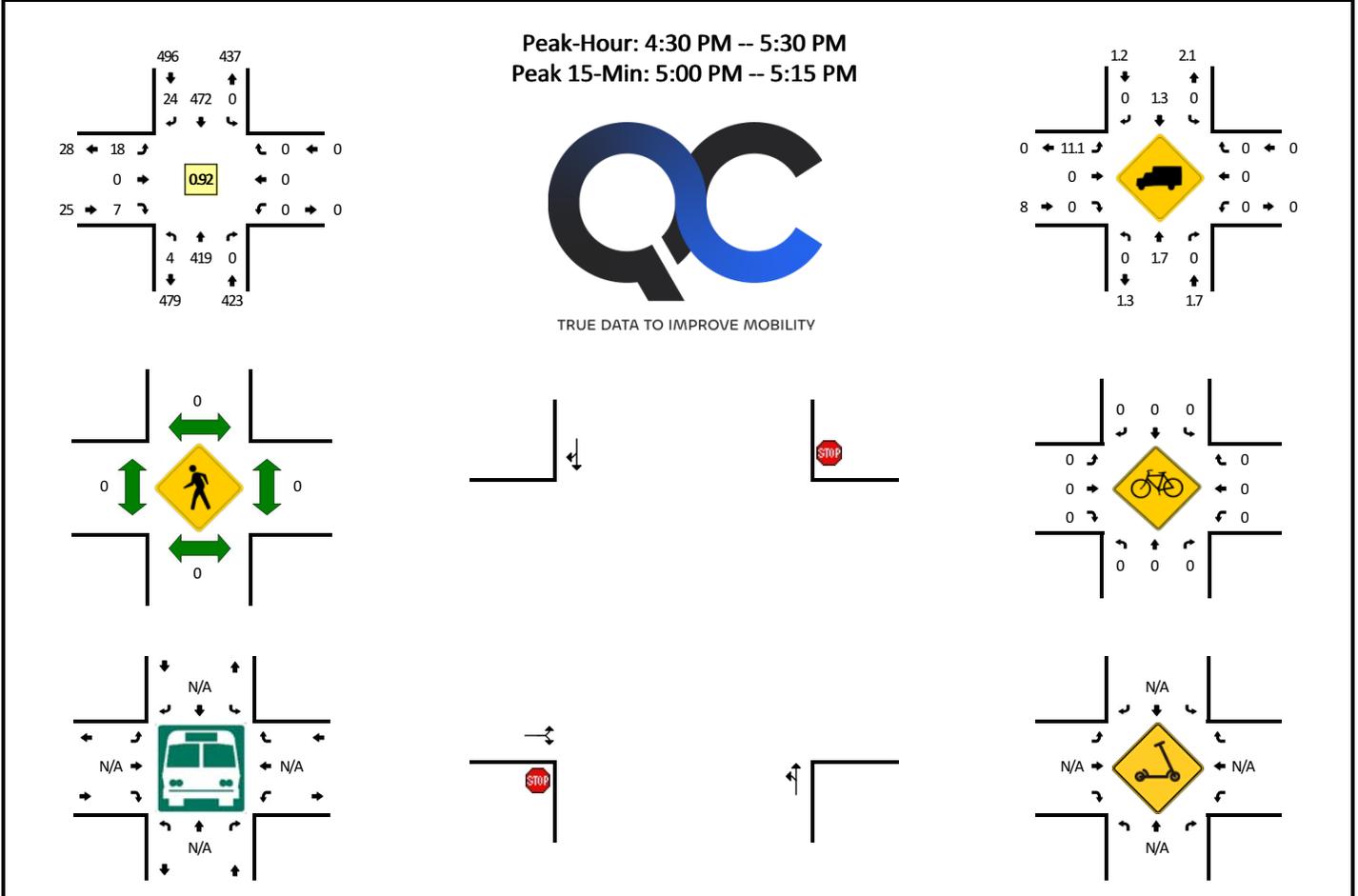


15-Min Count Period Beginning At	Weddington Matthews Rd (Northbound)				Weddington Matthews Rd (Southbound)				Greenbrook Pkwy (Eastbound)				Greenbrook Pkwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	1	46	0	0	0	81	7	0	6	0	0	0	0	0	0	0	141	
2:15 PM	1	33	0	0	0	79	3	0	5	0	2	0	0	0	0	0	123	
2:30 PM	1	49	0	0	0	51	4	0	3	0	0	0	0	0	0	0	108	
2:45 PM	1	63	0	0	0	81	5	0	3	0	1	0	0	0	0	0	154	526
3:00 PM	1	66	0	0	0	64	0	0	3	0	0	0	0	0	0	0	134	519
3:15 PM	4	116	0	0	0	85	5	0	4	0	3	0	0	0	0	0	217	613
3:30 PM	3	89	0	0	0	122	10	0	3	0	4	0	0	0	0	0	231	736
3:45 PM	1	56	0	0	0	125	6	0	2	0	0	0	0	0	0	0	190	772
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	12	356	0	0	0	488	40	0	12	0	16	0	0	0	0	0	924	
Heavy Trucks	0	12	0	0	0	8	0	0	8	0	0	0	0	0	0	0	28	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: Weddington Matthews Rd -- Greenbrook Pkwy
CITY/STATE: Weddington, NC

QC JOB #: 16824014
DATE: Wed, Nov 13 2024



15-Min Count Period Beginning At	Weddington Matthews Rd (Northbound)				Weddington Matthews Rd (Southbound)				Greenbrook Pkwy (Eastbound)				Greenbrook Pkwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	75	0	0	0	107	5	0	3	0	2	0	0	0	0	0	192	
4:15 PM	3	79	0	0	0	98	6	0	6	0	0	0	0	0	0	0	192	
4:30 PM	0	93	0	0	0	125	3	0	4	0	2	0	0	0	0	0	227	
4:45 PM	2	99	0	0	0	116	6	0	5	0	1	0	0	0	0	0	229	840
5:00 PM	2	115	0	0	0	126	8	0	5	0	1	0	0	0	0	0	257	905
5:15 PM	0	112	0	0	0	105	7	0	4	0	3	0	0	0	0	0	231	944
5:30 PM	2	108	0	0	0	105	6	0	1	0	2	0	0	0	0	0	224	941
5:45 PM	4	95	0	0	0	119	3	0	3	0	2	0	0	0	0	0	226	938
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	8	460	0	0	0	504	32	0	20	0	4	0	0	0	0	0	1028	
Heavy Trucks	0	12	0	0	0	8	0	0	0	0	0	0	0	0	0	0	20	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

Intersection Volume Development

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

INTERSECTION: Weddington-Matthews Road and Tilley Morris Road
COUNT DATE: Wednesday, November 13, 2024

AM Peak Hour

AM 2024 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Adjusted Turning Movement Counts	0	56	199	52	0	257	630	178	0	446	88	293	0	136	52	118	
Volume Balancing																	
AM 2024 EXISTING TRAFFIC	0	56	199	52	0	257	630	178	0	446	88	293	0	136	52	118	
AM 2024 Existing/2029 Background PHF	0.90	0.62	0.87	0.72	0.90	0.76	0.71	0.67	0.90	0.75	0.69	0.73	0.90	0.56	0.57	0.53	
AM 2029 Build PHF	0.90	0.62	0.87	0.73	0.90	0.76	0.71	0.67	0.90	0.75	0.69	0.73	0.90	0.56	0.57	0.53	
AM Existing/Background Heavy Vehicle Percentage	2%	2%	5%	6%	2%	6%	2%	2%	2%	2%	2%	3%	2%	2%	2%	2%	
AM Build Heavy Vehicle Percentage	2%	2%	5%	6%	2%	6%	2%	2%	2%	2%	2%	3%	2%	2%	2%	2%	
AM 2029 BACKGROUND TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Years To Buildout	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	
AM 2029 BACKGROUND TRAFFIC GROWTH	0	6	21	5	0	27	66	19	0	46	9	30	0	14	5	12	
AM 2029 BACKGROUND TRAFFIC	0	62	220	57	0	284	696	197	0	492	97	323	0	150	57	130	
SITE TRAFFIC DISTRIBUTION		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Net New Distribution	Entering				25%		35%										
	Exiting									25%		35%					
TOTAL AM PROJECT TRIPS	0	0	0	3	0	3	0	0	0	7	0	9	0	0	0	0	
AM 2029 BUILD-OUT TRAFFIC	0	62	220	60	0	287	696	197	0	499	97	332	0	150	57	130	

MID Peak Hour

MID 2024 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Adjusted Turning Movement Counts	0	72	446	139	0	245	325	156	0	74	43	220	0	163	54	87	
Volume Balancing																	
MID 2024 EXISTING TRAFFIC	0	72	446	139	0	245	325	156	0	74	43	220	0	163	54	87	
MID 2024 Existing/2029 Background PHF	0.90	0.67	0.93	0.70	0.90	0.93	0.84	0.62	0.90	0.84	0.60	0.78	0.90	0.42	0.48	0.46	
MID 2029 Build PHF	0.90	0.67	0.93	0.71	0.90	0.93	0.84	0.62	0.90	0.84	0.60	0.78	0.90	0.42	0.48	0.46	
MID Existing/Background Heavy Vehicle Percentage	2%	2%	2%	4%	2%	2%	3%	2%	2%	7%	2%	5%	2%	2%	2%	2%	
MID Build Heavy Vehicle Percentage	2%	2%	2%	4%	2%	2%	3%	2%	2%	7%	2%	5%	2%	2%	2%	2%	
MID 2029 BACKGROUND TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Years To Buildout	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	
MID 2029 BACKGROUND TRAFFIC GROWTH	0	7	46	14	0	25	34	16	0	8	4	23	0	17	6	9	
MID 2029 BACKGROUND TRAFFIC	0	79	492	153	0	270	359	172	0	82	47	243	0	180	60	96	
SITE TRAFFIC DISTRIBUTION		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Net New Distribution	Entering				25%		35%										
	Exiting									25%		35%					
TOTAL MID PROJECT TRIPS	0	0	0	7	0	9	0	0	0	4	0	6	0	0	0	0	
MID 2029 BUILD-OUT TRAFFIC	0	79	492	160	0	279	359	172	0	86	47	249	0	180	60	96	

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

INTERSECTION: **Weddington-Matthews Road and Tilley Morris Road**
 COUNT DATE: **Wednesday, November 13, 2024**

PM Peak Hour

PM 2024 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Adjusted Turning Movement Counts	0	9	614	215	0	289	412	18	0	147	4	277	0	19	15	11		
Volume Balancing																		
PM 2024 EXISTING TRAFFIC	0	9	614	215	0	289	412	18	0	147	4	277	0	19	15	11		
PM 2024 Existing/2029 Background PHF	0.90	0.75	0.95	0.94	0.90	0.88	0.95	0.50	0.90	0.90	0.50	0.89	0.90	0.53	0.54	0.39		
PM 2029 Build PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90		
PM Existing/Background Heavy Vehicle Percentage	2%	2%	2%	2%	2%	2%	3%	6%	2%	3%	2%	2%	2%	2%	2%	2%		
PM Build Heavy Vehicle Percentage	2%	2%	2%	2%	2%	2%	3%	6%	2%	3%	2%	2%	2%	2%	2%	2%		
PM 2029 BACKGROUND TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%		
PM 2029 BACKGROUND TRAFFIC GROWTH	0	1	64	22	0	30	43	2	0	15	0	29	0	2	2	1		
PM 2029 BACKGROUND TRAFFIC	0	10	678	237	0	319	455	20	0	162	4	306	0	21	17	12		
SITE TRAFFIC DISTRUBUTION																		
LAND USE	TYPE		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Net New Distribution	Entering					25%		35%										
	Exiting											25%		35%				
TOTAL PM PROJECT TRIPS			0	0	0	8	0	10	0	0	0	5	0	6	0	0	0	0
PM 2029 BUILD-OUT TRAFFIC			0	10	678	245	0	329	455	20	0	167	4	312	0	21	17	12

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

INTERSECTION: Weddington-Matthews Road and Amanda Drive
COUNT DATE: Wednesday, November 13, 2024

AM Peak Hour

AM 2024 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Adjusted Turning Movement Counts	0	21	0	14	0	9	1	7	0	7	813	1	0	3	328	8		
Volume Balancing											5			2				
AM 2024 EXISTING TRAFFIC	0	21	0	14	0	9	1	7	0	7	818	1	0	5	328	8		
AM 2024 Existing PHF	0.90	0.66	0.90	0.88	0.90	0.56	0.25	0.58	0.90	0.88	0.83	0.25	0.90	0.38	0.85	0.67		
AM 2029 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90		
AM Existing/Background Heavy Vehicle Percentage	2%	5%	2%	7%	2%	11%	100%	2%	2%	2%	2%	2%	2%	33%	5%	25%		
AM Build Heavy Vehicle Percentage	2%	5%	2%	7%	2%	11%	100%	2%	2%	2%	2%	2%	2%	25%	5%	25%		
AM 2029 BACKGROUND TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Years To Buildout	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5		
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%		
AM 2029 BACKGROUND TRAFFIC GROWTH	0	2	0	1	0	1	0	1	0	1	85	0	0	1	34	1		
AM 2029 BACKGROUND TRAFFIC	0	23	0	15	0	10	1	8	0	8	903	1	0	6	362	9		
SITE TRAFFIC DISTRIBUTION																		
LAND USE	TYPE		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Net New Distribution	Entering															18%	42%	
	Exiting								18%				42%					
TOTAL AM PROJECT TRIPS			0	5	0	0	11	0	0	2	4	0						
AM 2029 BUILD-OUT TRAFFIC			0	23	0	15	0	10	1	13	0	8	914	1	0	8	366	9

MID Peak Hour

MID 2024 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Adjusted Turning Movement Counts	0	11	0	18	0	4	0	1	0	14	298	14	0	1	398	18		
Volume Balancing						2		1		1	10	2						
MID 2024 EXISTING TRAFFIC	0	11	0	18	0	6	0	2	0	15	308	16	0	1	398	18		
MID 2024 Existing PHF	0.90	0.69	0.90	0.64	0.90	0.50	0.90	0.25	0.90	0.50	0.73	0.44	0.90	0.25	0.78	0.75		
MID 2029 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90		
MID Existing/Background Heavy Vehicle Percentage	2%	2%	2%	2%	2%	25%	2%	2%	2%	7%	4%	14%	2%	2%	3%	2%		
MID Build Heavy Vehicle Percentage	2%	2%	2%	2%	2%	25%	2%	2%	2%	7%	4%	14%	2%	2%	3%	2%		
MID 2029 BACKGROUND TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Years To Buildout	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5		
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%		
MID 2029 BACKGROUND TRAFFIC GROWTH	0	1	0	2	0	1	0	0	0	2	32	2	0	0	41	2		
MID 2029 BACKGROUND TRAFFIC	0	12	0	20	0	7	0	2	0	17	340	18	0	1	439	20		
SITE TRAFFIC DISTRIBUTION																		
Net New Distribution	Entering															18%	42%	
	Exiting							18%			42%							
TOTAL MID PROJECT TRIPS			0	0	0	0	0	0	3	0	0	7	0	0	5	11	0	
MID 2029 BUILD-OUT TRAFFIC			0	12	0	20	0	7	0	5	0	17	347	18	0	6	450	20

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

INTERSECTION: **Weddington-Matthews Road and Amanda Drive**
 COUNT DATE: **Wednesday, November 13, 2024**

PM Peak Hour

PM 2024 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Adjusted Turning Movement Counts	0	14	0	10	0	4	0	4	0	15	429	10	0	3	467	13		
Volume Balancing						2		1								13		
PM 2024 EXISTING TRAFFIC	0	14	0	10	0	6	0	5	0	15	429	10	0	3	480	13		
PM 2024 Existing PHF	0.90	0.70	0.95	0.63	0.90	0.33	0.90	1.00	0.90	0.75	0.91	0.50	0.90	0.75	0.95	0.54		
PM 2029 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90		
PM Existing/Background Heavy Vehicle Percentage	2%	14%	2%	2%	2%	2%	2%	2%	2%	2%	2%	20%	2%	2%	2%	2%		
PM Build Heavy Vehicle Percentage	2%	14%	2%	2%	2%	2%	2%	2%	2%	2%	2%	20%	2%	2%	2%	2%		
PM 2029 BACKGROUND TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%		
PM 2029 BACKGROUND TRAFFIC GROWTH	0	1	0	1	0	1	0	1	0	2	45	1	0	0	50	1		
PM 2029 BACKGROUND TRAFFIC	0	15	0	11	0	7	0	6	0	17	474	11	0	3	530	14		
SITE TRAFFIC DISTRUBUTION																		
LAND USE	TYPE		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Net New Distribution	Entering															18%	42%	
	Exiting								18%				42%					
TOTAL PM PROJECT TRIPS			0	3	0	0	8	0	0	6	12	0						
PM 2029 BUILD-OUT TRAFFIC	0	15	0	11	0	7	0	9	0	17	482	11	0	9	542	14		

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

INTERSECTION: Amanda Drive and Bonner Drive
COUNT DATE: Wednesday, November 13, 2024

AM Peak Hour

AM 2024 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Adjusted Turning Movement Counts	0	0	5	1	0	1	8	0	0	8	0	1	0	0	0	0		
Volume Balancing							1											
AM 2024 EXISTING TRAFFIC	0	0	5	1	0	1	9	0	0	8	0	1	0	0	0	0		
AM 2024 Existing PHF	0.90	0.90	0.63	0.25	0.90	0.25	0.50	0.90	0.90	0.67	0.90	0.25	0.90	0.90	0.90	0.90		
AM 2029 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90		
AM Existing/Background Heavy Vehicle Percentage	2%	2%	20%	2%	2%	100%	2%	2%	2%	2%	2%	100%	2%	2%	2%	2%		
AM Build Heavy Vehicle Percentage	2%	2%	20%	2%	2%	100%	2%	2%	2%	2%	2%	100%	2%	2%	2%	2%		
AM 2029 BACKGROUND TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Years To Buildout	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5		
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%		
AM 2029 BACKGROUND TRAFFIC GROWTH	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0		
AM 2029 BACKGROUND TRAFFIC	0	0	6	1	0	1	10	0	0	9	0	1	0	0	0	0		
SITE TRAFFIC DISTRIBUTION																		
LAND USE	TYPE		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Net New Distribution	Entering					18%												
	Exiting											18%						
TOTAL AM PROJECT TRIPS			0	0	0	2	0	0	0	0	0	5	0	0	0	0	0	0
AM 2029 BUILD-OUT TRAFFIC			0	0	6	3	0	1	10	0	0	14	0	1	0	0	0	0

MID Peak Hour

MID 2024 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Adjusted Turning Movement Counts	0	0	10	7	0	0	6	0	0	2	0	1	0	0	0	0	
Volume Balancing																	
MID 2024 EXISTING TRAFFIC	0	0	10	7	0	0	6	0	0	2	0	1	0	0	0	0	
MID 2024 Existing PHF	0.90	0.90	0.36	0.58	0.90	0.90	0.50	0.90	0.90	0.25	0.90	0.25	0.90	0.90	0.90	0.90	
MID 2029 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
MID Existing/Background Heavy Vehicle Percentage	2%	2%	10%	29%	2%	2%	2%	2%	2%	2%	2%	100%	2%	2%	2%	2%	
MID Build Heavy Vehicle Percentage	2%	2%	10%	19%	2%	2%	2%	2%	2%	2%	2%	100%	2%	2%	2%	2%	
MID 2029 BACKGROUND TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Years To Buildout	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	
MID 2029 BACKGROUND TRAFFIC GROWTH	0	0	1	1	0	0	1	0									
MID 2029 BACKGROUND TRAFFIC	0	0	11	8	0	0	7	0	0	2	0	1	0	0	0	0	
SITE TRAFFIC DISTRIBUTION																	
Net New Distribution	Entering					18%											
	Exiting										18%						
TOTAL MID PROJECT TRIPS			0	0	0	5	0	0	0	0	3	0	0	0	0	0	
MID 2029 BUILD-OUT TRAFFIC			0	0	11	13	0	0	7	0	0	5	0	1	0	0	0

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

INTERSECTION: Amanda Drive and Bonner Drive
 COUNT DATE: Wednesday, November 13, 2024

PM Peak Hour

PM 2024 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Adjusted Turning Movement Counts	0	0	7	5	0	0	9	0	0	2	0	2	0	0	0	0	
Volume Balancing			1														
PM 2024 EXISTING TRAFFIC	0	0	8	5	0	0	9	0	0	2	0	2	0	0	0	0	
PM 2024 Existing PHF	0.90	0.90	0.95	0.42	0.90	0.90	0.45	0.90	0.90	0.50	0.90	0.25	0.90	0.90	0.90	0.90	
PM 2029 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
PM Existing/Background Heavy Vehicle Percentage	2%	2%	14%	20%	2%	2%	2%	2%	2%	2%	2%	50%	2%	2%	2%	2%	
PM Build Heavy Vehicle Percentage	2%	2%	14%	11%	2%	2%	2%	2%	2%	2%	2%	50%	2%	2%	2%	2%	
PM 2029 BACKGROUND TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	
PM 2029 BACKGROUND TRAFFIC GROWTH	0	0	1	1	0	0	1	0									
PM 2029 BACKGROUND TRAFFIC	0	0	9	6	0	0	10	0	0	2	0	2	0	0	0	0	
SITE TRAFFIC DISTRUBUTION		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
LAND USE	TYPE																
Net New Distribution	Entering				18%												
	Exiting										18%						
TOTAL PM PROJECT TRIPS		0	0	0	6	0	0	0	0	0	3	0	0	0	0	0	
PM 2029 BUILD-OUT TRAFFIC		0	0	9	12	0	0	10	0	0	5	0	2	0	0	0	

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

INTERSECTION: Hemby Road/Beulah Church Road and Weddington-Matthews Road
COUNT DATE: Wednesday, November 13, 2024

AM Peak Hour

AM 2024 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Adjusted Turning Movement Counts	0	43	117	12	0	110	385	385	0	26	306	31	0	101	239	37		
Volume Balancing																		
AM 2024 EXISTING TRAFFIC	0	43	117	12	0	110	385	385	0	26	306	31	0	101	239	37		
AM 2024 Existing PHF	0.90	0.67	0.91	0.50	0.90	0.83	0.88	0.79	0.90	0.54	0.82	0.86	0.90	0.72	0.87	0.77		
AM 2029 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90		
AM Existing/Background Heavy Vehicle Percentage	2%	2%	5%	8%	2%	4%	3%	2%	2%	2%	2%	2%	2%	5%	5%	8%		
AM Build Heavy Vehicle Percentage	2%	2%	5%	8%	2%	4%	3%	2%	2%	2%	2%	2%	2%	5%	5%	8%		
AM 2029 BACKGROUND TRAFFIC	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5		
Years To Buildout	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5		
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%		
AM 2029 BACKGROUND TRAFFIC GROWTH	0	4	12	1	0	11	40	40	0	3	32	3	0	11	25	4		
AM 2029 BACKGROUND TRAFFIC	0	47	129	13	0	121	425	425	0	29	338	34	0	112	264	41		
SITE TRAFFIC DISTRIBUTION																		
LAND USE	TYPE		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Net New Distribution	Entering			15%					15%			10%						
	Exiting															15%	10%	15%
TOTAL AM PROJECT TRIPS			0	1	0	0	0	0	2	0	0	1	0	0	5	3	5	
AM 2029 BUILD-OUT TRAFFIC			0	48	129	13	0	121	425	427	0	29	339	34	0	117	267	46

MID Peak Hour

MID 2024 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Adjusted Turning Movement Counts	0	44	166	23	0	43	160	105	0	20	195	127	0	163	223	29		
Volume Balancing																		
MID 2024 EXISTING TRAFFIC	0	44	166	23	0	43	160	105	0	20	195	127	0	163	223	29		
MID 2024 Existing PHF	0.90	0.85	0.87	0.82	0.90	0.60	0.91	0.67	0.90	0.46	0.65	0.79	0.90	0.68	0.89	0.81		
MID 2029 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90		
MID Existing/Background Heavy Vehicle Percentage	2%	5%	2%	4%	2%	5%	4%	5%	2%	10%	4%	2%	2%	4%	4%	3%		
MID Build Heavy Vehicle Percentage	2%	5%	2%	4%	2%	5%	4%	5%	2%	10%	4%	2%	2%	4%	4%	3%		
MID 2029 BACKGROUND TRAFFIC	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5		
Years To Buildout	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5		
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%		
MID 2029 BACKGROUND TRAFFIC GROWTH	0	5	17	2	0	4	17	11	0	2	20	13	0	17	23	3		
MID 2029 BACKGROUND TRAFFIC	0	49	183	25	0	47	177	116	0	22	215	140	0	180	246	32		
SITE TRAFFIC DISTRIBUTION																		
Net New Distribution	Entering			15%				15%			10%							
	Exiting													15%	10%	15%		
TOTAL MID PROJECT TRIPS			0	4	0	0	0	0	4	0	0	3	0	2	2	2		
MID 2029 BUILD-OUT TRAFFIC			0	53	183	25	0	47	177	120	0	22	218	140	0	182	248	34

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

INTERSECTION: Hemby Road/Beulah Church Road and Weddington-Matthews Road
 COUNT DATE: Wednesday, November 13, 2024

PM Peak Hour

PM 2024 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Adjusted Turning Movement Counts	0	61	229	19	0	49	168	101	0	22	275	110	0	184	239	36	
Volume Balancing																	
PM 2024 EXISTING TRAFFIC	0	61	229	19	0	49	168	101	0	22	275	110	0	184	239	36	
PM 2024 Existing PHF	0.90	0.69	0.95	0.59	0.90	0.68	0.84	0.84	0.90	0.79	0.88	0.72	0.90	0.81	0.83	0.90	
PM 2029 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
PM Existing/Background Heavy Vehicle Percentage	2%	2%	2%	5%	2%	4%	2%	3%	2%	9%	2%	3%	2%	2%	2%	2%	
PM Build Heavy Vehicle Percentage	2%	2%	2%	5%	2%	4%	2%	3%	2%	9%	2%	3%	2%	2%	2%	2%	
PM 2029 BACKGROUND TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	
PM 2029 BACKGROUND TRAFFIC GROWTH	0	6	24	2	0	5	17	11	0	2	29	11	0	19	25	4	
PM 2029 BACKGROUND TRAFFIC	0	67	253	21	0	54	185	112	0	24	304	121	0	203	264	40	
SITE TRAFFIC DISTRUBUTION		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
LAND USE	TYPE																
Net New Distribution	Entering		15%					15%			10%						
	Exiting													15%	10%	15%	
TOTAL PM PROJECT TRIPS		0	5	0	0	0	0	0	5	0	0	3	0	3	2	3	
PM 2029 BUILD-OUT TRAFFIC		0	72	253	21	0	54	185	117	0	24	307	121	0	206	266	43

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

INTERSECTION: **Weddington-Matthews Road and Access A**
 COUNT DATE: **-**

AM Peak Hour

AM 2024 EXISTING TRAFFIC		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM 2024 EXISTING TRAFFIC		0	0	0	0	0	0	0	0	0	0	803	0	0	0	343	0
AM 2029 PHF		0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
AM Build Heavy Vehicle Percentage		2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%	2%
AM 2029 BACKGROUND TRAFFIC		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Annual Growth Rate		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
AM 2029 BACKGROUND TRAFFIC GROWTH		0	0	0	0	0	0	0	0	0	0	84	0	0	0	36	0
AM 2029 BACKGROUND TRAFFIC		0	0	0	0	0	0	0	0	0	0	887	0	0	0	379	0
SITE TRAFFIC DISTRIBUTION																	
LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Net New Distribution	Entering										10%		30%		28%		14%
	Exiting		14%		10%		30%		28%								
TOTAL AM PROJECT TRIPS		0	3	0	3	0	10	0	8	0	1	0	3	0	3	0	1
AM 2029 BUILD-OUT TRAFFIC		0	3	0	3	0	10	0	8	0	1	887	3	0	3	379	1

MID Peak Hour

MID 2024 EXISTING TRAFFIC		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
MID 2024 EXISTING TRAFFIC		0	0	0	0	0	0	0	0	0	0	336	0	0	0	408	0
MID 2029 PHF		0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
MID Build Heavy Vehicle Percentage		2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	2%	3%	2%
MID 2029 BACKGROUND TRAFFIC		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Years To Buildout		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Annual Growth Rate		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
MID 2029 BACKGROUND TRAFFIC GROWTH		0	0	0	0	0	0	0	0	0	0	35	0	0	0	42	0
MID 2029 BACKGROUND TRAFFIC		0	0	0	0	0	0	0	0	0	0	371	0	0	0	451	0
SITE TRAFFIC DISTRIBUTION																	
LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Net New Distribution	Entering										10%		30%		28%		14%
	Exiting		14%		10%		30%		28%								
TOTAL MID PROJECT TRIPS		0	2	0	1	0	5	0	5	0	3	0	8	0	8	0	3
MID 2029 BUILD-OUT TRAFFIC		0	2	0	1	0	5	0	5	0	3	371	8	0	8	451	3

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

INTERSECTION: **Weddington-Matthews Road and Access A**
COUNT DATE: -

PM Peak Hour

PM 2024 EXISTING TRAFFIC		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM 2024 EXISTING TRAFFIC		0	0	0	0	0	0	0	0	0	0	439	0	0	0	479	0
PM 2029 PHF		0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PM Build Heavy Vehicle Percentage		2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
PM 2029 BACKGROUND TRAFFIC		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Annual Growth Rate		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
PM 2029 BACKGROUND TRAFFIC GROWTH		0	0	0	0	0	0	0	0	0	0	46	0	0	0	50	0
PM 2029 BACKGROUND TRAFFIC		0	0	0	0	0	0	0	0	0	0	485	0	0	0	529	0
SITE TRAFFIC DISTRIBUTION		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Net New Distribution	Entering										10%		30%		28%		14%
	Exiting		14%		10%		30%		28%								
TOTAL PM PROJECT TRIPS		0	2	0	2	0	6	0	6	0	3	0	10	0	9	0	3
PM 2029 BUILD-OUT TRAFFIC		0	2	0	2	0	6	0	6	0	3	485	10	0	9	529	3

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

INTERSECTION: **Weddington-Matthews Road and Greenbrook Parkway**
 COUNT DATE: **Wednesday, November 13, 2024**

AM Peak Hour

AM 2024 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Adjusted Turning Movement Counts	0	26	0	8	0	0	0	0	0	3	800	0	0	0	333	16		
Volume Balancing															2			
AM 2024 EXISTING TRAFFIC	0	26	0	8	0	0	0	0	0	3	800	0	0	0	335	16		
AM 2024 Existing PHF	0.90	0.59	0.90	0.67	0.90	0.90	0.90	0.90	0.90	0.25	0.82	0.90	0.90	0.90	0.88	0.57		
AM 2029 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90		
AM Existing/Background Heavy Vehicle Percentage	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%	6%		
AM Build Heavy Vehicle Percentage	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%	6%		
AM 2029 BACKGROUND TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Years To Buildout	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5		
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%		
AM 2029 BACKGROUND TRAFFIC GROWTH	0	3	0	1	0	0	0	0	0	0	83	0	0	0	35	2		
AM 2029 BACKGROUND TRAFFIC	0	29	0	9	0	0	0	0	0	3	884	0	0	0	370	18		
SITE TRAFFIC DISTRUBUTION																		
LAND USE	TYPE		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Net New Distribution	Entering																	42%
	Exiting												42%					
TOTAL AM PROJECT TRIPS			0	11	0	0	0	4	0									
AM 2029 BUILD-OUT TRAFFIC			0	29	0	9	0	0	0	0	0	3	895	0	0	0	374	18

MID Peak Hour

MID 2024 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Adjusted Turning Movement Counts	0	12	0	7	0	0	0	0	0	9	327	0	0	0	396	21	
Volume Balancing															5		
MID 2024 EXISTING TRAFFIC	0	12	0	7	0	0	0	0	0	9	327	0	0	0	401	21	
MID 2024 Existing PHF	0.90	0.75	0.90	0.44	0.90	0.90	0.90	0.90	0.90	0.56	0.71	0.90	0.90	0.90	0.79	0.53	
MID 2029 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
MID Existing/Background Heavy Vehicle Percentage	2%	17%	2%	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	2%	3%	2%	
MID Build Heavy Vehicle Percentage	2%	17%	2%	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	2%	3%	2%	
MID 2029 BACKGROUND TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Years To Buildout	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	
MID 2029 BACKGROUND TRAFFIC GROWTH	0	1	0	1	0	0	0	0	0	1	34	0	0	0	42	2	
MID 2029 BACKGROUND TRAFFIC	0	13	0	8	0	0	0	0	0	10	361	0	0	0	443	23	
SITE TRAFFIC DISTRUBUTION																	
Net New Distribution	Entering																42%
	Exiting										42%						
TOTAL MID PROJECT TRIPS			0	7	0	0	0	11	0								
MID 2029 BUILD-OUT TRAFFIC			0	13	0	8	0	0	0	0	10	368	0	0	0	454	23

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

INTERSECTION: **Weddington-Matthews Road and Greenbrook Parkway**
 COUNT DATE: **Wednesday, November 13, 2024**

PM Peak Hour

PM 2024 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Adjusted Turning Movement Counts	0	18	0	7	0	0	0	0	0	4	419	0	0	0	472	24	
Volume Balancing		1									16						
PM 2024 EXISTING TRAFFIC	0	19	0	7	0	0	0	0	0	4	435	0	0	0	472	24	
PM 2024 Existing PHF	0.90	0.90	0.95	0.58	0.90	0.90	0.90	0.90	0.90	0.50	0.91	0.90	0.92	0.90	0.94	0.75	
PM 2029 PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
PM Existing/Background Heavy Vehicle Percentage	2%	11%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
PM Build Heavy Vehicle Percentage	2%	11%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
PM 2029 BACKGROUND TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	
PM 2029 BACKGROUND TRAFFIC GROWTH	0	2	0	1	0	0	0	0	0	0	45	0	0	0	49	2	
PM 2029 BACKGROUND TRAFFIC	0	21	0	8	0	0	0	0	0	4	481	0	0	0	521	26	
SITE TRAFFIC DISTRUBUTION		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
LAND USE	TYPE																
Net New Distribution	Entering																42%
	Exiting											42%					
TOTAL PM PROJECT TRIPS		0	8	0	0	0	12	0									
PM 2029 BUILD-OUT TRAFFIC		0	21	0	8	0	0	0	0	0	4	489	0	0	0	533	26

Signal Plan

2 Phase Fully Actuated Isolated

OASIS 2070L LOOP & DETECTOR INSTALLATION CHART

LOOP	SIZE (ft)	INDUCTIVE LOOPS		DETECTION PROGRAMMING				NEW CAB	
		FROM DRIVE (ft)	TO DRIVE (ft)	TRUNK	TRUNK	CALLING	EXTENSION		SWITCH DELAY TIME
2A	516	300	5	Y	2	Y	Y	Y	Y
2B	6X40	0	2-4-2	Y	2	Y	Y	-	Y
4A	516	300	5	Y	4	Y	Y	-	Y
4B	6X40	0	2-4-2	Y	4	Y	Y	-	Y
6A	516	300	5	Y	6	Y	Y	-	Y
6B	6X40	0	2-4-2	Y	6	Y	Y	-	Y
EA	6X6	300	4	Y	8	Y	Y	-	Y
EB	6X40	0	2-4-2	Y	8	Y	Y	-	Y
EC	6X40	0	2-4-2	Y	8	Y	Y	-	Y

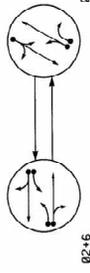
TABLE OF OPERATION

SIGNAL FACE	PHASE	
	1	2
21:22	C R Y	Y
41:42	R G R	Y
61:52	C R Y	Y
81:82	R G R	Y

SIGNAL FACE I.D.
All Heads L.E.D.



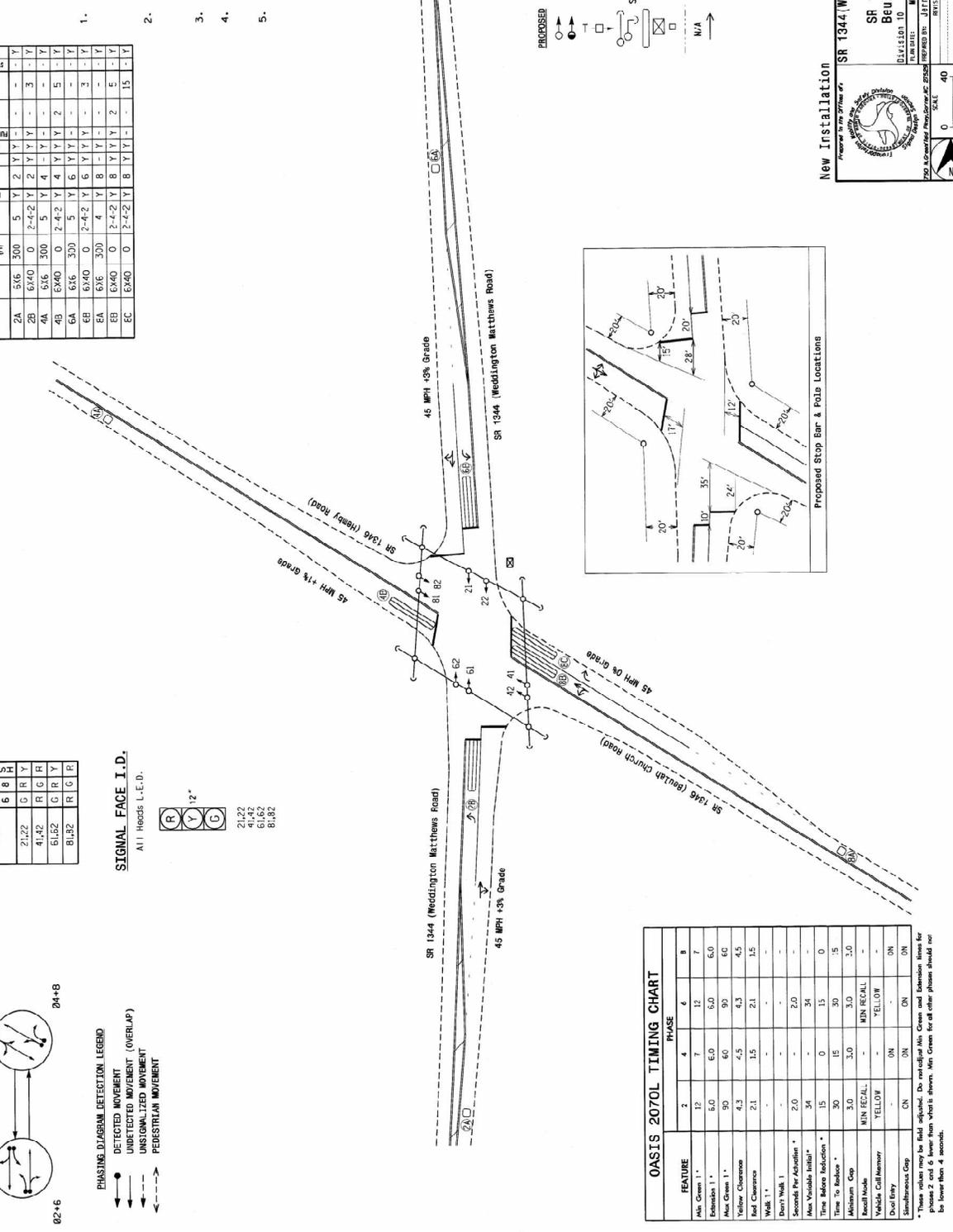
PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALED MOVEMENT
- PEDESTRIAN MOVEMENT

- NOTES**
- Refer to Roadway Standard Drawings N0001, dated July 2006 and Standard Specifications for Roads and Structures, dated July 2006. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
 - Set 61 detector units to presence mode.
 - Locate new cabinet so as not to obstruct sight distance of vehicles turning right on road. The cabinet should be designed to include an Auxiliary Output file for future use.



OASIS 2070L TIMING CHART

FEATURE	PHASE					
	2	4	6	8	7	5
Min Green 1"	12	7	12	7	12	7
Extension 1"	5.0	6.0	5.0	6.0	5.0	6.0
Max Green 1"	90	60	90	60	90	60
Yellow Clearance	4.3	4.5	4.3	4.5	4.3	4.5
Red Clearance	2.1	1.5	2.1	1.5	2.1	1.5
Walk 1"	-	-	-	-	-	-
Don't Walk 1"	2.0	-	2.0	-	2.0	-
Second Per Adaption	34	-	34	-	34	-
Max Vehicle Initial	15	0	15	0	15	0
Time Before Reduction	30	15	30	15	30	15
Time To Release	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap	MIN RECALL	-	MIN RECALL	-	MIN RECALL	-
Recall Mode	YELLOW	-	YELLOW	-	YELLOW	-
Vehicle Call Memory	ON	ON	ON	ON	ON	ON
Dual Entry	ON	ON	ON	ON	ON	ON
Simultaneous Gap	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.

New Installation
SR 1344, Weddington Matthews Road
SR 1346 (Henby Road) / Beulah Church Road

Division 10 Union County

DATE: 08/14/10
SCALE: 1"=40'

DESIGNED BY: [Signature]
CHECKED BY: [Signature]
IN CHARGE: [Signature]

Intersection Capacity Analysis

2024 Existing Conditions

Lanes, Volumes, Timings

5017 Weddington-Matthews Road TIA

1: Weddington-Matthews Road & Tilley Morris Road & Union Day School Driveway 2024 Existing AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4	4	4	4			4	4		4	4
Traffic Volume (vph)	56	199	52	257	630	178	446	88	293	136	52	118
Future Volume (vph)	56	199	52	257	630	178	446	88	293	136	52	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		175	150		0	0		150	0		100
Storage Lanes	0		1	1		0	0		1	0		1
Taper Length (ft)	25			175			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.965				0.850			0.850
Flt Protected		0.986		0.950				0.960			0.965	
Satd. Flow (prot)	0	1799	1524	1703	1798	0	0	1788	1568	0	1798	1583
Flt Permitted		0.986		0.950				0.960			0.965	
Satd. Flow (perm)	0	1799	1524	1703	1798	0	0	1788	1568	0	1798	1583
Link Speed (mph)		45			45			45			25	
Link Distance (ft)		1107			1131			2099			1065	
Travel Time (s)		16.8			17.1			31.8			29.0	
Peak Hour Factor	0.62	0.87	0.72	0.76	0.71	0.67	0.75	0.69	0.73	0.56	0.57	0.53
Heavy Vehicles (%)	2%	5%	6%	6%	2%	2%	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	90	229	72	338	887	266	595	128	401	243	91	223
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	319	72	338	1153	0	0	723	401	0	334	223
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary

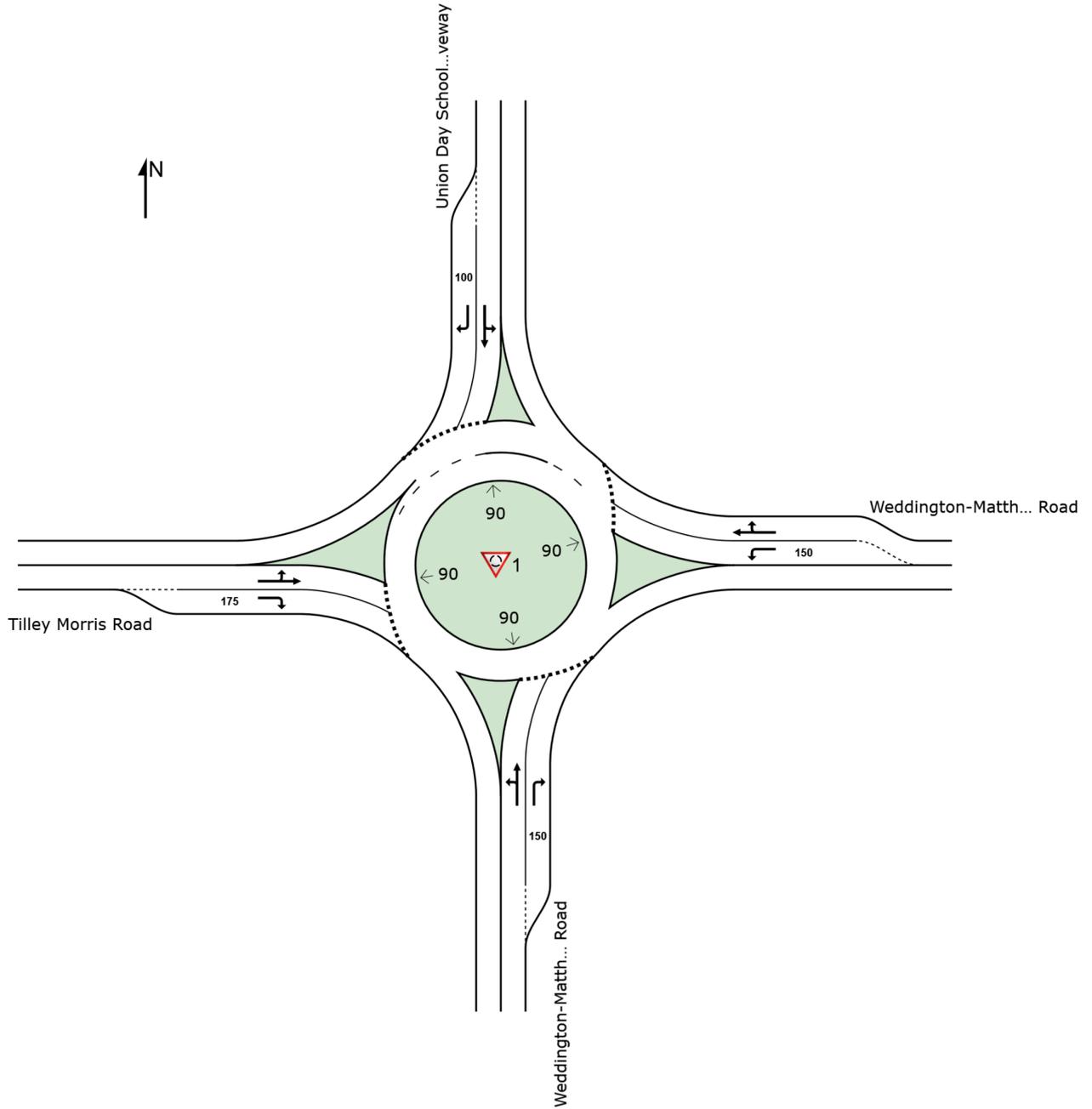
Area Type:	Other
Control Type:	Roundabout
Intersection Capacity Utilization	103.5%
ICU Level of Service	G
Analysis Period (min)	15

SITE LAYOUT

 Site: 1 [2024 Existing AM (Site Folder: 2024 Existing)]

New Site
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: K:\CHL_PRJ\012826085 Toll Brothers - Weddington\08 - Other KHA Disciplines\TRAFFIC\08B_SIDRA\2025-02-27 Intersection 1 Updated.sip9

MOVEMENT SUMMARY

Site: 1 [2024 Existing AM (Site Folder: 2024 Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
 Site Category: (None)
 Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]	v/c	sec		[Veh.	Dist]				mph
			veh/h	%	veh/h	%				veh	ft				
South: Weddington-Matthews Road															
3	L2	All MCs	595	2.0	595	2.0	0.888	31.7	LOS D	16.9	429.6	1.00	1.40	2.64	24.0
8	T1	All MCs	128	2.0	128	2.0	0.888	31.7	LOS D	16.9	429.6	1.00	1.40	2.64	20.7
18	R2	All MCs	401	3.0	401	3.0	0.502	11.4	LOS B	3.3	83.2	0.70	0.68	0.98	32.3
Approach			1124	2.4	1124	2.4	0.888	24.4	LOS C	16.9	429.6	0.89	1.14	2.05	25.8
East: Weddington-Matthews Road															
1	L2	All MCs	338	6.0	338	6.0	0.576	16.9	LOS C	3.2	84.1	0.78	0.84	1.18	27.7
6	T1	All MCs	887	2.0	887	2.0	1.805	382.9	LOS F	167.8	4262.2	1.00	5.91	17.99	5.1
16	R2	All MCs	266	2.0	266	2.0	1.805	382.9	LOS F	167.8	4262.2	1.00	5.91	17.99	4.9
Approach			1491	2.9	1491	2.9	1.805	301.3	LOS F	167.8	4262.2	0.95	4.76	14.17	6.3
North: Union Day School Driveway															
7	L2	All MCs	243	2.0	243	2.0	0.889	54.7	LOS F	6.6	166.6	0.96	1.54	2.47	17.1
4	T1	All MCs	91	2.0	91	2.0	0.889	54.7	LOS F	6.6	166.6	0.96	1.54	2.47	17.3
14	R2	All MCs	223	2.0	223	2.0	0.679	34.2	LOS D	3.2	81.3	0.90	1.14	1.53	20.6
Approach			557	2.0	557	2.0	0.889	46.5	LOS E	6.6	166.6	0.93	1.38	2.09	18.3
West: Tilley Morris Road															
5	L2	All MCs	90	2.0	90	2.0	0.456	11.1	LOS B	2.5	63.6	0.70	0.70	0.95	25.6
2	T1	All MCs	229	5.0	229	5.0	0.456	11.8	LOS B	2.5	63.6	0.70	0.70	0.95	31.7
12	R2	All MCs	72	6.0	72	6.0	0.107	6.5	LOS A	0.4	9.5	0.56	0.50	0.56	34.3
Approach			391	4.5	391	4.5	0.456	10.7	LOS B	2.5	63.6	0.68	0.66	0.88	30.4
All Vehicles			3563	2.8	3563	2.8	1.805	141.7	LOS F	167.8	4262.2	0.90	2.64	7.00	11.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: K:\CHL_PRJ\012826085 Toll Brothers - Weddington\08 - Other KHA Disciplines\TRAFFIC\08B_SIDRA\2025-02-27 Intersection 1 Updated.sip9

Lanes, Volumes, Timings
 2: Weddington-Matthews Road & Amanda Drive

5017 Weddington-Matthews Road TIA
 2024 Existing AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	21	4	14	9	4	7	7	818	4	5	328	8
Future Volume (vph)	21	4	14	9	4	7	7	818	4	5	328	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.958			0.963			0.998			0.996	
Flt Protected		0.970			0.982						0.998	
Satd. Flow (prot)	0	1675	0	0	1275	0	0	1859	0	0	1774	0
Flt Permitted		0.970			0.982						0.998	
Satd. Flow (perm)	0	1675	0	0	1275	0	0	1859	0	0	1774	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		1285			469			1472			1543	
Travel Time (s)		35.0			12.8			22.3			23.4	
Peak Hour Factor	0.66	0.90	0.88	0.56	0.25	0.58	0.88	0.83	0.25	0.38	0.85	0.67
Heavy Vehicles (%)	5%	2%	7%	11%	100%	2%	2%	2%	2%	33%	5%	25%
Adj. Flow (vph)	32	4	16	16	16	12	8	986	16	13	386	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	52	0	0	44	0	0	1010	0	0	411	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	57.2%
ICU Level of Service	B
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Vol, veh/h	21	4	14	9	4	7	7	818	4	5	328	8
Future Vol, veh/h	21	4	14	9	4	7	7	818	4	5	328	8
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									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	66	90	88	56	25	58	88	83	25	38	85	67
Heavy Vehicles, %	5	2	7	11	100	2	2	2	2	33	5	25
Mvmt Flow	32	4	16	16	16	12	8	986	16	13	386	12

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1442	1436	392	1438	1434	994	398	0	0	1002	0	0
Stage 1	418	418	-	1010	1010	-	-	-	-	-	-	-
Stage 2	1024	1018	-	428	424	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.52	6.27	7.21	7.5	6.22	4.12	-	-	4.43	-	-
Critical Hdwy Stg 1	6.15	5.52	-	6.21	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.52	-	6.21	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.018	3.363	3.599	4.9	3.318	2.218	-	-	2.497	-	-
Pot Cap-1 Maneuver	108	133	646	106	84	297	1161	-	-	583	-	-
Stage 1	607	591	-	278	218	-	-	-	-	-	-	-
Stage 2	280	315	-	588	450	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	85	127	646	97	80	297	1161	-	-	583	-	-
Mov Cap-2 Maneuver	85	127	-	97	80	-	-	-	-	-	-	-
Stage 1	597	574	-	274	215	-	-	-	-	-	-	-
Stage 2	245	310	-	553	437	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	56.3		58.9		0.1		0.4	
HCM LOS	F		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1161	-	-	120	109	583	-	-
HCM Lane V/C Ratio	0.007	-	-	0.435	0.405	0.023	-	-
HCM Control Delay (s/veh)	8.1	0	-	56.3	58.9	11.3	0	-
HCM Lane LOS	A	A	-	F	F	B	A	-
HCM 95th %tile Q (veh)	0	-	-	1.9	1.7	0.1	-	-

Lanes, Volumes, Timings
 3: Bonner Drive & Amanda Drive

5017 Weddington-Matthews Road TIA
 2024 Existing AM



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	5	1	1	9	8	1
Future Volume (vph)	5	1	1	9	8	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.955			0.966		
Fl _t Protected				0.991	0.964	
Satd. Flow (prot)	1592	0	0	1571	1399	0
Fl _t Permitted				0.991	0.964	
Satd. Flow (perm)	1592	0	0	1571	1399	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	469			1133	1077	
Travel Time (s)	12.8			30.9	29.4	
Peak Hour Factor	0.63	0.25	0.25	0.50	0.67	0.25
Heavy Vehicles (%)	20%	2%	100%	2%	2%	100%
Adj. Flow (vph)	8	4	4	18	12	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	0	22	16	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.3% ICU Level of Service A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	3.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	h			4	Y	
Traffic Vol, veh/h	5	1	1	9	8	1
Future Vol, veh/h	5	1	1	9	8	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	25	25	50	67	25
Heavy Vehicles, %	20	2	100	2	2	100
Mvmt Flow	8	4	4	18	12	4

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	12	0	36
Stage 1	-	-	-	-	10
Stage 2	-	-	-	-	26
Critical Hdwy	-	-	5.1	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	3.1	-	3.518
Pot Cap-1 Maneuver	-	-	1148	-	977
Stage 1	-	-	-	-	1013
Stage 2	-	-	-	-	997
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1148	-	973
Mov Cap-2 Maneuver	-	-	-	-	973
Stage 1	-	-	-	-	1013
Stage 2	-	-	-	-	993

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.5	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	937	-	-	1148	-
HCM Lane V/C Ratio	0.017	-	-	0.003	-
HCM Control Delay (s/veh)	8.9	-	-	8.1	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q (veh)	0.1	-	-	0	-

Lanes, Volumes, Timings

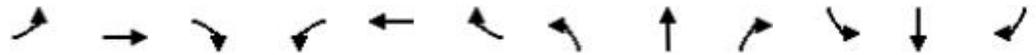
5017 Weddington-Matthews Road TIA

4: Weddington-Matthews Road & Hemby Road/Beulah Church Road

2024 Existing AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕		↕	↕	
Traffic Volume (vph)	43	117	12	110	385	385	26	306	31	101	239	37
Future Volume (vph)	43	117	12	110	385	385	26	306	31	101	239	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			3%			3%	
Storage Length (ft)	0		0	0		175	125		0	300		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.985				0.850		0.987			0.978	
Fl _t Protected		0.985			0.988		0.950			0.950		
Satd. Flow (prot)	0	1756	0	0	1818	1583	1743	1811	0	1693	1736	0
Fl _t Permitted		0.709			0.864		0.472			0.358		
Satd. Flow (perm)	0	1264	0	0	1590	1583	866	1811	0	638	1736	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1015			1082			1232			3102	
Travel Time (s)		15.4			16.4			18.7			47.0	
Peak Hour Factor	0.67	0.91	0.50	0.83	0.88	0.79	0.54	0.82	0.86	0.72	0.87	0.77
Heavy Vehicles (%)	2%	5%	8%	4%	3%	2%	2%	2%	2%	5%	5%	8%
Adj. Flow (vph)	64	129	24	133	438	487	48	373	36	140	275	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	217	0	0	571	487	48	409	0	140	323	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Minimum Split (s)	13.0	13.0		13.0	13.0	13.0	18.4	18.4		18.4	18.4	
Total Split (s)	33.0	33.0		33.0	33.0	33.0	27.0	27.0		27.0	27.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%	55.0%	45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	27.0	27.0		27.0	27.0	27.0	20.6	20.6		20.6	20.6	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.3	4.3		4.3	4.3	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.1	2.1		2.1	2.1	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.4	-1.4		-1.4	-1.4	
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	15.0	15.0		15.0	15.0	
Time To Reduce (s)	15.0	15.0		15.0	15.0	15.0	30.0	30.0		30.0	30.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Act Effct Green (s)		26.5			26.5	26.5	18.2	18.2		18.2	18.2	
Actuated g/C Ratio		0.48			0.48	0.48	0.33	0.33		0.33	0.33	
v/c Ratio		0.36			0.74	0.64	0.17	0.68		0.66	0.56	
Control Delay (s/veh)		11.7			20.1	16.0	14.8	22.7		34.1	19.6	

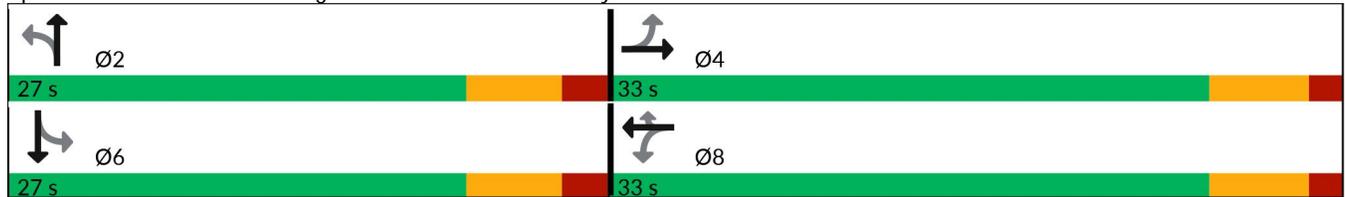


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		11.7			20.1	16.0	14.8	22.7		34.1	19.6	
LOS		B			C	B	B	C		C	B	
Approach Delay (s/veh)		11.7			18.2			21.9			24.0	
Approach LOS		B			B			C			C	
Queue Length 50th (ft)		42			143	113	11	118		40	88	
Queue Length 95th (ft)		93			#311	178	18	174		70	148	
Internal Link Dist (ft)		935			1002			1152			3022	
Turn Bay Length (ft)						175	125			300		
Base Capacity (vph)		654			823	819	352	737		259	706	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.33			0.69	0.59	0.14	0.55		0.54	0.46	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 54.8
 Natural Cycle: 45
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay (s/veh): 19.6
 Intersection LOS: B
 Intersection Capacity Utilization 80.3%
 ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 4: Weddington-Matthews Road & Hemby Road/Beulah Church Road



Lanes, Volumes, Timings

5017 Weddington-Matthews Road TIA

1: Weddington-Matthews Road & Tilley Morris Road & Union Day School Driveway²⁰²⁴ Existing MID



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	446	139	245	325	156	74	43	220	163	54	87
Future Volume (vph)	72	446	139	245	325	156	74	43	220	163	54	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		175	150		0	0		150	0		100
Storage Lanes	0		1	1		0	0		1	0		1
Taper Length (ft)	25			175			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.941				0.850			0.850
Flt Protected		0.991		0.950				0.973			0.963	
Satd. Flow (prot)	0	1846	1553	1770	1742	0	0	1765	1538	0	1794	1583
Flt Permitted		0.991		0.950				0.973			0.963	
Satd. Flow (perm)	0	1846	1553	1770	1742	0	0	1765	1538	0	1794	1583
Link Speed (mph)		45		45				45			25	
Link Distance (ft)		1107		1131				2099			1065	
Travel Time (s)		16.8		17.1				31.8			29.0	
Peak Hour Factor	0.67	0.93	0.70	0.93	0.84	0.62	0.84	0.60	0.78	0.42	0.48	0.46
Heavy Vehicles (%)	2%	2%	4%	2%	3%	2%	7%	2%	5%	2%	2%	2%
Adj. Flow (vph)	107	480	199	263	387	252	88	72	282	388	113	189
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	587	199	263	639	0	0	160	282	0	501	189
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary

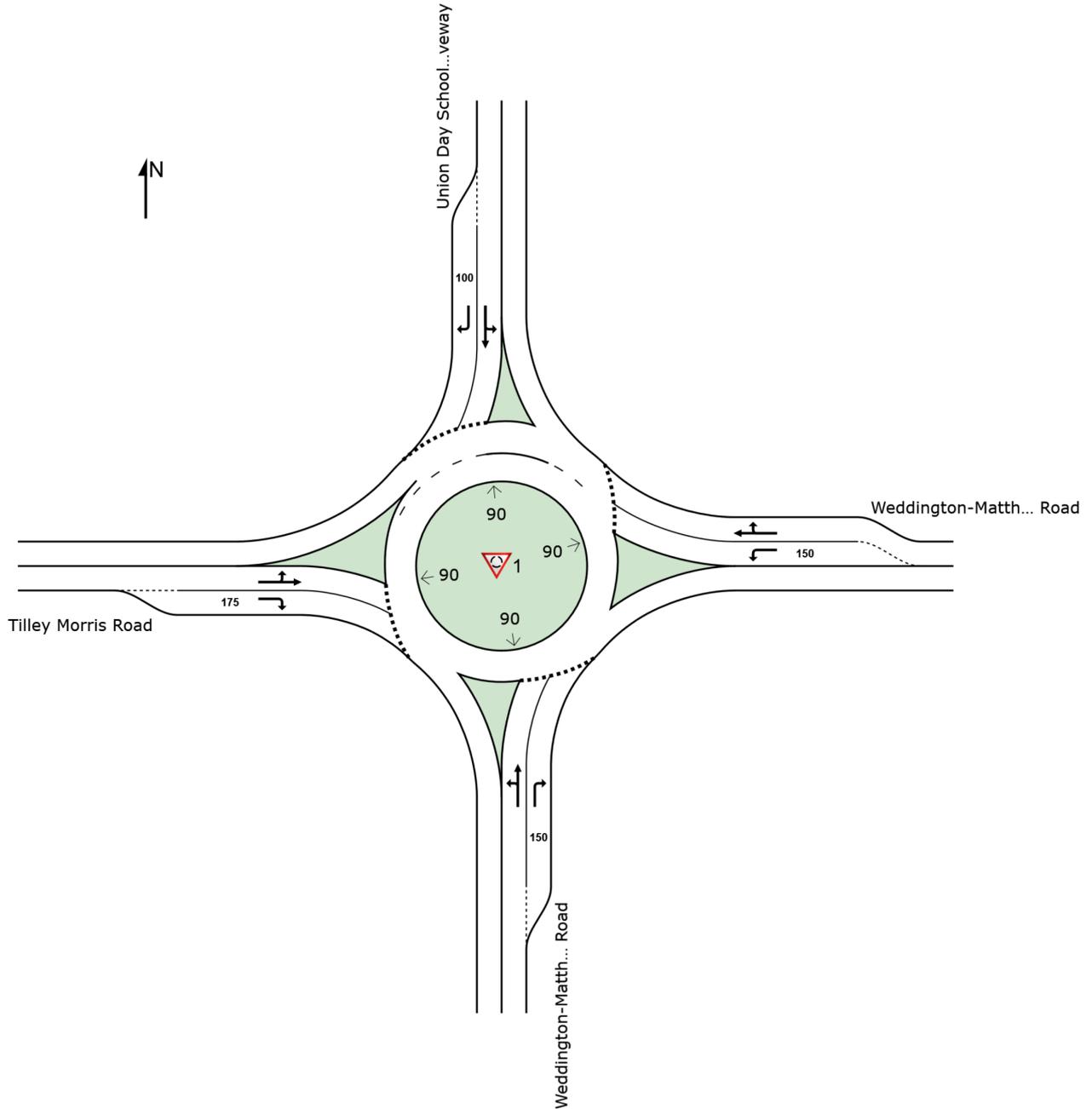
Area Type:	Other
Control Type:	Roundabout
Intersection Capacity Utilization	82.6%
Analysis Period (min)	15
	ICU Level of Service E

SITE LAYOUT

 Site: 1 [2024 Existing MID (Site Folder: 2024 Existing)]

New Site
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: K:\CHL_PRJ\012826085 Toll Brothers - Weddington\08 - Other KHA Disciplines\TRAFFIC\08B_SIDRA\2025-02-27 Intersection 1 Updated.sjp9

MOVEMENT SUMMARY

Site: 1 [2024 Existing MID (Site Folder: 2024 Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site

Site Category: (None)

Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				mph
			veh/h		veh/h					veh	ft				
South: Weddington-Matthews Road															
3	L2	All MCs	88	7.0	88	7.0	0.313	12.6	LOS B	1.2	30.0	0.69	0.71	0.79	30.3
8	T1	All MCs	72	2.0	72	2.0	0.313	10.8	LOS B	1.2	30.0	0.69	0.71	0.79	25.5
18	R2	All MCs	282	5.0	282	5.0	0.556	18.2	LOS C	2.8	72.2	0.78	0.88	1.19	29.1
Approach			442	4.9	442	4.9	0.556	15.9	LOS C	2.8	72.2	0.75	0.82	1.04	28.7
East: Weddington-Matthews Road															
1	L2	All MCs	263	2.0	263	2.0	0.245	5.6	LOS A	1.1	28.0	0.43	0.28	0.43	32.5
6	T1	All MCs	387	3.0	387	3.0	0.599	11.1	LOS B	5.8	149.2	0.65	0.50	0.85	32.8
16	R2	All MCs	252	2.0	252	2.0	0.599	11.0	LOS B	5.8	149.2	0.65	0.50	0.85	26.3
Approach			902	2.4	902	2.4	0.599	9.5	LOS A	5.8	149.2	0.58	0.44	0.73	30.6
North: Union Day School Driveway															
7	L2	All MCs	388	2.0	388	2.0	0.704	19.5	LOS C	6.1	153.8	0.83	1.11	1.58	23.0
4	T1	All MCs	113	2.0	113	2.0	0.704	19.5	LOS C	6.1	153.8	0.83	1.11	1.58	23.4
14	R2	All MCs	189	2.0	189	2.0	0.293	9.3	LOS A	1.1	28.9	0.64	0.59	0.65	26.7
Approach			690	2.0	690	2.0	0.704	16.7	LOS C	6.1	153.8	0.78	0.97	1.32	24.0
West: Tilley Morris Road															
5	L2	All MCs	107	2.0	107	2.0	0.877	35.0	LOS D	11.8	300.9	0.98	1.34	2.50	20.4
2	T1	All MCs	480	2.0	480	2.0	0.877	35.0	LOS D	11.8	300.9	0.98	1.34	2.50	24.3
12	R2	All MCs	199	4.0	199	4.0	0.309	9.6	LOS A	1.2	31.5	0.65	0.61	0.70	33.0
Approach			786	2.5	786	2.5	0.877	28.6	LOS D	11.8	300.9	0.89	1.16	2.05	25.3
All Vehicles			2819	2.7	2819	2.7	0.877	17.6	LOS C	11.8	300.9	0.74	0.83	1.29	26.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: K:\CHL_PRJ\012826085 Toll Brothers - Weddington\08 - Other KHA Disciplines\TRAFFIC\08B_SIDRA\2025-02-27 Intersection 1 Updated.sip9

Lanes, Volumes, Timings
 2: Weddington-Matthews Road & Amanda Drive

5017 Weddington-Matthews Road TIA
 2024 Existing MID



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	11	4	18	6	4	4	15	308	16	4	398	18
Future Volume (vph)	11	4	18	6	4	4	15	308	16	4	398	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.921			0.932			0.990			0.994	
Fl _t Protected		0.984			0.982			0.997			0.999	
Satd. Flow (prot)	0	1688	0	0	1572	0	0	1787	0	0	1833	0
Fl _t Permitted		0.984			0.982			0.997			0.999	
Satd. Flow (perm)	0	1688	0	0	1572	0	0	1787	0	0	1833	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		1285			469			1472			1543	
Travel Time (s)		35.0			12.8			22.3			23.4	
Peak Hour Factor	0.69	0.90	0.64	0.50	0.90	0.25	0.50	0.73	0.44	0.25	0.78	0.75
Heavy Vehicles (%)	2%	2%	2%	25%	2%	2%	7%	4%	14%	2%	3%	2%
Adj. Flow (vph)	16	4	28	12	4	16	30	422	36	16	510	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	48	0	0	32	0	0	488	0	0	550	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	36.8%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	4	18	6	4	4	15	308	16	4	398	18
Future Vol, veh/h	11	4	18	6	4	4	15	308	16	4	398	18
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									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	69	90	64	50	90	25	50	73	44	25	78	75
Heavy Vehicles, %	2	2	2	25	2	2	7	4	14	2	3	2
Mvmt Flow	16	4	28	12	4	16	30	422	36	16	510	24

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1064	1072	522	1070	1066	440	534	0	0	458	0	0
Stage 1	554	554	-	500	500	-	-	-	-	-	-	-
Stage 2	510	518	-	570	566	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.35	6.52	6.22	4.17	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.35	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.35	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.725	4.018	3.318	2.263	-	-	2.218	-	-
Pot Cap-1 Maneuver	201	220	555	180	222	617	1009	-	-	1103	-	-
Stage 1	517	514	-	512	543	-	-	-	-	-	-	-
Stage 2	546	533	-	468	507	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	184	207	555	160	209	617	1009	-	-	1103	-	-
Mov Cap-2 Maneuver	184	207	-	160	209	-	-	-	-	-	-	-
Stage 1	496	503	-	492	521	-	-	-	-	-	-	-
Stage 2	506	512	-	431	496	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	19	20.4	0.5	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1009	-	-	306	266	1103	-
HCM Lane V/C Ratio	0.03	-	-	0.159	0.122	0.015	-
HCM Control Delay (s/veh)	8.7	0	-	19	20.4	8.3	0
HCM Lane LOS	A	A	-	C	C	A	A
HCM 95th %tile Q (veh)	0.1	-	-	0.6	0.4	0	-

Lanes, Volumes, Timings
 3: Bonner Drive & Amanda Drive



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	10	7	0	6	2	1
Future Volume (vph)	10	7	0	6	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.959			0.955		
Fl _t Protected				0.968		
Satd. Flow (prot)	1575	0	0	1863	1304	0
Fl _t Permitted				0.968		
Satd. Flow (perm)	1575	0	0	1863	1304	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	469			1133	1077	
Travel Time (s)	12.8			30.9	29.4	
Peak Hour Factor	0.36	0.58	0.90	0.50	0.25	0.25
Heavy Vehicles (%)	10%	29%	2%	2%	2%	100%
Adj. Flow (vph)	28	12	0	12	8	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	40	0	0	12	12	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.3%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	1.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	T			T	T	
Traffic Vol, veh/h	10	7	0	6	2	1
Future Vol, veh/h	10	7	0	6	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	36	58	90	50	25	25
Heavy Vehicles, %	10	29	2	2	2	100
Mvmt Flow	28	12	0	12	8	4

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	40	0	46
Stage 1	-	-	-	-	34
Stage 2	-	-	-	-	12
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1570	-	964
Stage 1	-	-	-	-	988
Stage 2	-	-	-	-	1011
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1570	-	964
Mov Cap-2 Maneuver	-	-	-	-	964
Stage 1	-	-	-	-	988
Stage 2	-	-	-	-	1011

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	909	-	-	1570	-
HCM Lane V/C Ratio	0.013	-	-	-	-
HCM Control Delay (s/veh)	9	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q (veh)	0	-	-	0	-

Lanes, Volumes, Timings

5017 Weddington-Matthews Road TIA

4: Weddington-Matthews Road & Hemby Road/Beulah Church Road

2024 Existing MID



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	166	23	43	160	105	20	195	127	163	223	29
Future Volume (vph)	44	166	23	43	160	105	20	195	127	163	223	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			3%			3%	
Storage Length (ft)	0		0	0		175	125		0	300		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.986				0.850		0.948			0.981	
Fl _t Protected		0.990			0.986		0.950			0.950		
Satd. Flow (prot)	0	1795	0	0	1796	1538	1616	1717	0	1710	1767	0
Fl _t Permitted		0.889			0.847		0.584			0.411		
Satd. Flow (perm)	0	1612	0	0	1543	1538	994	1717	0	740	1767	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1015			1082			1232			3102	
Travel Time (s)		15.4			16.4			18.7			47.0	
Peak Hour Factor	0.85	0.87	0.82	0.60	0.91	0.67	0.46	0.65	0.79	0.68	0.89	0.81
Heavy Vehicles (%)	5%	2%	4%	5%	4%	5%	10%	4%	2%	4%	4%	3%
Adj. Flow (vph)	52	191	28	72	176	157	43	300	161	240	251	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	271	0	0	248	157	43	461	0	240	287	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Minimum Split (s)	13.0	13.0		13.0	13.0	13.0	18.4	18.4		18.4	18.4	
Total Split (s)	22.0	22.0		22.0	22.0	22.0	38.0	38.0		38.0	38.0	
Total Split (%)	36.7%	36.7%		36.7%	36.7%	36.7%	63.3%	63.3%		63.3%	63.3%	
Maximum Green (s)	16.0	16.0		16.0	16.0	16.0	31.6	31.6		31.6	31.6	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.3	4.3		4.3	4.3	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.1	2.1		2.1	2.1	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.4	-1.4		-1.4	-1.4	
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	15.0	15.0		15.0	15.0	
Time To Reduce (s)	15.0	15.0		15.0	15.0	15.0	30.0	30.0		30.0	30.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Act Effct Green (s)		15.4			15.4	15.4	21.3	21.3		21.3	21.3	
Actuated g/C Ratio		0.33			0.33	0.33	0.45	0.45		0.45	0.45	
v/c Ratio		0.52			0.49	0.31	0.10	0.59		0.72	0.36	
Control Delay (s/veh)		19.0			18.8	16.2	7.6	13.0		24.0	9.6	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		19.0			18.8	16.2	7.6	13.0		24.0	9.6	
LOS		B			B	B	A	B		C	A	
Approach Delay (s/veh)		19.0			17.8			12.6			16.2	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)		56			51	30	7	92		52	50	
Queue Length 95th (ft)		145			141	63	9	97		73	88	
Internal Link Dist (ft)		935			1002			1152			3022	
Turn Bay Length (ft)						175	125			300		
Base Capacity (vph)		605			579	577	724	1252		539	1288	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.45			0.43	0.27	0.06	0.37		0.45	0.22	

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	47.1
Natural Cycle:	50
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.72
Intersection Signal Delay (s/veh):	15.9
Intersection LOS:	B
Intersection Capacity Utilization:	68.0%
ICU Level of Service:	C
Analysis Period (min):	15

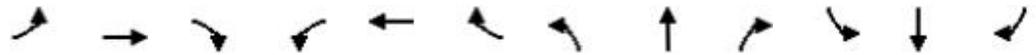
Splits and Phases: 4: Weddington-Matthews Road & Hemby Road/Beulah Church Road



Lanes, Volumes, Timings

5017 Weddington-Matthews Road TIA

1: Weddington-Matthews Road & Tilley Morris Road & Union Day School Driveway 2024 Existing PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4	4	4	4			4	4		4	4
Traffic Volume (vph)	9	614	215	289	412	18	147	4	277	19	15	11
Future Volume (vph)	9	614	215	289	412	18	147	4	277	19	15	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		175	150		0	0		150	0		100
Storage Lanes	0		1	1		0	0		1	0		1
Taper Length (ft)	25			175			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.989				0.850			0.850
Flt Protected		0.999		0.950				0.955			0.973	
Satd. Flow (prot)	0	1861	1583	1770	1820	0	0	1762	1583	0	1812	1583
Flt Permitted		0.999		0.950				0.955			0.973	
Satd. Flow (perm)	0	1861	1583	1770	1820	0	0	1762	1583	0	1812	1583
Link Speed (mph)		45			45			45			25	
Link Distance (ft)		1107			1131			2099			1065	
Travel Time (s)		16.8			17.1			31.8			29.0	
Peak Hour Factor	0.75	0.95	0.94	0.88	0.95	0.50	0.90	0.50	0.89	0.53	0.54	0.39
Heavy Vehicles (%)	2%	2%	2%	2%	3%	6%	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	12	646	229	328	434	36	163	8	311	36	28	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	658	229	328	470	0	0	171	311	0	64	28
Sign Control		Yield			Yield			Yield			Yield	

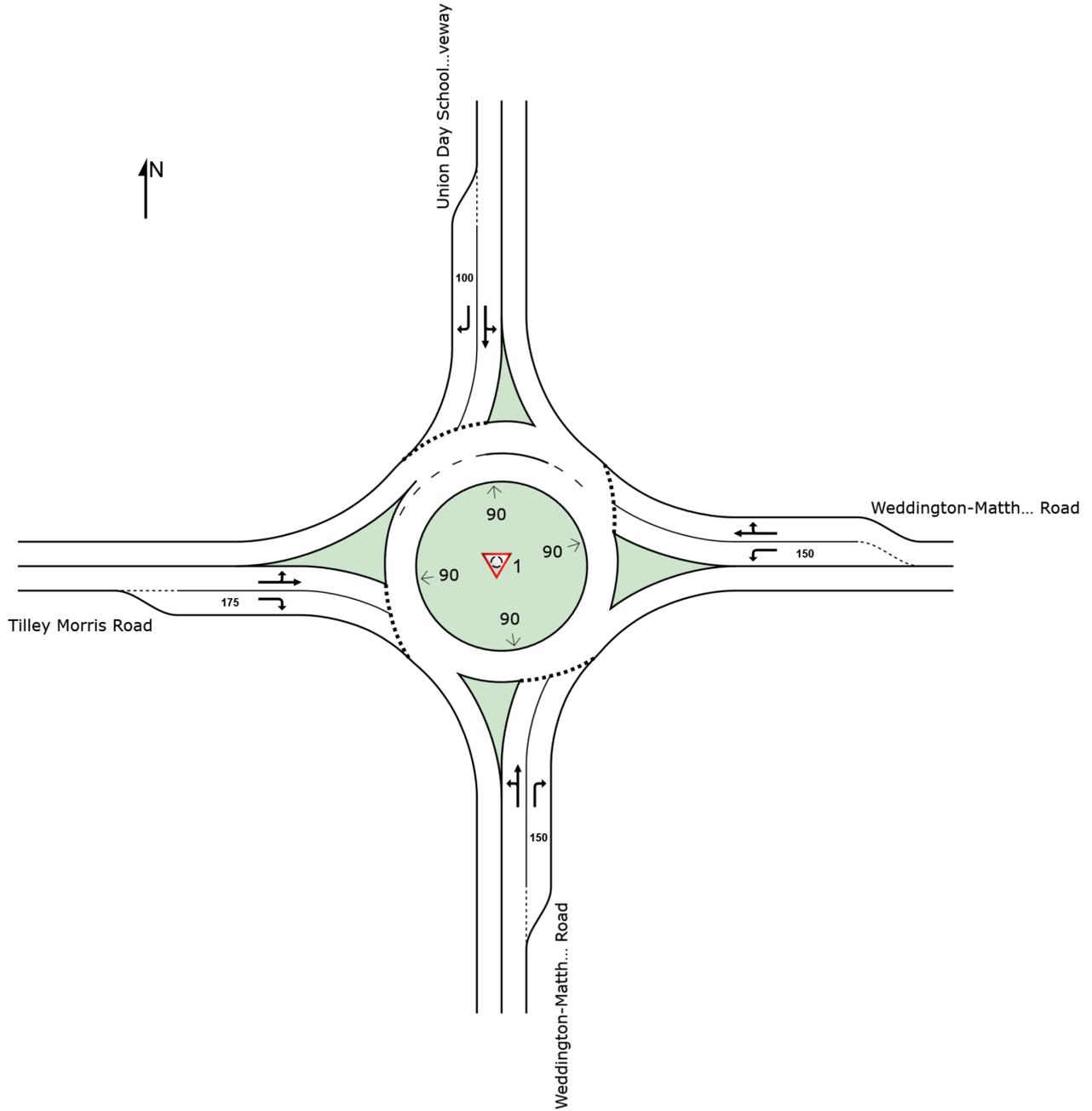
Intersection Summary	
Area Type:	Other
Control Type:	Roundabout
Intersection Capacity Utilization	80.6%
Analysis Period (min)	15
	ICU Level of Service D

SITE LAYOUT

 Site: 1 [2024 Existing PM (Site Folder: 2024 Existing)]

New Site
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: K:\CHL_PRJ\012826085 Toll Brothers - Weddington\08 - Other KHA Disciplines\TRAFFIC\08B_SIDRA\2025-02-27 Intersection 1 Updated.sip9

MOVEMENT SUMMARY

Site: 1 [2024 Existing PM (Site Folder: 2024 Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
 Site Category: (None)
 Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				mph
			veh/h		veh/h					veh	ft				
South: Weddington-Matthews Road															
3	L2	All MCs	160	3.0	160	3.0	0.234	7.9	LOS A	0.9	22.9	0.61	0.54	0.61	31.4
8	T1	All MCs	4	2.0	4	2.0	0.234	7.6	LOS A	0.9	22.9	0.61	0.54	0.61	26.0
18	R2	All MCs	301	2.0	301	2.0	0.422	10.7	LOS B	2.2	54.6	0.69	0.67	0.87	32.7
Approach			465	2.3	465	2.3	0.422	9.7	LOS A	2.2	54.6	0.66	0.62	0.78	32.2
East: Weddington-Matthews Road															
1	L2	All MCs	314	2.0	314	2.0	0.267	5.4	LOS A	1.3	32.3	0.36	0.19	0.36	32.6
6	T1	All MCs	448	3.0	448	3.0	0.402	7.1	LOS A	2.2	57.0	0.42	0.23	0.42	34.9
16	R2	All MCs	20	6.0	20	6.0	0.402	7.3	LOS A	2.2	57.0	0.42	0.23	0.42	27.6
Approach			782	2.7	782	2.7	0.402	6.4	LOS A	2.2	57.0	0.39	0.21	0.39	33.7
North: Union Day School Driveway															
7	L2	All MCs	21	2.0	21	2.0	0.061	6.7	LOS A	0.2	5.0	0.58	0.57	0.58	26.7
4	T1	All MCs	16	2.0	16	2.0	0.061	6.7	LOS A	0.2	5.0	0.58	0.57	0.58	27.1
14	R2	All MCs	12	2.0	12	2.0	0.022	6.9	LOS A	0.1	1.8	0.59	0.54	0.59	27.5
Approach			49	2.0	49	2.0	0.061	6.7	LOS A	0.2	5.0	0.59	0.56	0.59	27.0
West: Tilley Morris Road															
5	L2	All MCs	10	2.0	10	2.0	0.680	14.0	LOS B	8.8	222.8	0.78	0.74	1.28	25.3
2	T1	All MCs	667	2.0	667	2.0	0.680	14.0	LOS B	8.8	222.8	0.78	0.74	1.28	31.6
12	R2	All MCs	234	2.0	234	2.0	0.235	5.9	LOS A	1.0	25.8	0.48	0.33	0.48	35.2
Approach			911	2.0	911	2.0	0.680	11.9	LOS B	8.8	222.8	0.70	0.64	1.07	32.3
All Vehicles			2207	2.3	2207	2.3	0.680	9.4	LOS A	8.8	222.8	0.58	0.48	0.76	32.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: K:\CHL_PRJ\012826085 Toll Brothers - Weddington\08 - Other KHA Disciplines\TRAFFIC\08B_SIDRA\2025-02-27 Intersection 1 Updated.sip9

Lanes, Volumes, Timings
 2: Weddington-Matthews Road & Amanda Drive

5017 Weddington-Matthews Road TIA
 2024 Existing PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	14	0	10	6	0	5	15	429	10	3	480	13
Future Volume (vph)	14	0	10	6	0	5	15	429	10	3	480	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.940			0.971			0.995			0.994	
Fl _t Protected		0.973			0.962			0.998				
Satd. Flow (prot)	0	1599	0	0	1740	0	0	1837	0	0	1852	0
Fl _t Permitted		0.973			0.962			0.998				
Satd. Flow (perm)	0	1599	0	0	1740	0	0	1837	0	0	1852	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		1285			469			1472			1543	
Travel Time (s)		35.0			12.8			22.3			23.4	
Peak Hour Factor	0.70	0.90	0.63	0.33	0.90	1.00	0.75	0.91	0.50	0.75	0.95	0.54
Heavy Vehicles (%)	14%	2%	2%	2%	2%	2%	2%	2%	20%	2%	2%	2%
Adj. Flow (vph)	20	0	16	18	0	5	20	471	20	4	505	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	36	0	0	23	0	0	511	0	0	533	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	43.5%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Vol, veh/h	14	0	10	6	0	5	15	429	10	3	480	13
Future Vol, veh/h	14	0	10	6	0	5	15	429	10	3	480	13
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									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	90	63	33	90	100	75	91	50	75	95	54
Heavy Vehicles, %	14	2	2	2	2	2	2	2	20	2	2	2
Mvmt Flow	20	0	16	18	0	5	20	471	20	4	505	24

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1049	1056	517	1054	1058	481	529	0	0	491	0	0
Stage 1	525	525	-	521	521	-	-	-	-	-	-	-
Stage 2	524	531	-	533	537	-	-	-	-	-	-	-
Critical Hdwy	7.24	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.24	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.24	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.626	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	195	225	558	204	225	585	1038	-	-	1072	-	-
Stage 1	515	529	-	539	532	-	-	-	-	-	-	-
Stage 2	515	526	-	531	523	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	189	218	558	193	218	585	1038	-	-	1072	-	-
Mov Cap-2 Maneuver	189	218	-	193	218	-	-	-	-	-	-	-
Stage 1	501	526	-	524	518	-	-	-	-	-	-	-
Stage 2	497	512	-	513	520	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	20.6		22.7		0.3		0.1	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1038	-	-	267	226	1072	-	-
HCM Lane V/C Ratio	0.019	-	-	0.134	0.103	0.004	-	-
HCM Control Delay (s/veh)	8.5	0	-	20.6	22.7	8.4	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q (veh)	0.1	-	-	0.5	0.3	0	-	-

Lanes, Volumes, Timings
 3: Bonner Drive & Amanda Drive

5017 Weddington-Matthews Road TIA
 2024 Existing PM



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	8	5	0	9	2	2
Future Volume (vph)	8	5	0	9	2	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.938			0.910		
Fl _t Protected				0.984		
Satd. Flow (prot)	1526	0	0	1863	1270	0
Fl _t Permitted				0.984		
Satd. Flow (perm)	1526	0	0	1863	1270	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	469			1133	1077	
Travel Time (s)	12.8			30.9	29.4	
Peak Hour Factor	0.58	0.42	0.90	0.45	0.50	0.25
Heavy Vehicles (%)	14%	20%	2%	2%	2%	50%
Adj. Flow (vph)	14	12	0	20	4	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	26	0	0	20	12	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.3%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	1.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	h			4	W	
Traffic Vol, veh/h	8	5	0	9	2	2
Future Vol, veh/h	8	5	0	9	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	58	42	90	45	50	25
Heavy Vehicles, %	14	20	2	2	2	50
Mvmt Flow	14	12	0	20	4	8

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	26	0	40
Stage 1	-	-	-	-	20
Stage 2	-	-	-	-	20
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1588	-	972
Stage 1	-	-	-	-	1003
Stage 2	-	-	-	-	1003
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1588	-	972
Mov Cap-2 Maneuver	-	-	-	-	972
Stage 1	-	-	-	-	1003
Stage 2	-	-	-	-	1003

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	947	-	-	1588	-
HCM Lane V/C Ratio	0.013	-	-	-	-
HCM Control Delay (s/veh)	8.9	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q (veh)	0	-	-	0	-

Lanes, Volumes, Timings

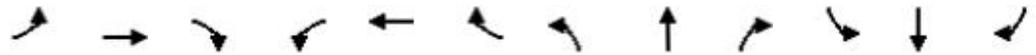
5017 Weddington-Matthews Road TIA

4: Weddington-Matthews Road & Hemby Road/Beulah Church Road

2024 Existing PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	229	19	49	168	101	22	275	110	184	239	36
Future Volume (vph)	61	229	19	49	168	101	22	275	110	184	239	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			3%			3%	
Storage Length (ft)	0		0	0		175	125		0	300		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.990				0.850		0.951			0.982	
Fl _t Protected		0.990			0.987		0.950			0.950		
Satd. Flow (prot)	0	1812	0	0	1829	1568	1631	1739	0	1743	1802	0
Fl _t Permitted		0.865			0.816		0.523			0.375		
Satd. Flow (perm)	0	1584	0	0	1512	1568	898	1739	0	688	1802	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1015			1082			1232			3102	
Travel Time (s)		15.4			16.4			18.7			47.0	
Peak Hour Factor	0.69	0.77	0.59	0.68	0.84	0.84	0.79	0.88	0.72	0.81	0.83	0.90
Heavy Vehicles (%)	2%	2%	5%	4%	2%	3%	9%	2%	3%	2%	2%	2%
Adj. Flow (vph)	88	297	32	72	200	120	28	313	153	227	288	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	417	0	0	272	120	28	466	0	227	328	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Minimum Split (s)	13.0	13.0		13.0	13.0	13.0	18.4	18.4		18.4	18.4	
Total Split (s)	25.0	25.0		25.0	25.0	25.0	35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%	41.7%	58.3%	58.3%		58.3%	58.3%	
Maximum Green (s)	19.0	19.0		19.0	19.0	19.0	28.6	28.6		28.6	28.6	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.3	4.3		4.3	4.3	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.1	2.1		2.1	2.1	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.4	-1.4		-1.4	-1.4	
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	15.0	15.0		15.0	15.0	
Time To Reduce (s)	15.0	15.0		15.0	15.0	15.0	30.0	30.0		30.0	30.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Act Effct Green (s)		19.3			19.3	19.3	21.6	21.6		21.6	21.6	
Actuated g/C Ratio		0.38			0.38	0.38	0.42	0.42		0.42	0.42	
v/c Ratio		0.70			0.48	0.20	0.07	0.63		0.78	0.43	
Control Delay (s/veh)		24.1			17.5	14.0	8.7	15.8		33.6	12.1	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		24.1			17.5	14.0	8.7	15.8		33.6	12.1	
LOS		C			B	B	A	B		C	B	
Approach Delay (s/veh)		24.1			16.4			15.4			20.9	
Approach LOS		C			B			B			C	
Queue Length 50th (ft)		102			60	23	5	106		57	67	
Queue Length 95th (ft)		184			131	60	14	174		112	104	
Internal Link Dist (ft)		935			1002			1152			3022	
Turn Bay Length (ft)						175	125			300		
Base Capacity (vph)		634			605	628	539	1044		413	1082	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.66			0.45	0.19	0.05	0.45		0.55	0.30	

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	51.2
Natural Cycle:	50
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.78
Intersection Signal Delay (s/veh):	19.2
Intersection LOS:	B
Intersection Capacity Utilization:	76.2%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 4: Weddington-Matthews Road & Hemby Road/Beulah Church Road

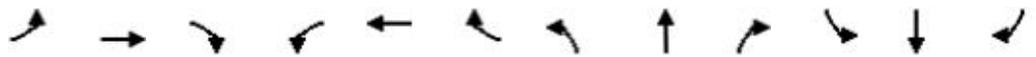


2029 Background Conditions

Lanes, Volumes, Timings

5017 Weddington-Matthews Road TIA

1: Weddington-Matthews Road & Tilley Morris Road & Union Day School Driveway 2009 Background AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4	4	4	4			4	4		4	4
Traffic Volume (vph)	62	220	57	284	696	197	492	97	323	150	57	130
Future Volume (vph)	62	220	57	284	696	197	492	97	323	150	57	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		175	150		0	0		150	0		100
Storage Lanes	0		1	1		0	0		1	0		1
Taper Length (ft)	25			175			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.965				0.850			0.850
Flt Protected		0.986		0.950				0.960			0.965	
Satd. Flow (prot)	0	1799	1524	1703	1798	0	0	1788	1568	0	1798	1583
Flt Permitted		0.986		0.950				0.960			0.965	
Satd. Flow (perm)	0	1799	1524	1703	1798	0	0	1788	1568	0	1798	1583
Link Speed (mph)		45			45			45			25	
Link Distance (ft)		1107			1131			2099			1065	
Travel Time (s)		16.8			17.1			31.8			29.0	
Peak Hour Factor	0.62	0.87	0.72	0.76	0.71	0.67	0.75	0.69	0.73	0.56	0.57	0.53
Heavy Vehicles (%)	2%	5%	6%	6%	2%	2%	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	100	253	79	374	980	294	656	141	442	268	100	245
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	353	79	374	1274	0	0	797	442	0	368	245
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary

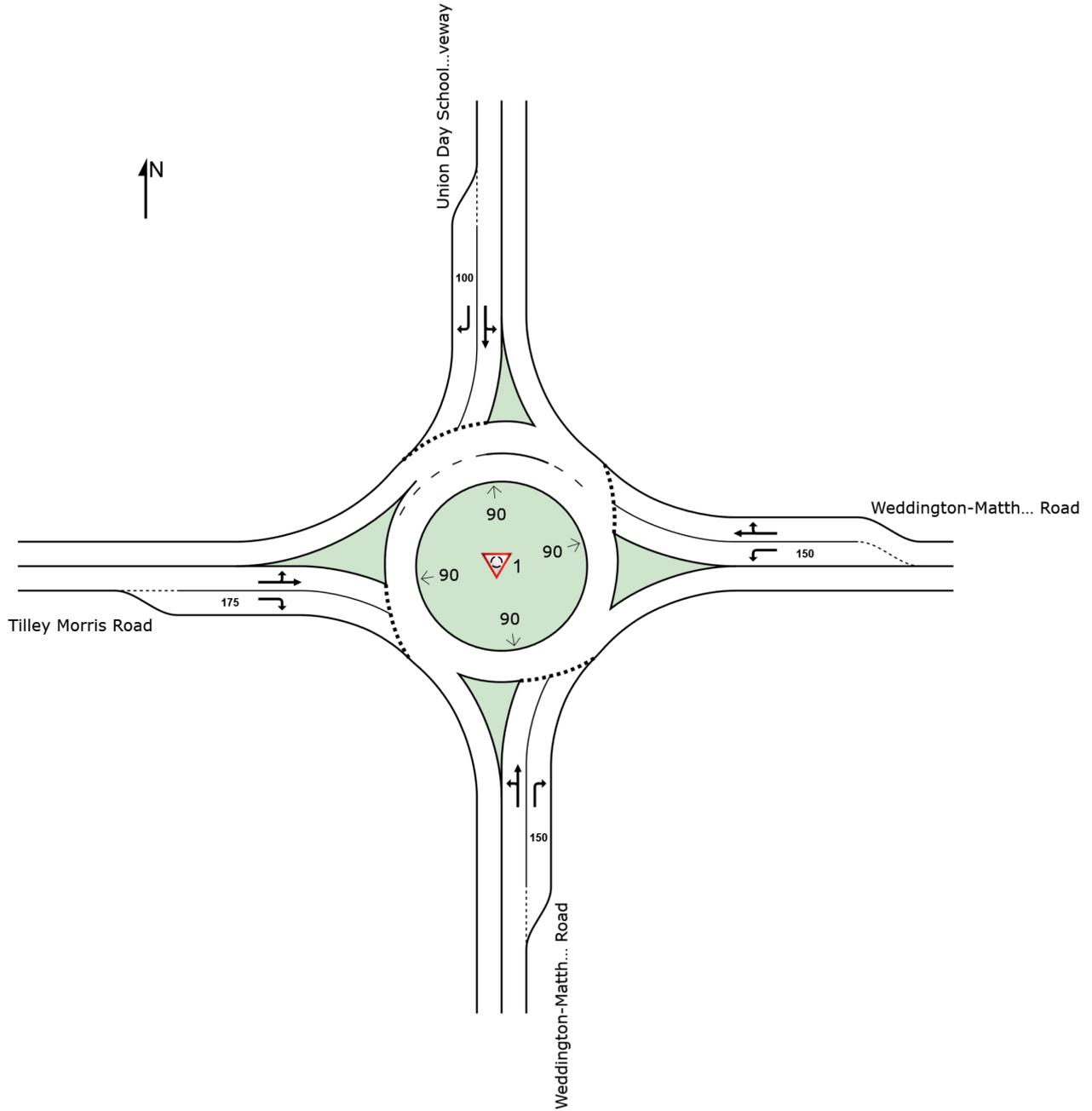
Area Type:	Other
Control Type:	Roundabout
Intersection Capacity Utilization	112.6%
ICU Level of Service	H
Analysis Period (min)	15

SITE LAYOUT

 Site: 1 [2029 Background AM (Site Folder: 2029 Background)]

New Site
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: K:\CHL_PRJ\012826085 Toll Brothers - Weddington\08 - Other KHA Disciplines\TRAFFIC\08B_SIDRA\2025-02-27 Intersection 1 Updated.sip9

MOVEMENT SUMMARY

Site: 1 [2029 Background AM (Site Folder: 2029 Background)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
 Site Category: (None)
 Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.	Dist]				mph
			veh/h		veh/h					veh	ft				
South: Weddington-Matthews Road															
3	L2	All MCs	656	2.0	656	2.0	1.030	61.3	LOS F	32.4	822.2	1.00	2.13	4.56	18.4
8	T1	All MCs	141	2.0	141	2.0	1.030	61.3	LOS F	32.4	822.2	1.00	2.13	4.56	16.4
18	R2	All MCs	442	3.0	442	3.0	0.583	13.9	LOS B	4.3	110.5	0.76	0.79	1.20	31.1
Approach			1239	2.4	1239	2.4	1.030	44.4	LOS E	32.4	822.2	0.91	1.65	3.36	21.1
East: Weddington-Matthews Road															
1	L2	All MCs	374	6.0	374	6.0	0.685	22.9	LOS C	4.3	111.5	0.84	0.96	1.41	25.9
6	T1	All MCs	980	2.0	980	2.0	2.136	531.2	LOS F	217.6	5526.1	1.00	6.67	21.13	3.8
16	R2	All MCs	294	2.0	294	2.0	2.136	531.2	LOS F	217.6	5526.1	1.00	6.67	21.13	3.7
Approach			1648	2.9	1648	2.9	2.136	418.4	LOS F	217.6	5526.1	0.96	5.38	16.66	4.8
North: Union Day School Driveway															
7	L2	All MCs	268	2.0	268	2.0	1.023	86.4	LOS F	12.7	323.1	1.00	2.20	4.12	13.8
4	T1	All MCs	100	2.0	100	2.0	1.023	86.6	LOS F	12.7	323.1	1.00	2.20	4.12	14.0
14	R2	All MCs	245	2.0	245	2.0	0.783	45.8	LOS E	4.2	106.4	0.93	1.28	1.84	18.6
Approach			613	2.0	613	2.0	1.023	70.2	LOS F	12.7	323.1	0.97	1.83	3.21	15.4
West: Tilley Morris Road															
5	L2	All MCs	100	2.0	100	2.0	0.536	13.7	LOS B	3.2	82.9	0.75	0.80	1.14	24.9
2	T1	All MCs	253	5.0	253	5.0	0.536	14.5	LOS B	3.2	82.9	0.75	0.80	1.14	30.6
12	R2	All MCs	79	6.0	79	6.0	0.125	7.1	LOS A	0.4	11.0	0.59	0.53	0.59	34.0
Approach			432	4.5	432	4.5	0.536	12.9	LOS B	3.2	82.9	0.72	0.75	1.04	29.6
All Vehicles			3932	2.8	3932	2.8	2.136	200.7	LOS F	217.6	5526.1	0.92	3.14	8.65	8.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Lanes, Volumes, Timings
 2: Weddington-Matthews Road & Amanda Drive



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	23	4	15	10	4	8	8	903	4	6	362	9
Future Volume (vph)	23	4	15	10	4	8	8	903	4	6	362	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.951			0.949			0.999			0.997	
Fl _t Protected		0.973			0.978						0.999	
Satd. Flow (prot)	0	1667	0	0	1440	0	0	1861	0	0	1786	0
Fl _t Permitted		0.973			0.978						0.999	
Satd. Flow (perm)	0	1667	0	0	1440	0	0	1861	0	0	1786	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		1285			469			1472			1543	
Travel Time (s)		35.0			12.8			22.3			23.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	2%	7%	11%	100%	2%	2%	2%	2%	33%	5%	25%
Adj. Flow (vph)	26	4	17	11	4	9	9	1003	4	7	402	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	47	0	0	24	0	0	1016	0	0	419	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	62.1%
ICU Level of Service	B
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Vol, veh/h	23	4	15	10	4	8	8	903	4	6	362	9
Future Vol, veh/h	23	4	15	10	4	8	8	903	4	6	362	9
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									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	5	2	7	11	100	2	2	2	2	33	5	25
Mvmt Flow	26	4	17	11	4	9	9	1003	4	7	402	10

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1451	1446	407	1455	1449	1005	412	0	0	1007	0	0
Stage 1	421	421	-	1023	1023	-	-	-	-	-	-	-
Stage 2	1030	1025	-	432	426	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.52	6.27	7.21	7.5	6.22	4.12	-	-	4.43	-	-
Critical Hdwy Stg 1	6.15	5.52	-	6.21	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.52	-	6.21	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.018	3.363	3.599	4.9	3.318	2.218	-	-	2.497	-	-
Pot Cap-1 Maneuver	107	132	633	103	82	293	1147	-	-	580	-	-
Stage 1	604	589	-	274	215	-	-	-	-	-	-	-
Stage 2	278	312	-	585	449	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	97	128	633	95	79	293	1147	-	-	580	-	-
Mov Cap-2 Maneuver	97	128	-	95	79	-	-	-	-	-	-	-
Stage 1	593	580	-	269	211	-	-	-	-	-	-	-
Stage 2	259	306	-	556	442	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	41.5		42.5		0.1		0.2	
HCM LOS	E		E					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1147	-	-	144	120	580	-	-
HCM Lane V/C Ratio	0.008	-	-	0.324	0.204	0.011	-	-
HCM Control Delay (s/veh)	8.2	0	-	41.5	42.5	11.3	0	-
HCM Lane LOS	A	A	-	E	E	B	A	-
HCM 95th %tile Q (veh)	0	-	-	1.3	0.7	0	-	-

Lanes, Volumes, Timings
 3: Bonner Drive & Amanda Drive



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	6	1	1	10	9	1
Future Volume (vph)	6	1	1	10	9	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.983			0.988		
Fl _t Protected				0.996	0.957	
Satd. Flow (prot)	1586	0	0	1718	1620	0
Fl _t Permitted				0.996	0.957	
Satd. Flow (perm)	1586	0	0	1718	1620	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	469			1133	1077	
Travel Time (s)	12.8			30.9	29.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	20%	2%	100%	2%	2%	100%
Adj. Flow (vph)	7	1	1	11	10	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	8	0	0	12	11	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.3%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	3.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	h			4	Y	
Traffic Vol, veh/h	6	1	1	10	9	1
Future Vol, veh/h	6	1	1	10	9	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	20	2	100	2	2	100
Mvmt Flow	7	1	1	11	10	1

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	8	0	21
Stage 1	-	-	-	-	8
Stage 2	-	-	-	-	13
Critical Hdwy	-	-	5.1	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	3.1	-	3.518
Pot Cap-1 Maneuver	-	-	1152	-	996
Stage 1	-	-	-	-	1015
Stage 2	-	-	-	-	1010
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1152	-	995
Mov Cap-2 Maneuver	-	-	-	-	995
Stage 1	-	-	-	-	1015
Stage 2	-	-	-	-	1009

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.7	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	978	-	-	1152	-
HCM Lane V/C Ratio	0.011	-	-	0.001	-
HCM Control Delay (s/veh)	8.7	-	-	8.1	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q (veh)	0	-	-	0	-

Lanes, Volumes, Timings

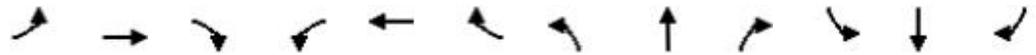
5017 Weddington-Matthews Road TIA

4: Weddington-Matthews Road & Hemby Road/Beulah Church Road

2029 Background AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	129	13	121	425	425	29	338	34	112	264	41
Future Volume (vph)	47	129	13	121	425	425	29	338	34	112	264	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			3%			3%	
Storage Length (ft)	0		0	0		175	125		0	300		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.991				0.850		0.986			0.980	
Fl _t Protected		0.988			0.989		0.950			0.950		
Satd. Flow (prot)	0	1772	0	0	1820	1583	1743	1809	0	1693	1740	0
Fl _t Permitted		0.755			0.873		0.442			0.340		
Satd. Flow (perm)	0	1354	0	0	1607	1583	811	1809	0	606	1740	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1015			1082			1232			3102	
Travel Time (s)		15.4			16.4			18.7			47.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	5%	8%	4%	3%	2%	2%	2%	2%	5%	5%	8%
Adj. Flow (vph)	52	143	14	134	472	472	32	376	38	124	293	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	209	0	0	606	472	32	414	0	124	339	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Minimum Split (s)	13.0	13.0		13.0	13.0	13.0	18.4	18.4		18.4	18.4	
Total Split (s)	34.0	34.0		34.0	34.0	34.0	26.0	26.0		26.0	26.0	
Total Split (%)	56.7%	56.7%		56.7%	56.7%	56.7%	43.3%	43.3%		43.3%	43.3%	
Maximum Green (s)	28.0	28.0		28.0	28.0	28.0	19.6	19.6		19.6	19.6	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.3	4.3		4.3	4.3	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.1	2.1		2.1	2.1	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.4	-1.4		-1.4	-1.4	
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	15.0	15.0		15.0	15.0	
Time To Reduce (s)	15.0	15.0		15.0	15.0	15.0	30.0	30.0		30.0	30.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Act Effct Green (s)		27.6			27.6	27.6	18.0	18.0		18.0	18.0	
Actuated g/C Ratio		0.50			0.50	0.50	0.32	0.32		0.32	0.32	
v/c Ratio		0.31			0.76	0.60	0.12	0.71		0.64	0.60	
Control Delay (s/veh)		10.6			20.3	14.7	14.9	24.5		34.1	21.4	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		10.6			20.3	14.7	14.9	24.5		34.1	21.4	
LOS		B			C	B	B	C		C	C	
Approach Delay (s/veh)		10.6			17.9			23.8			24.8	
Approach LOS		B			B			C			C	
Queue Length 50th (ft)		41			160	110	8	123		36	97	
Queue Length 95th (ft)		83			#342	204	24	209		#103	169	
Internal Link Dist (ft)		935			1002			1152			3022	
Turn Bay Length (ft)						175	125			300		
Base Capacity (vph)		712			845	832	308	689		231	662	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.29			0.72	0.57	0.10	0.60		0.54	0.51	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 55.7
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay (s/veh): 19.8
 Intersection LOS: B
 Intersection Capacity Utilization 85.8%
 ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 4: Weddington-Matthews Road & Hemby Road/Beulah Church Road



Lanes, Volumes, Timings

5017 Weddington-Matthews Road TIA

1: Weddington-Matthews Road & Tilley Morris Road & Union Day School Driveway 2020 Background MID



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4	4	4	4			4	4		4	4
Traffic Volume (vph)	79	492	153	270	359	172	82	47	243	180	60	96
Future Volume (vph)	79	492	153	270	359	172	82	47	243	180	60	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		175	150		0	0		150	0		100
Storage Lanes	0		1	1		0	0		1	0		1
Taper Length (ft)	25			175			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.941				0.850			0.850
Flt Protected		0.991		0.950				0.973			0.963	
Satd. Flow (prot)	0	1846	1553	1770	1742	0	0	1764	1538	0	1794	1583
Flt Permitted		0.991		0.950				0.973			0.963	
Satd. Flow (perm)	0	1846	1553	1770	1742	0	0	1764	1538	0	1794	1583
Link Speed (mph)		45			45			45			25	
Link Distance (ft)		1107			1131			2099			1065	
Travel Time (s)		16.8			17.1			31.8			29.0	
Peak Hour Factor	0.67	0.93	0.70	0.93	0.84	0.62	0.84	0.60	0.78	0.42	0.48	0.46
Heavy Vehicles (%)	2%	2%	4%	2%	3%	2%	7%	2%	5%	2%	2%	2%
Adj. Flow (vph)	118	529	219	290	427	277	98	78	312	429	125	209
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	647	219	290	704	0	0	176	312	0	554	209
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary

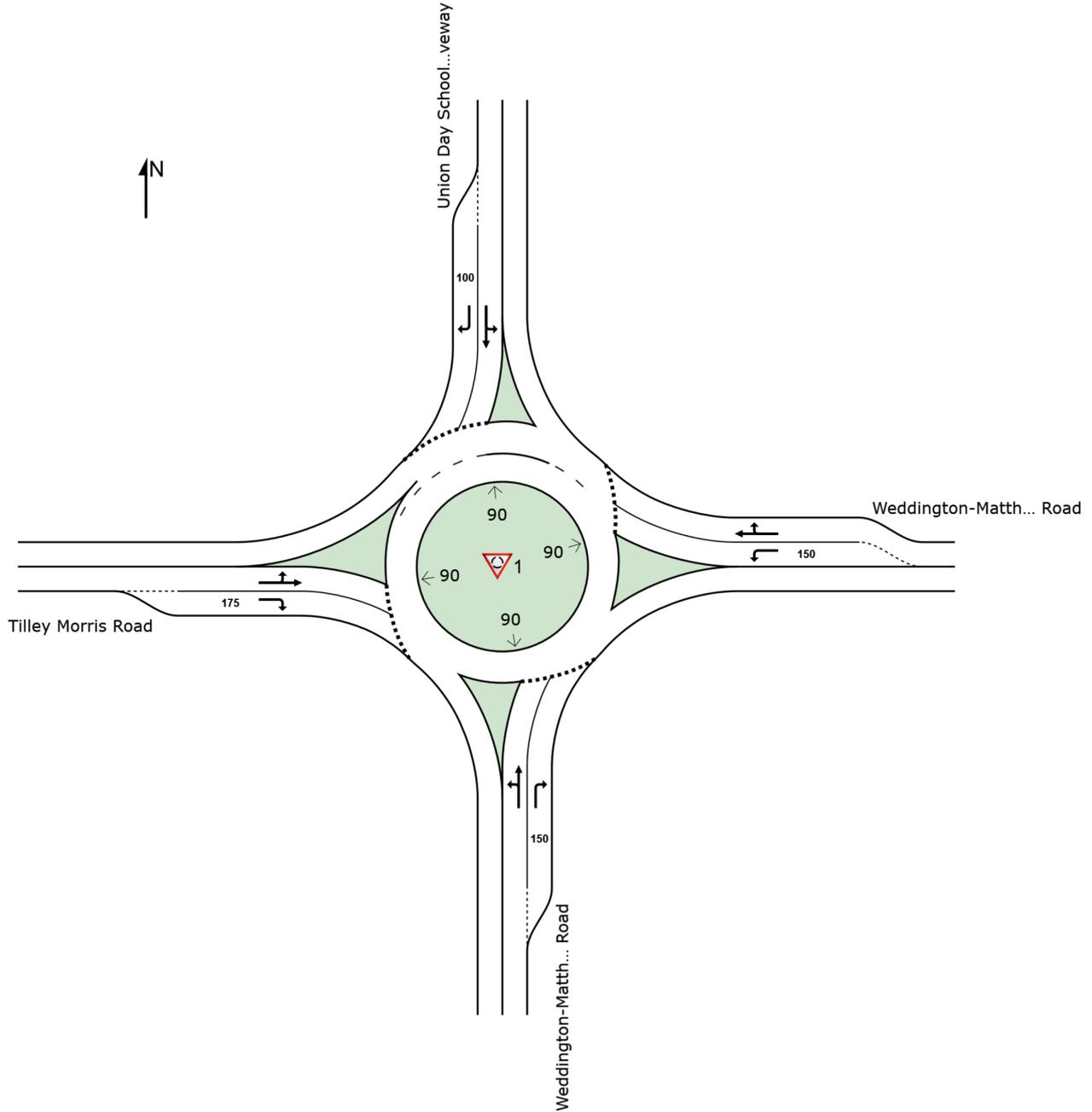
Area Type:	Other
Control Type:	Roundabout
Intersection Capacity Utilization	89.4%
Analysis Period (min)	15
	ICU Level of Service E

SITE LAYOUT

Site: 1 [2029 Background MID (Site Folder: 2029 Background)]

New Site
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: K:\CHL_PRJ\012826085 Toll Brothers - Weddington\08 - Other KHA Disciplines\TRAFFIC\08B_SIDRA\2025-02-27 Intersection 1 Updated.sip9

MOVEMENT SUMMARY

Site: 1 [2029 Background MID (Site Folder: 2029 Background)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	[Total HV]	[Total HV]	[Total HV]	v/c	sec		[Veh. veh	[Dist] ft			mph	
South: Weddington-Matthews Road															
3	L2	All MCs	98	7.0	98	7.0	0.372	14.8	LOS B	1.4	37.2	0.72	0.77	0.90	29.5
8	T1	All MCs	78	2.0	78	2.0	0.372	12.7	LOS B	1.4	37.2	0.72	0.77	0.90	24.9
18	R2	All MCs	312	5.0	312	5.0	0.662	24.4	LOS C	3.6	94.6	0.83	0.99	1.41	26.9
Approach			487	4.9	487	4.9	0.662	20.6	LOS C	3.6	94.6	0.79	0.91	1.23	27.1
East: Weddington-Matthews Road															
1	L2	All MCs	290	2.0	290	2.0	0.276	6.1	LOS A	1.3	32.2	0.46	0.30	0.46	32.3
6	T1	All MCs	427	3.0	427	3.0	0.675	13.4	LOS B	9.0	228.5	0.74	0.66	1.15	31.7
16	R2	All MCs	277	2.0	277	2.0	0.675	13.3	LOS B	9.0	228.5	0.74	0.66	1.15	25.6
Approach			995	2.4	995	2.4	0.675	11.2	LOS B	9.0	228.5	0.66	0.56	0.95	29.9
North: Union Day School Driveway															
7	L2	All MCs	429	2.0	429	2.0	0.836	30.5	LOS D	9.4	237.8	0.92	1.46	2.22	20.8
4	T1	All MCs	125	2.0	125	2.0	0.836	30.5	LOS D	9.4	237.8	0.92	1.46	2.22	21.0
14	R2	All MCs	209	2.0	209	2.0	0.349	10.9	LOS B	1.5	37.6	0.67	0.70	0.80	26.2
Approach			762	2.0	762	2.0	0.836	25.1	LOS D	9.4	237.8	0.85	1.25	1.83	22.0
West: Tilley Morris Road															
5	L2	All MCs	118	2.0	118	2.0	1.044	72.0	LOS F	25.5	647.7	1.00	2.08	4.79	15.3
2	T1	All MCs	529	2.0	529	2.0	1.044	72.0	LOS F	25.5	647.7	1.00	2.08	4.79	17.4
12	R2	All MCs	219	4.0	219	4.0	0.369	11.4	LOS B	1.6	40.5	0.69	0.70	0.84	32.2
Approach			866	2.5	866	2.5	1.044	56.7	LOS F	25.5	647.7	0.92	1.73	3.79	19.2
All Vehicles			3110	2.7	3110	2.7	1.044	28.8	LOS D	25.5	647.7	0.80	1.11	2.00	23.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Lanes, Volumes, Timings
 2: Weddington-Matthews Road & Amanda Drive



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	12	4	20	7	4	4	17	340	18	4	439	20
Future Volume (vph)	12	4	20	7	4	4	17	340	18	4	439	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.924			0.966			0.994			0.994	
Fl _t Protected		0.984			0.976			0.998				
Satd. Flow (prot)	0	1694	0	0	1578	0	0	1802	0	0	1834	0
Fl _t Permitted		0.984			0.976			0.998				
Satd. Flow (perm)	0	1694	0	0	1578	0	0	1802	0	0	1834	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		1285			469			1472			1543	
Travel Time (s)		35.0			12.8			22.3			23.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	25%	2%	2%	7%	4%	14%	2%	3%	2%
Adj. Flow (vph)	13	4	22	8	4	4	19	378	20	4	488	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	39	0	0	16	0	0	417	0	0	514	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	40.1%
Analysis Period (min)	15
	ICU Level of Service A

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Vol, veh/h	12	4	20	7	4	4	17	340	18	4	439	20
Future Vol, veh/h	12	4	20	7	4	4	17	340	18	4	439	20
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									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	25	2	2	7	4	14	2	3	2
Mvmt Flow	13	4	22	8	4	4	19	378	20	4	488	22

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	937	943	499	946	944	388	510	0	0	398	0	0
Stage 1	507	507	-	426	426	-	-	-	-	-	-	-
Stage 2	430	436	-	520	518	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.35	6.52	6.22	4.17	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.35	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.35	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.725	4.018	3.318	2.263	-	-	2.218	-	-
Pot Cap-1 Maneuver	245	263	572	220	262	660	1030	-	-	1161	-	-
Stage 1	548	539	-	564	586	-	-	-	-	-	-	-
Stage 2	603	580	-	499	533	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	235	255	572	204	254	660	1030	-	-	1161	-	-
Mov Cap-2 Maneuver	235	255	-	204	254	-	-	-	-	-	-	-
Stage 1	535	536	-	550	572	-	-	-	-	-	-	-
Stage 2	580	566	-	473	530	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	16.5		19.4		0.4		0.1	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1030	-	-	354	267	1161	-
HCM Lane V/C Ratio	0.018	-	-	0.113	0.062	0.004	-
HCM Control Delay (s/veh)	8.6	0	-	16.5	19.4	8.1	0
HCM Lane LOS	A	A	-	C	C	A	A
HCM 95th %tile Q (veh)	0.1	-	-	0.4	0.2	0	-

Lanes, Volumes, Timings
 3: Bonner Drive & Amanda Drive



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	11	8	0	7	2	1
Future Volume (vph)	11	8	0	7	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.942			0.955		
Fl _t Protected				0.968		
Satd. Flow (prot)	1515	0	0	1863	1304	0
Fl _t Permitted				0.968		
Satd. Flow (perm)	1515	0	0	1863	1304	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	469			1133	1077	
Travel Time (s)	12.8			30.9	29.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	10%	29%	2%	2%	2%	100%
Adj. Flow (vph)	12	9	0	8	2	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	0	0	8	3	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.3% ICU Level of Service A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	T			T	T	
Traffic Vol, veh/h	11	8	0	7	2	1
Future Vol, veh/h	11	8	0	7	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	10	29	2	2	2	100
Mvmt Flow	12	9	0	8	2	1

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	21	0	25
Stage 1	-	-	-	-	17
Stage 2	-	-	-	-	8
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1595	-	991
Stage 1	-	-	-	-	1006
Stage 2	-	-	-	-	1015
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1595	-	991
Mov Cap-2 Maneuver	-	-	-	-	991
Stage 1	-	-	-	-	1006
Stage 2	-	-	-	-	1015

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	934	-	-	1595	-
HCM Lane V/C Ratio	0.004	-	-	-	-
HCM Control Delay (s/veh)	8.9	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q (veh)	0	-	-	0	-

Lanes, Volumes, Timings

5017 Weddington-Matthews Road TIA

4: Weddington-Matthews Road & Hemby Road/Beulah Church Road

2029 Background MID



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	183	25	47	177	116	22	215	140	180	246	32
Future Volume (vph)	49	183	25	47	177	116	22	215	140	180	246	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			3%			3%	
Storage Length (ft)	0		0	0		175	125		0	300		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.987				0.850		0.941			0.983	
Fl _t Protected		0.991			0.990		0.950			0.950		
Satd. Flow (prot)	0	1799	0	0	1805	1538	1616	1706	0	1710	1771	0
Fl _t Permitted		0.892			0.882		0.559			0.463		
Satd. Flow (perm)	0	1620	0	0	1608	1538	951	1706	0	833	1771	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1015			1082			1232			3102	
Travel Time (s)		15.4			16.4			18.7			47.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	2%	4%	5%	4%	5%	10%	4%	2%	4%	4%	3%
Adj. Flow (vph)	54	203	28	52	197	129	24	239	156	200	273	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	285	0	0	249	129	24	395	0	200	309	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Minimum Split (s)	13.0	13.0		13.0	13.0	13.0	18.4	18.4		18.4	18.4	
Total Split (s)	25.0	25.0		25.0	25.0	25.0	35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%	41.7%	58.3%	58.3%		58.3%	58.3%	
Maximum Green (s)	19.0	19.0		19.0	19.0	19.0	28.6	28.6		28.6	28.6	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.3	4.3		4.3	4.3	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.1	2.1		2.1	2.1	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.4	-1.4		-1.4	-1.4	
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	15.0	15.0		15.0	15.0	
Time To Reduce (s)	15.0	15.0		15.0	15.0	15.0	30.0	30.0		30.0	30.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Act Effct Green (s)		16.3			16.3	16.3	19.1	19.1		19.1	19.1	
Actuated g/C Ratio		0.36			0.36	0.36	0.42	0.42		0.42	0.42	
v/c Ratio		0.49			0.44	0.24	0.06	0.56		0.58	0.42	
Control Delay (s/veh)		16.4			15.5	13.3	8.6	13.7		18.3	11.6	

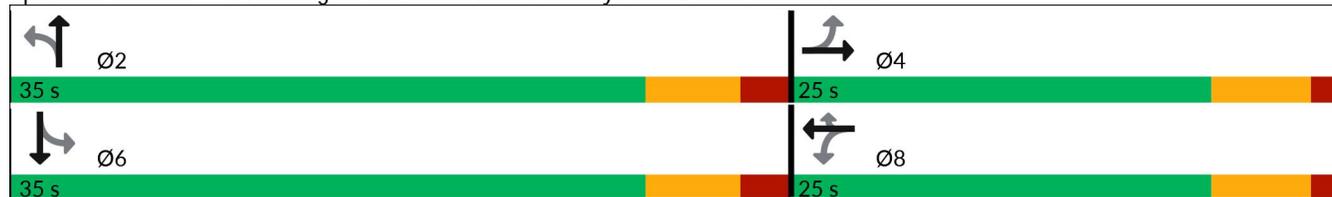


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		16.4			15.5	13.3	8.6	13.7		18.3	11.6	
LOS		B			B	B	A	B		B	B	
Approach Delay (s/veh)		16.4			14.7			13.4			14.2	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)		53			45	22	4	73		37	53	
Queue Length 95th (ft)		146			127	69	14	148		98	110	
Internal Link Dist (ft)		935			1002			1152			3022	
Turn Bay Length (ft)						175	125			300		
Base Capacity (vph)		738			732	700	650	1166		569	1210	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.39			0.34	0.18	0.04	0.34		0.35	0.26	

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	45.8
Natural Cycle:	40
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.58
Intersection Signal Delay (s/veh):	14.5
Intersection LOS:	B
Intersection Capacity Utilization:	72.3%
ICU Level of Service:	C
Analysis Period (min):	15

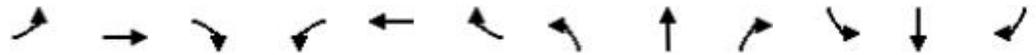
Splits and Phases: 4: Weddington-Matthews Road & Hemby Road/Beulah Church Road



Lanes, Volumes, Timings

5017 Weddington-Matthews Road TIA

1: Weddington-Matthews Road & Tilley Morris Road & Union Day School Driveway 2009 Background PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4	4	4	4			4	4		4	4
Traffic Volume (vph)	10	678	237	319	455	20	162	4	306	21	17	12
Future Volume (vph)	10	678	237	319	455	20	162	4	306	21	17	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		175	150		0	0		150	0		100
Storage Lanes	0		1	1		0	0		1	0		1
Taper Length (ft)	25			175			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.994				0.850			0.850
Flt Protected		0.999		0.950				0.953			0.973	
Satd. Flow (prot)	0	1861	1583	1770	1831	0	0	1758	1583	0	1812	1583
Flt Permitted		0.999		0.950				0.953			0.973	
Satd. Flow (perm)	0	1861	1583	1770	1831	0	0	1758	1583	0	1812	1583
Link Speed (mph)		45			45			45			25	
Link Distance (ft)		1107			1131			2099			1065	
Travel Time (s)		16.8			17.1			31.8			29.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	3%	6%	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	11	753	263	354	506	22	180	4	340	23	19	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	764	263	354	528	0	0	184	340	0	42	13
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary

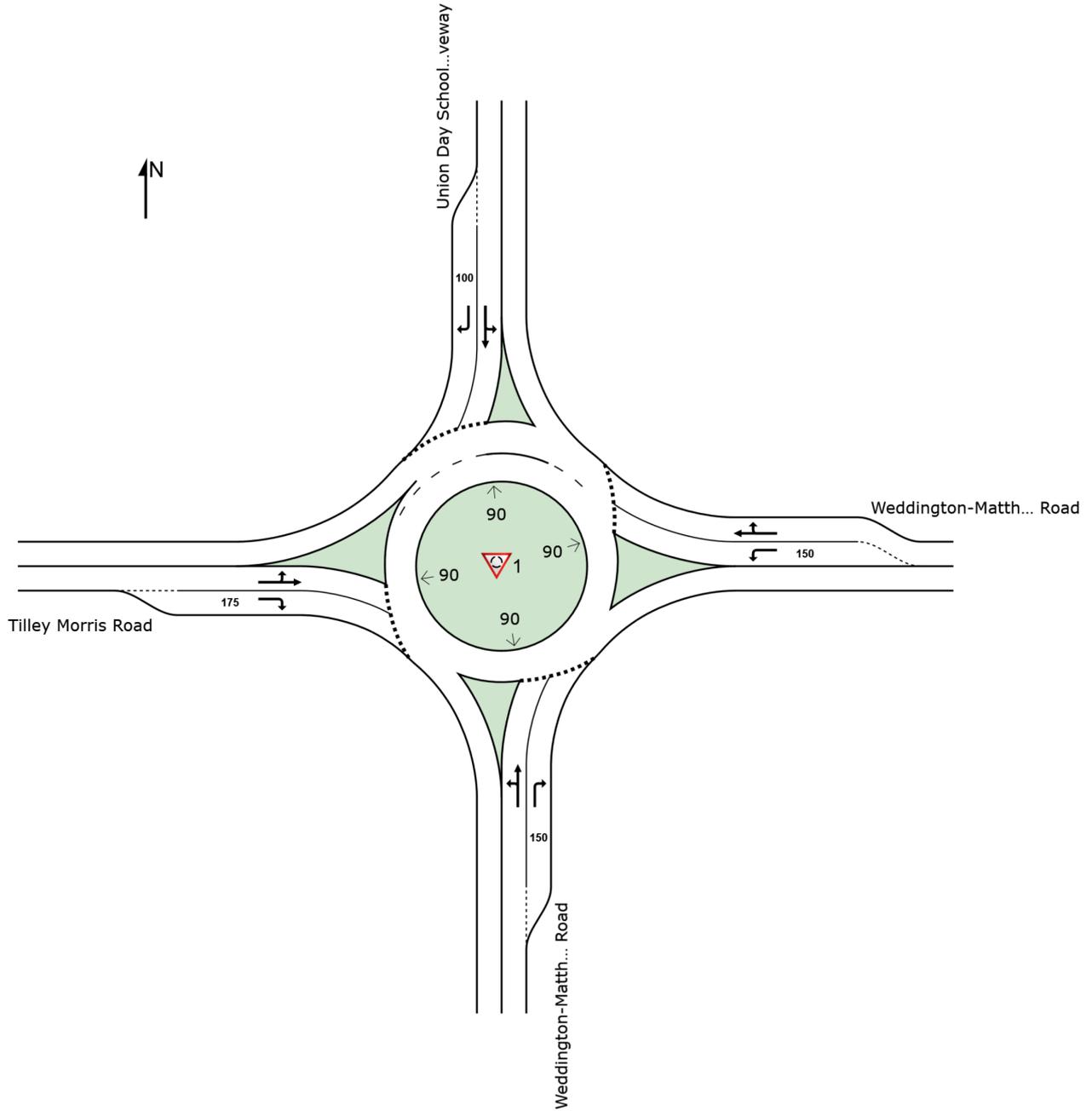
Area Type:	Other
Control Type:	Roundabout
Intersection Capacity Utilization	87.2%
Analysis Period (min)	15
	ICU Level of Service E

SITE LAYOUT

 Site: 1 [2029 Background PM (Site Folder: 2029 Background)]

New Site
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: K:\CHL_PRJ\012826085 Toll Brothers - Weddington\08 - Other KHA Disciplines\TRAFFIC\08B_SIDRA\2025-02-27 Intersection 1 Updated.sip9

MOVEMENT SUMMARY

Site: 1 [2029 Background PM (Site Folder: 2029 Background)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
 Site Category: (None)
 Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				mph
			veh/h		veh/h					veh	ft				
South: Weddington-Matthews Road															
3	L2	All MCs	180	3.0	180	3.0	0.288	9.3	LOS A	1.1	28.3	0.65	0.60	0.66	30.8
8	T1	All MCs	4	2.0	4	2.0	0.288	9.0	LOS A	1.1	28.3	0.65	0.60	0.66	25.6
18	R2	All MCs	340	2.0	340	2.0	0.520	13.8	LOS B	2.9	74.3	0.75	0.78	1.05	31.3
Approach			524	2.3	524	2.3	0.520	12.2	LOS B	2.9	74.3	0.71	0.72	0.91	31.1
East: Weddington-Matthews Road															
1	L2	All MCs	354	2.0	354	2.0	0.307	6.0	LOS A	1.5	38.6	0.39	0.22	0.39	32.3
6	T1	All MCs	506	3.0	506	3.0	0.464	8.0	LOS A	2.7	70.3	0.48	0.27	0.48	34.3
16	R2	All MCs	22	6.0	22	6.0	0.464	8.4	LOS A	2.7	70.3	0.48	0.27	0.48	27.3
Approach			882	2.7	882	2.7	0.464	7.2	LOS A	2.7	70.3	0.44	0.25	0.44	33.3
North: Union Day School Driveway															
7	L2	All MCs	23	2.0	23	2.0	0.078	7.6	LOS A	0.2	6.3	0.62	0.62	0.62	26.4
4	T1	All MCs	19	2.0	19	2.0	0.078	7.6	LOS A	0.2	6.3	0.62	0.62	0.62	26.9
14	R2	All MCs	13	2.0	13	2.0	0.028	7.8	LOS A	0.1	2.2	0.63	0.61	0.63	27.2
Approach			56	2.0	56	2.0	0.078	7.7	LOS A	0.2	6.3	0.62	0.61	0.62	26.8
West: Tilley Morris Road															
5	L2	All MCs	11	2.0	11	2.0	0.802	20.5	LOS C	14.7	372.7	0.94	1.05	1.91	23.6
2	T1	All MCs	753	2.0	753	2.0	0.802	20.5	LOS C	14.7	372.7	0.94	1.05	1.91	29.0
12	R2	All MCs	263	2.0	263	2.0	0.276	6.6	LOS A	1.2	31.0	0.52	0.38	0.52	34.8
Approach			1028	2.0	1028	2.0	0.802	16.9	LOS C	14.7	372.7	0.83	0.88	1.56	30.2
All Vehicles			2490	2.3	2490	2.3	0.802	12.3	LOS B	14.7	372.7	0.67	0.62	1.01	31.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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10:02:47 AM

Project: K:\CHL_PRJ\012826085 Toll Brothers - Weddington\08 - Other KHA Disciplines\TRAFFIC\08B_SIDRA\2025-02-27 Intersection 1

Updated.sip9

Lanes, Volumes, Timings
 2: Weddington-Matthews Road & Amanda Drive

5017 Weddington-Matthews Road TIA
 2029 Background PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	15	4	11	7	4	6	17	474	11	4	530	14
Future Volume (vph)	15	4	11	7	4	6	17	474	11	4	530	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.951			0.950			0.997			0.996	
Fl _t Protected		0.975			0.979			0.998				
Satd. Flow (prot)	0	1628	0	0	1732	0	0	1846	0	0	1855	0
Fl _t Permitted		0.975			0.979			0.998				
Satd. Flow (perm)	0	1628	0	0	1732	0	0	1846	0	0	1855	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		1285			469			1472			1543	
Travel Time (s)		35.0			12.8			22.3			23.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	14%	2%	2%	2%	2%	2%	2%	2%	20%	2%	2%	2%
Adj. Flow (vph)	17	4	12	8	4	7	19	527	12	4	589	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	33	0	0	19	0	0	558	0	0	609	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	47.0%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Vol, veh/h	15	4	11	7	4	6	17	474	11	4	530	14
Future Vol, veh/h	15	4	11	7	4	6	17	474	11	4	530	14
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									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	14	2	2	2	2	2	2	2	20	2	2	2
Mvmt Flow	17	4	12	8	4	7	19	527	12	4	589	16

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1182	1182	597	1184	1184	533	605	0	0	539	0	0
Stage 1	605	605	-	571	571	-	-	-	-	-	-	-
Stage 2	577	577	-	613	613	-	-	-	-	-	-	-
Critical Hdwy	7.24	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.24	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.24	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.626	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	158	190	503	166	189	547	973	-	-	1029	-	-
Stage 1	465	487	-	506	505	-	-	-	-	-	-	-
Stage 2	482	502	-	480	483	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	149	184	503	155	183	547	973	-	-	1029	-	-
Mov Cap-2 Maneuver	149	184	-	155	183	-	-	-	-	-	-	-
Stage 1	452	484	-	492	491	-	-	-	-	-	-	-
Stage 2	459	488	-	461	480	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	25.6		23.1		0.3		0.1	
HCM LOS	D		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	973	-	-	208	218	1029	-
HCM Lane V/C Ratio	0.019	-	-	0.16	0.087	0.004	-
HCM Control Delay (s/veh)	8.8	0	-	25.6	23.1	8.5	0
HCM Lane LOS	A	A	-	D	C	A	A
HCM 95th %tile Q (veh)	0.1	-	-	0.6	0.3	0	-

Lanes, Volumes, Timings
 3: Bonner Drive & Amanda Drive



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	9	6	0	10	2	2
Future Volume (vph)	9	6	0	10	2	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.944			0.932		
Fl _t Protected				0.976		
Satd. Flow (prot)	1540	0	0	1863	1372	0
Fl _t Permitted				0.976		
Satd. Flow (perm)	1540	0	0	1863	1372	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	469			1133	1077	
Travel Time (s)	12.8			30.9	29.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	14%	20%	2%	2%	2%	50%
Adj. Flow (vph)	10	7	0	11	2	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	0	11	4	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.3% ICU Level of Service A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	1.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	T			T	T	
Traffic Vol, veh/h	9	6	0	10	2	2
Future Vol, veh/h	9	6	0	10	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	14	20	2	2	2	50
Mvmt Flow	10	7	0	11	2	2

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	17	0	25
Stage 1	-	-	-	-	14
Stage 2	-	-	-	-	11
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1600	-	991
Stage 1	-	-	-	-	1009
Stage 2	-	-	-	-	1012
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1600	-	991
Mov Cap-2 Maneuver	-	-	-	-	991
Stage 1	-	-	-	-	1009
Stage 2	-	-	-	-	1012

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	966	-	-	1600	-
HCM Lane V/C Ratio	0.005	-	-	-	-
HCM Control Delay (s/veh)	8.7	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q (veh)	0	-	-	0	-

Lanes, Volumes, Timings

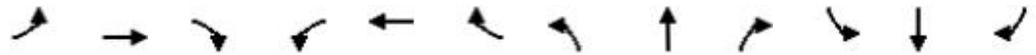
5017 Weddington-Matthews Road TIA

4: Weddington-Matthews Road & Hemby Road/Beulah Church Road

2029 Background PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	253	21	54	185	112	24	304	121	203	264	40
Future Volume (vph)	67	253	21	54	185	112	24	304	121	203	264	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			3%			3%	
Storage Length (ft)	0		0	0		175	125		0	300		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.992				0.850		0.957			0.980	
Fl _t Protected		0.990			0.989		0.950			0.950		
Satd. Flow (prot)	0	1817	0	0	1834	1568	1631	1751	0	1743	1798	0
Fl _t Permitted		0.878			0.859		0.521			0.380		
Satd. Flow (perm)	0	1611	0	0	1593	1568	895	1751	0	697	1798	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1015			1082			1232			3102	
Travel Time (s)		15.4			16.4			18.7			47.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	5%	4%	2%	3%	9%	2%	3%	2%	2%	2%
Adj. Flow (vph)	74	281	23	60	206	124	27	338	134	226	293	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	378	0	0	266	124	27	472	0	226	337	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Minimum Split (s)	13.0	13.0		13.0	13.0	13.0	18.4	18.4		18.4	18.4	
Total Split (s)	24.0	24.0		24.0	24.0	24.0	36.0	36.0		36.0	36.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%	40.0%	60.0%	60.0%		60.0%	60.0%	
Maximum Green (s)	18.0	18.0		18.0	18.0	18.0	29.6	29.6		29.6	29.6	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.3	4.3		4.3	4.3	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.1	2.1		2.1	2.1	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.4	-1.4		-1.4	-1.4	
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	15.0	15.0		15.0	15.0	
Time To Reduce (s)	15.0	15.0		15.0	15.0	15.0	30.0	30.0		30.0	30.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Act Effct Green (s)		17.8			17.8	17.8	21.5	21.5		21.5	21.5	
Actuated g/C Ratio		0.36			0.36	0.36	0.43	0.43		0.43	0.43	
v/c Ratio		0.65			0.47	0.22	0.07	0.62		0.75	0.43	
Control Delay (s/veh)		22.5			17.4	14.5	8.3	14.8		29.1	11.5	

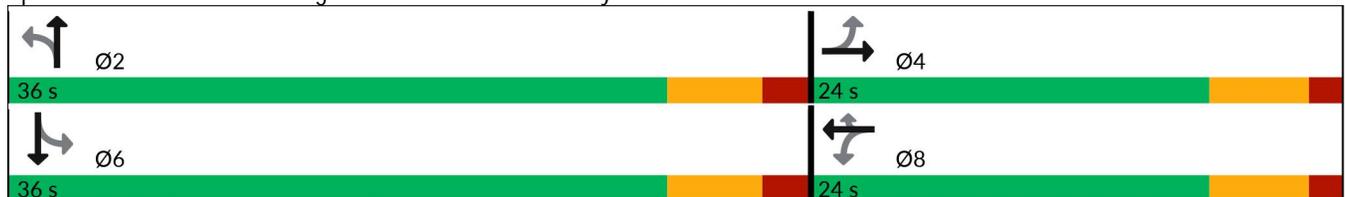


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		22.5			17.4	14.5	8.3	14.8		29.1	11.5	
LOS		C			B	B	A	B		C	B	
Approach Delay (s/veh)		22.5			16.5			14.4			18.6	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)		90			58	24	4	103		53	66	
Queue Length 95th (ft)		#240			142	68	15	175		#153	115	
Internal Link Dist (ft)		935			1002			1152			3022	
Turn Bay Length (ft)						175	125			300		
Base Capacity (vph)		636			629	619	576	1128		449	1159	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.59			0.42	0.20	0.05	0.42		0.50	0.29	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 49.6
 Natural Cycle: 45
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay (s/veh): 17.8
 Intersection LOS: B
 Intersection Capacity Utilization 82.3%
 ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 4: Weddington-Matthews Road & Hemby Road/Beulah Church Road

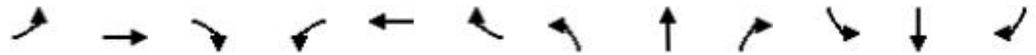


2029 Build-out Conditions

Lanes, Volumes, Timings

5017 Weddington-Matthews Road TIA

1: Weddington-Matthews Road & Tilley Morris Road & Union Day School Driveway 2029 Build AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4	4	4	4			4	4		4	4
Traffic Volume (vph)	62	220	60	287	696	197	499	97	332	150	57	130
Future Volume (vph)	62	220	60	287	696	197	499	97	332	150	57	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		175	150		0	0		150	0		100
Storage Lanes	0		1	1		0	0		1	0		1
Taper Length (ft)	25			175			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.965				0.850			0.850
Flt Protected		0.986		0.950				0.960			0.965	
Satd. Flow (prot)	0	1799	1524	1703	1798	0	0	1788	1568	0	1798	1583
Flt Permitted		0.986		0.950				0.960			0.965	
Satd. Flow (perm)	0	1799	1524	1703	1798	0	0	1788	1568	0	1798	1583
Link Speed (mph)		45			45			45			25	
Link Distance (ft)		1107			1131			2099			1065	
Travel Time (s)		16.8			17.1			31.8			29.0	
Peak Hour Factor	0.62	0.87	0.73	0.76	0.71	0.67	0.75	0.69	0.73	0.56	0.57	0.53
Heavy Vehicles (%)	2%	5%	6%	6%	2%	2%	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	100	253	82	378	980	294	665	141	455	268	100	245
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	353	82	378	1274	0	0	806	455	0	368	245
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary

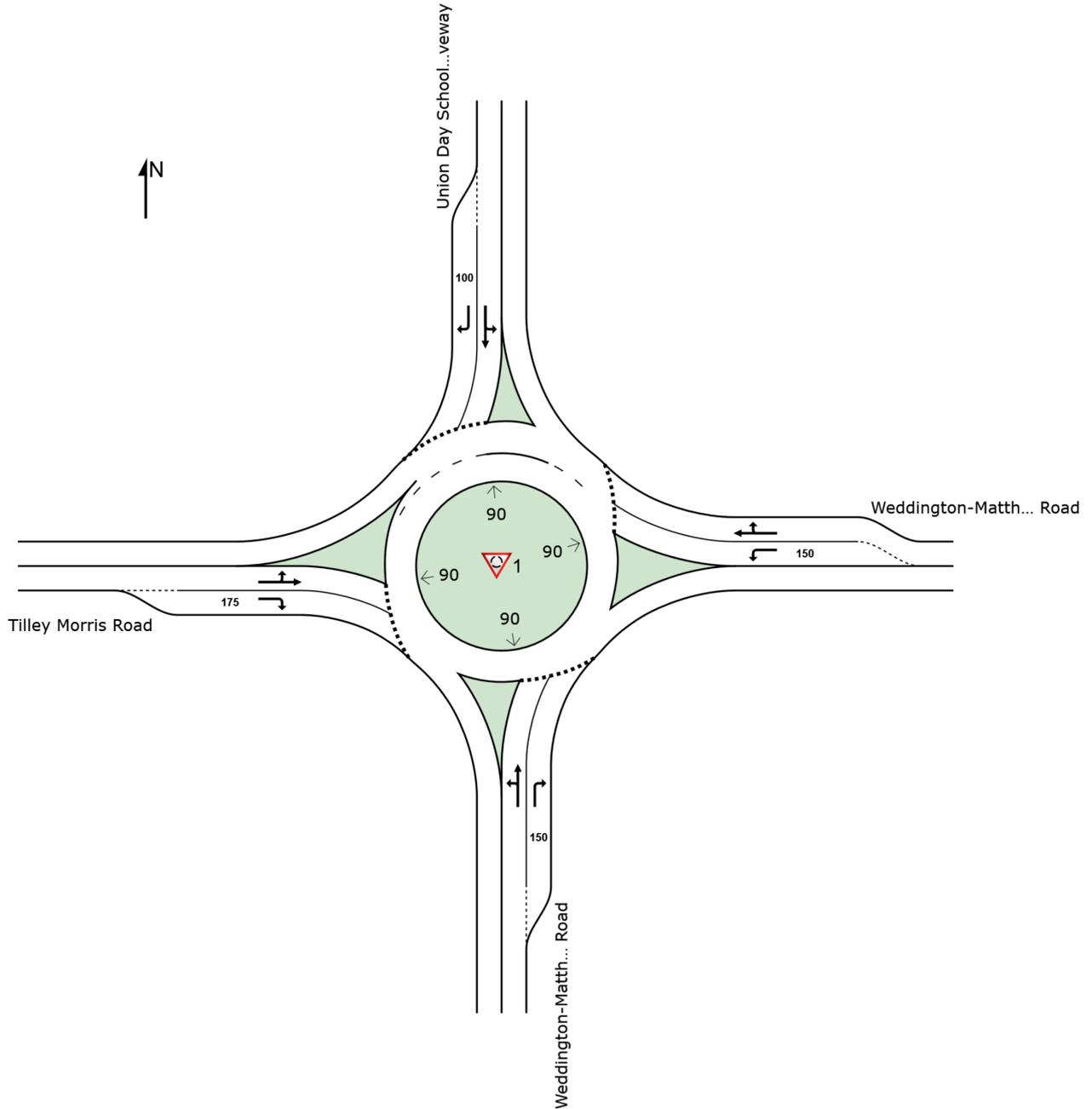
Area Type:	Other
Control Type:	Roundabout
Intersection Capacity Utilization	113.0%
ICU Level of Service	H
Analysis Period (min)	15

SITE LAYOUT

Site: 1 [2029 Build AM (Site Folder: 2029 Build)]

New Site
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

Site: 1 [2029 Build AM (Site Folder: 2029 Build)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site

Site Category: (None)

Roundabout

Vehicle Movement Performance																
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.	Dist]					mph
			veh/h		veh/h					veh	ft					
South: Weddington-Matthews Road																
3	L2	All MCs	665	2.0	665	2.0	1.041	64.2	LOS F	34.1	865.2	1.00	2.19	4.75	18.0	
8	T1	All MCs	141	2.0	141	2.0	1.041	64.2	LOS F	34.1	865.2	1.00	2.19	4.75	16.0	
18	R2	All MCs	455	3.0	455	3.0	0.598	14.4	LOS B	4.6	117.4	0.77	0.81	1.24	30.9	
Approach			1261	2.4	1261	2.4	1.041	46.2	LOS E	34.1	865.2	0.92	1.69	3.48	20.7	
East: Weddington-Matthews Road																
1	L2	All MCs	378	6.0	378	6.0	0.694	23.5	LOS C	4.4	114.5	0.84	0.97	1.44	25.7	
6	T1	All MCs	980	2.0	980	2.0	2.141	533.7	LOS F	218.0	5537.4	1.00	6.68	21.17	3.8	
16	R2	All MCs	294	2.0	294	2.0	2.141	533.7	LOS F	218.0	5537.4	1.00	6.68	21.17	3.7	
Approach			1652	2.9	1652	2.9	2.141	419.5	LOS F	218.0	5537.4	0.96	5.38	16.66	4.8	
North: Union Day School Driveway																
7	L2	All MCs	268	2.0	268	2.0	1.028	87.9	LOS F	13.0	330.2	1.00	2.23	4.20	13.7	
4	T1	All MCs	100	2.0	100	2.0	1.028	88.1	LOS F	13.0	330.2	1.00	2.23	4.20	13.8	
14	R2	All MCs	245	2.0	245	2.0	0.786	46.5	LOS E	4.2	107.3	0.93	1.28	1.86	18.5	
Approach			613	2.0	613	2.0	1.028	71.4	LOS F	13.0	330.2	0.97	1.85	3.26	15.3	
West: Tilley Morris Road																
5	L2	All MCs	100	2.0	100	2.0	0.537	13.7	LOS B	3.2	83.1	0.75	0.80	1.14	24.9	
2	T1	All MCs	253	5.0	253	5.0	0.537	14.5	LOS B	3.2	83.1	0.75	0.80	1.14	30.6	
12	R2	All MCs	82	6.0	82	6.0	0.130	7.2	LOS A	0.4	11.5	0.59	0.54	0.59	33.9	
Approach			435	4.5	435	4.5	0.537	12.9	LOS B	3.2	83.1	0.72	0.75	1.04	29.6	
All Vehicles			3961	2.8	3961	2.8	2.141	201.1	LOS F	218.0	5537.4	0.92	3.15	8.68	8.6	

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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10:02:47 AM

Project: K:\CHL_PRJ\012826085 Toll Brothers - Weddington\08 - Other KHA Disciplines\TRAFFIC\08B_SIDRA\2025-02-27 Intersection 1

Updated.sip9

Lanes, Volumes, Timings
 2: Weddington-Matthews Road & Amanda Drive



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	23	4	15	10	4	13	8	914	4	8	366	9
Future Volume (vph)	23	4	15	10	4	13	8	914	4	8	366	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.951			0.935			0.999			0.997	
Fl _t Protected		0.973			0.981						0.999	
Satd. Flow (prot)	0	1667	0	0	1465	0	0	1861	0	0	1787	0
Fl _t Permitted		0.973			0.981						0.999	
Satd. Flow (perm)	0	1667	0	0	1465	0	0	1861	0	0	1787	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		1285			469			1472			1543	
Travel Time (s)		35.0			12.8			22.3			23.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	2%	7%	11%	100%	2%	2%	2%	2%	25%	5%	25%
Adj. Flow (vph)	26	4	17	11	4	14	9	1016	4	9	407	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	47	0	0	29	0	0	1029	0	0	426	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	62.7%
ICU Level of Service	B
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Vol, veh/h	23	4	15	10	4	13	8	914	4	8	366	9
Future Vol, veh/h	23	4	15	10	4	13	8	914	4	8	366	9
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									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	5	2	7	11	100	2	2	2	2	25	5	25
Mvmt Flow	26	4	17	11	4	14	9	1016	4	9	407	10

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1475	1468	412	1477	1471	1018	417	0	0	1020	0	0
Stage 1	430	430	-	1036	1036	-	-	-	-	-	-	-
Stage 2	1045	1038	-	441	435	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.52	6.27	7.21	7.5	6.22	4.12	-	-	4.35	-	-
Critical Hdwy Stg 1	6.15	5.52	-	6.21	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.52	-	6.21	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.018	3.363	3.599	4.9	3.318	2.218	-	-	2.425	-	-
Pot Cap-1 Maneuver	103	128	629	99	79	288	1142	-	-	598	-	-
Stage 1	598	583	-	269	211	-	-	-	-	-	-	-
Stage 2	273	308	-	578	444	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	91	123	629	91	76	288	1142	-	-	598	-	-
Mov Cap-2 Maneuver	91	123	-	91	76	-	-	-	-	-	-	-
Stage 1	587	571	-	264	207	-	-	-	-	-	-	-
Stage 2	249	302	-	547	435	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	44.7		40.8		0.1		0.2	
HCM LOS	E		E					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1142	-	-	136	130	598	-	-
HCM Lane V/C Ratio	0.008	-	-	0.343	0.231	0.015	-	-
HCM Control Delay (s/veh)	8.2	0	-	44.7	40.8	11.1	0	-
HCM Lane LOS	A	A	-	E	E	B	A	-
HCM 95th %tile Q (veh)	0	-	-	1.4	0.8	0	-	-

Lanes, Volumes, Timings
3: Bonner Drive & Amanda Drive



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	6	3	1	10	14	1
Future Volume (vph)	6	3	1	10	14	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.959			0.992		
Fl _t Protected				0.996	0.955	
Satd. Flow (prot)	1590	0	0	1718	1670	0
Fl _t Permitted				0.996	0.955	
Satd. Flow (perm)	1590	0	0	1718	1670	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	469			1133	1077	
Travel Time (s)	12.8			30.9	29.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	20%	2%	100%	2%	2%	100%
Adj. Flow (vph)	7	3	1	11	16	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	0	12	17	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.3%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	3.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	1			1	1	
Traffic Vol, veh/h	6	3	1	10	14	1
Future Vol, veh/h	6	3	1	10	14	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	20	2	100	2	2	100
Mvmt Flow	7	3	1	11	16	1

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	10	0	22
Stage 1	-	-	-	-	9
Stage 2	-	-	-	-	13
Critical Hdwy	-	-	5.1	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	3.1	-	3.518
Pot Cap-1 Maneuver	-	-	1150	-	995
Stage 1	-	-	-	-	1014
Stage 2	-	-	-	-	1010
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1150	-	994
Mov Cap-2 Maneuver	-	-	-	-	994
Stage 1	-	-	-	-	1014
Stage 2	-	-	-	-	1009

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.7	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	983	-	-	1150	-
HCM Lane V/C Ratio	0.017	-	-	0.001	-
HCM Control Delay (s/veh)	8.7	-	-	8.1	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q (veh)	0.1	-	-	0	-

Lanes, Volumes, Timings

5017 Weddington-Matthews Road TIA

4: Weddington-Matthews Road & Hemby Road/Beulah Church Road

2029 Build AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕		↕	↕	
Traffic Volume (vph)	48	129	13	121	425	427	29	339	34	117	267	46
Future Volume (vph)	48	129	13	121	425	427	29	339	34	117	267	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			3%			3%	
Storage Length (ft)	0		0	0		175	125		0	300		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.991				0.850		0.986			0.978	
Fl _t Protected		0.988			0.989		0.950			0.950		
Satd. Flow (prot)	0	1772	0	0	1820	1583	1743	1809	0	1693	1736	0
Fl _t Permitted		0.749			0.872		0.429			0.338		
Satd. Flow (perm)	0	1344	0	0	1605	1583	787	1809	0	602	1736	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1015			1082			1232			3102	
Travel Time (s)		15.4			16.4			18.7			47.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	5%	8%	4%	3%	2%	2%	2%	2%	5%	5%	8%
Adj. Flow (vph)	53	143	14	134	472	474	32	377	38	130	297	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	210	0	0	606	474	32	415	0	130	348	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Minimum Split (s)	13.0	13.0		13.0	13.0	13.0	18.4	18.4		18.4	18.4	
Total Split (s)	34.0	34.0		34.0	34.0	34.0	26.0	26.0		26.0	26.0	
Total Split (%)	56.7%	56.7%		56.7%	56.7%	56.7%	43.3%	43.3%		43.3%	43.3%	
Maximum Green (s)	28.0	28.0		28.0	28.0	28.0	19.6	19.6		19.6	19.6	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.3	4.3		4.3	4.3	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.1	2.1		2.1	2.1	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.4	-1.4		-1.4	-1.4	
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	15.0	15.0		15.0	15.0	
Time To Reduce (s)	15.0	15.0		15.0	15.0	15.0	30.0	30.0		30.0	30.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Act Effct Green (s)		27.6			27.6	27.6	18.0	18.0		18.0	18.0	
Actuated g/C Ratio		0.50			0.50	0.50	0.32	0.32		0.32	0.32	
v/c Ratio		0.32			0.76	0.60	0.13	0.71		0.67	0.62	
Control Delay (s/veh)		10.7			20.4	14.7	15.0	24.6		37.1	21.9	

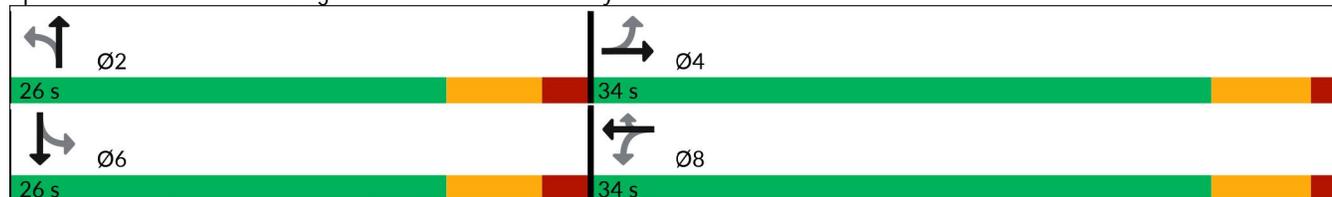


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		10.7			20.4	14.7	15.0	24.6		37.1	21.9	
LOS		B			C	B	B	C		D	C	
Approach Delay (s/veh)		10.7			17.9			23.9			26.0	
Approach LOS		B			B			C			C	
Queue Length 50th (ft)		41			160	111	8	124		38	100	
Queue Length 95th (ft)		84			#343	205	24	210		#111	174	
Internal Link Dist (ft)		935			1002			1152			3022	
Turn Bay Length (ft)						175	125			300		
Base Capacity (vph)		706			844	832	299	689		229	661	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.30			0.72	0.57	0.11	0.60		0.57	0.53	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 55.7
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay (s/veh): 20.2
 Intersection LOS: C
 Intersection Capacity Utilization 85.9%
 ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 4: Weddington-Matthews Road & Hemby Road/Beulah Church Road



Lanes, Volumes, Timings
5: Weddington-Matthews Road & Access A

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	3	10	0	8	1	887	3	3	379	1
Future Volume (vph)	3	0	3	10	0	8	1	887	3	3	379	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.932			0.939							
Fl _t Protected		0.976			0.973							
Satd. Flow (prot)	0	1694	0	0	1702	0	0	1863	0	0	1810	0
Fl _t Permitted		0.976			0.973							
Satd. Flow (perm)	0	1694	0	0	1702	0	0	1863	0	0	1810	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		1078			1059			3102			1472	
Travel Time (s)		29.4			28.9			47.0			22.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%	2%
Adj. Flow (vph)	3	0	3	11	0	9	1	986	3	3	421	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	0	0	20	0	0	990	0	0	425	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	57.5%
ICU Level of Service	B
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Vol, veh/h	3	0	3	10	0	8	1	887	3	3	379	1
Future Vol, veh/h	3	0	3	10	0	8	1	887	3	3	379	1
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									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	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	5	2
Mvmt Flow	3	0	3	11	0	9	1	986	3	3	421	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1422	1419	422	1419	1418	988	422	0	0	989	0	0
Stage 1	428	428	-	990	990	-	-	-	-	-	-	-
Stage 2	994	991	-	429	428	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	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	114	137	632	114	137	300	1137	-	-	699	-	-
Stage 1	605	585	-	297	324	-	-	-	-	-	-	-
Stage 2	295	324	-	604	585	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	110	136	632	113	136	300	1137	-	-	699	-	-
Mov Cap-2 Maneuver	110	136	-	113	136	-	-	-	-	-	-	-
Stage 1	604	581	-	296	323	-	-	-	-	-	-	-
Stage 2	286	323	-	597	581	-	-	-	-	-	-	-

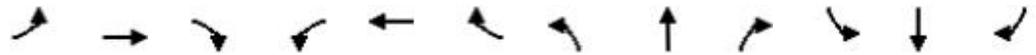
Approach	EB	WB	NB	SB
HCM Control Delay, s/v	25	31.4	0	0.1
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1137	-	-	187	156	699	-
HCM Lane V/C Ratio	0.001	-	-	0.036	0.128	0.005	-
HCM Control Delay (s/veh)	8.2	0	-	25	31.4	10.2	0
HCM Lane LOS	A	A	-	D	D	B	A
HCM 95th %tile Q (veh)	0	-	-	0.1	0.4	0	-

Lanes, Volumes, Timings

5017 Weddington-Matthews Road TIA

1: Weddington-Matthews Road & Tilley Morris Road & Union Day School Driveway 2029 Build MID



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4	4	4	4			4	4		4	4
Traffic Volume (vph)	79	492	160	279	359	172	86	47	249	180	60	96
Future Volume (vph)	79	492	160	279	359	172	86	47	249	180	60	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		175	150		0	0		150	0		100
Storage Lanes	0		1	1		0	0		1	0		1
Taper Length (ft)	25			175			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.941				0.850			0.850
Flt Protected		0.991		0.950				0.972			0.963	
Satd. Flow (prot)	0	1846	1553	1770	1742	0	0	1762	1538	0	1794	1583
Flt Permitted		0.991		0.950				0.972			0.963	
Satd. Flow (perm)	0	1846	1553	1770	1742	0	0	1762	1538	0	1794	1583
Link Speed (mph)		45		45				45			25	
Link Distance (ft)		1107			1131			2099			1065	
Travel Time (s)		16.8			17.1			31.8			29.0	
Peak Hour Factor	0.67	0.93	0.71	0.93	0.84	0.62	0.84	0.60	0.78	0.42	0.48	0.46
Heavy Vehicles (%)	2%	2%	4%	2%	3%	2%	7%	2%	5%	2%	2%	2%
Adj. Flow (vph)	118	529	225	300	427	277	102	78	319	429	125	209
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	647	225	300	704	0	0	180	319	0	554	209
Sign Control		Yield			Yield			Yield			Yield	

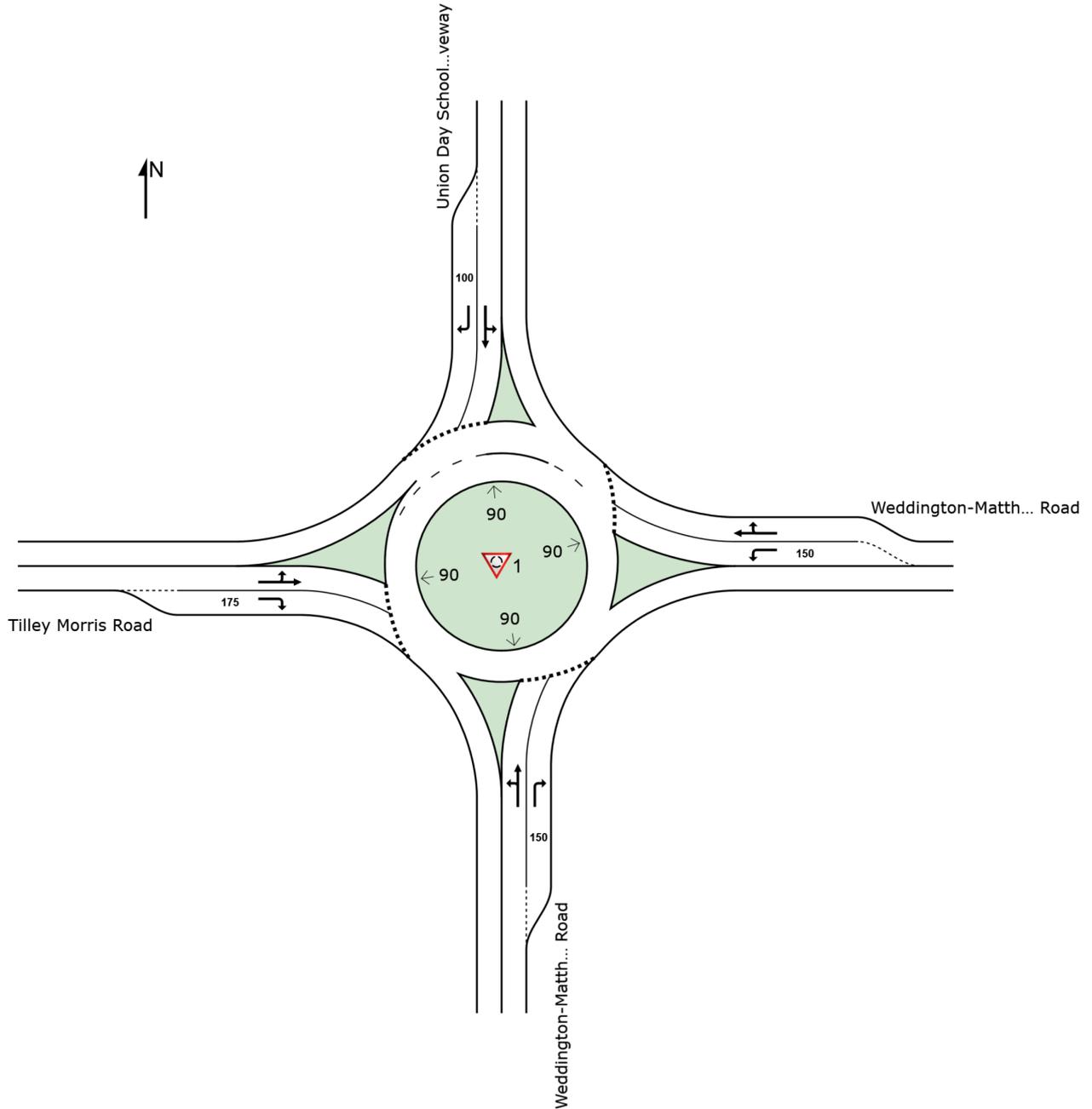
Intersection Summary	
Area Type:	Other
Control Type:	Roundabout
Intersection Capacity Utilization	89.4%
Analysis Period (min)	15
	ICU Level of Service E

SITE LAYOUT

 Site: 1 [2029 Build MID (Site Folder: 2029 Build)]

New Site
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: K:\CHL_PRJ\012826085 Toll Brothers - Weddington\08 - Other KHA Disciplines\TRAFFIC\08B_SIDRA\2025-02-27 Intersection 1 Updated.sip9

MOVEMENT SUMMARY

Site: 1 [2029 Build MID (Site Folder: 2029 Build)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
 Site Category: (None)
 Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				mph
			veh/h		veh/h					veh	ft				
South: Weddington-Matthews Road															
3	L2	All MCs	102	7.0	102	7.0	0.380	14.9	LOS B	1.5	38.5	0.72	0.78	0.92	29.4
8	T1	All MCs	78	2.0	78	2.0	0.380	12.8	LOS B	1.5	38.5	0.72	0.78	0.92	24.8
18	R2	All MCs	319	5.0	319	5.0	0.675	25.0	LOS D	3.8	98.7	0.83	1.00	1.44	26.8
Approach			500	4.9	500	4.9	0.675	21.0	LOS C	3.8	98.7	0.79	0.92	1.25	26.9
East: Weddington-Matthews Road															
1	L2	All MCs	300	2.0	300	2.0	0.286	6.2	LOS A	1.3	33.7	0.46	0.31	0.46	32.2
6	T1	All MCs	427	3.0	427	3.0	0.678	13.6	LOS B	9.0	230.9	0.75	0.67	1.17	31.7
16	R2	All MCs	277	2.0	277	2.0	0.678	13.4	LOS B	9.0	230.9	0.75	0.67	1.17	25.5
Approach			1005	2.4	1005	2.4	0.678	11.3	LOS B	9.0	230.9	0.66	0.56	0.96	29.9
North: Union Day School Driveway															
7	L2	All MCs	429	2.0	429	2.0	0.848	32.0	LOS D	9.7	245.8	0.93	1.50	2.30	20.5
4	T1	All MCs	125	2.0	125	2.0	0.848	32.0	LOS D	9.7	245.8	0.93	1.50	2.30	20.7
14	R2	All MCs	209	2.0	209	2.0	0.354	11.1	LOS B	1.5	38.3	0.68	0.71	0.82	26.2
Approach			762	2.0	762	2.0	0.848	26.3	LOS D	9.7	245.8	0.86	1.29	1.89	21.8
West: Tilley Morris Road															
5	L2	All MCs	118	2.0	118	2.0	1.054	75.2	LOS F	26.5	673.1	1.00	2.13	4.98	15.0
2	T1	All MCs	529	2.0	529	2.0	1.054	75.2	LOS F	26.5	673.1	1.00	2.13	4.98	17.0
12	R2	All MCs	225	4.0	225	4.0	0.384	11.8	LOS B	1.7	42.9	0.70	0.71	0.87	32.0
Approach			872	2.5	872	2.5	1.054	58.8	LOS F	26.5	673.1	0.92	1.77	3.92	18.9
All Vehicles			3139	2.7	3139	2.7	1.054	29.7	LOS D	26.5	673.1	0.80	1.13	2.06	23.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: K:\CHL_PRJ\012826085 Toll Brothers - Weddington\08 - Other KHA Disciplines\TRAFFIC\08B_SIDRA\2025-02-27 Intersection 1 Updated.sip9

Lanes, Volumes, Timings
2: Weddington-Matthews Road & Amanda Drive



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	12	4	20	7	4	5	17	347	18	6	450	20
Future Volume (vph)	12	4	20	7	4	5	17	347	18	6	450	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.924			0.955			0.994			0.994	
Fl _t Protected		0.984			0.978			0.998			0.999	
Satd. Flow (prot)	0	1694	0	0	1581	0	0	1802	0	0	1833	0
Fl _t Permitted		0.984			0.978			0.998			0.999	
Satd. Flow (perm)	0	1694	0	0	1581	0	0	1802	0	0	1833	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		1285			469			1472			1543	
Travel Time (s)		35.0			12.8			22.3			23.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	25%	2%	2%	7%	4%	14%	2%	3%	2%
Adj. Flow (vph)	13	4	22	8	4	6	19	386	20	7	500	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	39	0	0	18	0	0	425	0	0	529	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	39.6%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Vol, veh/h	12	4	20	7	4	5	17	347	18	6	450	20
Future Vol, veh/h	12	4	20	7	4	5	17	347	18	6	450	20
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									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	25	2	2	7	4	14	2	3	2
Mvmt Flow	13	4	22	8	4	6	19	386	20	7	500	22

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	964	969	511	972	970	396	522	0	0	406	0	0
Stage 1	525	525	-	434	434	-	-	-	-	-	-	-
Stage 2	439	444	-	538	536	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.35	6.52	6.22	4.17	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.35	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.35	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.725	4.018	3.318	2.263	-	-	2.218	-	-
Pot Cap-1 Maneuver	235	254	563	211	253	653	1019	-	-	1153	-	-
Stage 1	536	529	-	558	581	-	-	-	-	-	-	-
Stage 2	597	575	-	488	523	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	224	246	563	195	245	653	1019	-	-	1153	-	-
Mov Cap-2 Maneuver	224	246	-	195	245	-	-	-	-	-	-	-
Stage 1	523	524	-	545	567	-	-	-	-	-	-	-
Stage 2	573	561	-	461	518	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	16.9		19.4		0.4		0.1	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1019	-	-	342	267	1153	-
HCM Lane V/C Ratio	0.019	-	-	0.117	0.067	0.006	-
HCM Control Delay (s/veh)	8.6	0	-	16.9	19.4	8.1	0
HCM Lane LOS	A	A	-	C	C	A	A
HCM 95th %tile Q (veh)	0.1	-	-	0.4	0.2	0	-

Lanes, Volumes, Timings
 3: Bonner Drive & Amanda Drive



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	11	13	0	7	5	1
Future Volume (vph)	11	13	0	7	5	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.927			0.981		
Fl _t Protected				0.959		
Satd. Flow (prot)	1534	0	0	1863	1541	0
Fl _t Permitted				0.959		
Satd. Flow (perm)	1534	0	0	1863	1541	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	469			1133	1077	
Travel Time (s)	12.8			30.9	29.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	10%	19%	2%	2%	2%	100%
Adj. Flow (vph)	12	14	0	8	6	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	26	0	0	8	7	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.3%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	T			T	T	
Traffic Vol, veh/h	11	13	0	7	5	1
Future Vol, veh/h	11	13	0	7	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	10	19	2	2	2	100
Mvmt Flow	12	14	0	8	6	1

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	26	0	27
Stage 1	-	-	-	-	19
Stage 2	-	-	-	-	8
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1588	-	988
Stage 1	-	-	-	-	1004
Stage 2	-	-	-	-	1015
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1588	-	988
Mov Cap-2 Maneuver	-	-	-	-	988
Stage 1	-	-	-	-	1004
Stage 2	-	-	-	-	1015

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	959	-	-	1588	-
HCM Lane V/C Ratio	0.007	-	-	-	-
HCM Control Delay (s/veh)	8.8	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q (veh)	0	-	-	0	-

Lanes, Volumes, Timings

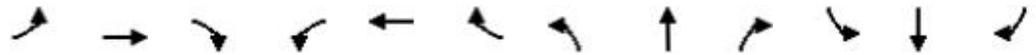
5017 Weddington-Matthews Road TIA

4: Weddington-Matthews Road & Hemby Road/Beulah Church Road

2029 Build MID



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	183	25	47	177	120	22	218	140	182	248	34
Future Volume (vph)	53	183	25	47	177	120	22	218	140	182	248	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			3%			3%	
Storage Length (ft)	0		0	0		175	125		0	300		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.987				0.850		0.941			0.982	
Fl _t Protected		0.990			0.990		0.950			0.950		
Satd. Flow (prot)	0	1797	0	0	1805	1538	1616	1706	0	1710	1769	0
Fl _t Permitted		0.883			0.883		0.553			0.459		
Satd. Flow (perm)	0	1603	0	0	1610	1538	941	1706	0	826	1769	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1015			1082			1232			3102	
Travel Time (s)		15.4			16.4			18.7			47.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	2%	4%	5%	4%	5%	10%	4%	2%	4%	4%	3%
Adj. Flow (vph)	59	203	28	52	197	133	24	242	156	202	276	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	290	0	0	249	133	24	398	0	202	314	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Minimum Split (s)	13.0	13.0		13.0	13.0	13.0	18.4	18.4		18.4	18.4	
Total Split (s)	25.0	25.0		25.0	25.0	25.0	35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%	41.7%	58.3%	58.3%		58.3%	58.3%	
Maximum Green (s)	19.0	19.0		19.0	19.0	19.0	28.6	28.6		28.6	28.6	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.3	4.3		4.3	4.3	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.1	2.1		2.1	2.1	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.4	-1.4		-1.4	-1.4	
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	15.0	15.0		15.0	15.0	
Time To Reduce (s)	15.0	15.0		15.0	15.0	15.0	30.0	30.0		30.0	30.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Act Effct Green (s)		16.4			16.4	16.4	19.2	19.2		19.2	19.2	
Actuated g/C Ratio		0.36			0.36	0.36	0.42	0.42		0.42	0.42	
v/c Ratio		0.51			0.43	0.24	0.06	0.56		0.59	0.43	
Control Delay (s/veh)		16.8			15.6	13.5	8.6	13.8		18.6	11.7	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		16.8			15.6	13.5	8.6	13.8		18.6	11.7	
LOS		B			B	B	A	B		B	B	
Approach Delay (s/veh)		16.8			14.8			13.5			14.4	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)		55			46	23	4	74		38	54	
Queue Length 95th (ft)		151			128	71	14	149		99	112	
Internal Link Dist (ft)		935			1002			1152			3022	
Turn Bay Length (ft)						175	125			300		
Base Capacity (vph)		726			729	696	666	1208		585	1252	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.40			0.34	0.19	0.04	0.33		0.35	0.25	

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	46
Natural Cycle:	40
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.59
Intersection Signal Delay (s/veh):	14.7
Intersection LOS:	B
Intersection Capacity Utilization:	72.8%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 4: Weddington-Matthews Road & Hemby Road/Beulah Church Road



Lanes, Volumes, Timings
5: Weddington-Matthews Road & Access A

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	1	5	0	5	3	371	8	8	451	3
Future Volume (vph)	2	0	1	5	0	5	3	371	8	8	451	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.955			0.932			0.997			0.999	
Fl _t Protected		0.968			0.976						0.999	
Satd. Flow (prot)	0	1722	0	0	1694	0	0	1806	0	0	1841	0
Fl _t Permitted		0.968			0.976						0.999	
Satd. Flow (perm)	0	1722	0	0	1694	0	0	1806	0	0	1841	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		1199			1029			3102			1472	
Travel Time (s)		32.7			28.1			47.0			22.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	3%	2%
Adj. Flow (vph)	2	0	1	6	0	6	3	412	9	9	501	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	0	12	0	0	424	0	0	513	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	39.1%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Vol, veh/h	2	0	1	5	0	5	3	371	8	8	451	3
Future Vol, veh/h	2	0	1	5	0	5	3	371	8	8	451	3
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									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	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	5	2	2	3	2
Mvmt Flow	2	0	1	6	0	6	3	412	9	9	501	3

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	947	948	503	944	945	417	504	0	0	421	0	0
Stage 1	521	521	-	423	423	-	-	-	-	-	-	-
Stage 2	426	427	-	521	522	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	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	241	261	569	242	262	636	1061	-	-	1138	-	-
Stage 1	539	532	-	609	588	-	-	-	-	-	-	-
Stage 2	606	585	-	539	531	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	236	257	569	239	258	636	1061	-	-	1138	-	-
Mov Cap-2 Maneuver	236	257	-	239	258	-	-	-	-	-	-	-
Stage 1	537	526	-	607	586	-	-	-	-	-	-	-
Stage 2	598	583	-	532	525	-	-	-	-	-	-	-

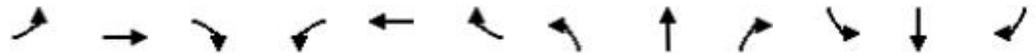
Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	17.4		15.7		0.1		0.1	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1061	-	-	293	347	1138	-	-
HCM Lane V/C Ratio	0.003	-	-	0.011	0.032	0.008	-	-
HCM Control Delay (s/veh)	8.4	0	-	17.4	15.7	8.2	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q (veh)	0	-	-	0	0.1	0	-	-

Lanes, Volumes, Timings

5017 Weddington-Matthews Road TIA

1: Weddington-Matthews Road & Tilley Morris Road & Union Day School Driveway 2029 Build PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4	4	4	4			4	4		4	4
Traffic Volume (vph)	10	678	245	329	455	20	167	4	312	21	17	12
Future Volume (vph)	10	678	245	329	455	20	167	4	312	21	17	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		175	150		0	0		150	0		100
Storage Lanes	0		1	1		0	0		1	0		1
Taper Length (ft)	25			175			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.994				0.850			0.850
Flt Protected		0.999		0.950				0.953			0.973	
Satd. Flow (prot)	0	1861	1583	1770	1831	0	0	1758	1583	0	1812	1583
Flt Permitted		0.999		0.950				0.953			0.973	
Satd. Flow (perm)	0	1861	1583	1770	1831	0	0	1758	1583	0	1812	1583
Link Speed (mph)		45			45			45			25	
Link Distance (ft)		1107			1131			2099			1065	
Travel Time (s)		16.8			17.1			31.8			29.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	3%	6%	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	11	753	272	366	506	22	186	4	347	23	19	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	764	272	366	528	0	0	190	347	0	42	13
Sign Control		Yield			Yield			Yield			Yield	

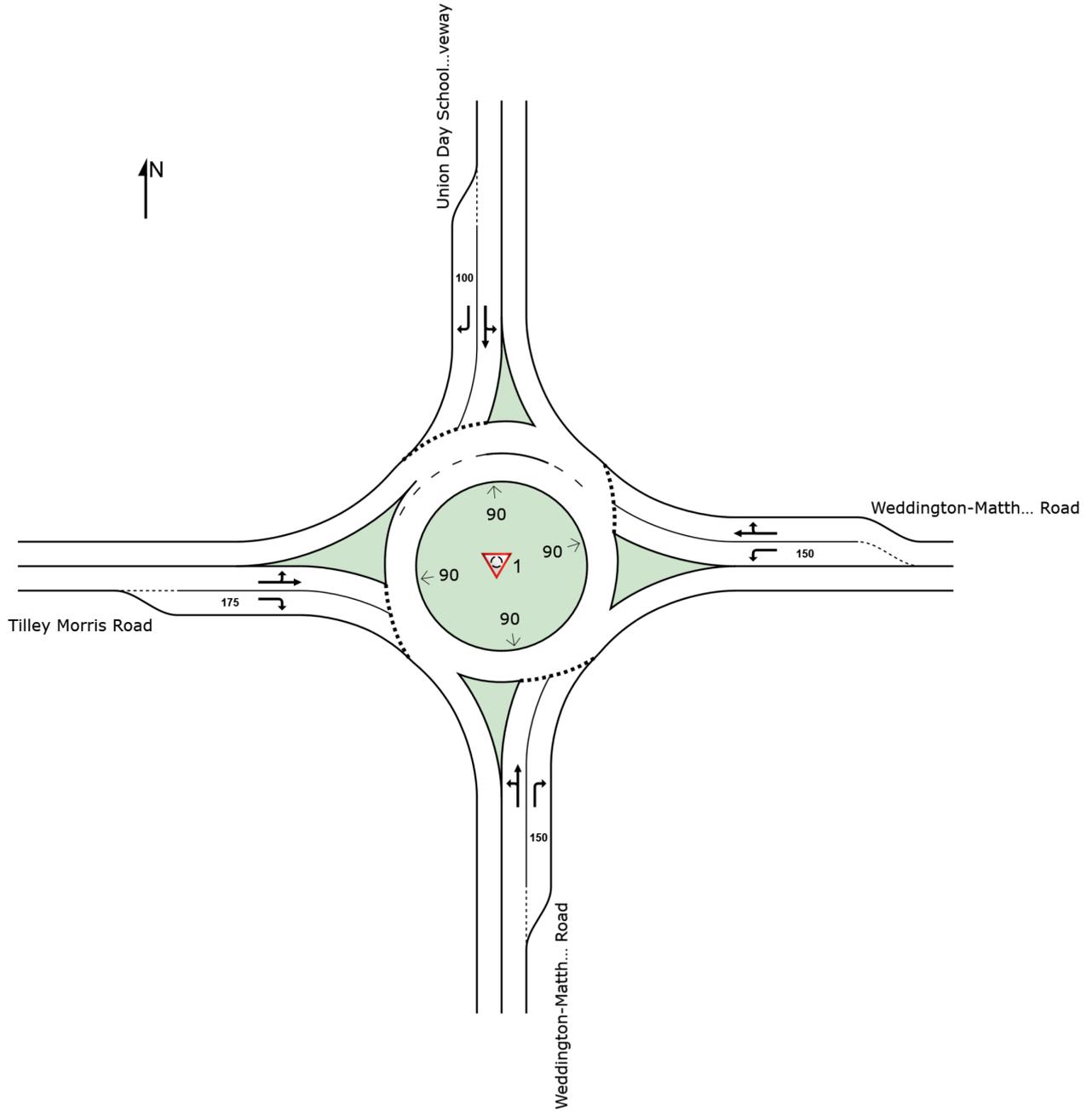
Intersection Summary	
Area Type:	Other
Control Type:	Roundabout
Intersection Capacity Utilization	87.5%
Analysis Period (min)	15
	ICU Level of Service E

SITE LAYOUT

Site: 1 [2029 Build PM (Site Folder: 2029 Build)]

New Site
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

Site: 1 [2029 Build PM (Site Folder: 2029 Build)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site
 Site Category: (None)
 Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				mph
			veh/h		veh/h					veh	ft				
South: Weddington-Matthews Road															
3	L2	All MCs	186	3.0	186	3.0	0.297	9.4	LOS A	1.2	29.6	0.65	0.61	0.68	30.8
8	T1	All MCs	4	2.0	4	2.0	0.297	9.2	LOS A	1.2	29.6	0.65	0.61	0.68	25.6
18	R2	All MCs	347	2.0	347	2.0	0.530	14.1	LOS B	3.0	76.9	0.75	0.79	1.07	31.2
Approach			537	2.3	537	2.3	0.530	12.4	LOS B	3.0	76.9	0.72	0.73	0.93	31.0
East: Weddington-Matthews Road															
1	L2	All MCs	366	2.0	366	2.0	0.319	6.1	LOS A	1.6	40.4	0.40	0.23	0.40	32.3
6	T1	All MCs	506	3.0	506	3.0	0.466	8.1	LOS A	2.8	70.6	0.48	0.28	0.48	34.3
16	R2	All MCs	22	6.0	22	6.0	0.466	8.4	LOS A	2.8	70.6	0.48	0.28	0.48	27.2
Approach			893	2.7	893	2.7	0.466	7.3	LOS A	2.8	70.6	0.45	0.26	0.45	33.2
North: Union Day School Driveway															
7	L2	All MCs	23	2.0	23	2.0	0.079	7.7	LOS A	0.3	6.4	0.62	0.62	0.62	26.4
4	T1	All MCs	19	2.0	19	2.0	0.079	7.7	LOS A	0.3	6.4	0.62	0.62	0.62	26.8
14	R2	All MCs	13	2.0	13	2.0	0.028	8.0	LOS A	0.1	2.3	0.64	0.61	0.64	27.2
Approach			56	2.0	56	2.0	0.079	7.8	LOS A	0.3	6.4	0.63	0.62	0.63	26.7
West: Tilley Morris Road															
5	L2	All MCs	11	2.0	11	2.0	0.810	21.3	LOS C	15.0	381.1	0.95	1.09	1.98	23.4
2	T1	All MCs	753	2.0	753	2.0	0.810	21.3	LOS C	15.0	381.1	0.95	1.09	1.98	28.7
12	R2	All MCs	272	2.0	272	2.0	0.289	6.8	LOS A	1.3	32.6	0.53	0.39	0.53	34.7
Approach			1037	2.0	1037	2.0	0.810	17.4	LOS C	15.0	381.1	0.84	0.90	1.60	30.0
All Vehicles			2522	2.3	2522	2.3	0.810	12.6	LOS B	15.0	381.1	0.67	0.63	1.03	31.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: K:\CHL_PRJ\012826085 Toll Brothers - Weddington\08 - Other KHA Disciplines\TRAFFIC\08B_SIDRA\2025-02-27 Intersection 1 Updated.sip9

Lanes, Volumes, Timings
 2: Weddington-Matthews Road & Amanda Drive

5017 Weddington-Matthews Road TIA
 2029 Build PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	15	4	11	7	4	9	17	482	11	9	542	14
Future Volume (vph)	15	4	11	7	4	9	17	482	11	9	542	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.951			0.939			0.997			0.997	
Fl _t Protected		0.975			0.982			0.998			0.999	
Satd. Flow (prot)	0	1628	0	0	1718	0	0	1847	0	0	1855	0
Fl _t Permitted		0.975			0.982			0.998			0.999	
Satd. Flow (perm)	0	1628	0	0	1718	0	0	1847	0	0	1855	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		1285			469			1472			1543	
Travel Time (s)		35.0			12.8			22.3			23.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	14%	2%	2%	2%	2%	2%	2%	2%	20%	2%	2%	2%
Adj. Flow (vph)	17	4	12	8	4	10	19	536	12	10	602	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	33	0	0	22	0	0	567	0	0	628	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	45.5%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Vol, veh/h	15	4	11	7	4	9	17	482	11	9	542	14
Future Vol, veh/h	15	4	11	7	4	9	17	482	11	9	542	14
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									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	14	2	2	2	2	2	2	2	20	2	2	2
Mvmt Flow	17	4	12	8	4	10	19	536	12	10	602	16

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1217	1216	610	1218	1218	542	618	0	0	548	0	0
Stage 1	630	630	-	580	580	-	-	-	-	-	-	-
Stage 2	587	586	-	638	638	-	-	-	-	-	-	-
Critical Hdwy	7.24	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.24	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.24	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.626	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	149	181	494	157	181	540	962	-	-	1021	-	-
Stage 1	450	475	-	500	500	-	-	-	-	-	-	-
Stage 2	475	497	-	465	471	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	139	173	494	145	173	540	962	-	-	1021	-	-
Mov Cap-2 Maneuver	139	173	-	145	173	-	-	-	-	-	-	-
Stage 1	437	468	-	486	486	-	-	-	-	-	-	-
Stage 2	449	483	-	442	464	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	27.1		22.6		0.3		0.1	
HCM LOS	D		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	962	-	-	196	227	1021	-
HCM Lane V/C Ratio	0.02	-	-	0.17	0.098	0.01	-
HCM Control Delay (s/veh)	8.8	0	-	27.1	22.6	8.6	0
HCM Lane LOS	A	A	-	D	C	A	A
HCM 95th %tile Q (veh)	0.1	-	-	0.6	0.3	0	-

Lanes, Volumes, Timings
 3: Bonner Drive & Amanda Drive



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	9	12	0	10	5	2
Future Volume (vph)	9	12	0	10	5	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.924			0.966		
Flt Protected				0.964		
Satd. Flow (prot)	1563	0	0	1863	1552	0
Flt Permitted				0.964		
Satd. Flow (perm)	1563	0	0	1863	1552	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	469			1133	1077	
Travel Time (s)	12.8			30.9	29.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	14%	11%	2%	2%	2%	50%
Adj. Flow (vph)	10	13	0	11	6	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	23	0	0	11	8	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.3%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	T			T	T	
Traffic Vol, veh/h	9	12	0	10	5	2
Future Vol, veh/h	9	12	0	10	5	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	14	11	2	2	2	50
Mvmt Flow	10	13	0	11	6	2

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	23	0	28
Stage 1	-	-	-	-	17
Stage 2	-	-	-	-	11
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1592	-	987
Stage 1	-	-	-	-	1006
Stage 2	-	-	-	-	1012
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1592	-	987
Mov Cap-2 Maneuver	-	-	-	-	987
Stage 1	-	-	-	-	1006
Stage 2	-	-	-	-	1012

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	972	-	-	1592	-
HCM Lane V/C Ratio	0.008	-	-	-	-
HCM Control Delay (s/veh)	8.7	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q (veh)	0	-	-	0	-

Lanes, Volumes, Timings

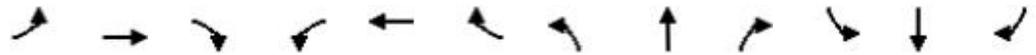
5017 Weddington-Matthews Road TIA

4: Weddington-Matthews Road & Hemby Road/Beulah Church Road

2029 Build PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	253	21	54	185	117	24	307	121	206	266	43
Future Volume (vph)	72	253	21	54	185	117	24	307	121	206	266	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			0%			3%			3%	
Storage Length (ft)	0		0	0		175	125		0	300		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.992				0.850		0.958			0.979	
Fl _t Protected		0.990			0.989		0.950			0.950		
Satd. Flow (prot)	0	1817	0	0	1834	1568	1631	1753	0	1743	1796	0
Fl _t Permitted		0.869			0.857		0.512			0.377		
Satd. Flow (perm)	0	1595	0	0	1589	1568	879	1753	0	692	1796	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1015			1082			1232			3102	
Travel Time (s)		15.4			16.4			18.7			47.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	5%	4%	2%	3%	9%	2%	3%	2%	2%	2%
Adj. Flow (vph)	80	281	23	60	206	130	27	341	134	229	296	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	384	0	0	266	130	27	475	0	229	344	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Minimum Split (s)	13.0	13.0		13.0	13.0	13.0	18.4	18.4		18.4	18.4	
Total Split (s)	25.0	25.0		25.0	25.0	25.0	35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%	41.7%	58.3%	58.3%		58.3%	58.3%	
Maximum Green (s)	19.0	19.0		19.0	19.0	19.0	28.6	28.6		28.6	28.6	
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.3	4.3		4.3	4.3	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	2.1	2.1		2.1	2.1	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.4	-1.4		-1.4	-1.4	
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	15.0	15.0		15.0	15.0	
Time To Reduce (s)	15.0	15.0		15.0	15.0	15.0	30.0	30.0		30.0	30.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Act Effct Green (s)		18.4			18.4	18.4	22.2	22.2		22.2	22.2	
Actuated g/C Ratio		0.36			0.36	0.36	0.44	0.44		0.44	0.44	
v/c Ratio		0.67			0.46	0.23	0.07	0.62		0.76	0.44	
Control Delay (s/veh)		22.9			17.5	14.7	8.6	15.1		30.9	11.9	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		22.9			17.5	14.7	8.6	15.1		30.9	11.9	
LOS		C			B	B	A	B		C	B	
Approach Delay (s/veh)		22.9			16.5			14.7			19.5	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)		95			60	27	5	109		57	71	
Queue Length 95th (ft)		#238			138	70	15	184		#161	123	
Internal Link Dist (ft)		935			1002			1152			3022	
Turn Bay Length (ft)						175	125			300		
Base Capacity (vph)		648			645	637	535	1068		421	1094	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.59			0.41	0.20	0.05	0.44		0.54	0.31	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 50.9
 Natural Cycle: 50
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay (s/veh): 18.3
 Intersection LOS: B
 Intersection Capacity Utilization 82.9%
 ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 4: Weddington-Matthews Road & Hemby Road/Beulah Church Road



Lanes, Volumes, Timings
5: Weddington-Matthews Road & Access A

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	2	6	0	6	3	485	10	9	529	3
Future Volume (vph)	2	0	2	6	0	6	3	485	10	9	529	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.932			0.932			0.997			0.999	
Fl _t Protected		0.976			0.976						0.999	
Satd. Flow (prot)	0	1694	0	0	1694	0	0	1857	0	0	1859	0
Fl _t Permitted		0.976			0.976						0.999	
Satd. Flow (perm)	0	1694	0	0	1694	0	0	1857	0	0	1859	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		939			1139			3102			1472	
Travel Time (s)		25.6			31.1			47.0			22.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2	0	2	7	0	7	3	539	11	10	588	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	14	0	0	553	0	0	601	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	44.1%
Analysis Period (min)	15
	ICU Level of Service A

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Vol, veh/h	2	0	2	6	0	6	3	485	10	9	529	3
Future Vol, veh/h	2	0	2	6	0	6	3	485	10	9	529	3
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									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	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	2	0	2	7	0	7	3	539	11	10	588	3

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1164	1166	590	1162	1162	545	591	0	0	550	0	0
Stage 1	610	610	-	551	551	-	-	-	-	-	-	-
Stage 2	554	556	-	611	611	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	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	171	194	508	172	195	538	985	-	-	1020	-	-
Stage 1	482	485	-	519	515	-	-	-	-	-	-	-
Stage 2	517	513	-	481	484	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	166	190	508	169	191	538	985	-	-	1020	-	-
Mov Cap-2 Maneuver	166	190	-	169	191	-	-	-	-	-	-	-
Stage 1	480	478	-	517	513	-	-	-	-	-	-	-
Stage 2	509	511	-	472	477	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	19.7		19.8		0.1		0.1	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	985	-	-	250	257	1020	-	-
HCM Lane V/C Ratio	0.003	-	-	0.018	0.052	0.01	-	-
HCM Control Delay (s/veh)	8.7	0	-	19.7	19.8	8.6	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q (veh)	0	-	-	0.1	0.2	0	-	-

Queuing and Blocking Reports

2024 Existing Conditions

Intersection: 1: Weddington-Matthews Road & Tilley Morris Road & Union Day School Driveway

Movement	EB	EB	WB	WB	NB	NB	B10	SB	SB
Directions Served	LT	R	L	TR	LT	R	T	LT	R
Maximum Queue (ft)	112	18	324	1080	1814	300	557	996	150
Average Queue (ft)	43	1	188	500	698	144	89	550	90
95th Queue (ft)	85	11	400	1283	1952	372	533	1204	201
Link Distance (ft)	1004				1024	1964	1454	970	
Upstream Blk Time (%)				33	14	1		40	
Queuing Penalty (veh)				0	113	4		0	
Storage Bay Dist (ft)	175		150				150	100	
Storage Blk Time (%)			4	48	54			75	0
Queuing Penalty (veh)			34	133	167			96	1

Intersection: 2: Weddington-Matthews Road & Amanda Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	60	94	74	68
Average Queue (ft)	20	15	7	4
95th Queue (ft)	48	53	48	28
Link Distance (ft)	1195	394	1400	1454
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Bonner Drive & Amanda Drive

Movement	NB
Directions Served	LR
Maximum Queue (ft)	46
Average Queue (ft)	8
95th Queue (ft)	32
Link Distance (ft)	1049
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Weddington-Matthews Road & Hemby Road/Beulah Church Road

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	357	279	226	46	198	124	171
Average Queue (ft)	115	133	92	11	103	49	84
95th Queue (ft)	373	232	173	33	173	101	146
Link Distance (ft)	952	1022			1176		3018
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			175	125		300	
Storage Blk Time (%)		3	0		4		
Queuing Penalty (veh)		15	2		1		

Network Summary

Network wide Queuing Penalty: 567

Intersection: 1: Weddington-Matthews Road & Tilley Morris Road & Union Day School Driveway

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	1034	300	86	39	111	71	937	150
Average Queue (ft)	410	129	33	8	43	22	235	58
95th Queue (ft)	1052	367	66	29	86	58	769	160
Link Distance (ft)	1004			1024	1964		970	
Upstream Blk Time (%)	20						6	
Queuing Penalty (veh)	0						0	
Storage Bay Dist (ft)		175	150			150		100
Storage Blk Time (%)	45				0		29	0
Queuing Penalty (veh)	65				0		42	0

Intersection: 2: Weddington-Matthews Road & Amanda Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	44	42	69	36
Average Queue (ft)	14	8	8	1
95th Queue (ft)	34	30	39	14
Link Distance (ft)	1195	394	1400	1454
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Bonner Drive & Amanda Drive

Movement	NB
Directions Served	LR
Maximum Queue (ft)	52
Average Queue (ft)	4
95th Queue (ft)	26
Link Distance (ft)	1049
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Weddington-Matthews Road & Hemby Road/Beulah Church Road

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	210	208	149	55	190	246	195
Average Queue (ft)	79	73	28	7	78	76	62
95th Queue (ft)	171	170	99	31	147	170	133
Link Distance (ft)	952	1022			1176		3018
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			175	125		300	
Storage Blk Time (%)		3			1	0	0
Queuing Penalty (veh)		4			0	0	0

Network Summary

Network wide Queuing Penalty: 113

Intersection: 1: Weddington-Matthews Road & Tilley Morris Road & Union Day School Driveway

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	963	300	109	32	97	77	61	41
Average Queue (ft)	460	156	38	8	47	32	18	4
95th Queue (ft)	1043	394	79	30	81	72	48	22
Link Distance (ft)	1004			1024	1964		970	
Upstream Blk Time (%)	19							
Queuing Penalty (veh)	0							
Storage Bay Dist (ft)		175	150			150		100
Storage Blk Time (%)	59		0					
Queuing Penalty (veh)	128		0					

Intersection: 2: Weddington-Matthews Road & Amanda Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	66	27	129	25
Average Queue (ft)	13	5	13	1
95th Queue (ft)	39	21	71	11
Link Distance (ft)	1195	394	1400	1454
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Bonner Drive & Amanda Drive

Movement	NB
Directions Served	LR
Maximum Queue (ft)	45
Average Queue (ft)	4
95th Queue (ft)	24
Link Distance (ft)	1049
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Weddington-Matthews Road & Hemby Road/Beulah Church Road

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	428	216	99	81	235	269	271
Average Queue (ft)	150	70	26	9	103	106	79
95th Queue (ft)	403	151	69	44	181	229	210
Link Distance (ft)	952	1022			1176		3018
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			175	125		300	
Storage Blk Time (%)		1	0		4	3	
Queuing Penalty (veh)		1	0		1	8	

Network Summary

Network wide Queuing Penalty: 138

2029 Background Conditions

Intersection: 1: Weddington-Matthews Road & Tilley Morris Road & Union Day School Driveway

Movement	EB	EB	WB	WB	NB	NB	B10	SB	SB
Directions Served	LT	R	L	TR	LT	R	T	LT	R
Maximum Queue (ft)	116	51	324	1075	2064	300	1446	997	150
Average Queue (ft)	49	4	217	563	1164	253	379	767	109
95th Queue (ft)	94	25	417	1302	2411	424	1341	1287	214
Link Distance (ft)	1004		1024		1964		1454	970	
Upstream Blk Time (%)				31	34	5		57	
Queuing Penalty (veh)				0	319	48		0	
Storage Bay Dist (ft)	175		150		150		100		
Storage Blk Time (%)				18	57	91	93		0
Queuing Penalty (veh)				172	169	297	124		0

Intersection: 2: Weddington-Matthews Road & Amanda Drive

Movement	EB	WB	NB	B5	SB
Directions Served	LTR	LTR	LTR	T	LTR
Maximum Queue (ft)	121	73	742	125	83
Average Queue (ft)	29	16	121	17	6
95th Queue (ft)	79	50	675	169	39
Link Distance (ft)	1195	394	1400	3018	1454
Upstream Blk Time (%)	3				
Queuing Penalty (veh)	24				
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Bonner Drive & Amanda Drive

Movement	NB
Directions Served	LR
Maximum Queue (ft)	60
Average Queue (ft)	11
95th Queue (ft)	38
Link Distance (ft)	1049
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Weddington-Matthews Road & Hemby Road/Beulah Church Road

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	404	278	271	108	265	156	198
Average Queue (ft)	124	144	107	14	130	63	98
95th Queue (ft)	331	241	207	60	220	129	172
Link Distance (ft)	952	1022			1176		3018
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			175	125		300	
Storage Blk Time (%)		4	1		9		
Queuing Penalty (veh)		18	5		3		

Network Summary

Network wide Queuing Penalty: 1179

Intersection: 1: Weddington-Matthews Road & Tilley Morris Road & Union Day School Driveway

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	1058	300	118	67	138	74	1019	150
Average Queue (ft)	642	206	35	11	50	28	451	80
95th Queue (ft)	1275	431	75	44	101	68	1183	190
Link Distance (ft)	1004			1024	1964		970	
Upstream Blk Time (%)	40						31	
Queuing Penalty (veh)	0						0	
Storage Bay Dist (ft)		175	150			150		100
Storage Blk Time (%)	73		0	0	0		47	0
Queuing Penalty (veh)	115		0	0	1		61	0

Intersection: 2: Weddington-Matthews Road & Amanda Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	51	47	104	39
Average Queue (ft)	16	9	11	2
95th Queue (ft)	39	30	55	21
Link Distance (ft)	1195	394	1400	1454
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Bonner Drive & Amanda Drive

Movement	NB
Directions Served	LR
Maximum Queue (ft)	36
Average Queue (ft)	2
95th Queue (ft)	18
Link Distance (ft)	1049
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Weddington-Matthews Road & Hemby Road/Beulah Church Road

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	198	249	136	48	196	184	151
Average Queue (ft)	77	79	30	10	95	83	63
95th Queue (ft)	153	180	90	31	162	146	127
Link Distance (ft)	952	1022			1176		3018
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			175	125		300	
Storage Blk Time (%)		2			2		
Queuing Penalty (veh)		2			1		

Network Summary

Network wide Queuing Penalty: 180

Intersection: 1: Weddington-Matthews Road & Tilley Morris Road & Union Day School Driveway

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	1062	300	116	48	123	84	60	37
Average Queue (ft)	926	283	40	14	56	33	20	5
95th Queue (ft)	1312	396	83	40	103	73	51	23
Link Distance (ft)	1004			1024	1964		970	
Upstream Blk Time (%)	75							
Queuing Penalty (veh)	0							
Storage Bay Dist (ft)		175	150			150		100
Storage Blk Time (%)	96	0	0		0			
Queuing Penalty (veh)	228	0	0		1			

Intersection: 2: Weddington-Matthews Road & Amanda Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	67	28	108	27
Average Queue (ft)	17	8	17	1
95th Queue (ft)	46	24	71	11
Link Distance (ft)	1195	394	1400	1454
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Bonner Drive & Amanda Drive

Movement	NB
Directions Served	LR
Maximum Queue (ft)	43
Average Queue (ft)	5
95th Queue (ft)	28
Link Distance (ft)	1049
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Weddington-Matthews Road & Hemby Road/Beulah Church Road

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	445	256	129	87	216	223	203
Average Queue (ft)	195	96	26	11	103	98	71
95th Queue (ft)	423	197	81	50	174	181	143
Link Distance (ft)	952	1022			1176		3018
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			175	125		300	
Storage Blk Time (%)		3			3	0	0
Queuing Penalty (veh)		4			1	0	0

Network Summary

Network wide Queuing Penalty: 234

2029 Build-out Conditions

Intersection: 1: Weddington-Matthews Road & Tilley Morris Road & Union Day School Driveway

Movement	EB	EB	WB	WB	NB	NB	B10	SB	SB
Directions Served	LT	R	L	TR	LT	R	T	LT	R
Maximum Queue (ft)	165	56	324	1078	2059	300	1475	1012	150
Average Queue (ft)	55	6	217	546	1149	222	425	839	109
95th Queue (ft)	117	31	416	1317	2468	429	1449	1255	216
Link Distance (ft)	1004			1024	1964		1454	970	
Upstream Blk Time (%)				31	36		10	59	
Queuing Penalty (veh)				0	343		91	0	
Storage Bay Dist (ft)		175	150			150			100
Storage Blk Time (%)	0		18	51	81			96	1
Queuing Penalty (veh)	0		152	158	274			126	1

Intersection: 2: Weddington-Matthews Road & Amanda Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	165	80	1137	107
Average Queue (ft)	36	22	226	10
95th Queue (ft)	116	62	989	54
Link Distance (ft)	1195	394	1388	1454
Upstream Blk Time (%)			1	
Queuing Penalty (veh)			8	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Bonner Drive & Amanda Drive

Movement	NB
Directions Served	LR
Maximum Queue (ft)	53
Average Queue (ft)	13
95th Queue (ft)	41
Link Distance (ft)	1049
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Weddington-Matthews Road & Hemby Road/Beulah Church Road

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	456	390	261	44	266	220	251
Average Queue (ft)	150	150	110	10	124	84	95
95th Queue (ft)	389	290	216	30	210	203	189
Link Distance (ft)	952	1022			1176		3008
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			175	125		300	
Storage Blk Time (%)		6	1		8	1	0
Queuing Penalty (veh)		24	7		2	5	0

Intersection: 5: Weddington-Matthews Road & Access A

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	29	45	378	18
Average Queue (ft)	5	12	29	1
95th Queue (ft)	22	37	263	9
Link Distance (ft)	1034	1014	3008	1388
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 1191

Intersection: 1: Weddington-Matthews Road & Tilley Morris Road & Union Day School Driveway

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	1048	300	142	126	121	82	1008	150
Average Queue (ft)	675	200	44	20	47	29	410	76
95th Queue (ft)	1319	429	125	123	97	69	1115	185
Link Distance (ft)	1004			1024	1964		970	
Upstream Blk Time (%)	48						26	
Queuing Penalty (veh)	0						0	
Storage Bay Dist (ft)		175	150			150		100
Storage Blk Time (%)	77		0	2	0		45	0
Queuing Penalty (veh)	126		0	7	1		59	0

Intersection: 2: Weddington-Matthews Road & Amanda Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	45	42	92	21
Average Queue (ft)	15	11	12	1
95th Queue (ft)	35	30	55	8
Link Distance (ft)	1195	394	1387	1454
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Bonner Drive & Amanda Drive

Movement	NB
Directions Served	LR
Maximum Queue (ft)	53
Average Queue (ft)	9
95th Queue (ft)	37
Link Distance (ft)	1049
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Weddington-Matthews Road & Hemby Road/Beulah Church Road

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	164	165	92	77	191	212	175
Average Queue (ft)	78	75	31	9	96	84	66
95th Queue (ft)	149	144	78	45	163	160	132
Link Distance (ft)	952	1022			1176		3007
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			175	125		300	
Storage Blk Time (%)		1			2	0	0
Queuing Penalty (veh)		1			1	0	0

Intersection: 5: Weddington-Matthews Road & Access A

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	33	40	6	35
Average Queue (ft)	3	8	0	2
95th Queue (ft)	19	30	3	15
Link Distance (ft)	1155	984	3007	1387
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 196

Intersection: 1: Weddington-Matthews Road & Tilley Morris Road & Union Day School Driveway

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	L	TR	LT	R	LT	R
Maximum Queue (ft)	1062	300	107	49	115	79	53	35
Average Queue (ft)	988	296	45	12	52	34	21	5
95th Queue (ft)	1229	350	85	37	92	71	50	24
Link Distance (ft)	1004			1024	1964		970	
Upstream Blk Time (%)	86							
Queuing Penalty (veh)	0							
Storage Bay Dist (ft)		175	150			150		100
Storage Blk Time (%)	100				0			
Queuing Penalty (veh)	245				0			

Intersection: 2: Weddington-Matthews Road & Amanda Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	72	45	95	68
Average Queue (ft)	18	11	12	5
95th Queue (ft)	47	32	52	35
Link Distance (ft)	1195	394	1390	1454
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Bonner Drive & Amanda Drive

Movement	NB
Directions Served	LR
Maximum Queue (ft)	52
Average Queue (ft)	8
95th Queue (ft)	33
Link Distance (ft)	1049
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Weddington-Matthews Road & Hemby Road/Beulah Church Road

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	456	315	173	34	214	315	295
Average Queue (ft)	194	115	32	7	112	137	88
95th Queue (ft)	413	258	118	23	181	272	218
Link Distance (ft)	952	1022			1176		3009
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			175	125		300	
Storage Blk Time (%)		7			4	4	0
Queuing Penalty (veh)		9			1	12	0

Intersection: 5: Weddington-Matthews Road & Access A

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	33	29	15	50
Average Queue (ft)	4	11	1	3
95th Queue (ft)	22	34	6	22
Link Distance (ft)	897	1096	3009	1390
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

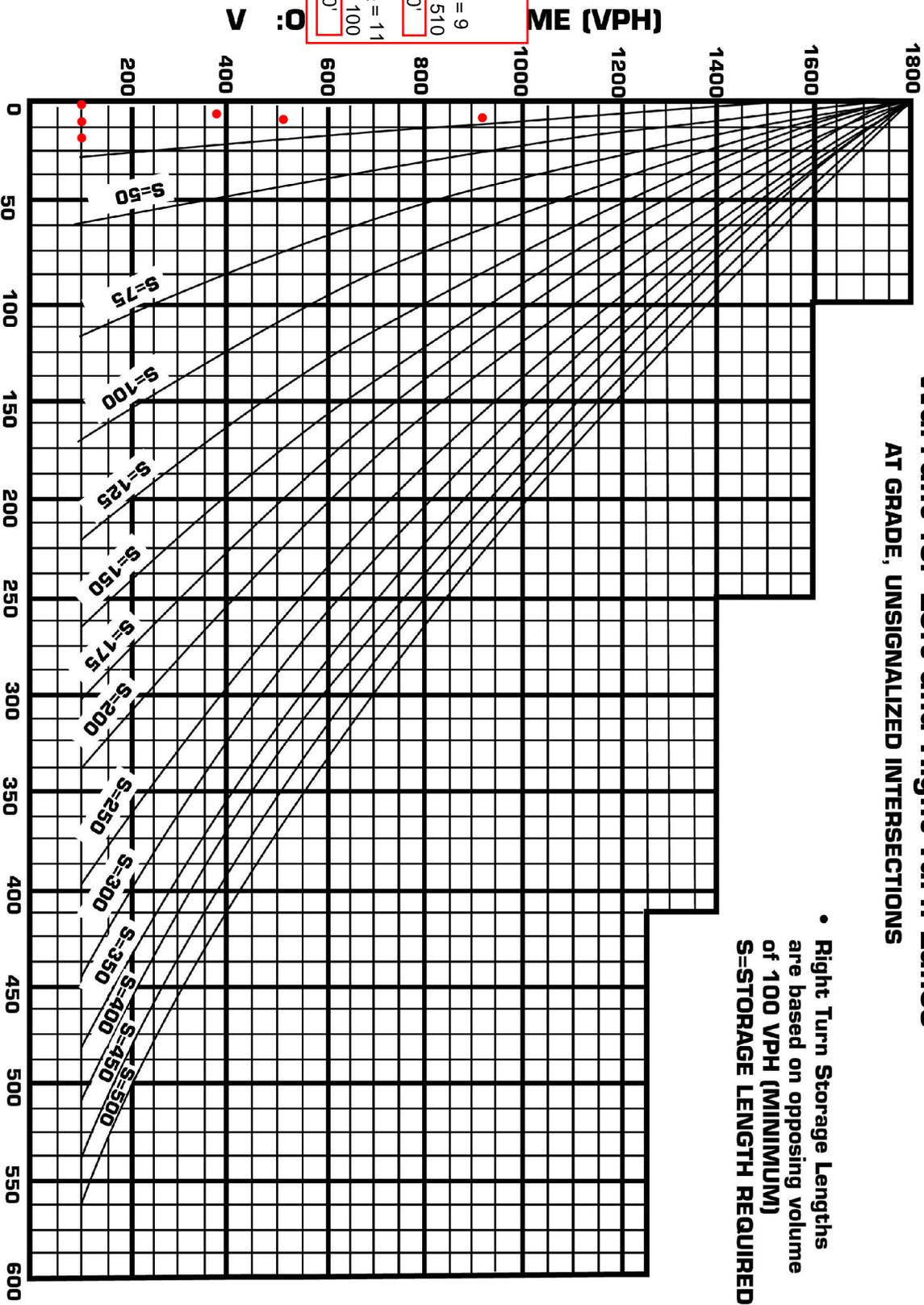
Network Summary

Network wide Queuing Penalty: 267

Auxiliary Turn-Lane Warrants

Warrant for Left and Right-Turn Lanes AT GRADE, UNSIGNALIZED INTERSECTIONS

- Right Turn Storage Lengths are based on opposing volume of 100 VPH (MINIMUM)
S=STORAGE LENGTH REQUIRED



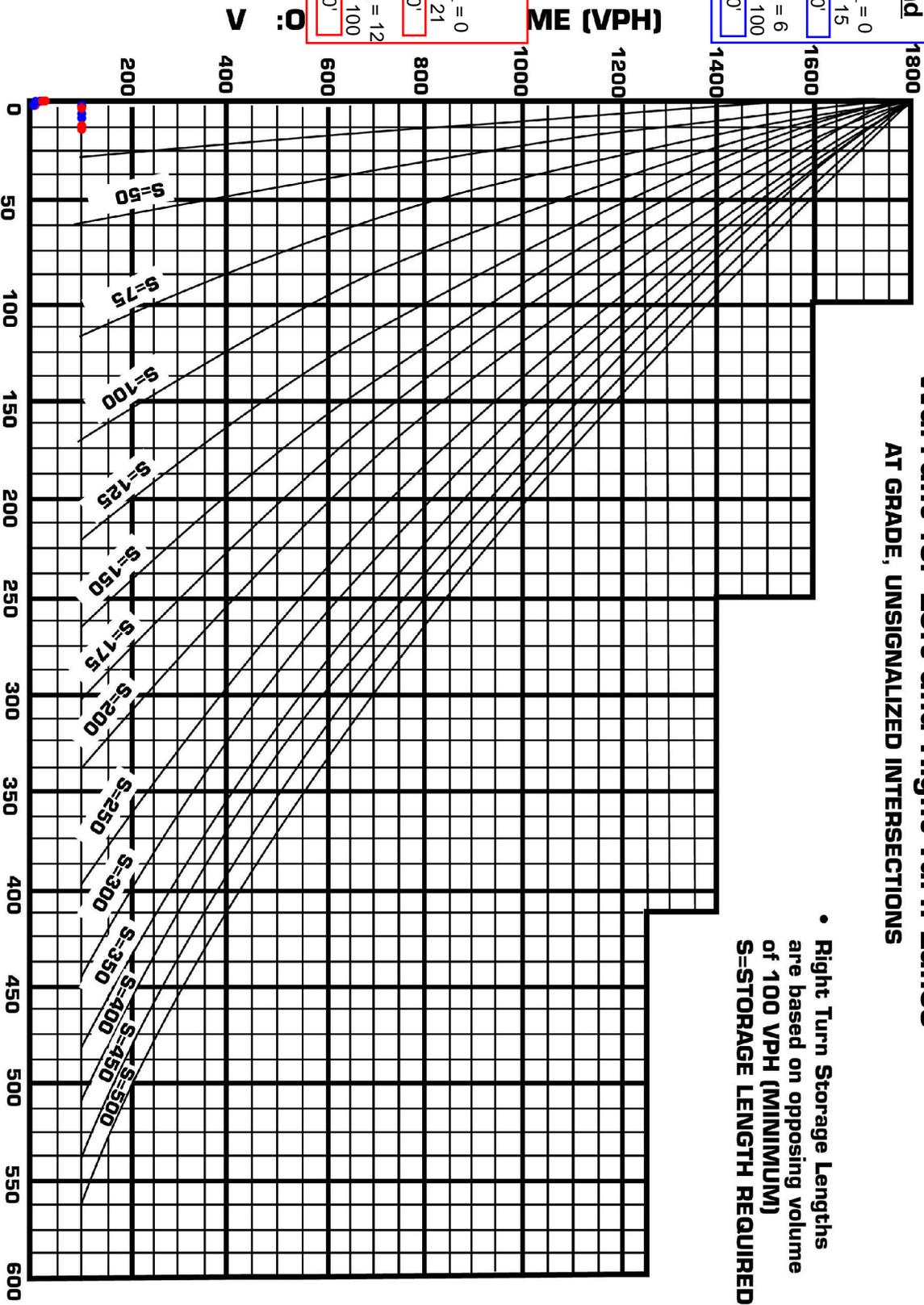
V: LEFT TURNING VOLUME (VPH)
 V: RIGHT TURNING VOLUME (VPH)

Note: Where adjacent signalization may provide opportunities for gaps in the traffic stream a reduction in the above storage values can be considered on a case by case basis.

Warrant for Left and Right-Turn Lanes AT GRADE, UNSIGNALIZED INTERSECTIONS

2029 Background			
AM	MID	PM	
V _{WBL} = 1	V _{WBL} = 0	V _{WBL} = 0	
V _o = 7	V _o = 19	V _o = 15	
S = 0'	S = 0'	S = 0'	
V _{EBR} = 1	V _{EBR} = 8	V _{EBR} = 6	
V _o = 100	V _o = 100	V _o = 100	
S = 0'	S = 0'	S = 0'	

2029 Build			
AM	MID	PM	
V _{WBL} = 1	V _{WBL} = 0	V _{WBL} = 0	
V _o = 9	V _o = 24	V _o = 21	
S = 0'	S = 0'	S = 0'	
V _{EBR} = 3	V _{EBR} = 13	V _{EBR} = 12	
V _o = 100	V _o = 100	V _o = 100	
S = 0'	S = 0'	S = 0'	



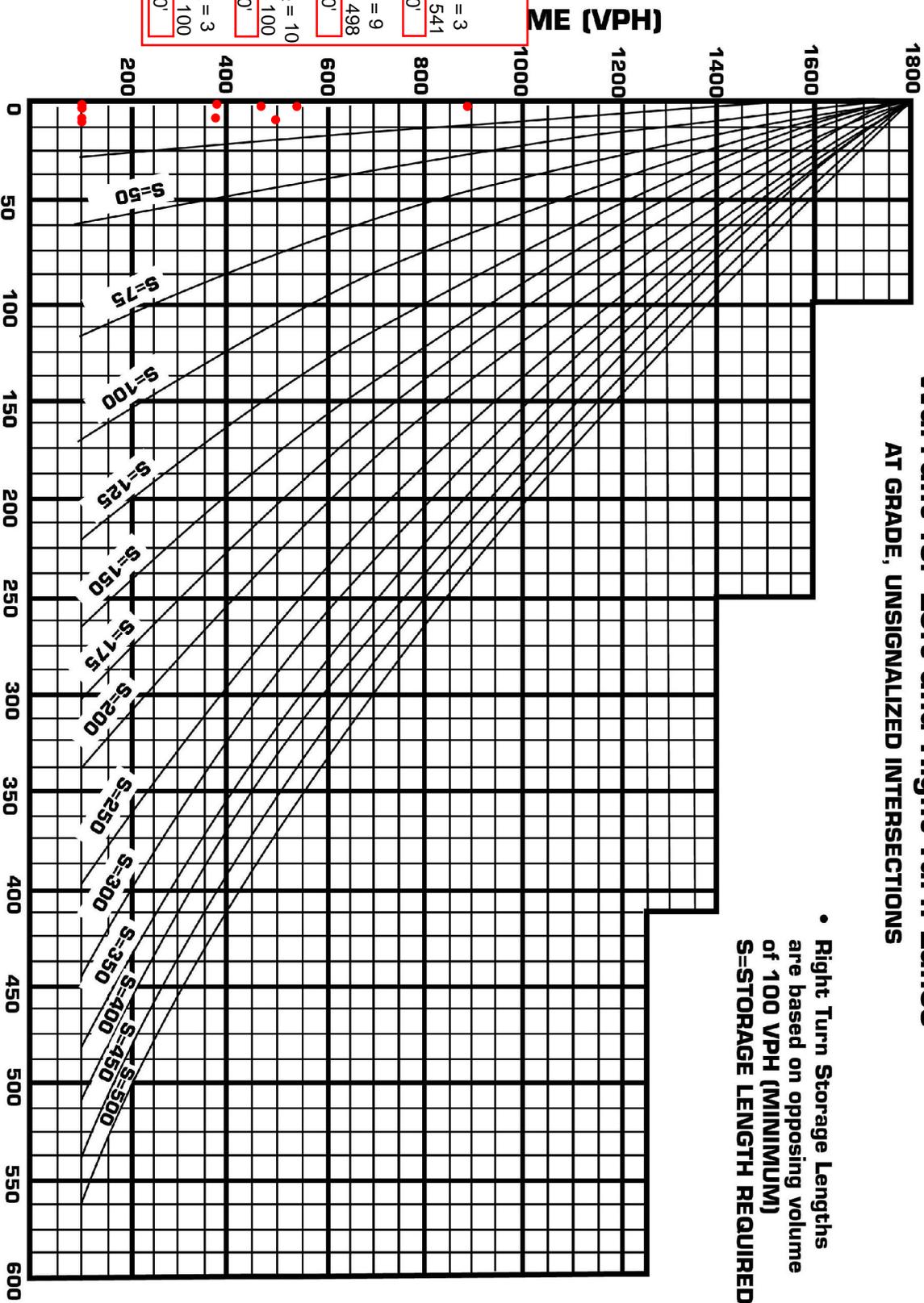
- Right Turn Storage Lengths are based on opposing volume of 100 VPH (MINIMUM)
- S=STORAGE LENGTH REQUIRED**

V_L: LEFT TURNING VOLUME (VPH)
 V_R: RIGHT TURNING VOLUME (VPH)

Note: Where adjacent signalization may provide opportunities for gaps in the traffic stream a reduction in the above storage values can be considered on a case by case basis.

Warrant for Left and Right-Turn Lanes AT GRADE, UNSIGNALIZED INTERSECTIONS

- Right Turn Storage Lengths are based on opposing volume of 100 VPH (MINIMUM)
S=STORAGE LENGTH REQUIRED



V_L: LEFT TURNING VOLUME (VPH)
 V_R: RIGHT TURNING VOLUME (VPH)

Note: Where adjacent signalization may provide opportunities for gaps in the traffic stream a reduction in the above storage values can be considered on a case by case basis.

COMMUNITY MEETING REPORT FOR REZONING PETITION NO. TBD

Petitioner: Toll Brothers
Rezoning Petition No.: TBD
Property: ±94.03 acres located at 5017 Weddington-Matthews Road

This Community Meeting Report is being filed with the Town of Weddington Town Clerk and the Town of Weddington Planning Department pursuant to section C. 5. of the Town of Weddington Unified Development Ordinance.

PERSONS AND ORGANIZATIONS CONTACTED WITH DATES AND EXPLANATIONS OF HOW CONTACTED:

A representative of the Town of Weddington mailed a written notice of the date, time and details of the Community Meeting to the individuals and organizations set out on **Exhibit A** by depositing the Community Meeting Notice in the U.S. mail on June 6th, 2025. A copy of the written notice is attached as **Exhibit B**.

TIME AND DATE OF MEETING:

The Community Meeting required by the Ordinance was held on Wednesday, June 18, 2025, at 6:00 PM at Weddington Swim and Racquet Club, 4315 Weddington Matthews Road, Matthews, NC, 28104.

PERSONS IN ATTENDANCE AT MEETING:

The list of attendees from the required Community Meeting is attached as **Exhibit C**. The Petitioner's representative at the required Community Meeting were Robert Price and Margaret Puckett from Toll Brothers, Andrew Loftin, P.E., Thomas Shirley, P.E., Lauren Zuend, and Tate Pouch with Kimley-Horn & Associates, Inc., the site and traffic engineers.

SUMMARY OF ISSUES DISCUSSED AT MEETING:

I. Overview of Petitioner's Presentation.

Introduction and Overview of Development Plan.

Ms. Puckett welcomed and thanked the participants for their interest in the Toll Brothers Morris Farm petition. Ms. Puckett and the petitioner's representatives provided the following information during the presentation:

Ms. Puckett provided the location of the 94-acre site at 5017 Weddington Matthews Road. The site is located on both sides of Weddington Matthews Road. Ms. Puckett explained the existing zoning, R-CD, and the proposed zoning, R-CD CZ. She showed the Weddington Comprehensive Plan and then turned it over to Robert Price. He explained the features on the proposed conceptual site plan: 45 single-family homes, septic in each lot, 100' Weddington Matthews Road buffer, right-of-way to right-of-way clearing, 1.03-acre average lot size, and 33.2 acres of common open space area. Mr. Price then explained that septic will be designed for 5-bedroom systems and the 2 septic systems the site would contain. If a lot contains 16,000 square feet of conducive soil, then it will operate under a conventional system, and if a lot contains 10,000 square feet of conducive soil, then it will operate under an engineered system. He showed the tree exhibit, outlining the existing heritage trees on site. He explained that the Town Ordinance suggests heritage trees need to be preserved and that it would be Toll's intent to salvage as many as possible and mitigate for

the trees that would be lost. Mr. Price presented the preliminary limits of disturbance on the site and explain the right-of-way to right-of-way clearing method that would be used. He then explained that a traffic impact analysis was done for this site and the required mitigation would be: 1) an extension of Bonner Drive into the proposed development with one ingress lane and one egress lane and 2) construction of eastbound and westbound stop-controlled approaches with one ingress and one egress lane that will have 100' IPS along with a southbound left-turn lane with 100' of storage. Mr. Price turned it back over to Ms. Puckett to discuss the Toll Brothers Approach that includes 225 different house combinations. Ms. Puckett showed interior and exterior upgrades, soft and hard scaping on each side of Weddington Matthews Road along with entry monumentation. Lastly, Ms. Puckett displayed the proposed residential renderings and outdoor living to end the presentation.

The anticipated rezoning schedule is for an August Initial Council Meeting, Planning Board meeting and a Public Hearing on, which will be determined based on Town's project load.

The meeting was then opened for questions and answers.

II. Summary of Questions/Comments and Responses:

The Participants inquiries centered around three primary concerns: septic, storm, and traffic. They also asked the Town of Weddington representatives questions about the plan.

A participant asked about the Bonner Drive extension and explained that the existing road is already very tight and that this would increase traffic through their neighborhood. The team explained that this was a recommendation from the Town and that multiple connections are typically required for fire access. Another participant asked about Amanda Drive inquiring if it would be modified. The team stated that no improvements are proposed on Amanda Drive.

A participant asked about the detention pond on the eastern side of the site and where the storm would be discharged. The team explained that ponds are placed in the low points of the site and that the ponds are designed to meet pre-development flows. There was concern from the participant of storm worsening the stream conditions and affecting residents living downstream of it. The team explained that there is a culvert in the stream adjacent to the pond and a hydrology study will be done to ensure that the stream will continue to flow the way it does in existing condition. An engineering study will also be conducted to determine the size of the culvert.

A participant inquired about whether there will be a berm behind the 6 homes adjacent to the pond and to the south of the site. The team explained that the site has a 50' buffer along the entire site and that there will be additional separation from the back of the home ranging from 50' to 200'. The team added that they would be open to screening the pond if this was something residents desired.

The participants had some questions regarding the site features shown on the concept plan. They asked about the large green area shown on the site concept plan. The team explained that this green area was the stream buffer area, and that the town requires a 100' buffer from the stream centerline. They asked if the ponds on the site are existing or proposed. The team described that there is one existing pond on site and 2 proposed ponds. The participants followed up asking how much storm the proposed ponds will hold. The team explained that the Town requires the pond to contain 100-year storm, and for the 2- and 10-year, we will have to meet pre and post. A question was raised on who will maintain the ponds and what would happen if they decided not to maintain them anymore. The team explained that responsibility would be transferred from Toll Brothers to HOA (Home Owner's Association) and that there will be by-laws and rules (a recorded public document) that will require them to maintain those basins.

A participant asked about potable water and the team explained that they plan to tie into an existing water main along Weddington Matthews Road. Another participant asked if properties will have their own wells and the team explained that they would be tying to the Town's water main.

A participant inquired about the sewage for the site. The team explained the brown area shows where suitable soil areas are and that there are two septic systems that will be used on the site depending on the area of conducive soil on each lot.

A participant asked if there will be any work done to stabilize the existing pond. The team explained that they intend to salvage the conditions for aesthetic value but that they would not be treating this as a stormwater system so it would maintain the same integrity on its own.

A participant asked about the common open space areas on the site plan and what they meant. The team explained that it is their intention to keep as many trees in those areas as possible as the focus of grading is only within the right-of-way. Once the right-of-way is graded, they will come back and individually grade each lot which leaves room to salvage more trees. Another participant asked about the buffer zones and what was allowed to be done in the buffers. The team explained that they are treating the buffers as undisturbed even though the Town does not necessarily require this. A follow up question was asked on who would be maintaining these buffers. The team responded that Toll will be responsible until that responsibility is transferred to the HOA and that they would be responsible for maintenance and any impacts to those areas.

A participant had concerns regarding tree removal and how this would affect runoff specifically in lot 40. The team explained that lot 40 will drain to the nearest pond on the site and this lot is bigger in size so this gives them space to work with when grading this lot.

A few participants asked about the cost of the homes. The team gave them a price range of 1.5 million and up depending on optionality and what consumers want in their homes. There were questions about the home exteriors and if they would look similar to the rendering. They expressed desire to see more brick and stone. The team explained that it is their intention to make the homes look like the renderings and that residents will have the option to choose their homes but that neighboring homes will not contain the same design.

A participant asked what school this site would be zoned for and had concern that Union County Schools are already near capacity. The team explained that the impact of this site on the school system would be very low as there are only 45 new homes being constructed. Another participant raised the question of traffic concerns with congestion of school traffic. The team explained that this site is following by right zoning requirements which means that the conditions would be set under what the Town proposed it to be.

A participant asked what the timeline for the project will look like once it breaks ground. The team explained that it will take approximately 12 months to develop the site but most likely activity in the community would be in 2027.

A participant asked about when roads would be widened and what would be done to mitigate it since morning traffic is already a problem. The team explained that it will be a concurrent approach. While the infill portion is happening on site, offsite improvements will also be under construction. The participant followed up asking if there is anything that could be done to help construction traffic and the team explained that there will be a traffic control plan put together that will follow the engineering plan.

A participant asked if the homes would be on slab or have crawl spaces and if the site will follow the updated cul-de-sac lengths outlined in the Town's code. The team explained that the updated cul-de-sac lengths will be used for this site and that homes will have crawl spaces.

A participant inquired if they will be notified of the next meeting taking place. The team explained that notices are sent to adjacent property owners within a certain radius for the final meeting.

A participant asked if there is any intent for Toll Brothers to bring trees onto the property and what this process looks like. The team explained that the operations team will put together a plan that is applicable to development and that they are looking to add in landscaping and larger caliber trees that fit the community's aesthetic. They added that the consumer they serve typically values this so there is intent to keep as many trees as they can.

There being no further questions, the participants were thanked for their time and interest in the development.

Once the meeting adjourned, there were additional questions asked to individuals on the development team. These discussions were continuations of questions asked in the meeting relating to:

- Bonner Drive connection
- Downstream stormwater
- Traffic analysis and turn lane

CHANGES MADE TO PETITION AS A RESULT OF THE MEETING:

The development team will continue to coordinate efforts with City Staff.

cc: Greg Gordos, AICP, Town Planner, Town of Weddington, NC
Robert Price, Toll Brothers
Bridget Grant, Moore & Van Allen, PLLC

Exhibit A

Adjacent Owners (List via email from the Town):

THE FALLS AT WEDDINGTON
HOMEOWNERS ASSOC. INC
2626 GLENWOOD AVE STE 550
RALEIGH, NC 27608

LAVIN ANDREW H
720 VINTAGE CREEK DR
MATTHEWS, NC 28104

MISTRETTA ANTOINETTE
716 VINTAGE CREEK DR
MATTHEWS, NC 28104

ANOTA FAMILY TRUST
712 VINTAGE CREEK DR
MATTHEWS, NC 28104

HUGGINS BRENT
708 VINTAGE CREEK DR
MATTHEWS, NC 28104

TENNEY PAUL JOSEPH
704 VINTAGE CREEK DR
MATTHEWS, NC 28104

BANSAL ABHINAV TRUSTEE ET AL
1153 WILLOW OAKS TR
MATTHEWS, NC 28104

GIBBS MARYLU B
1224 WILLOW OAKS TRL
MATTHEWS, NC 281048625

KLUTTZ HUGH L JR
5809 CHERRY HOLLOW LN
MATTHEWS, NC 281047786

COMMON WEALTH TRUST SERVICES
LLC TRUSTEE
5832 CHERRY HOLLOW LN
MATTHEWS, NC 28104

JACKSON BARRY W
5824 CHERRY HOLLOW LN
MATTHEWS, NC 281047786

BOULDIN NATHAN GREGORY
5816 CHERRY HOLLOW LN
MATTHEWS, NC 28104

REID JOHN P
1440 WILLOW OAKS TRL
MATTHEWS, NC 281048627

BRIERS MELISSA BUSCHE
4706 CEDAR RIDGE LN
MATTHEWS, NC 28104

NEWSOME MICHAEL TEARELL
1264 WILLOW OAKS TRL
MATTHEWS, NC 281048625

ELLIS SCOTT P
4717 CEDAR RIDGE LN
MATTHEWS, NC 28104

CHESSER DALE A
1297 WILLOR OAKS TRL
MATTHEWS, NC 28104

HUNT RUSSELL J
5714 CHERRY HOLLOW LN
MATTHEWS, NC 28104

LAUSTSEN KAREN TRUSTEE
5700 CHERRY HOLLOW LN
MATTHEWS, NC 28104

MASON BRIAN W
5707 CHERRY HOLLOW LN
MATTHEWS, NC 28104

VANCE DUSTIN MICHAEL
1213 WILLOW OAKS TRL
MATTHEWS, NC 28104

HOUSTON JOHN B IV
1219 WILLOW OAKS TRL
MATTHEWS, NC 28104

HOOD WILLIAM BAILEY
1200 WILLOW OAKS TRL
MATTHEWS, NC 28104

FOSKUHL RUDY ALLEN
5815 CHERRY HOLLOW LN
MATTHEWS, NC 28104

LARSON CHARLES C
5831 CHERRY HOLLOW LN
MATTHEWS, NC 281047786

MCPHERSON LUTHER M
4700 CEDAR RIDGE LN
MATTHEWS, NC 28104

PALMER JOHN ROBERT JR
4725 CEDAR RIDGE LN
MATTHEWS, NC 28104

MATHEWS KELLY WILLIAM
4709 CEDAR RIDGE LN
MATTHEWS, NC 281047785

YACENDA DOUGLAS J
1310 WILLOW OAKS TRL
MATTHEWS, NC 28104

GILMORE ANDREW F
700 VINTAGE CREEK DR
MATTHEWS, NC 28104

Exhibit B

Community Meeting Notice:

Community Meeting

In accordance with the Town of Weddington Unified Development Ordinance (UDO) Section D-607(C)(5), notice is hereby given that a Community Meeting will be held at Weddington Swim and Racquet Club at 4315 Weddington Matthews Road on Wednesday, June 18, 2025 at 6:00 p.m. The applicant is To▯ Brothers and the project will be located on approximately 94 acres located at/near 5017 Weddington Matthews Road (parcel number 06120011). This parcel is currently zoned R-CD.



Any questions please contact Andrew Loftin: Andrew.loftin@kimley-horn.com

Site Location:

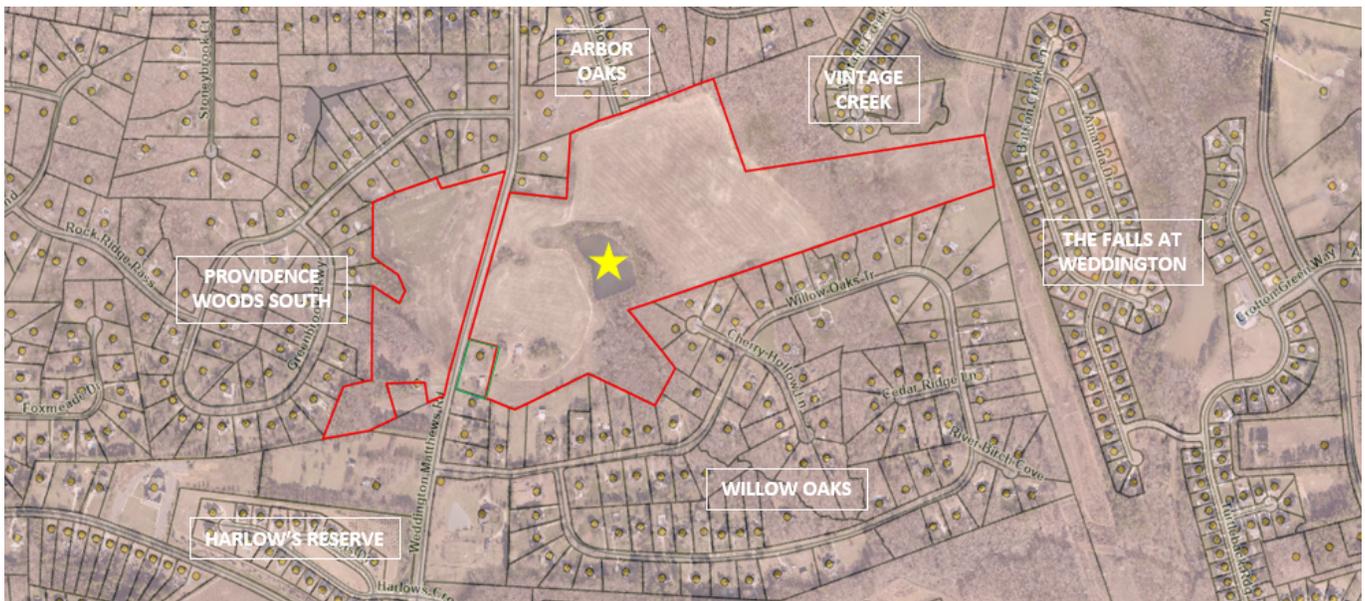


Exhibit C

NEIGHBORHOOD MEETING

PROJECT: Morris Farm Development MEETING DATE: June 18, 2025

LOCATION: Weddington Swim and Racquet Club
4315 Weddington Matthews Road

NAME	ADDRESS	PHONE NUMBER	EMAIL ADDRESS
Angela Mason	5767 Cherry Hollow Ln	704-604-1758	carangelamason@gmail.com
K Louster	5700 Cherry Hollow	704-846-1981	CHLSTO@yahoo.com
Barry Jackson	5824 Cherry Hollow	704-654-7013	bwj6820@gmail.com
CHRIS FAULK	1162 Willow Oaks Trl	980-721-2353	cfault.surveyor@gmail.com
Charlie & Holly Walker	625 Greenbrook Pkwy	704-846-4893	
D Ferraro	2308 Greenbrook Pkwy	704-644-2774	saferazzo@gmail.com
R Clayton Jones	5147 Pawhandle Cr	704-821-2756	
Steve Fellmeth		704-737-9223	stfellmeth@stken.com
Andy Stern	6114 Palomino Rd		
Bruce & Cheryl Klink	²⁵⁰⁸ GREENBROOK	980-275-0468	bklink@windstream.net
Carolyn & Andrew Palmer	^{700 Victoria} Palmer Creek Dr. Weddington		andrewj.palmer@gmail.com
Daniel & Martha Burgess	^{1225 Willow} OAKS TR.	704-846-0608	mburgess519@gmail.com
Mary Lou Gibbs			mlgibbs@mac.com
JB & Sonja Houston	1219 Willow OAKS TR.		johnsonjah@gmail.com
Domenico & Donna Pulao	2524 Greenbrook Parkway	704-907-6280	domenicofive@aol.com
Frank & Susan Bridges	5706 CHL	704-572-4494	fabridges@yahoo.com
Chris Owens	760 Eagle Point Ct	704-608-8903	COOWENS@coconthel.com
Jack Cahill	6100 Palomino	704-506-5220	JMC1545@prepaid.com
Adam Travers	3512 Tilley Morris	864-979-7590	AdamTravers@kw.com

Exhibit C (Cont.)

NEIGHBORHOOD MEETING			
PROJECT:	Morris Farm Development	MEETING DATE:	June 18, 2025
LOCATION:	Weddington Swim and Racquet Club 4315 Weddington Matthews Road		

NAME	ADDRESS	PHONE NUMBER	EMAIL ADDRESS
Alex Quinby	2532 Greenbrook Pkwy	772-321-1824	quinby.p.alex@gmail.com
LUTHER + LYNDA MERRISON	WILLOW OAKS SUB! 4700 CEDAR RIDGE LN 4837	704-287-1948	lynda.luther@windstream.net
Linda Piscopo	Weddington Matthews	704-975-5327	lindapiscopo@aol.com

NEIGHBORHOOD MEETING			
PROJECT:	Morris Farm Development	MEETING DATE:	June 18, 2025
LOCATION:	Weddington Swim and Racquet Club 4315 Weddington Matthews Road		

NAME	ADDRESS	PHONE NUMBER	EMAIL ADDRESS
Brian Hieger	2001 Greenbrook Pkwy	602-549-2855 704-651- 81224 7111	hiegiers2015@gmail.com
Ellen McLaughlin	3021 Highway		
Leah Lindsay	1119 Willow Oaks Trl	704-400-1837	
Tracy Stone	1480 Longleaf	704-577-3580	tlstjnj@msn.com
Melissa Meier	1470 Willow Oaks	323-363-0724	melissabmeier@gmail.com



PRE DA-1



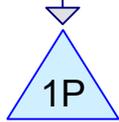
PRE DA-2



PRE DA-3



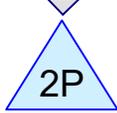
POST DA-1



DRY POND 1



POST DA-2 DETAINED



DRY POND 2



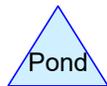
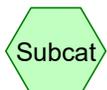
POST DA-2 UNDETAINED



POST DA-3 UNDETAINED



POST DA-2



Routing Diagram for Morris Hydrocad

Prepared by Kimley-Horn & Associates, Printed 12/30/2025
HydroCAD® 10.20-5c s/n 02344 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S: PRE DA-1

Runoff = 2.21 cfs @ 12.18 hrs, Volume= 0.232 af, Depth= 0.58"

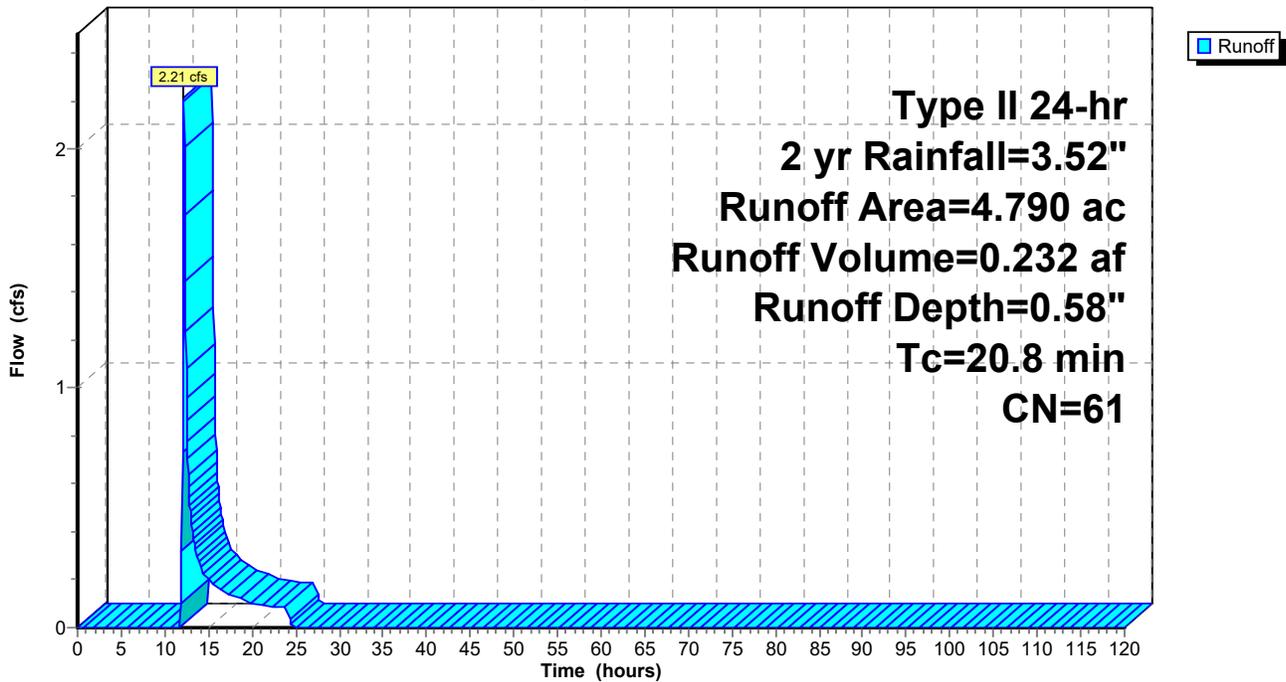
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Type II 24-hr 2 yr Rainfall=3.52"

Area (ac)	CN	Description
* 4.790	61	
4.790		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.8					Direct Entry, TR-55

Subcatchment 1S: PRE DA-1

Hydrograph



Summary for Subcatchment 2S: PRE DA-2

Runoff = 14.91 cfs @ 12.22 hrs, Volume= 1.610 af, Depth= 0.67"

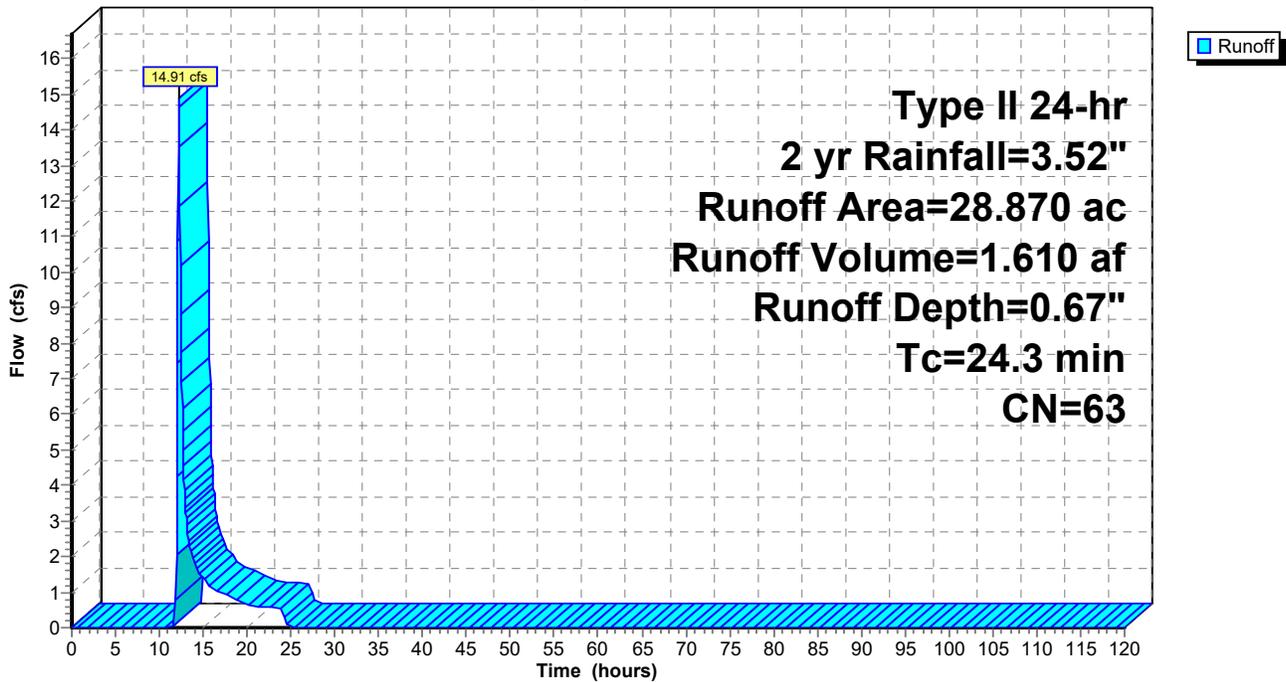
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Type II 24-hr 2 yr Rainfall=3.52"

Area (ac)	CN	Description
* 28.870	63	
28.870		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.3					Direct Entry, TR-55

Subcatchment 2S: PRE DA-2

Hydrograph



Summary for Subcatchment 3S: PRE DA-3

Runoff = 9.93 cfs @ 12.15 hrs, Volume= 0.957 af, Depth= 0.58"

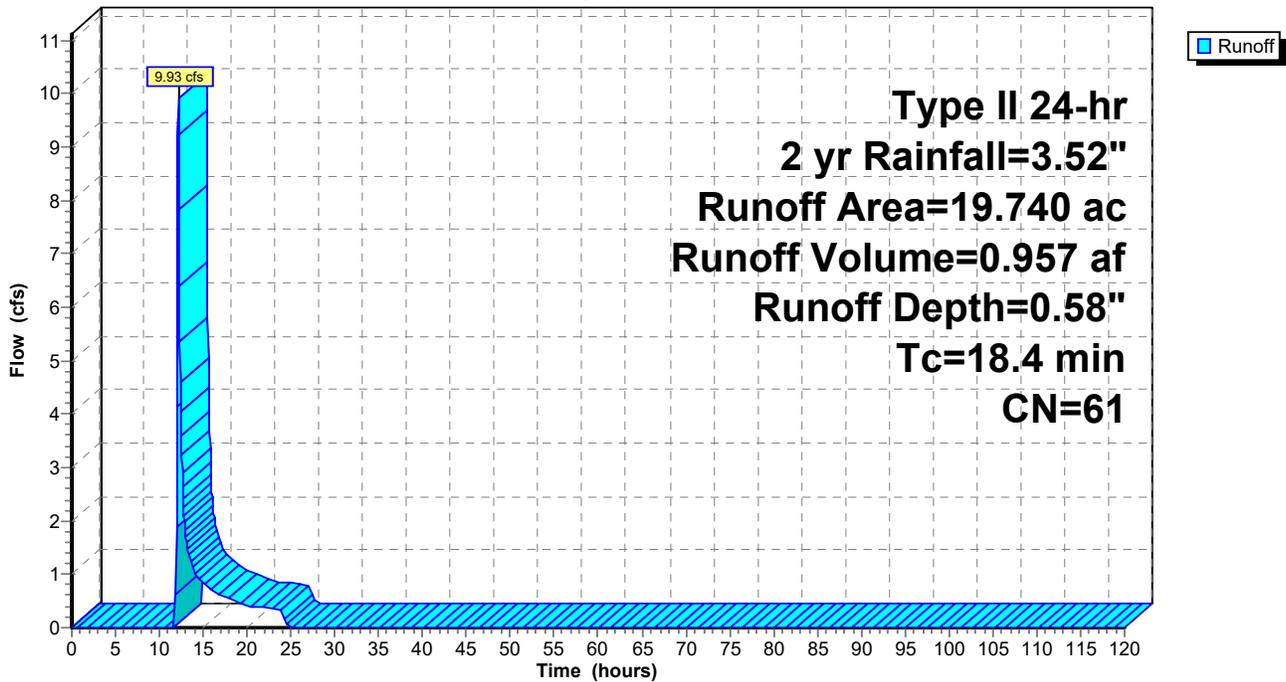
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 yr Rainfall=3.52"

Area (ac)	CN	Description
* 19.740	61	
19.740		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.4					Direct Entry, TR-55

Subcatchment 3S: PRE DA-3

Hydrograph



Summary for Subcatchment 7S: POST DA-3 UNDETAINED

Runoff = 9.89 cfs @ 12.08 hrs, Volume= 0.689 af, Depth= 0.91"

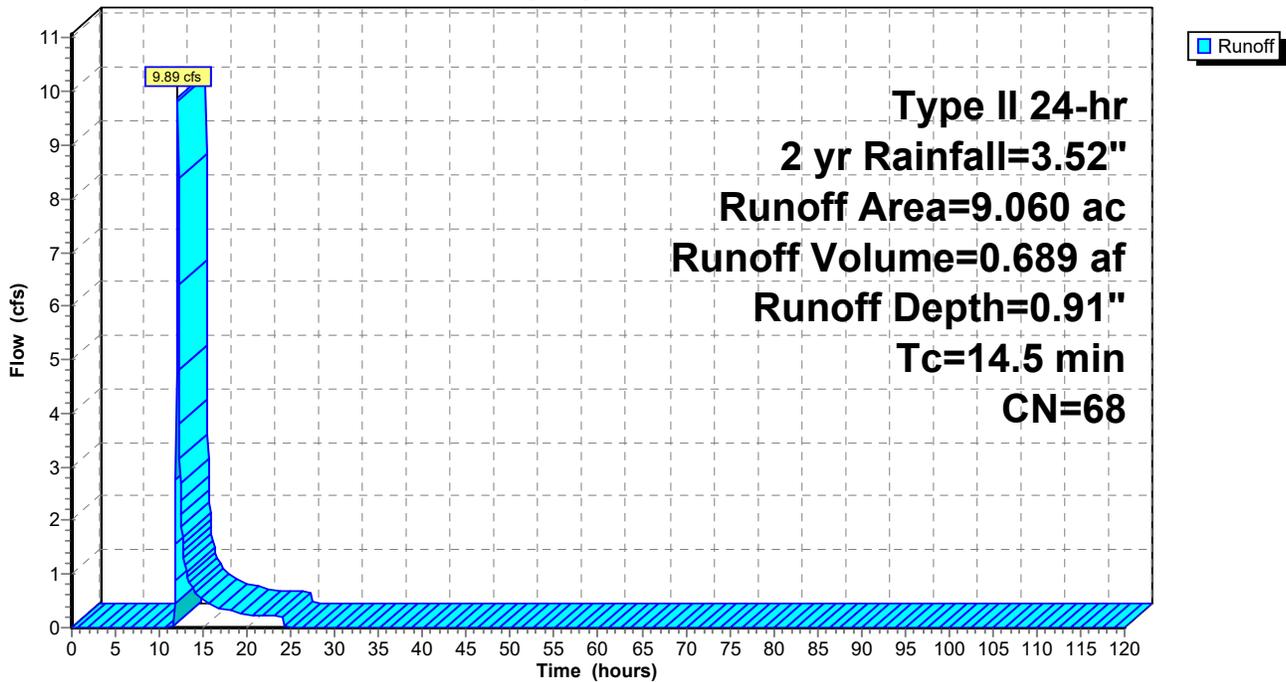
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Type II 24-hr 2 yr Rainfall=3.52"

Area (ac)	CN	Description
* 9.060	68	
9.060		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5					Direct Entry, TR-55

Subcatchment 7S: POST DA-3 UNDETAINED

Hydrograph



Summary for Pond 1P: DRY POND 1

Inflow Area = 7.140 ac, 0.00% Impervious, Inflow Depth = 0.97" for 2 yr event
 Inflow = 12.03 cfs @ 11.97 hrs, Volume= 0.575 af
 Outflow = 0.33 cfs @ 15.93 hrs, Volume= 0.575 af, Atten= 97%, Lag= 238.0 min
 Primary = 0.33 cfs @ 15.93 hrs, Volume= 0.575 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 709.11' @ 15.93 hrs Surf.Area= 8,079 sf Storage= 13,921 cf

Plug-Flow detention time= 562.5 min calculated for 0.575 af (100% of inflow)
 Center-of-Mass det. time= 562.1 min (1,430.1 - 868.1)

Volume	Invert	Avail.Storage	Storage Description
#1	707.00'	127,360 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
707.00	5,144	0	0
708.00	6,502	5,823	5,823
709.00	7,916	7,209	13,032
710.00	9,386	8,651	21,683
711.00	10,913	10,150	31,833
712.00	12,497	11,705	43,538
713.00	14,136	13,317	56,854
714.00	15,832	14,984	71,838
715.00	17,584	16,708	88,546
716.00	19,393	18,489	107,035
717.00	21,258	20,326	127,360

Device	Routing	Invert	Outlet Devices
#1	Primary	707.00'	24.0" Round OUTFALL L= 250.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 707.00' / 705.00' S= 0.0080 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	707.00'	3.0" Vert. ORIFICE 1 C= 0.600 Limited to weir flow at low heads
#3	Device 1	712.00'	48.0" x 48.0" Horiz. RISER C= 0.600 Limited to weir flow at low heads
#4	Secondary	715.00'	20.0' long x 10.0' breadth EMERGENCY SPILLWAY Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.33 cfs @ 15.93 hrs HW=709.11' (Free Discharge)

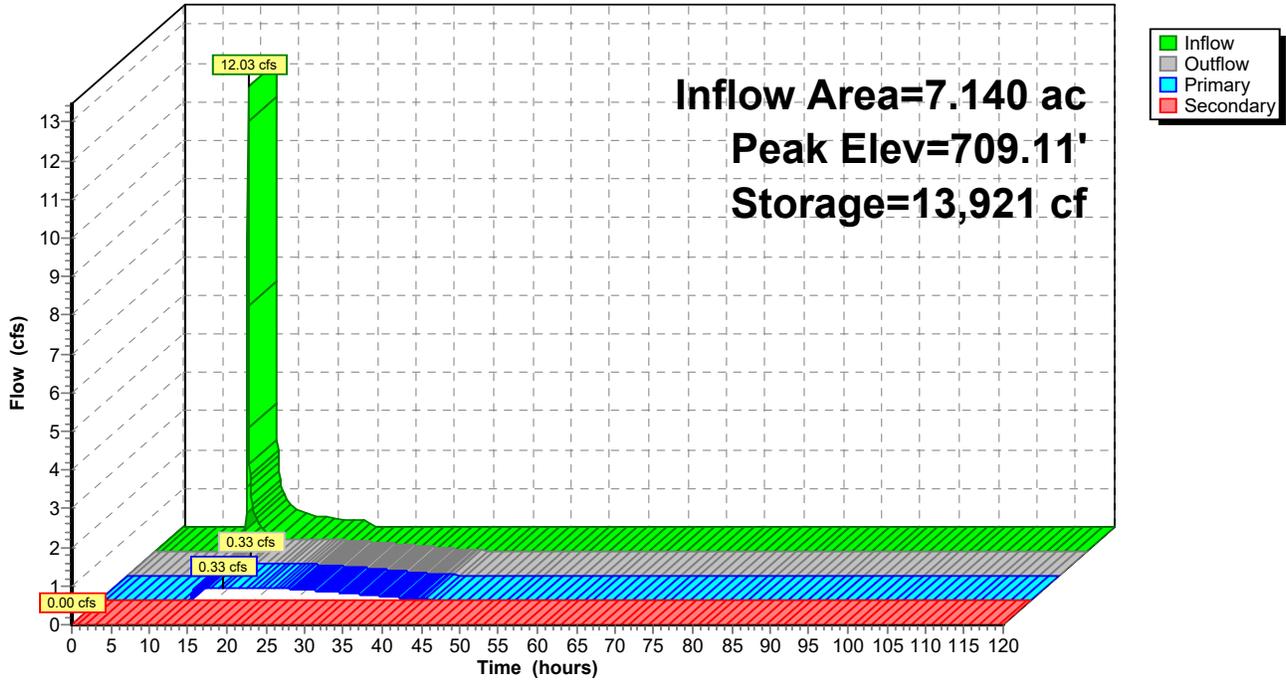
- ↑ 1=OUTFALL (Passes 0.33 cfs of 17.94 cfs potential flow)
- ↑ 2=ORIFICE 1 (Orifice Controls 0.33 cfs @ 6.79 fps)
- ↑ 3=RISER (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=707.00' (Free Discharge)

- ↑ 4=EMERGENCY SPILLWAY (Controls 0.00 cfs)

Pond 1P: DRY POND 1

Hydrograph



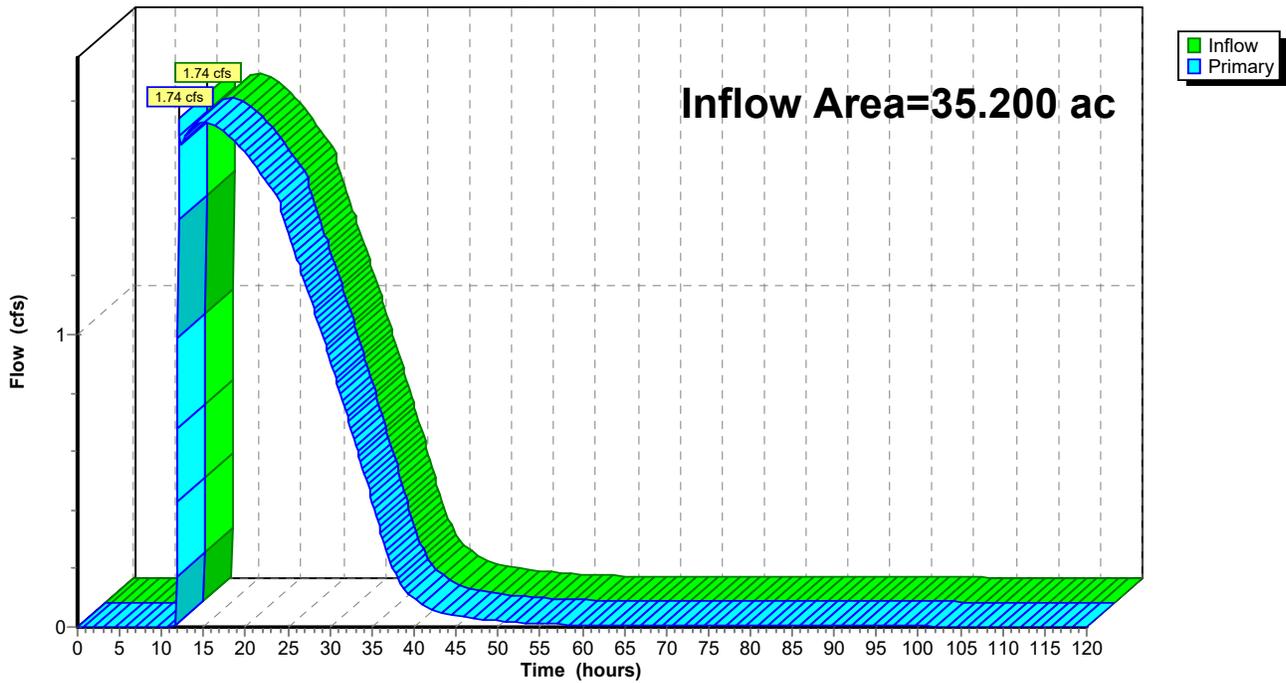
Summary for Link 10L: POST DA-2

Inflow Area = 35.200 ac, 0.00% Impervious, Inflow Depth > 0.91" for 2 yr event
Inflow = 1.74 cfs @ 12.10 hrs, Volume= 2.668 af
Primary = 1.74 cfs @ 12.10 hrs, Volume= 2.668 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Link 10L: POST DA-2

Hydrograph



Summary for Subcatchment 1S: PRE DA-1

Runoff = 6.92 cfs @ 12.16 hrs, Volume= 0.580 af, Depth= 1.45"

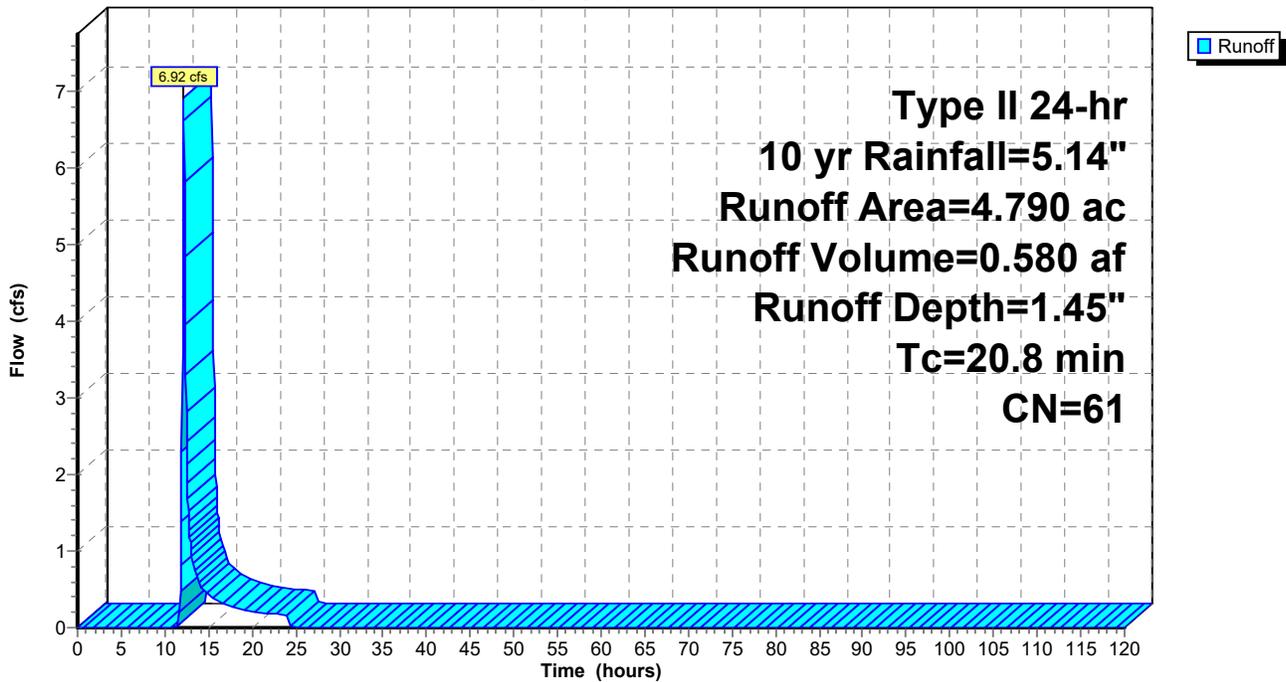
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10 yr Rainfall=5.14"

Area (ac)	CN	Description
* 4.790	61	
4.790		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.8					Direct Entry, TR-55

Subcatchment 1S: PRE DA-1

Hydrograph



Summary for Subcatchment 2S: PRE DA-2

Runoff = 42.44 cfs @ 12.20 hrs, Volume= 3.845 af, Depth= 1.60"

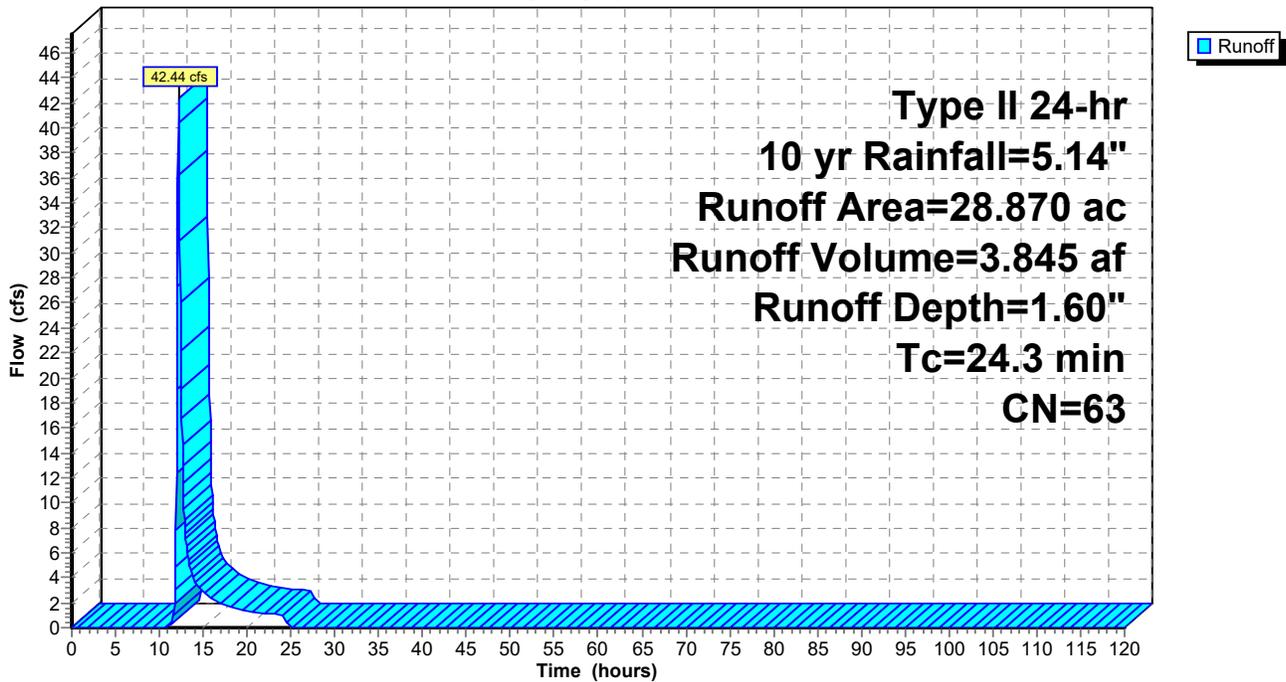
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10 yr Rainfall=5.14"

Area (ac)	CN	Description
* 28.870	63	
28.870		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.3					Direct Entry, TR-55

Subcatchment 2S: PRE DA-2

Hydrograph



Summary for Subcatchment 3S: PRE DA-3

Runoff = 30.63 cfs @ 12.13 hrs, Volume= 2.392 af, Depth= 1.45"

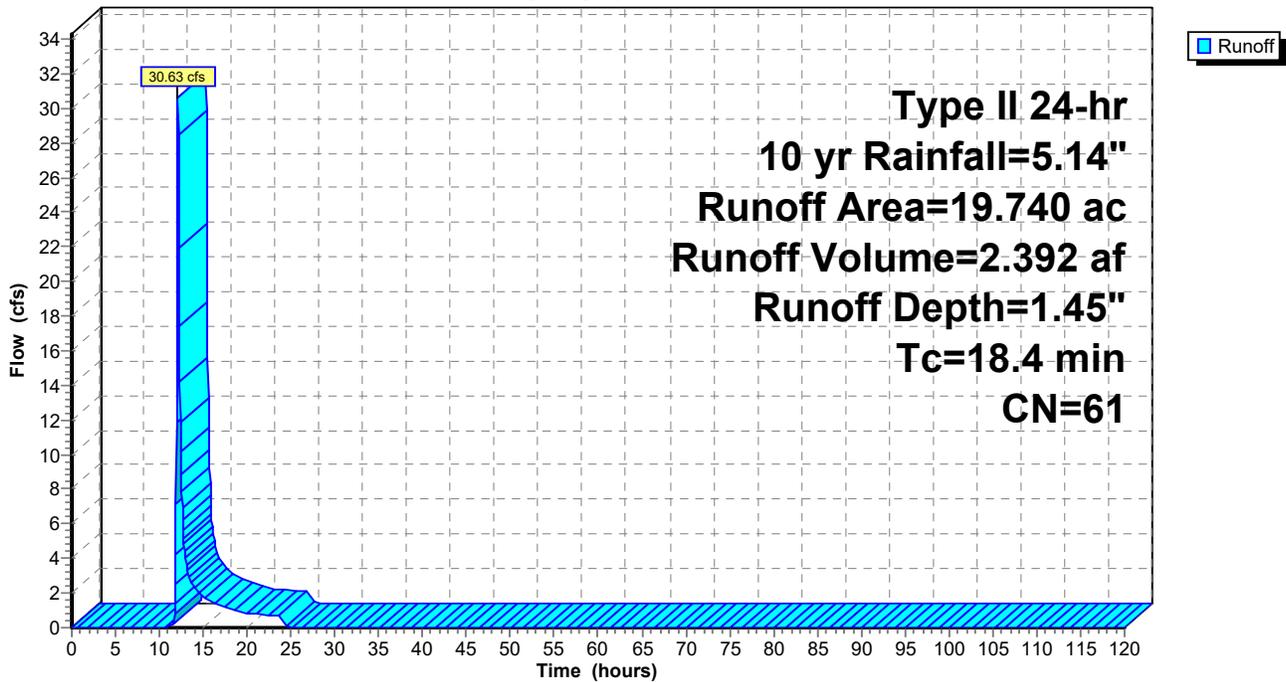
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10 yr Rainfall=5.14"

Area (ac)	CN	Description
* 19.740	61	
19.740		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.4					Direct Entry, TR-55

Subcatchment 3S: PRE DA-3

Hydrograph



Summary for Subcatchment 7S: POST DA-3 UNDETAINED

Runoff = 23.05 cfs @ 12.07 hrs, Volume= 1.495 af, Depth= 1.98"

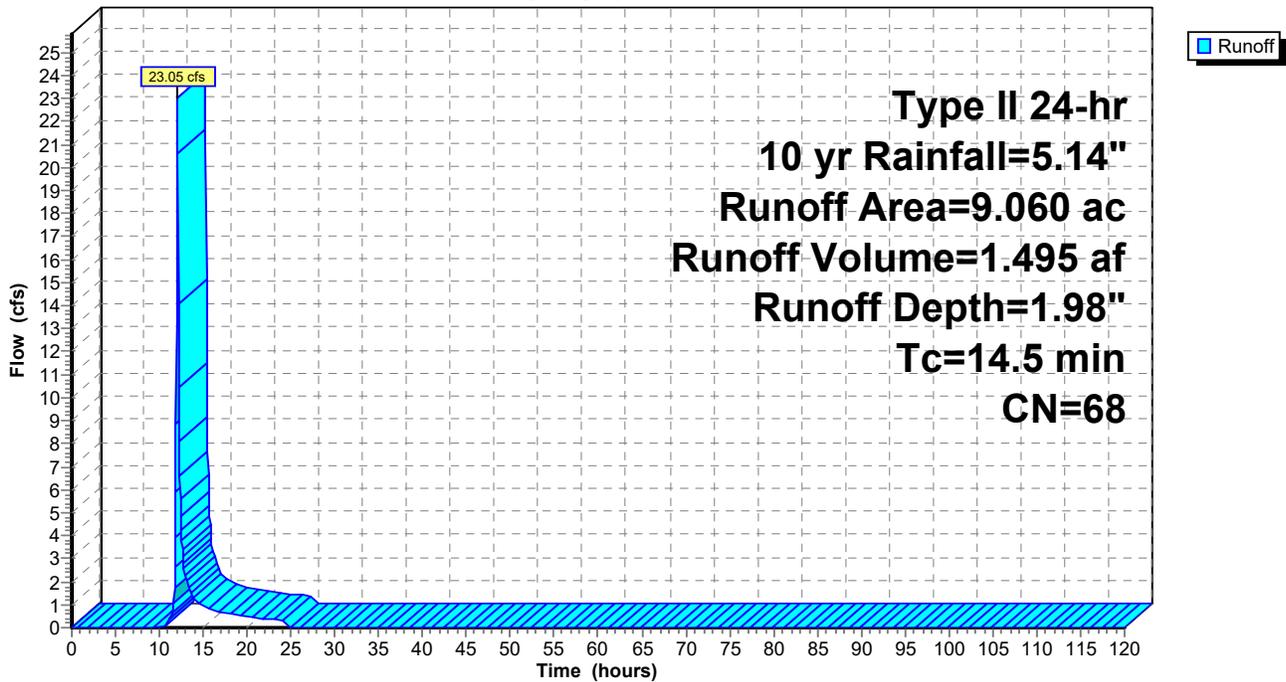
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10 yr Rainfall=5.14"

Area (ac)	CN	Description
* 9.060	68	
9.060		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5					Direct Entry, TR-55

Subcatchment 7S: POST DA-3 UNDETAINED

Hydrograph



Summary for Pond 1P: DRY POND 1

Inflow Area = 7.140 ac, 0.00% Impervious, Inflow Depth = 2.06" for 10 yr event
 Inflow = 26.48 cfs @ 11.96 hrs, Volume= 1.226 af
 Outflow = 0.48 cfs @ 17.91 hrs, Volume= 1.226 af, Atten= 98%, Lag= 356.9 min
 Primary = 0.48 cfs @ 17.91 hrs, Volume= 1.226 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 711.29' @ 17.91 hrs Surf.Area= 11,377 sf Storage= 35,098 cf

Plug-Flow detention time= 903.3 min calculated for 1.225 af (100% of inflow)
 Center-of-Mass det. time= 904.5 min (1,749.0 - 844.5)

Volume	Invert	Avail.Storage	Storage Description
#1	707.00'	127,360 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
707.00	5,144	0	0
708.00	6,502	5,823	5,823
709.00	7,916	7,209	13,032
710.00	9,386	8,651	21,683
711.00	10,913	10,150	31,833
712.00	12,497	11,705	43,538
713.00	14,136	13,317	56,854
714.00	15,832	14,984	71,838
715.00	17,584	16,708	88,546
716.00	19,393	18,489	107,035
717.00	21,258	20,326	127,360

Device	Routing	Invert	Outlet Devices
#1	Primary	707.00'	24.0" Round OUTFALL L= 250.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 707.00' / 705.00' S= 0.0080 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	707.00'	3.0" Vert. ORIFICE 1 C= 0.600 Limited to weir flow at low heads
#3	Device 1	712.00'	48.0" x 48.0" Horiz. RISER C= 0.600 Limited to weir flow at low heads
#4	Secondary	715.00'	20.0' long x 10.0' breadth EMERGENCY SPILLWAY Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.48 cfs @ 17.91 hrs HW=711.29' (Free Discharge)

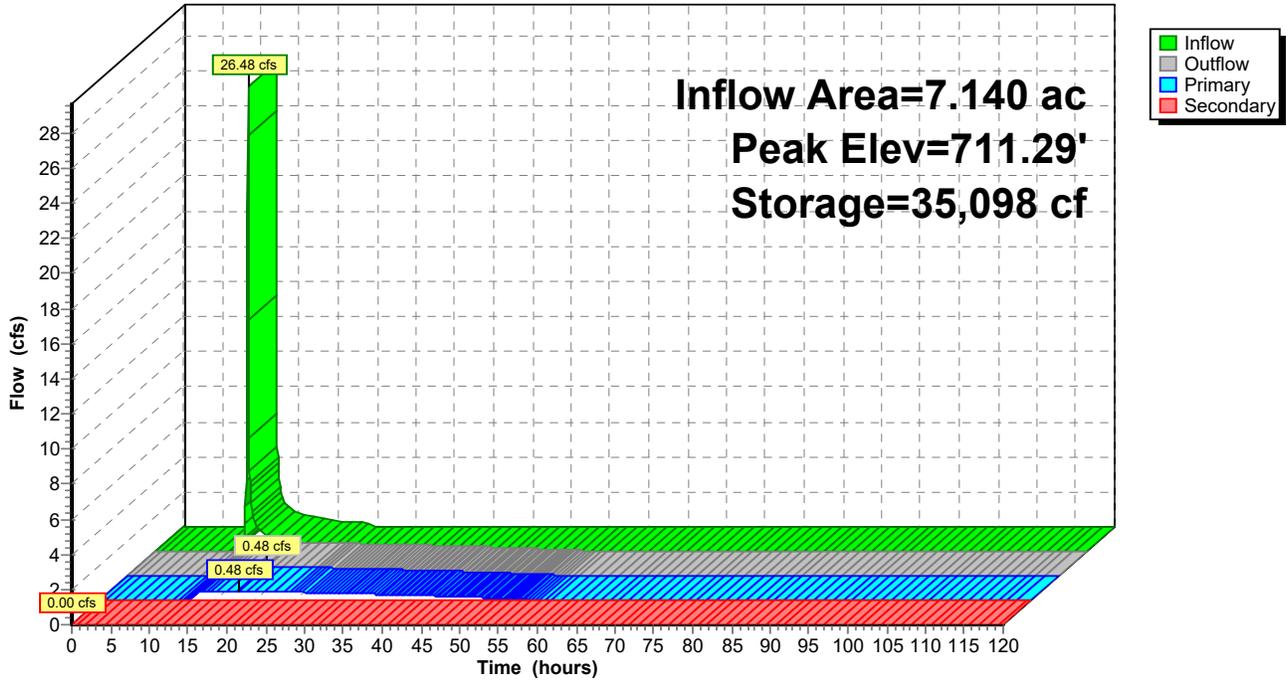
- ↑ 1=OUTFALL (Passes 0.48 cfs of 25.14 cfs potential flow)
- ↑ 2=ORIFICE 1 (Orifice Controls 0.48 cfs @ 9.83 fps)
- ↑ 3=RISER (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=707.00' (Free Discharge)

- ↑ 4=EMERGENCY SPILLWAY (Controls 0.00 cfs)

Pond 1P: DRY POND 1

Hydrograph



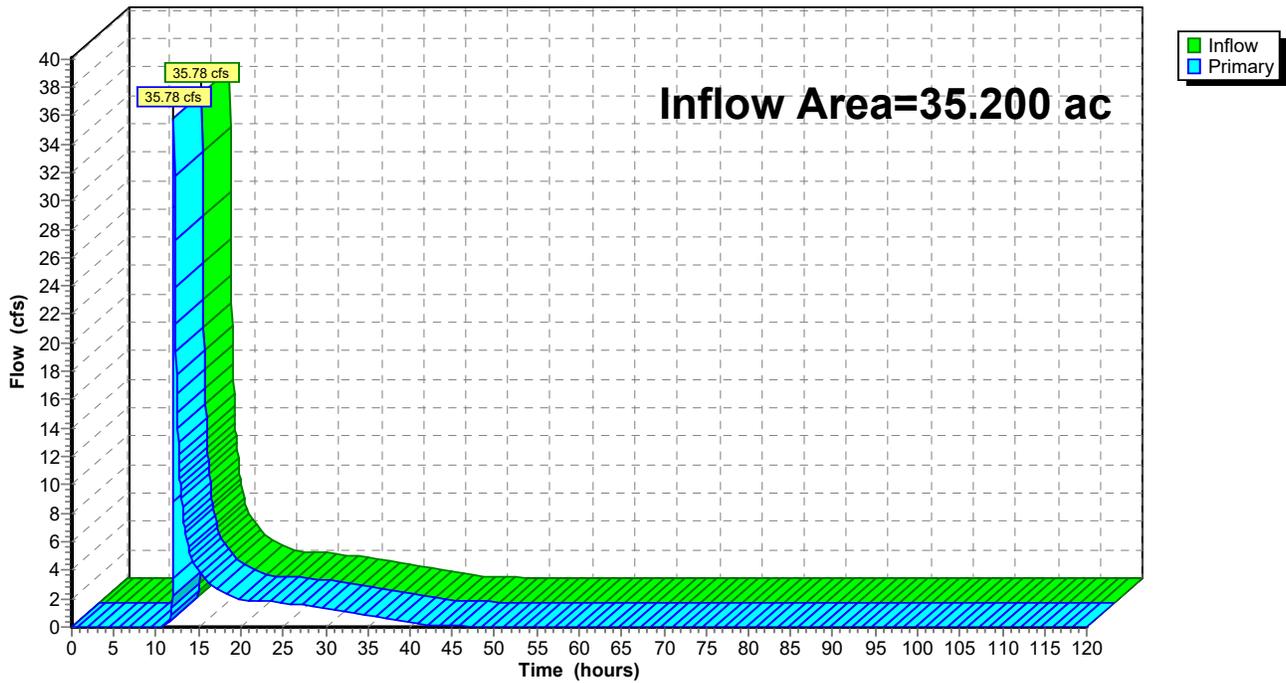
Summary for Link 10L: POST DA-2

Inflow Area = 35.200 ac, 0.00% Impervious, Inflow Depth = 1.97" for 10 yr event
Inflow = 35.78 cfs @ 12.11 hrs, Volume= 5.767 af
Primary = 35.78 cfs @ 12.11 hrs, Volume= 5.767 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Link 10L: POST DA-2

Hydrograph



Summary for Subcatchment 1S: PRE DA-1

Runoff = 10.34 cfs @ 12.15 hrs, Volume= 0.833 af, Depth= 2.09"

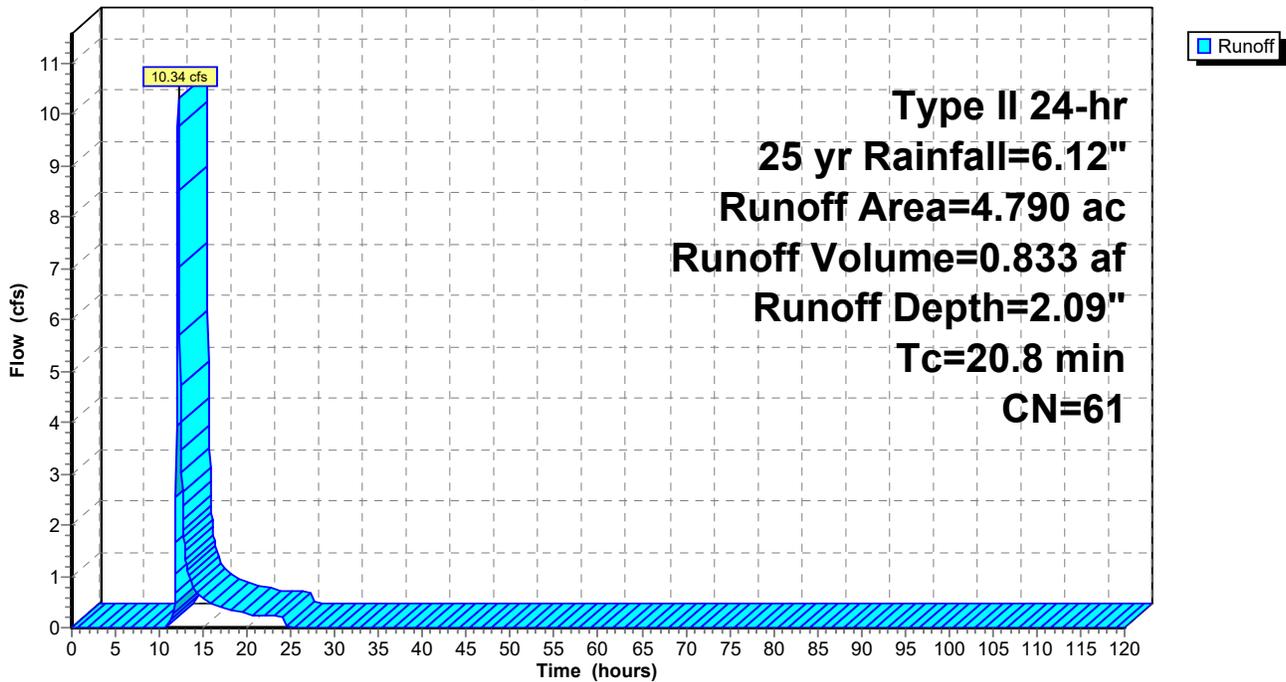
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Type II 24-hr 25 yr Rainfall=6.12"

Area (ac)	CN	Description
* 4.790	61	
4.790		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.8					Direct Entry, TR-55

Subcatchment 1S: PRE DA-1

Hydrograph



Summary for Subcatchment 2S: PRE DA-2

Runoff = 62.08 cfs @ 12.19 hrs, Volume= 5.439 af, Depth= 2.26"

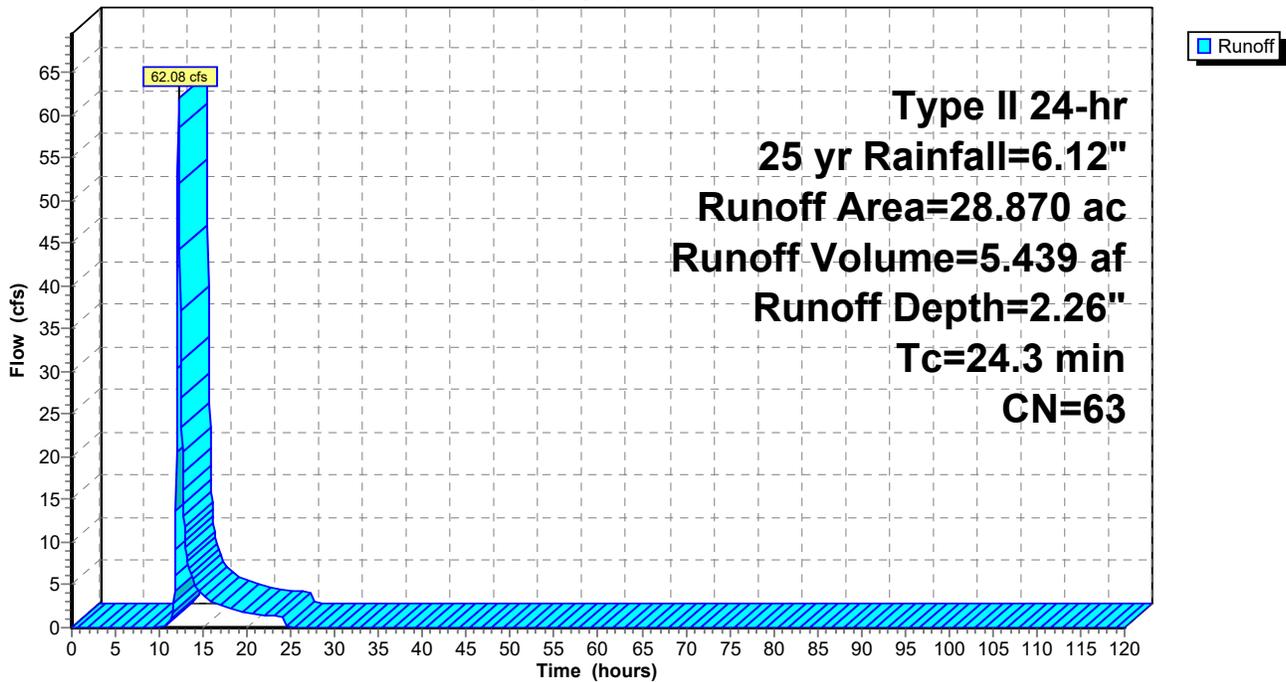
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Type II 24-hr 25 yr Rainfall=6.12"

Area (ac)	CN	Description
* 28.870	63	
28.870		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.3					Direct Entry, TR-55

Subcatchment 2S: PRE DA-2

Hydrograph



Summary for Subcatchment 3S: PRE DA-3

Runoff = 45.86 cfs @ 12.12 hrs, Volume= 3.432 af, Depth= 2.09"

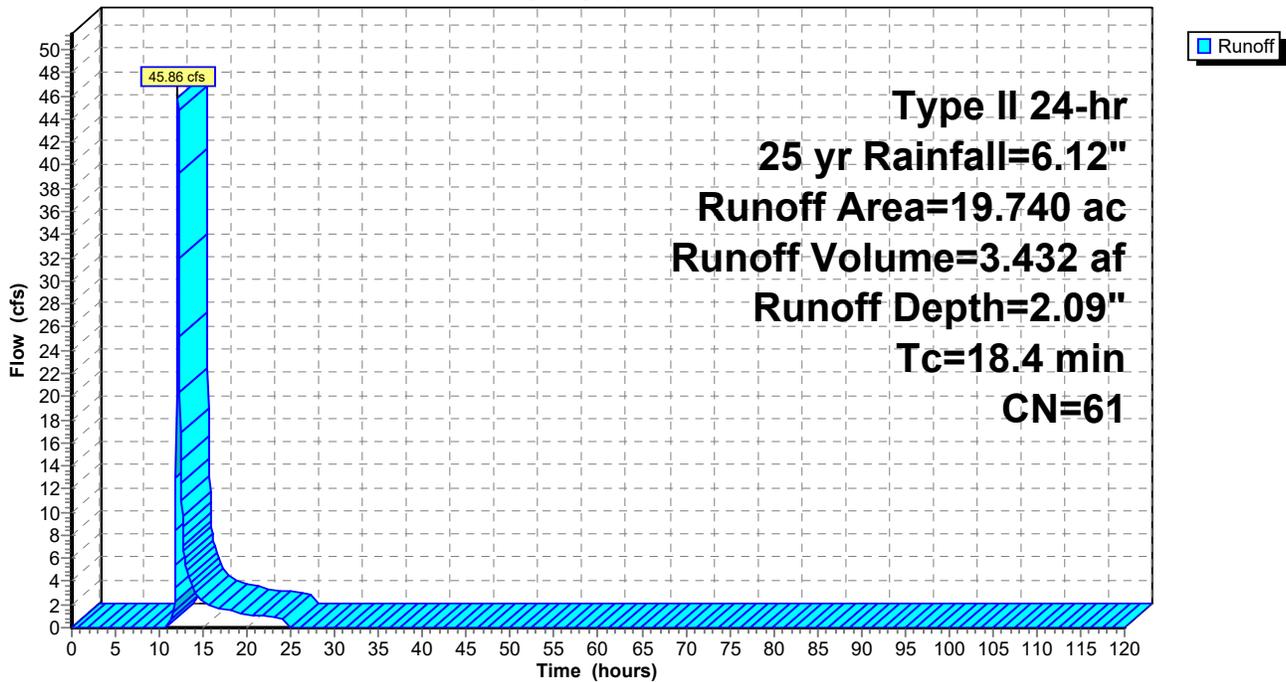
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Type II 24-hr 25 yr Rainfall=6.12"

Area (ac)	CN	Description
* 19.740	61	
19.740		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.4					Direct Entry, TR-55

Subcatchment 3S: PRE DA-3

Hydrograph



Summary for Subcatchment 7S: POST DA-3 UNDETAINED

Runoff = 31.95 cfs @ 12.07 hrs, Volume= 2.049 af, Depth= 2.71"

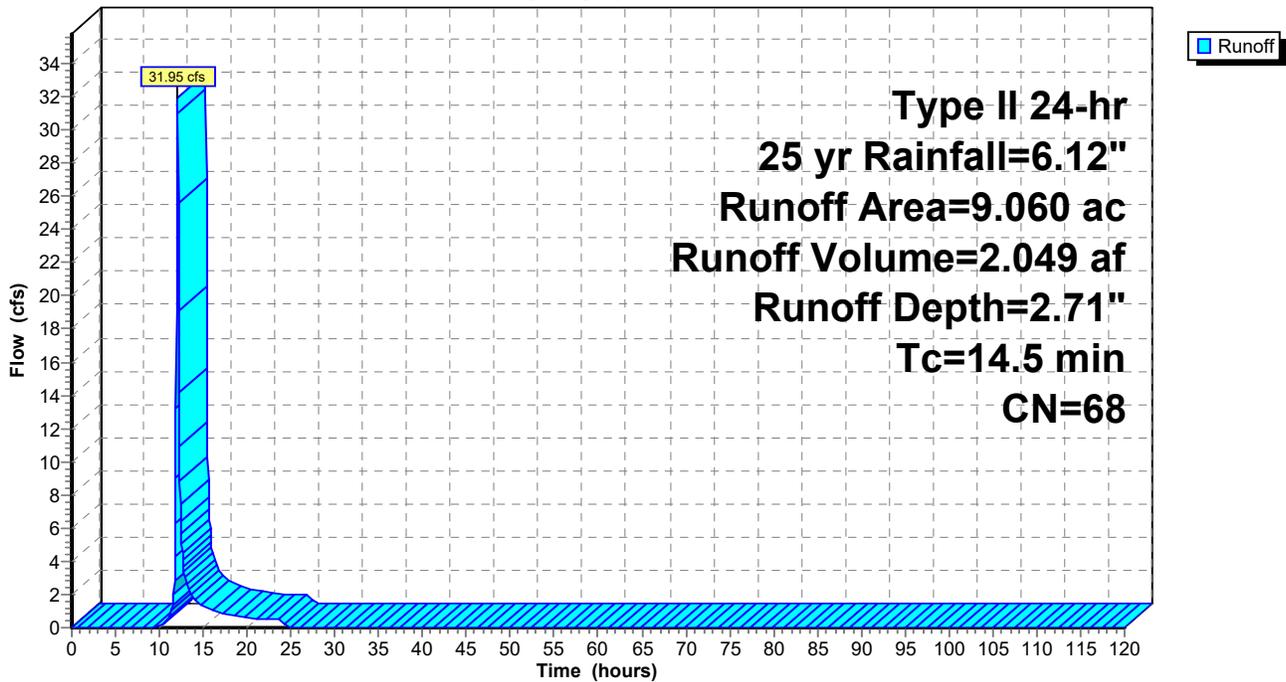
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Type II 24-hr 25 yr Rainfall=6.12"

Area (ac)	CN	Description
* 9.060	68	
9.060		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5					Direct Entry, TR-55

Subcatchment 7S: POST DA-3 UNDETAINED

Hydrograph



Summary for Pond 1P: DRY POND 1

Inflow Area = 7.140 ac, 0.00% Impervious, Inflow Depth = 2.81" for 25 yr event
 Inflow = 36.12 cfs @ 11.96 hrs, Volume= 1.670 af
 Outflow = 1.43 cfs @ 13.67 hrs, Volume= 1.670 af, Atten= 96%, Lag= 102.8 min
 Primary = 1.43 cfs @ 13.67 hrs, Volume= 1.670 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 712.05' @ 13.67 hrs Surf.Area= 12,587 sf Storage= 44,227 cf

Plug-Flow detention time= 924.3 min calculated for 1.669 af (100% of inflow)
 Center-of-Mass det. time= 925.5 min (1,761.0 - 835.4)

Volume	Invert	Avail.Storage	Storage Description
#1	707.00'	127,360 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
707.00	5,144	0	0
708.00	6,502	5,823	5,823
709.00	7,916	7,209	13,032
710.00	9,386	8,651	21,683
711.00	10,913	10,150	31,833
712.00	12,497	11,705	43,538
713.00	14,136	13,317	56,854
714.00	15,832	14,984	71,838
715.00	17,584	16,708	88,546
716.00	19,393	18,489	107,035
717.00	21,258	20,326	127,360

Device	Routing	Invert	Outlet Devices
#1	Primary	707.00'	24.0" Round OUTFALL L= 250.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 707.00' / 705.00' S= 0.0080 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	707.00'	3.0" Vert. ORIFICE 1 C= 0.600 Limited to weir flow at low heads
#3	Device 1	712.00'	48.0" x 48.0" Horiz. RISER C= 0.600 Limited to weir flow at low heads
#4	Secondary	715.00'	20.0' long x 10.0' breadth EMERGENCY SPILLWAY Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.20 cfs @ 13.67 hrs HW=712.05' (Free Discharge)

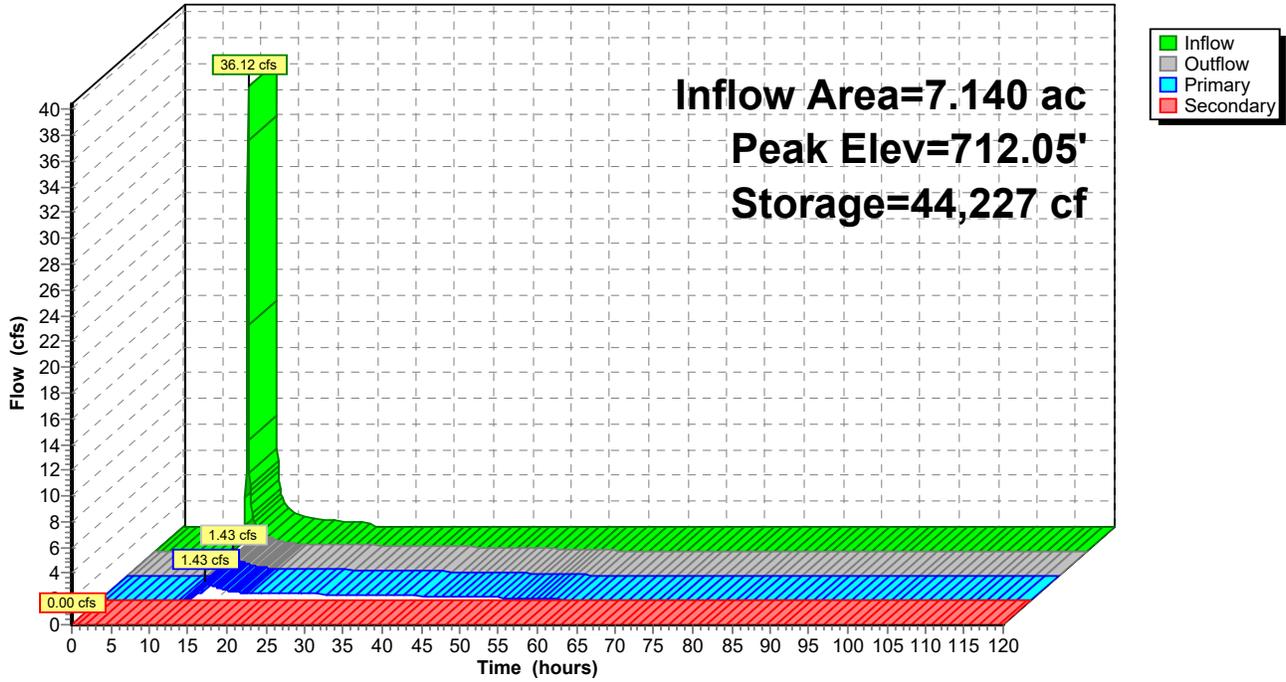
- ↑ 1=OUTFALL (Passes 1.20 cfs of 27.28 cfs potential flow)
- ↑ 2=ORIFICE 1 (Orifice Controls 0.52 cfs @ 10.69 fps)
- ↑ 3=RISER (Weir Controls 0.67 cfs @ 0.77 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=707.00' (Free Discharge)

- ↑ 4=EMERGENCY SPILLWAY (Controls 0.00 cfs)

Pond 1P: DRY POND 1

Hydrograph



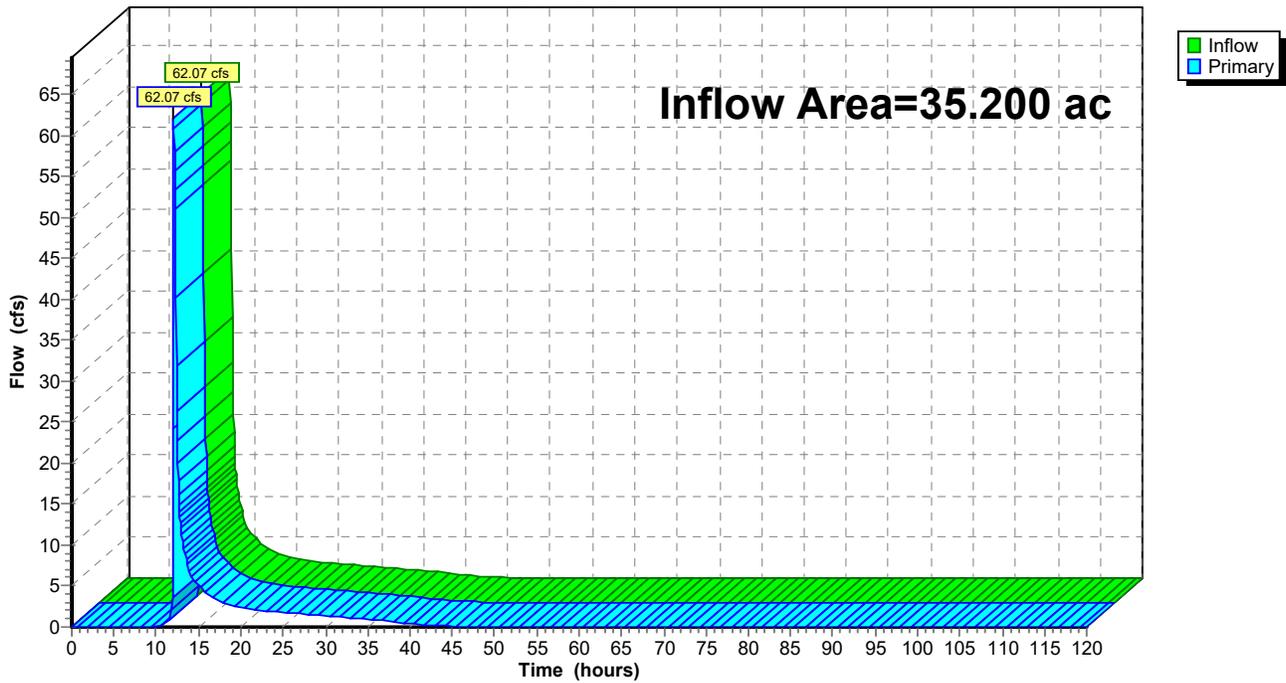
Summary for Link 10L: POST DA-2

Inflow Area = 35.200 ac, 0.00% Impervious, Inflow Depth = 2.69" for 25 yr event
Inflow = 62.07 cfs @ 12.06 hrs, Volume= 7.900 af
Primary = 62.07 cfs @ 12.06 hrs, Volume= 7.900 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Link 10L: POST DA-2

Hydrograph



Summary for Subcatchment 1S: PRE DA-1

Runoff = 13.30 cfs @ 12.15 hrs, Volume= 1.053 af, Depth= 2.64"

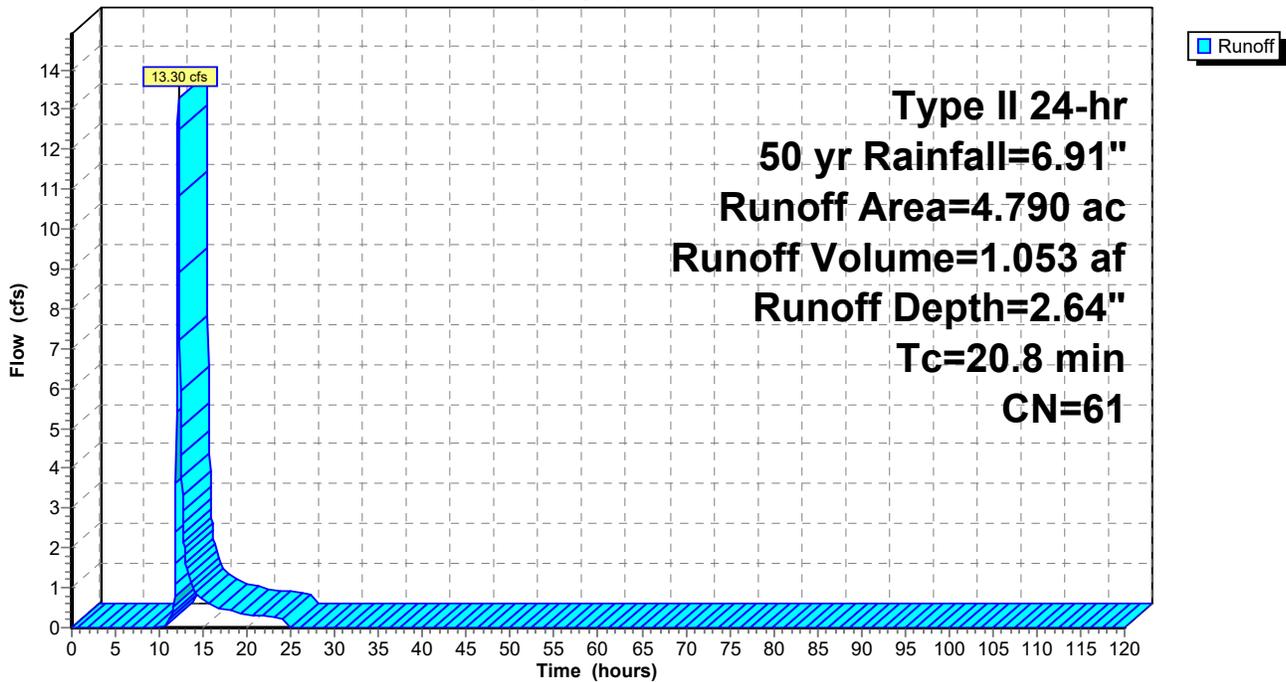
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Type II 24-hr 50 yr Rainfall=6.91"

Area (ac)	CN	Description
* 4.790	61	
4.790		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.8					Direct Entry, TR-55

Subcatchment 1S: PRE DA-1

Hydrograph



Summary for Subcatchment 2S: PRE DA-2

Runoff = 78.99 cfs @ 12.19 hrs, Volume= 6.817 af, Depth= 2.83"

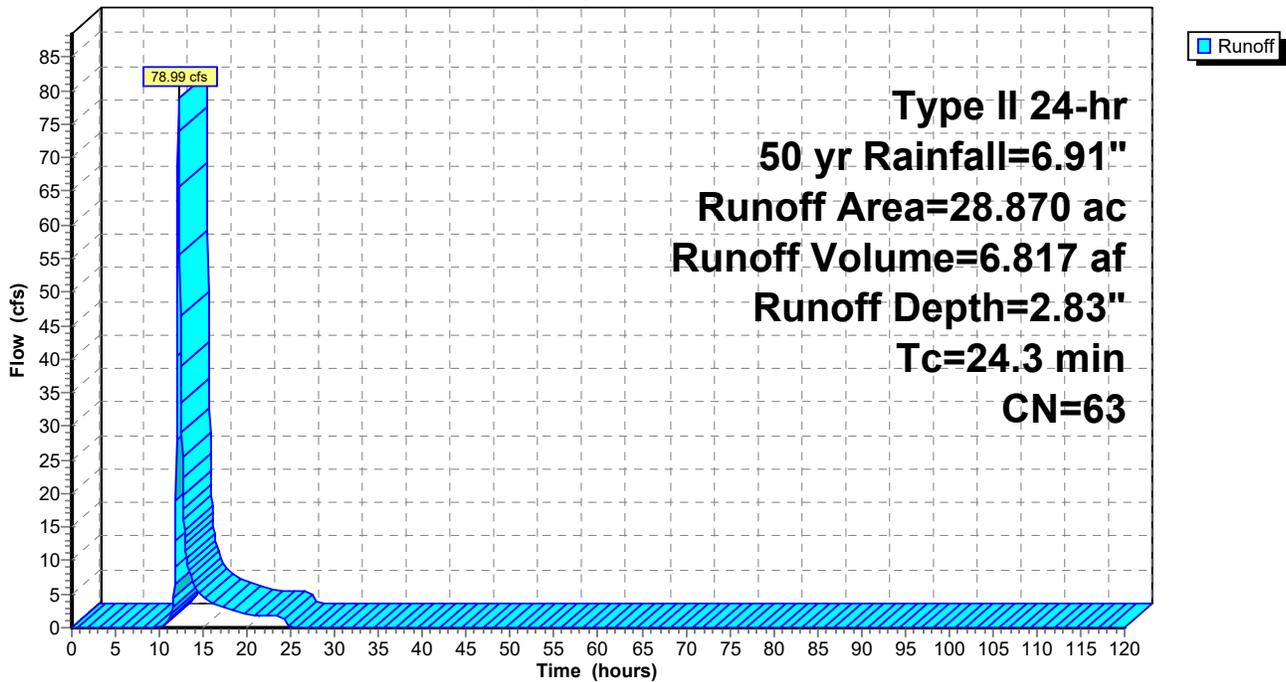
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Type II 24-hr 50 yr Rainfall=6.91"

Area (ac)	CN	Description
* 28.870	63	
28.870		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.3					Direct Entry, TR-55

Subcatchment 2S: PRE DA-2

Hydrograph



Summary for Subcatchment 3S: PRE DA-3

Runoff = 58.96 cfs @ 12.12 hrs, Volume= 4.338 af, Depth= 2.64"

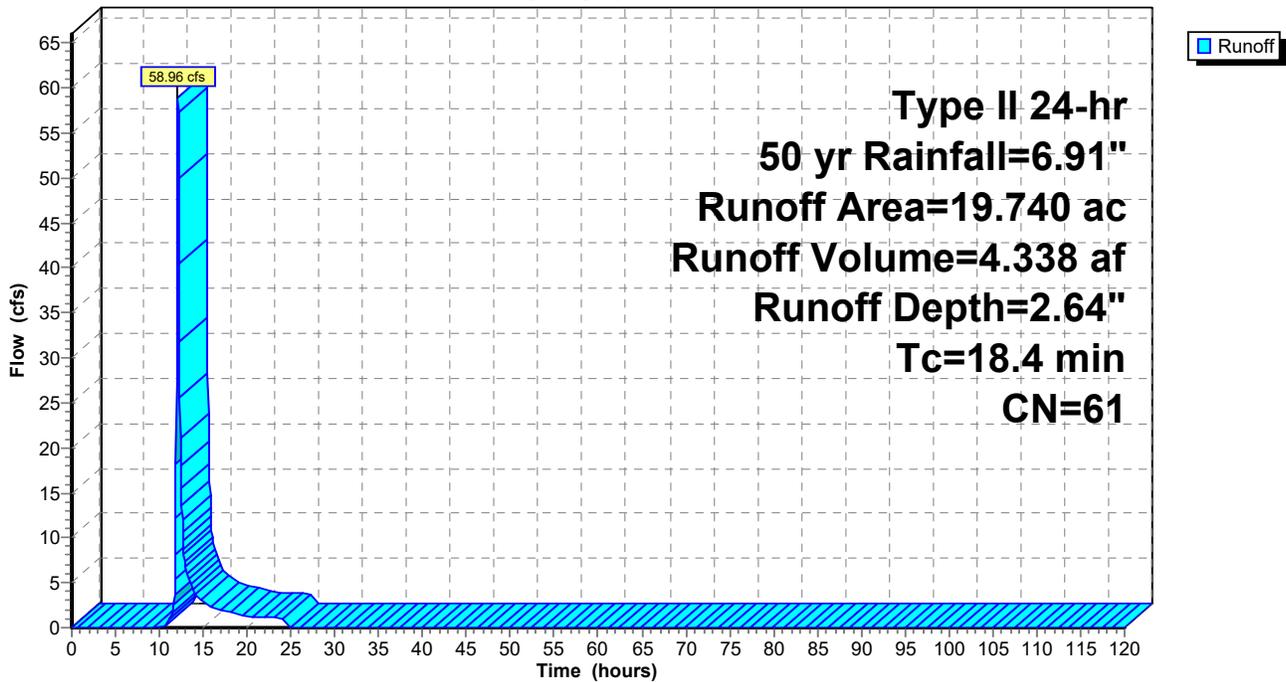
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Type II 24-hr 50 yr Rainfall=6.91"

Area (ac)	CN	Description
* 19.740	61	
19.740		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.4					Direct Entry, TR-55

Subcatchment 3S: PRE DA-3

Hydrograph



Summary for Subcatchment 7S: POST DA-3 UNDETAINED

Runoff = 39.45 cfs @ 12.07 hrs, Volume= 2.520 af, Depth= 3.34"

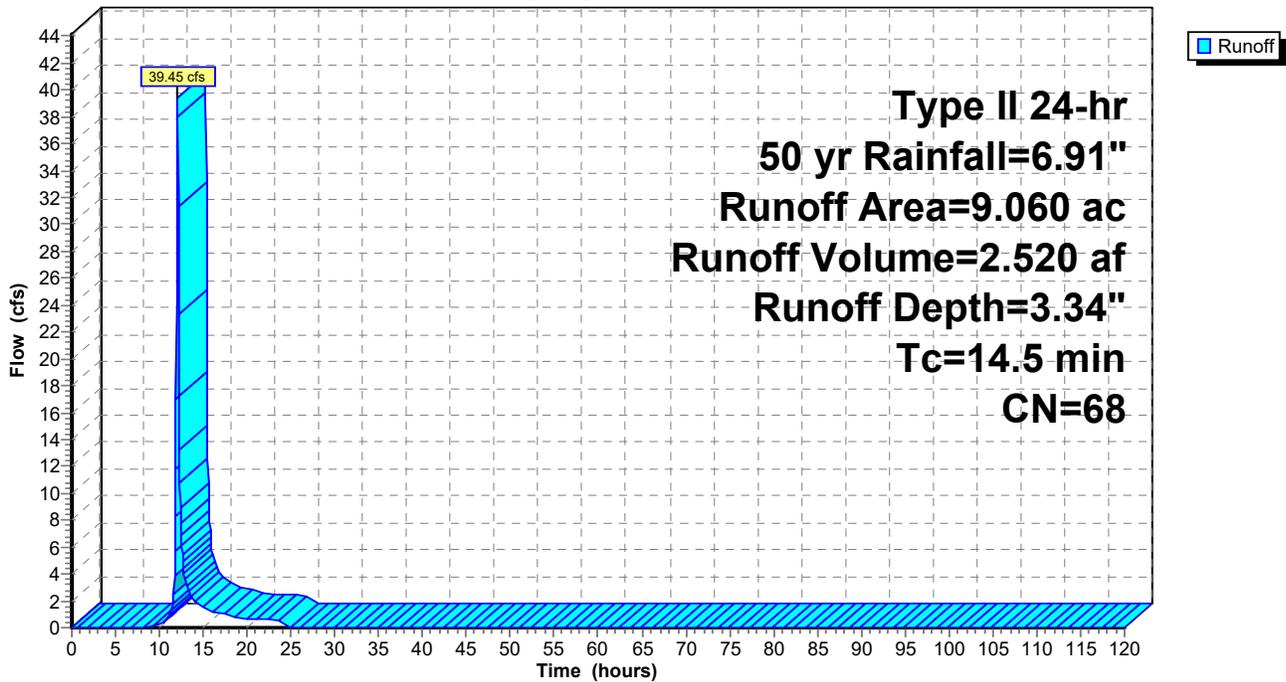
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Type II 24-hr 50 yr Rainfall=6.91"

Area (ac)	CN	Description
* 9.060	68	
9.060		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5					Direct Entry, TR-55

Subcatchment 7S: POST DA-3 UNDETAINED

Hydrograph



Summary for Pond 1P: DRY POND 1

Inflow Area = 7.140 ac, 0.00% Impervious, Inflow Depth = 3.44" for 50 yr event
 Inflow = 44.18 cfs @ 11.96 hrs, Volume= 2.047 af
 Outflow = 4.44 cfs @ 12.42 hrs, Volume= 2.047 af, Atten= 90%, Lag= 27.9 min
 Primary = 4.44 cfs @ 12.42 hrs, Volume= 2.047 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 712.17' @ 12.42 hrs Surf.Area= 12,783 sf Storage= 45,742 cf

Plug-Flow detention time= 781.7 min calculated for 2.047 af (100% of inflow)
 Center-of-Mass det. time= 781.4 min (1,611.0 - 829.6)

Volume	Invert	Avail.Storage	Storage Description
#1	707.00'	127,360 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
707.00	5,144	0	0
708.00	6,502	5,823	5,823
709.00	7,916	7,209	13,032
710.00	9,386	8,651	21,683
711.00	10,913	10,150	31,833
712.00	12,497	11,705	43,538
713.00	14,136	13,317	56,854
714.00	15,832	14,984	71,838
715.00	17,584	16,708	88,546
716.00	19,393	18,489	107,035
717.00	21,258	20,326	127,360

Device	Routing	Invert	Outlet Devices
#1	Primary	707.00'	24.0" Round OUTFALL L= 250.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 707.00' / 705.00' S= 0.0080 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	707.00'	3.0" Vert. ORIFICE 1 C= 0.600 Limited to weir flow at low heads
#3	Device 1	712.00'	48.0" x 48.0" Horiz. RISER C= 0.600 Limited to weir flow at low heads
#4	Secondary	715.00'	20.0' long x 10.0' breadth EMERGENCY SPILLWAY Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=4.31 cfs @ 12.42 hrs HW=712.17' (Free Discharge)

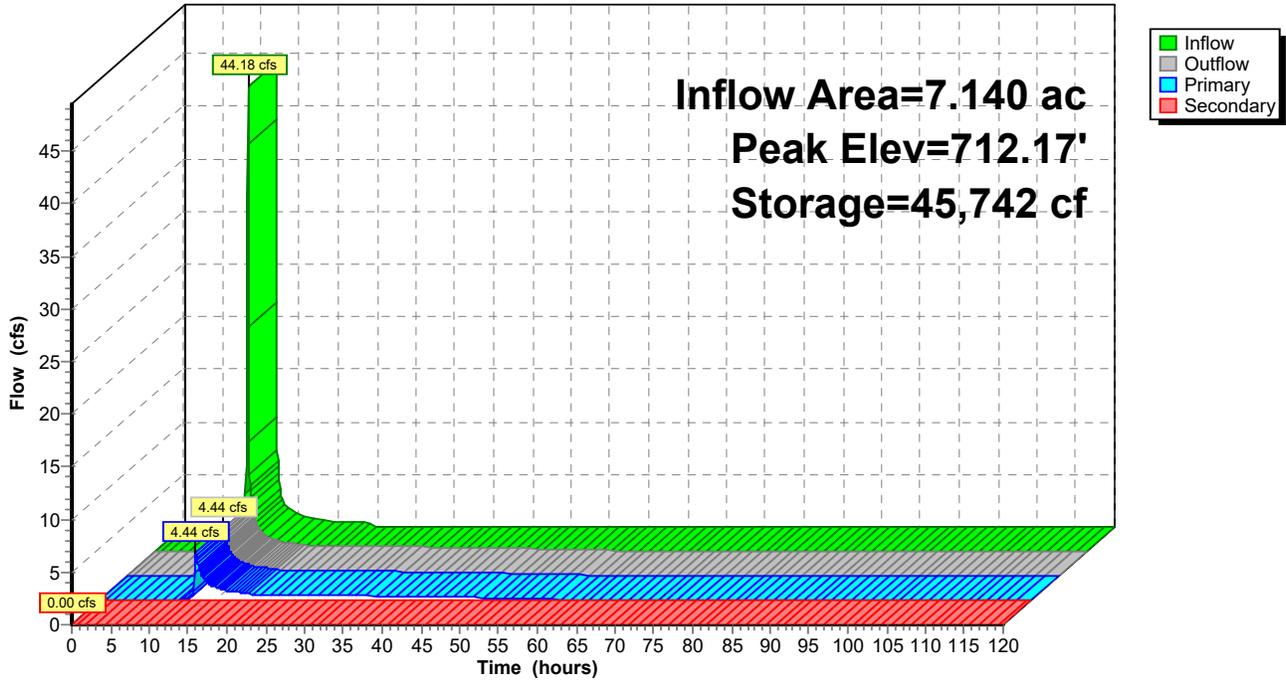
- ↑ 1=OUTFALL (Passes 4.31 cfs of 27.60 cfs potential flow)
- ↑ 2=ORIFICE 1 (Orifice Controls 0.53 cfs @ 10.82 fps)
- ↑ 3=RISER (Weir Controls 3.78 cfs @ 1.36 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=707.00' (Free Discharge)

- ↑ 4=EMERGENCY SPILLWAY (Controls 0.00 cfs)

Pond 1P: DRY POND 1

Hydrograph



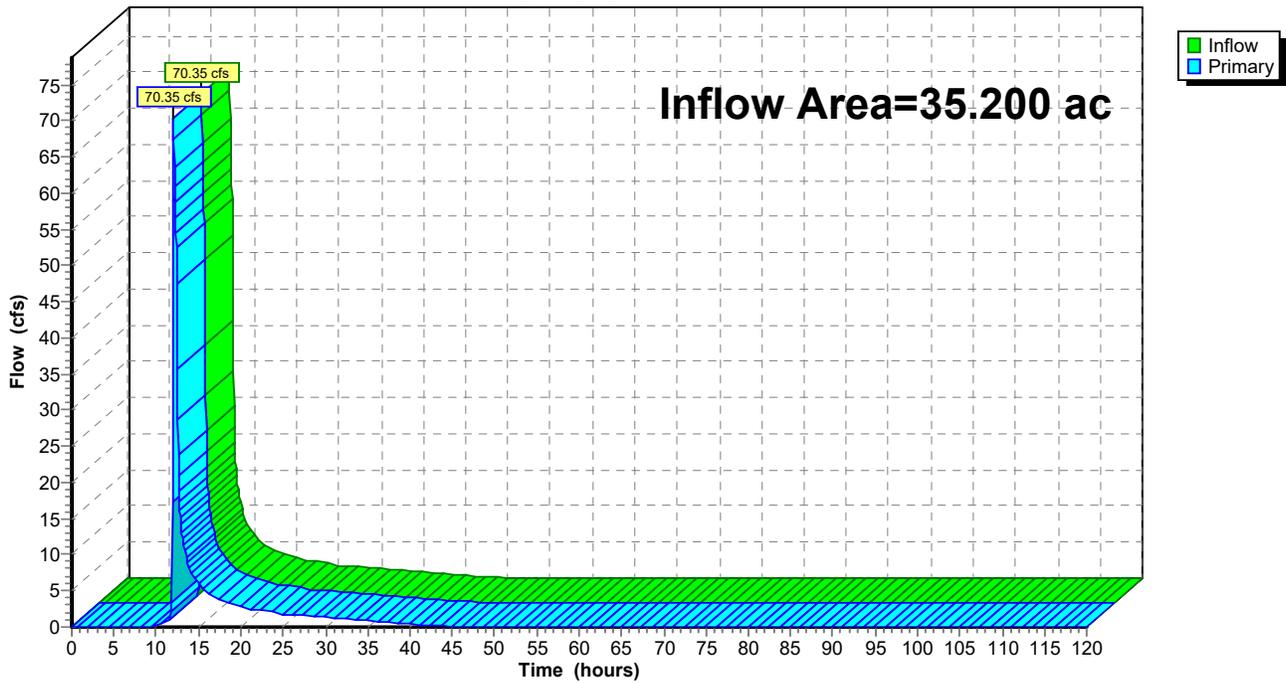
Summary for Link 10L: POST DA-2

Inflow Area = 35.200 ac, 0.00% Impervious, Inflow Depth = 3.19" for 50 yr event
Inflow = 70.35 cfs @ 12.05 hrs, Volume= 9.368 af
Primary = 70.35 cfs @ 12.05 hrs, Volume= 9.368 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Link 10L: POST DA-2

Hydrograph



Summary for Subcatchment 1S: PRE DA-1

Runoff = 16.53 cfs @ 12.14 hrs, Volume= 1.293 af, Depth= 3.24"

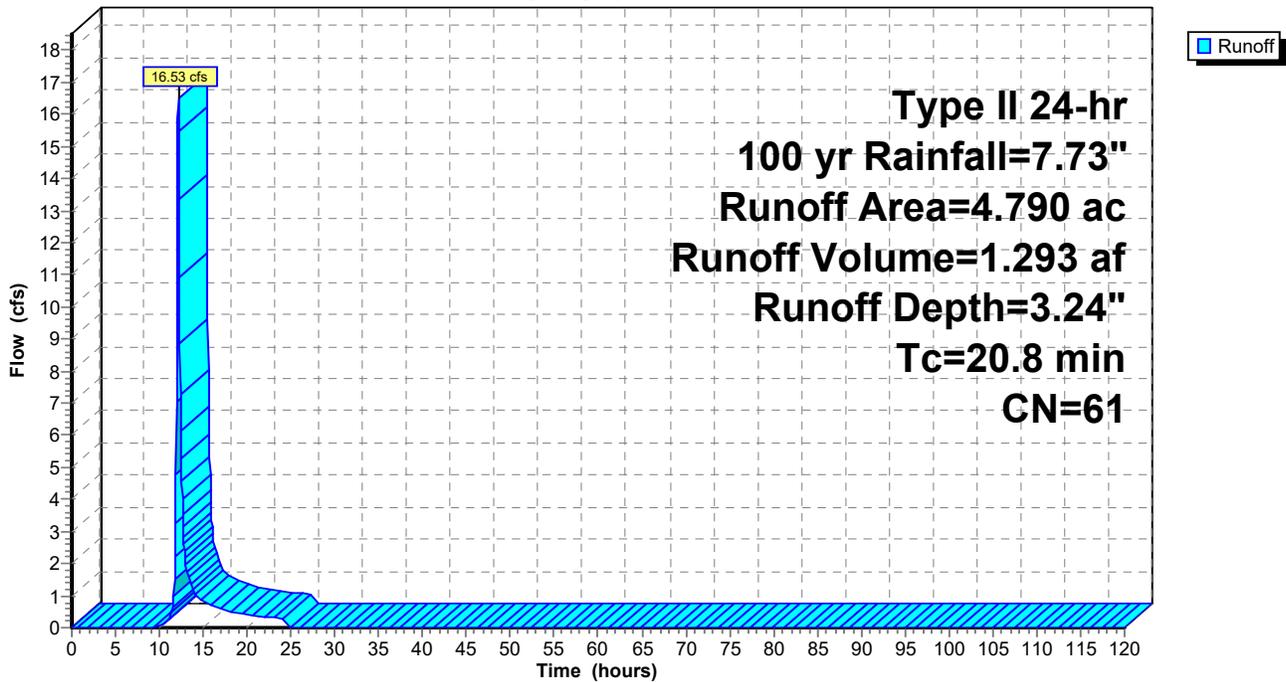
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100 yr Rainfall=7.73"

Area (ac)	CN	Description
* 4.790	61	
4.790		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.8					Direct Entry, TR-55

Subcatchment 1S: PRE DA-1

Hydrograph



Summary for Subcatchment 2S: PRE DA-2

Runoff = 97.32 cfs @ 12.18 hrs, Volume= 8.319 af, Depth= 3.46"

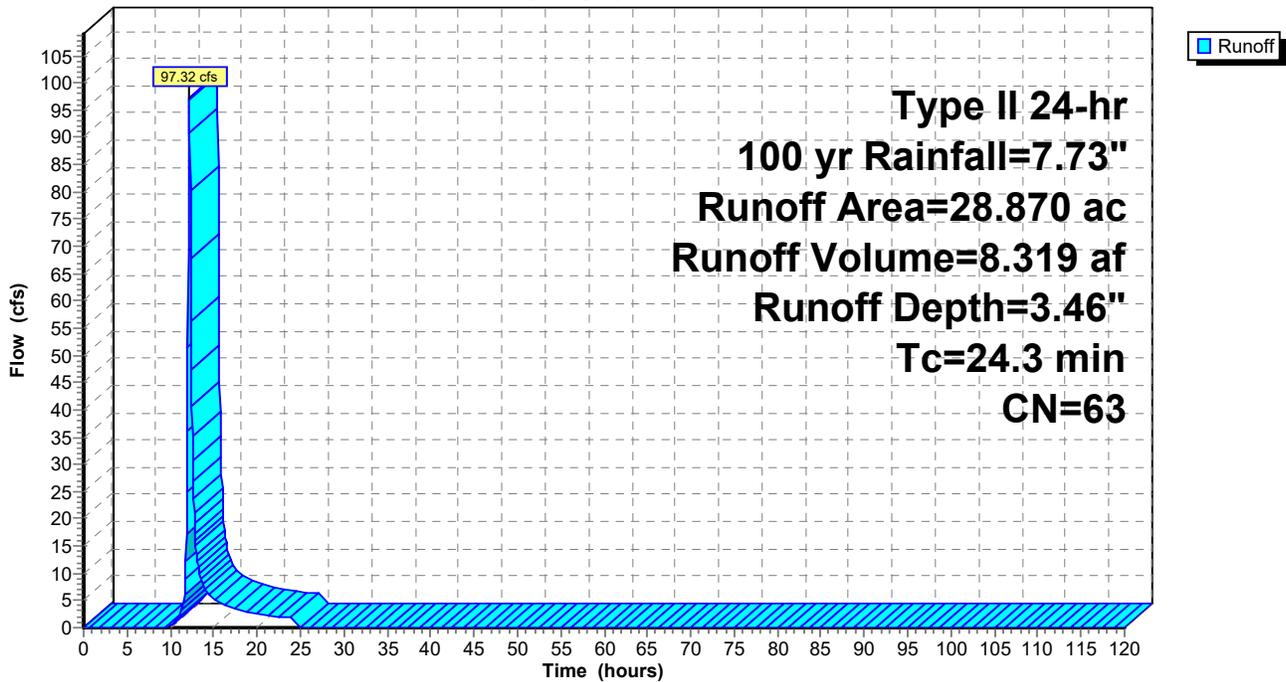
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100 yr Rainfall=7.73"

Area (ac)	CN	Description
* 28.870	63	
28.870		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.3					Direct Entry, TR-55

Subcatchment 2S: PRE DA-2

Hydrograph



Summary for Subcatchment 3S: PRE DA-3

Runoff = 73.21 cfs @ 12.12 hrs, Volume= 5.330 af, Depth= 3.24"

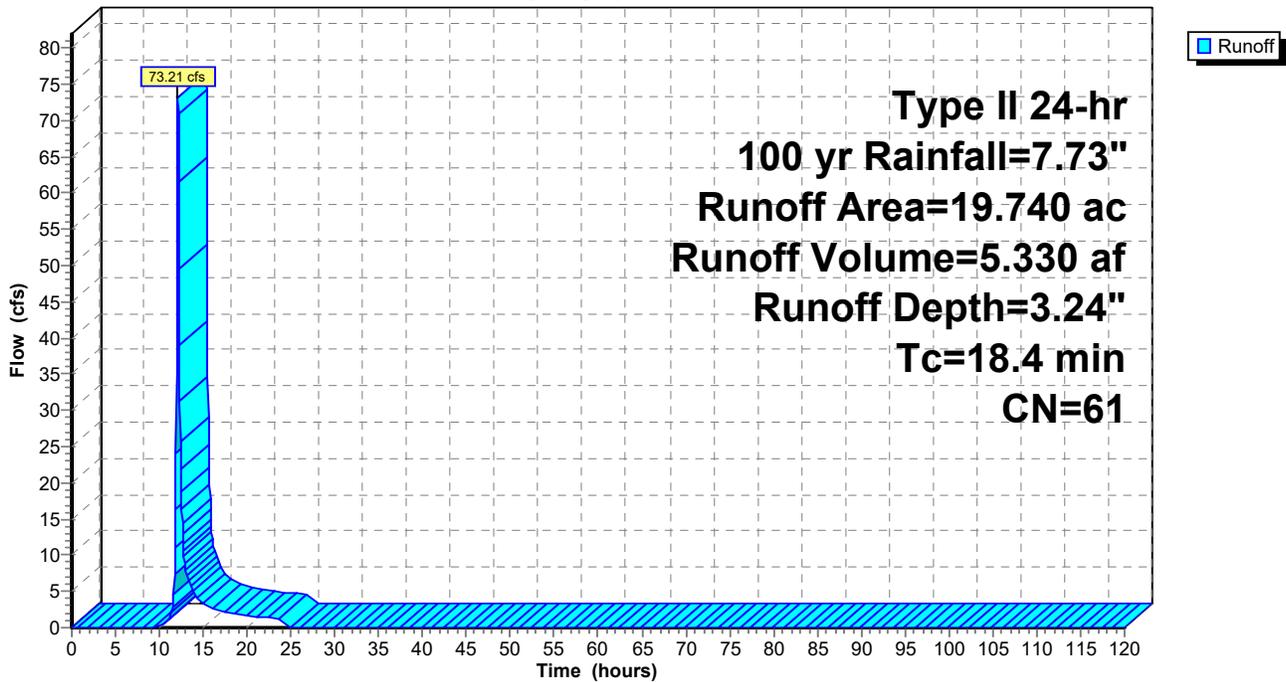
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100 yr Rainfall=7.73"

Area (ac)	CN	Description
* 19.740	61	
19.740		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.4					Direct Entry, TR-55

Subcatchment 3S: PRE DA-3

Hydrograph



Summary for Subcatchment 7S: POST DA-3 UNDETAINED

Runoff = 47.46 cfs @ 12.07 hrs, Volume= 3.027 af, Depth= 4.01"

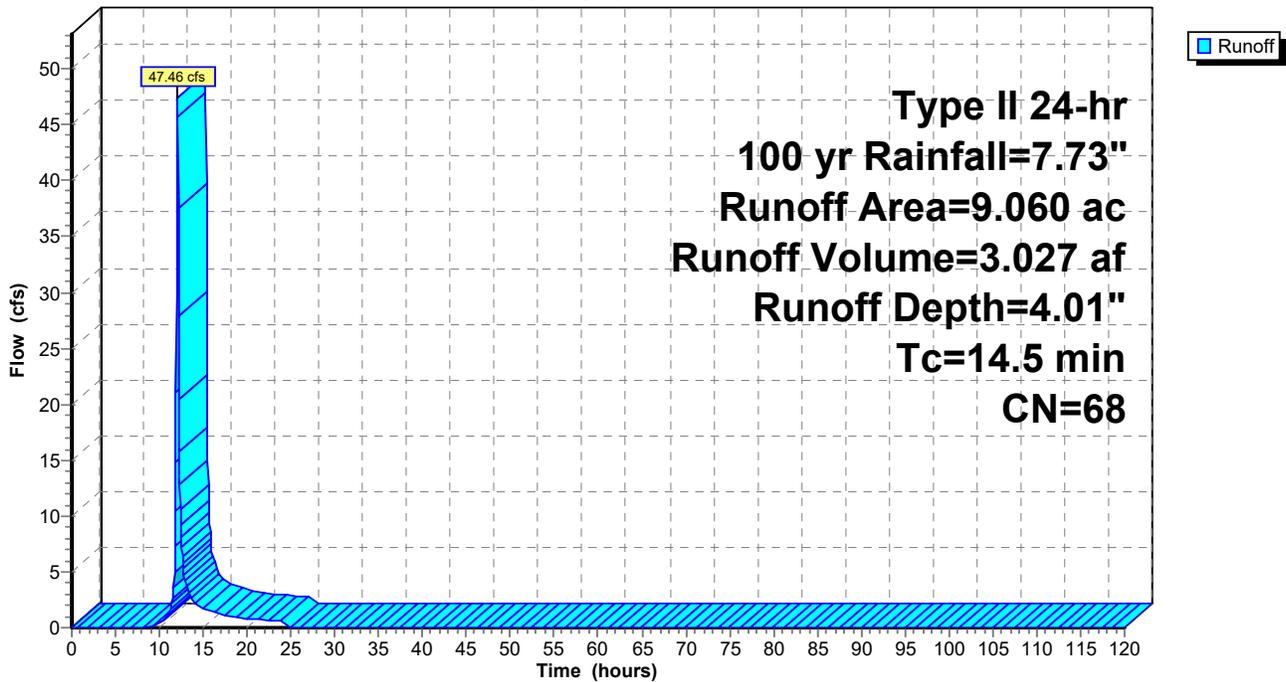
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100 yr Rainfall=7.73"

Area (ac)	CN	Description
* 9.060	68	
9.060		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5					Direct Entry, TR-55

Subcatchment 7S: POST DA-3 UNDETAINED

Hydrograph



Summary for Pond 1P: DRY POND 1

Inflow Area = 7.140 ac, 0.00% Impervious, Inflow Depth = 4.12" for 100 yr event
 Inflow = 52.74 cfs @ 11.96 hrs, Volume= 2.452 af
 Outflow = 14.09 cfs @ 12.11 hrs, Volume= 2.452 af, Atten= 73%, Lag= 9.2 min
 Primary = 14.09 cfs @ 12.11 hrs, Volume= 2.452 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 712.41' @ 12.11 hrs Surf.Area= 13,163 sf Storage= 48,750 cf

Plug-Flow detention time= 663.5 min calculated for 2.452 af (100% of inflow)
 Center-of-Mass det. time= 663.2 min (1,487.6 - 824.4)

Volume	Invert	Avail.Storage	Storage Description
#1	707.00'	127,360 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
707.00	5,144	0	0
708.00	6,502	5,823	5,823
709.00	7,916	7,209	13,032
710.00	9,386	8,651	21,683
711.00	10,913	10,150	31,833
712.00	12,497	11,705	43,538
713.00	14,136	13,317	56,854
714.00	15,832	14,984	71,838
715.00	17,584	16,708	88,546
716.00	19,393	18,489	107,035
717.00	21,258	20,326	127,360

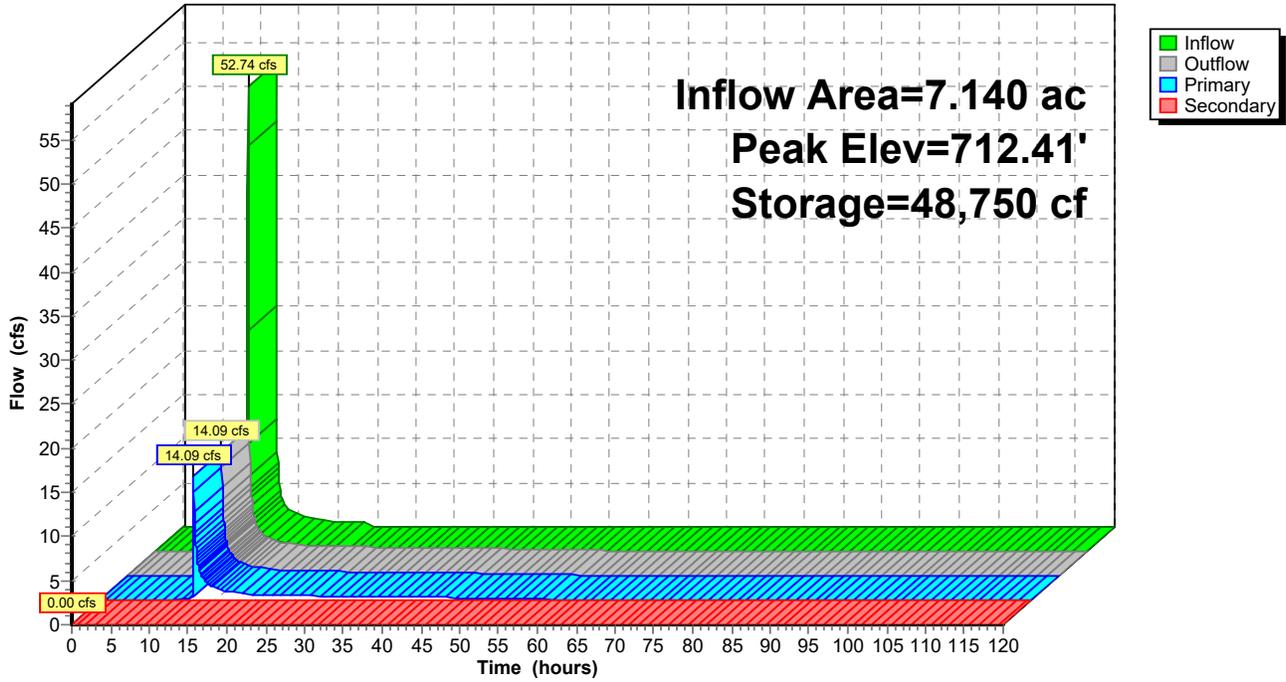
Device	Routing	Invert	Outlet Devices
#1	Primary	707.00'	24.0" Round OUTFALL L= 250.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 707.00' / 705.00' S= 0.0080 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	707.00'	3.0" Vert. ORIFICE 1 C= 0.600 Limited to weir flow at low heads
#3	Device 1	712.00'	48.0" x 48.0" Horiz. RISER C= 0.600 Limited to weir flow at low heads
#4	Secondary	715.00'	20.0' long x 10.0' breadth EMERGENCY SPILLWAY Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=13.52 cfs @ 12.11 hrs HW=712.39' (Free Discharge)
 ↑ **1=OUTFALL** (Passes 13.52 cfs of 28.19 cfs potential flow)
 ↑ **2=ORIFICE 1** (Orifice Controls 0.54 cfs @ 11.05 fps)
 ↑ **3=RISER** (Weir Controls 12.97 cfs @ 2.05 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=707.00' (Free Discharge)
 ↑ **4=EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 1P: DRY POND 1

Hydrograph



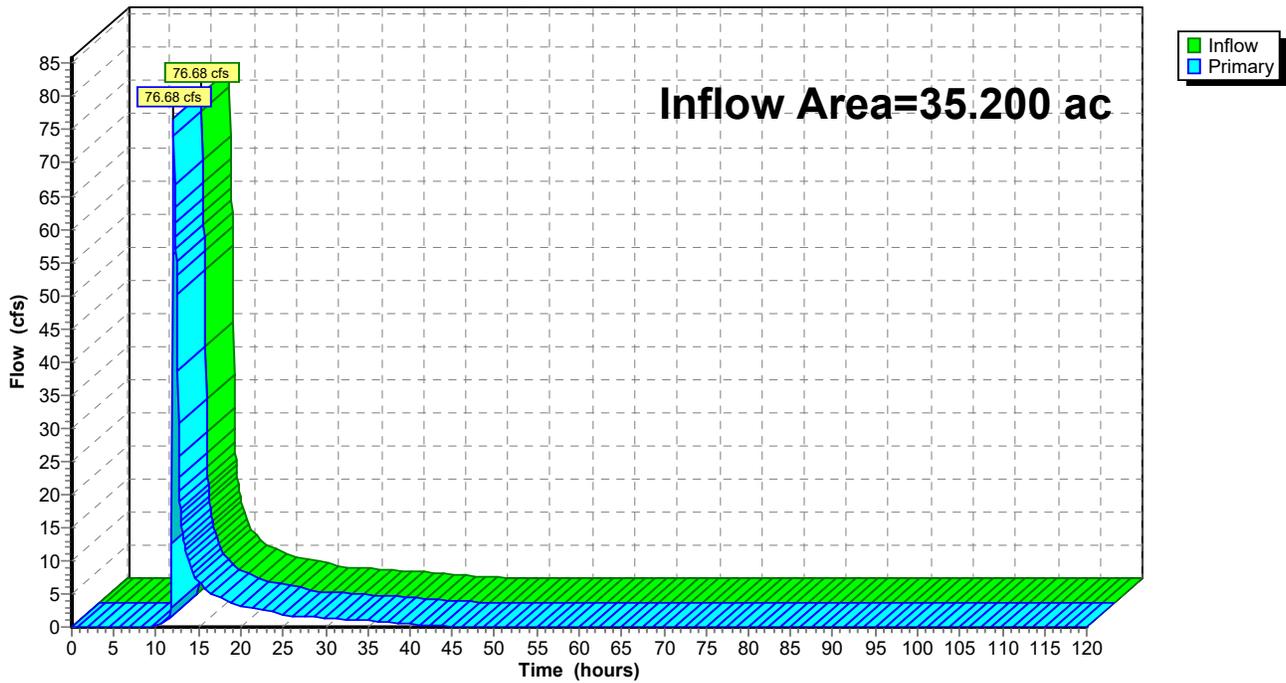
Summary for Link 10L: POST DA-2

Inflow Area = 35.200 ac, 0.00% Impervious, Inflow Depth = 3.63" for 100 yr event
Inflow = 76.68 cfs @ 12.03 hrs, Volume= 10.649 af
Primary = 76.68 cfs @ 12.03 hrs, Volume= 10.649 af, Atten= 0%, Lag= 0.0 min

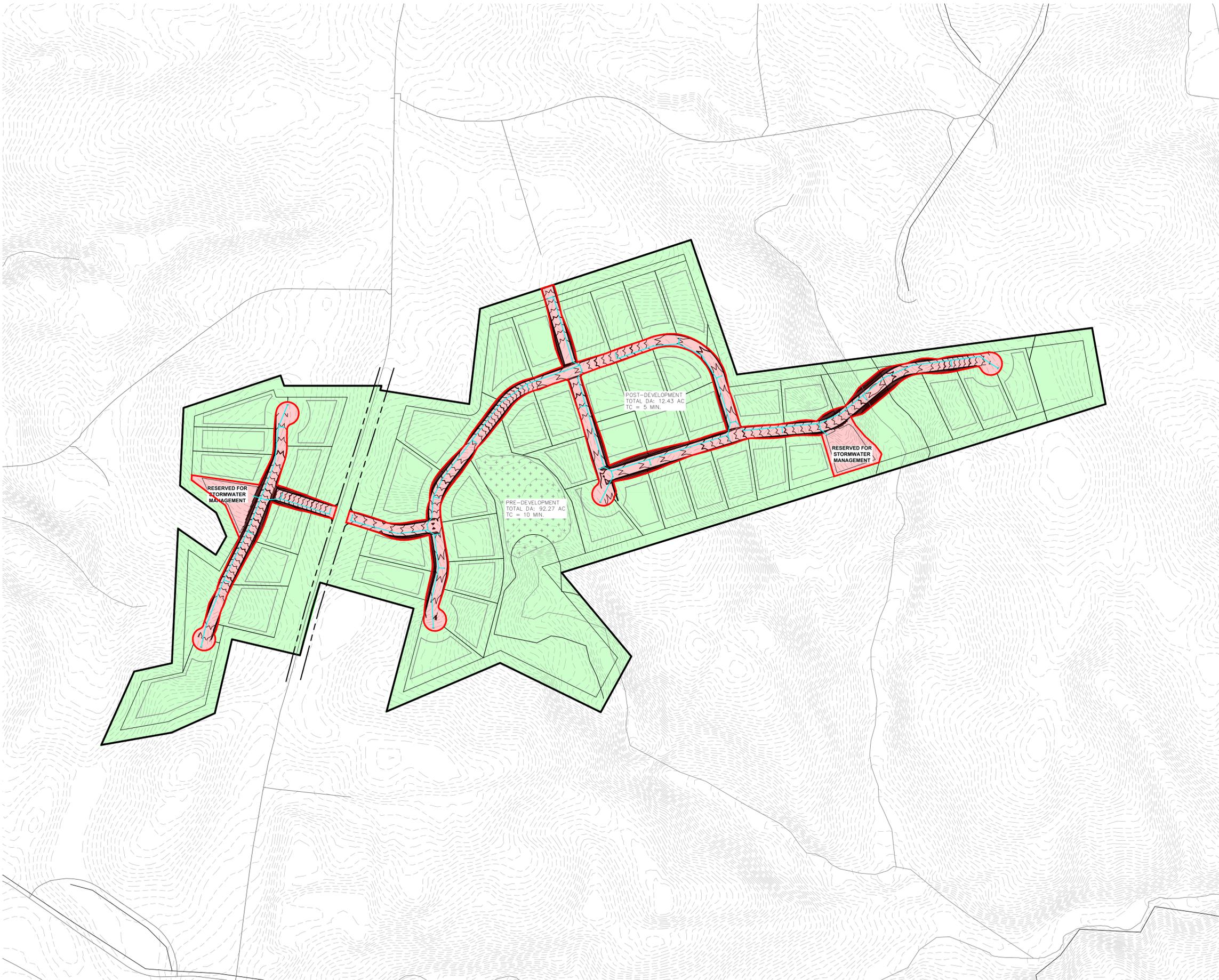
Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Link 10L: POST DA-2

Hydrograph



Plotted By: Loflin, Andrew Layout: Stormwater Exhibit July 09, 2025 07:29:25am K:\GHL_PR\A12826095 Toll Brothers - Weedington 02 - Weedington 02 - DWG\Concept\DWG Weedington Stormwater Calculations_2025-0613.dwg



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262535

Date Issued: 01/12/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 1

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

Environmental Health

500 N. Main St
Suite 47
Monroe, NC 28112
T 704-283-3553

unioncountync.gov

NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262542

Date Issued: 01/12/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 2

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

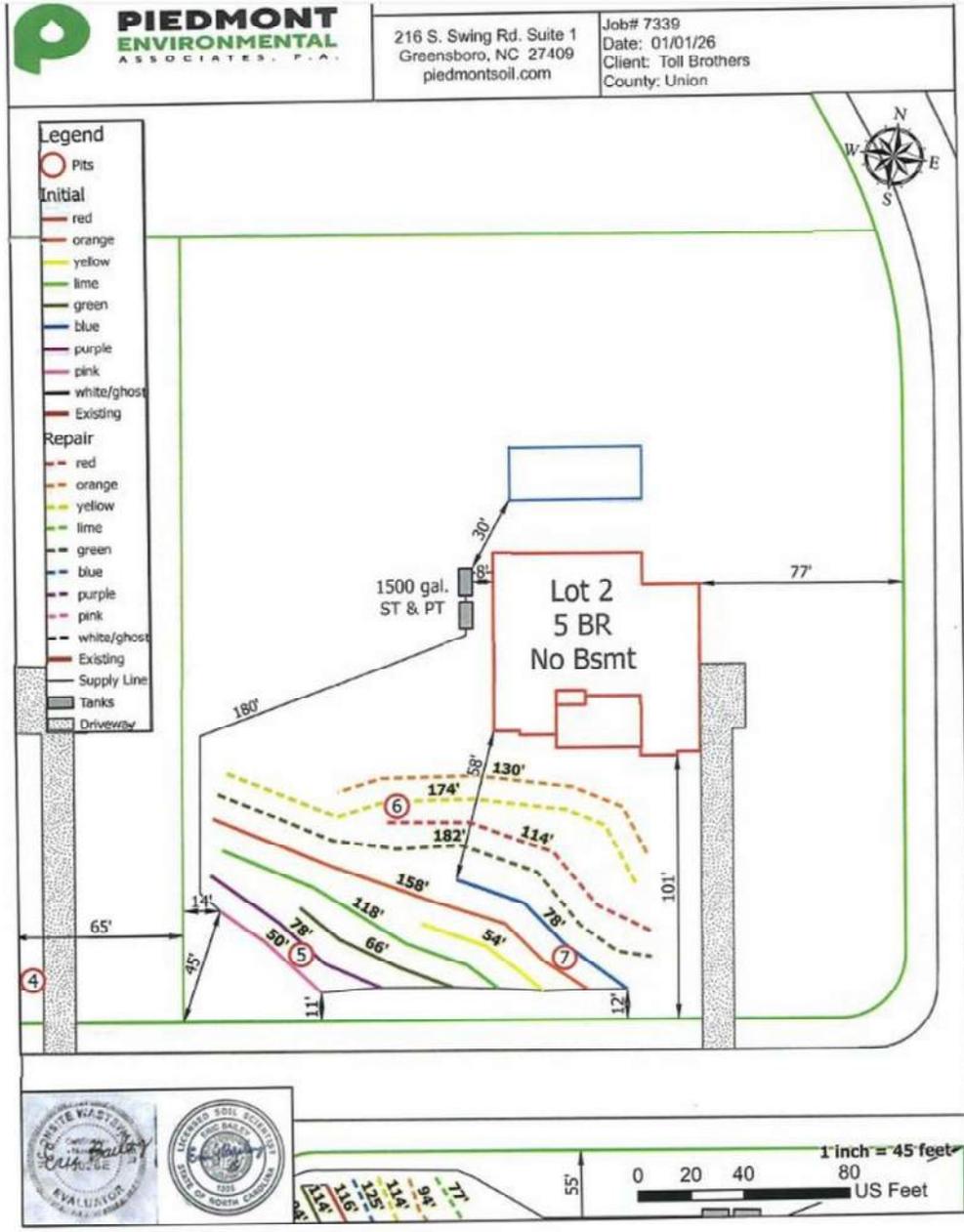
Environmental Health

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Design:

Permit#: A2IP262542



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262547

Date Issued: 01/12/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 3

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

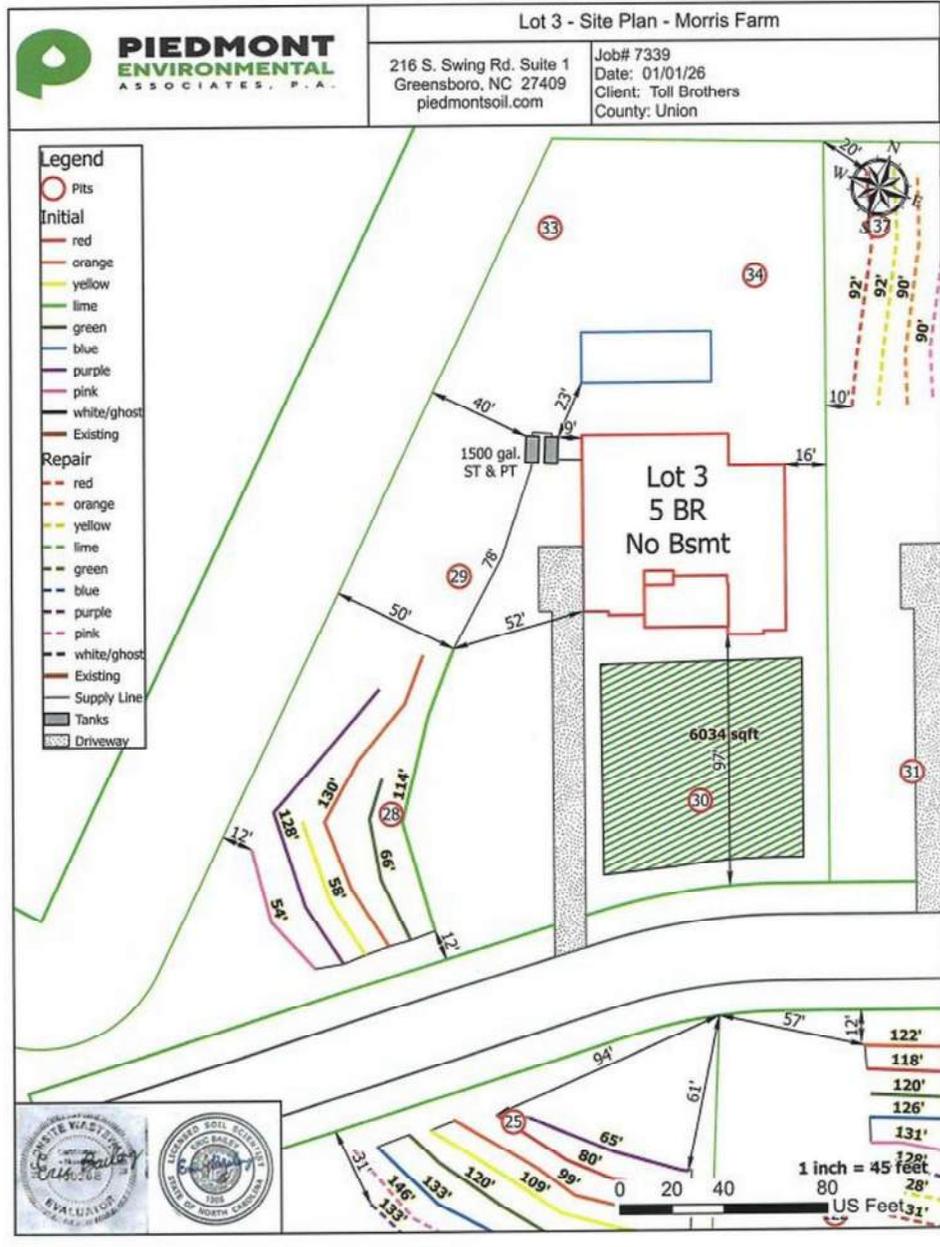
Environmental Health

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Design:

Permit#: A2IP262547



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262550

Date Issued: 01/12/2026

System Classification: IIb - Accepted wastewater gravity system

System Description: 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 4

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

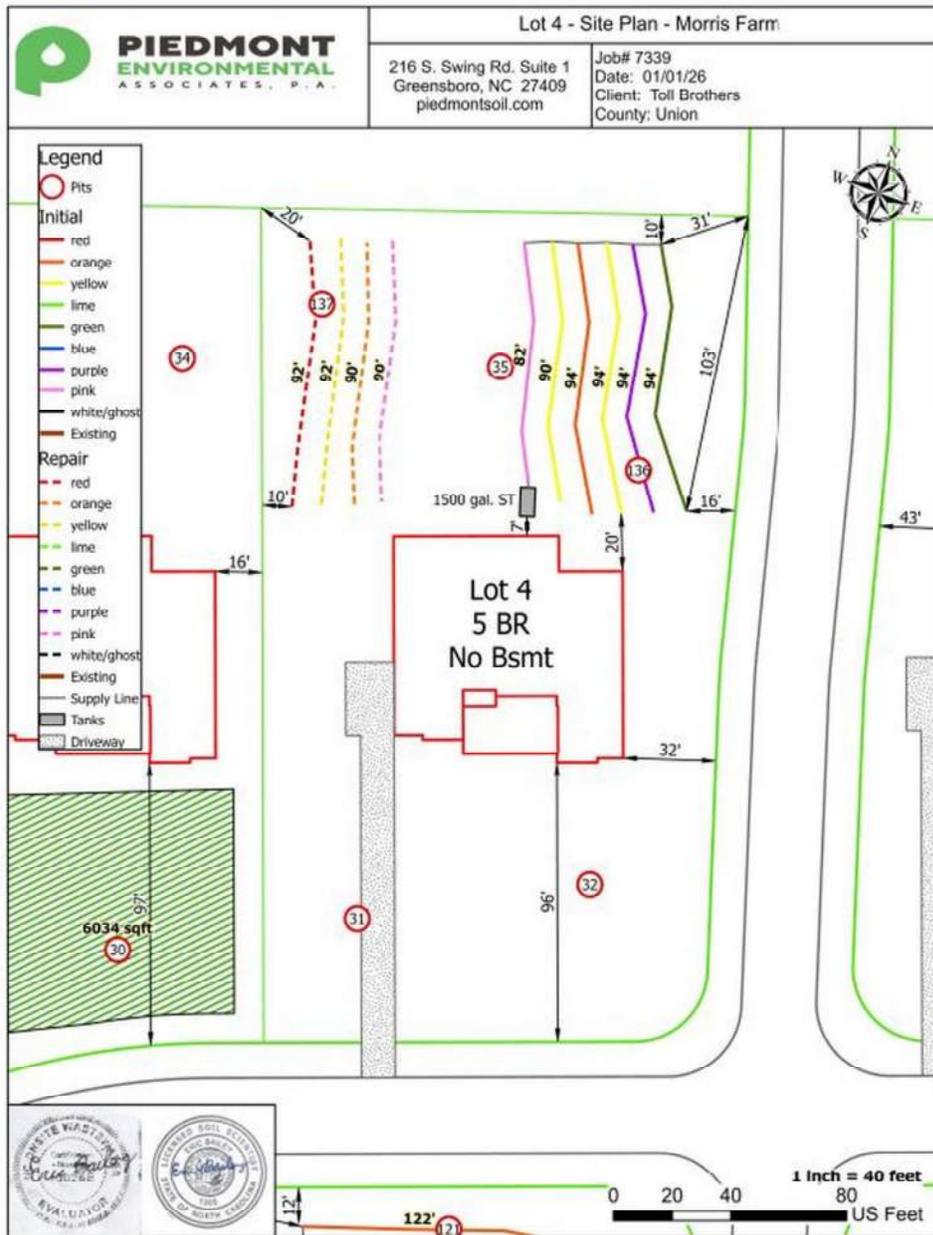
Environmental Health

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Design:

Permit#: A2IP262550



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262552

Date Issued: 01/12/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 5

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

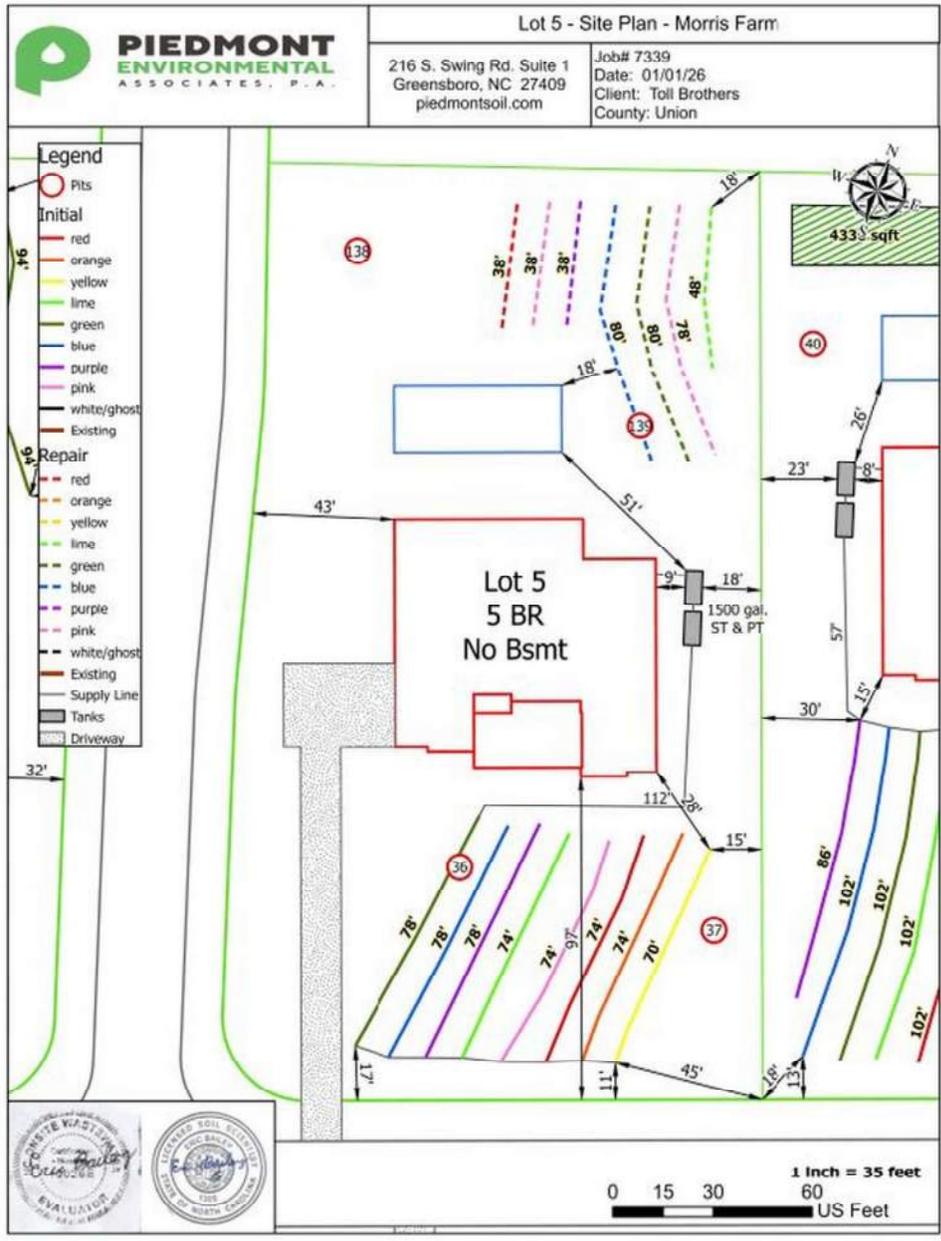
Environmental Health

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Design:

Permit#: A2IP262552



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262554

Date Issued: 01/12/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 6

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

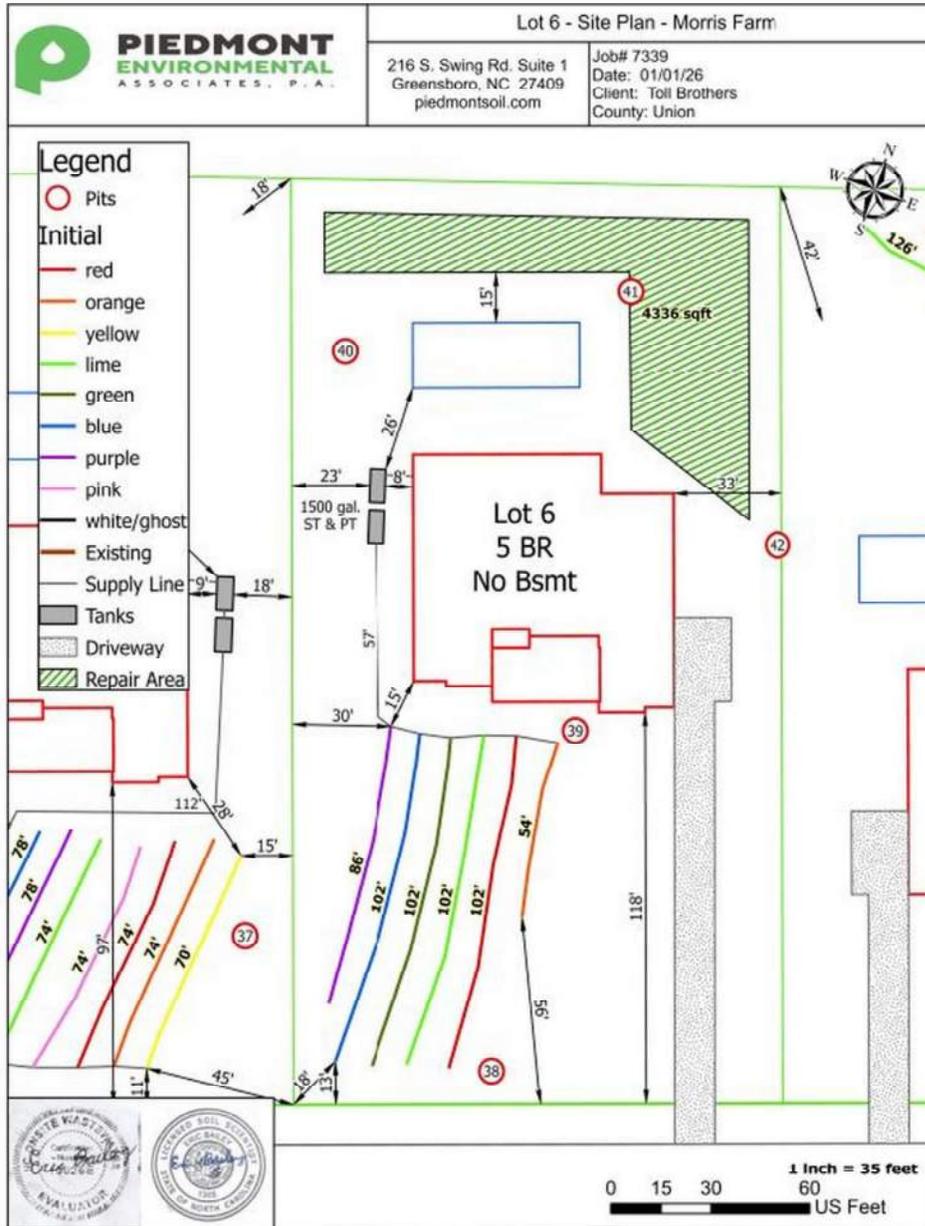
Environmental Health

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Design:

Permit#: A2IP262554



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262561

Date Issued: 01/12/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 7

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

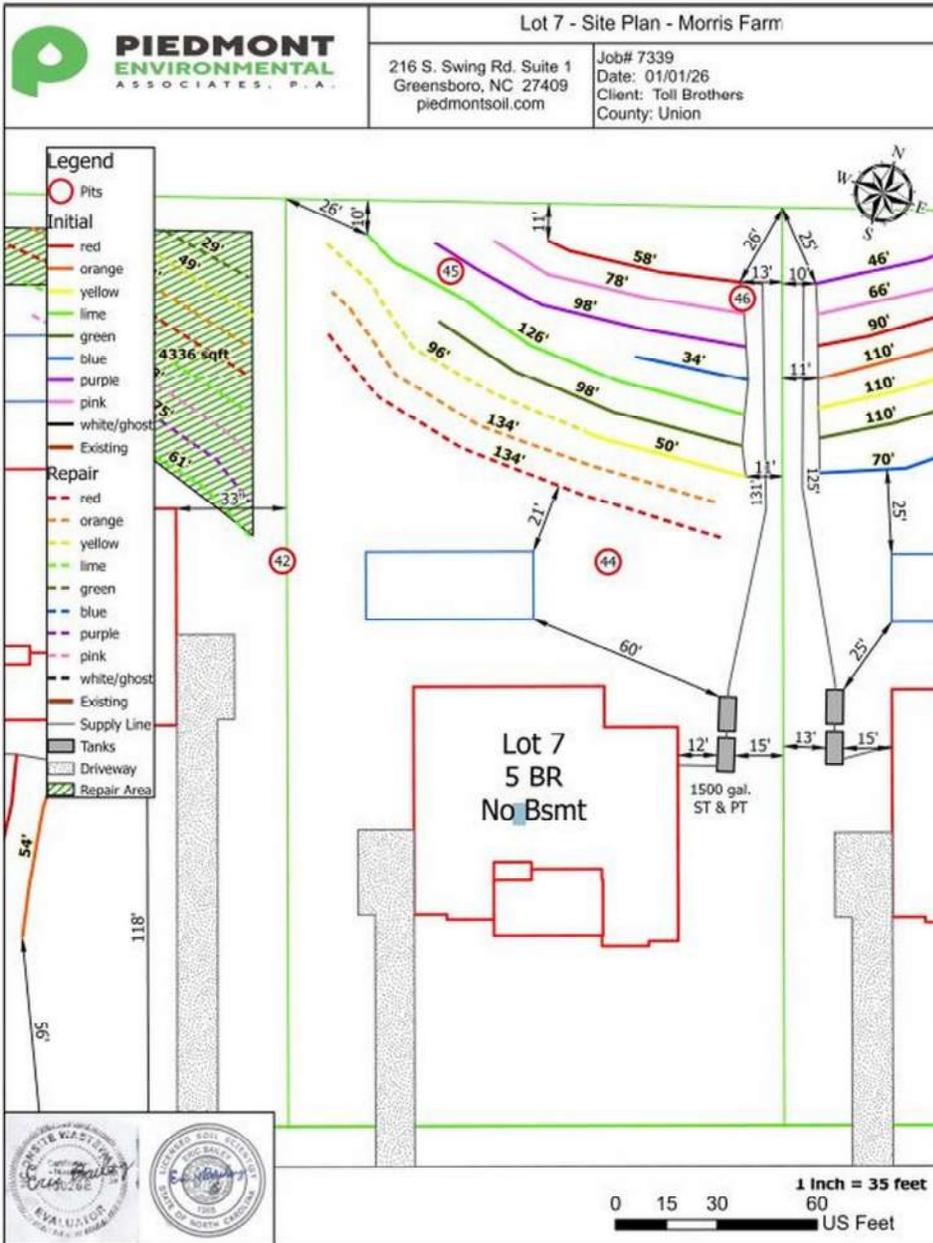
Environmental Health

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Design:

Permit#: A2IP262561



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262565

Date Issued: 01/12/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 8

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

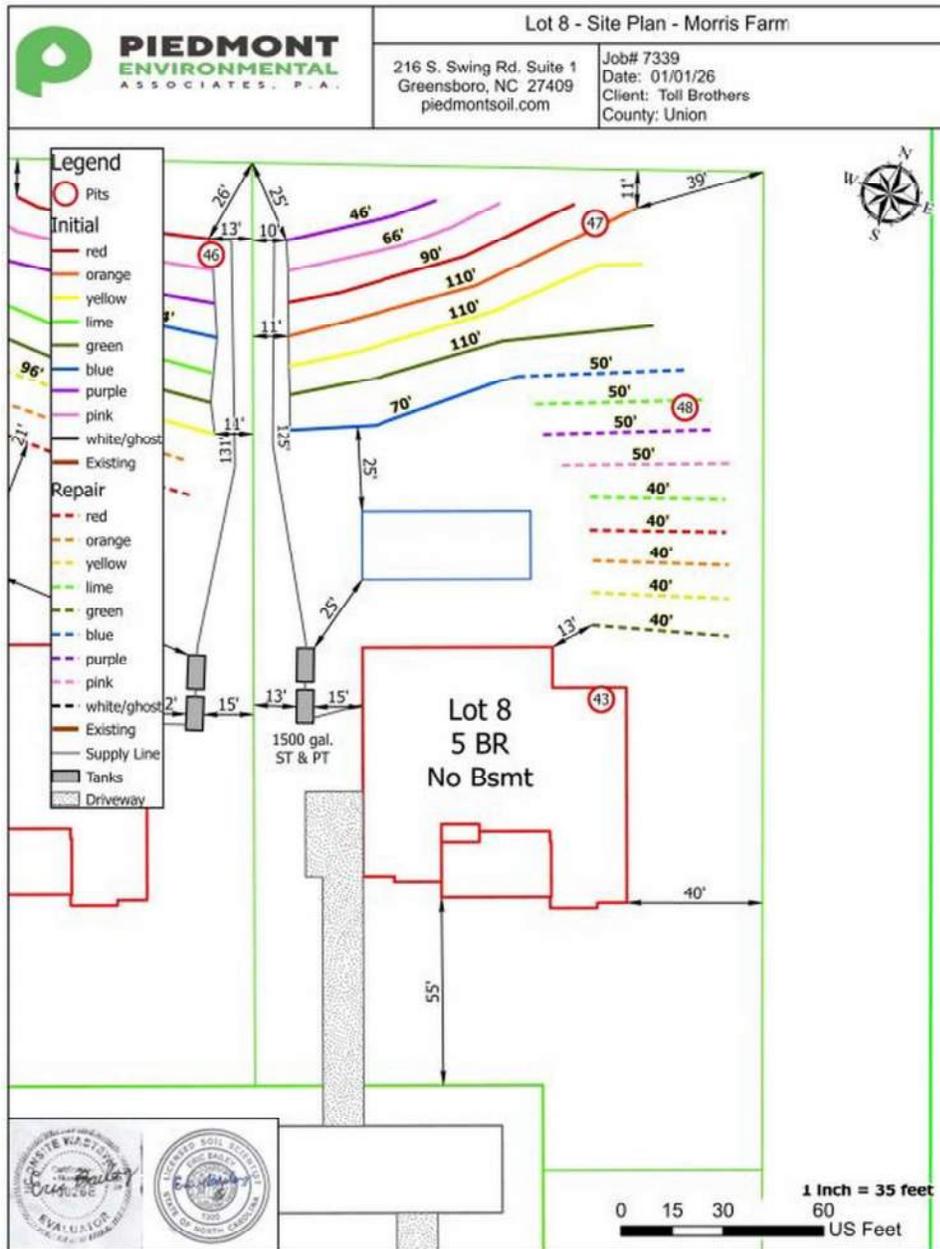
Environmental Health

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Design:

Permit#: A2IP262565



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262568

Date Issued: 01/12/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 9

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

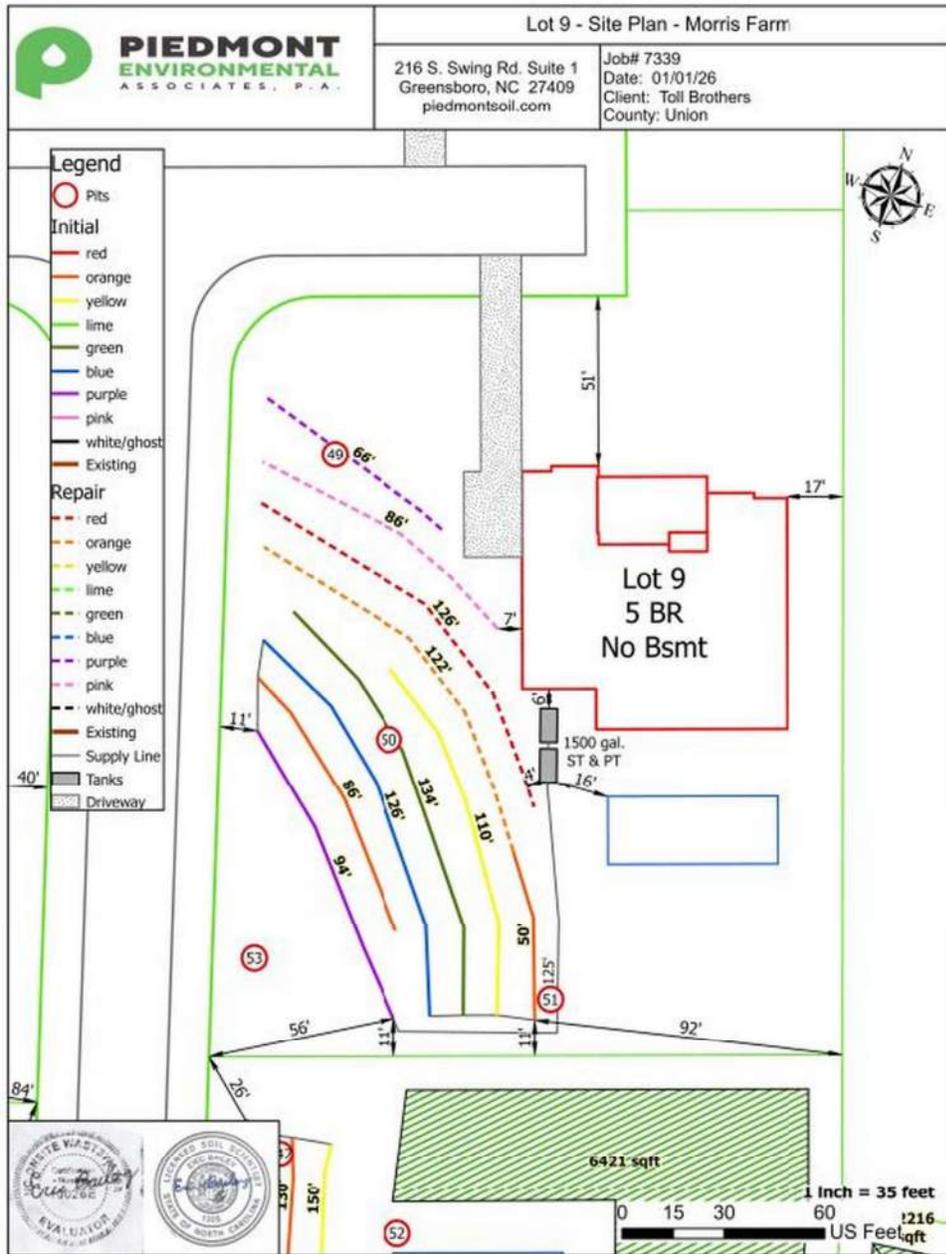
Environmental Health

500 N. Main St
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Monroe, NC 28112
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unioncountync.gov

Design:

Permit#: A2IP262568



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262575

Date Issued: 01/13/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 10

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

Environmental Health

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NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262577

Date Issued: 01/13/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 11

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

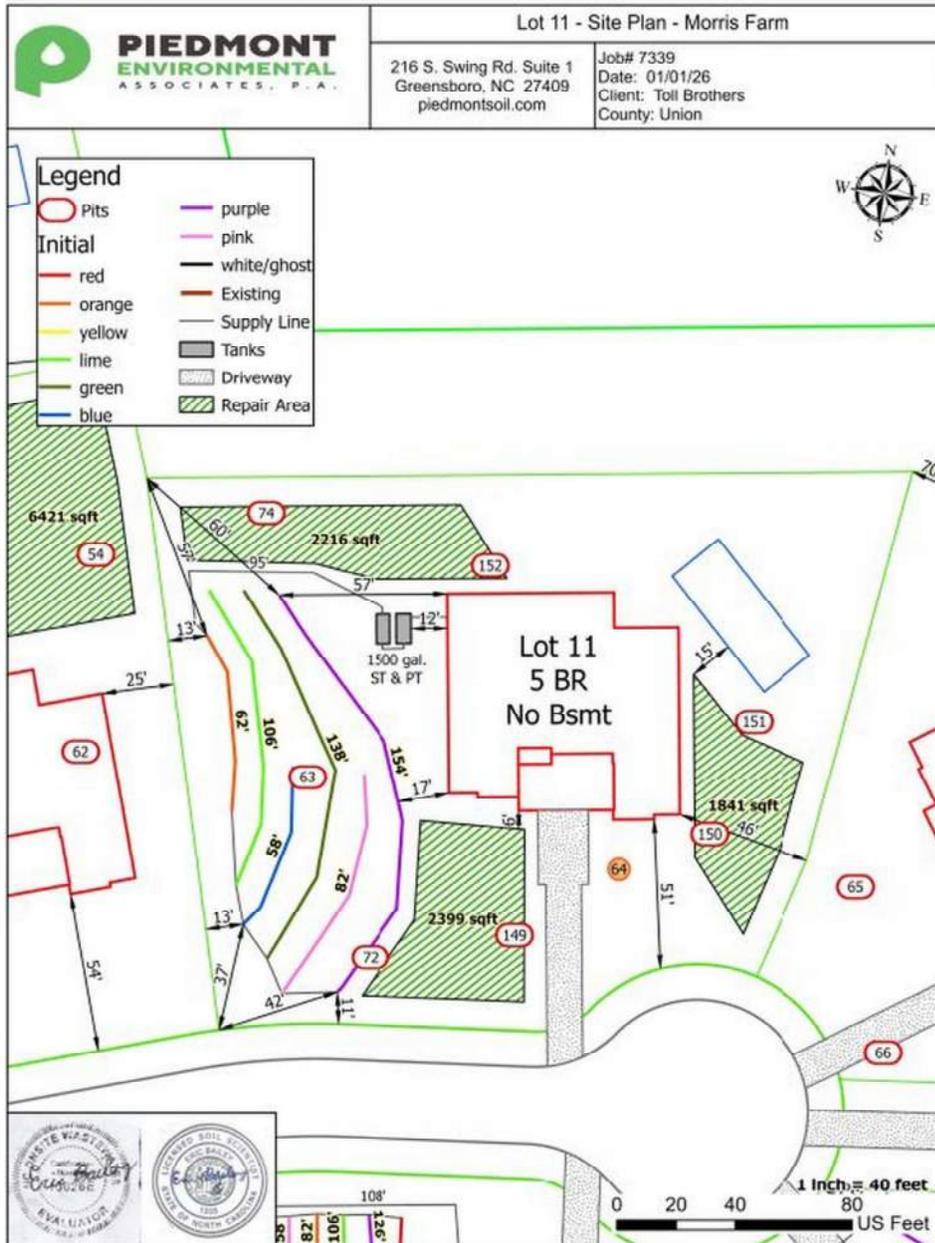
Environmental Health

500 N. Main St
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Monroe, NC 28112
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Design:

Permit#: A2IP262577



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262580

Date Issued: 01/13/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to PPBPS-V 50% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 12

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

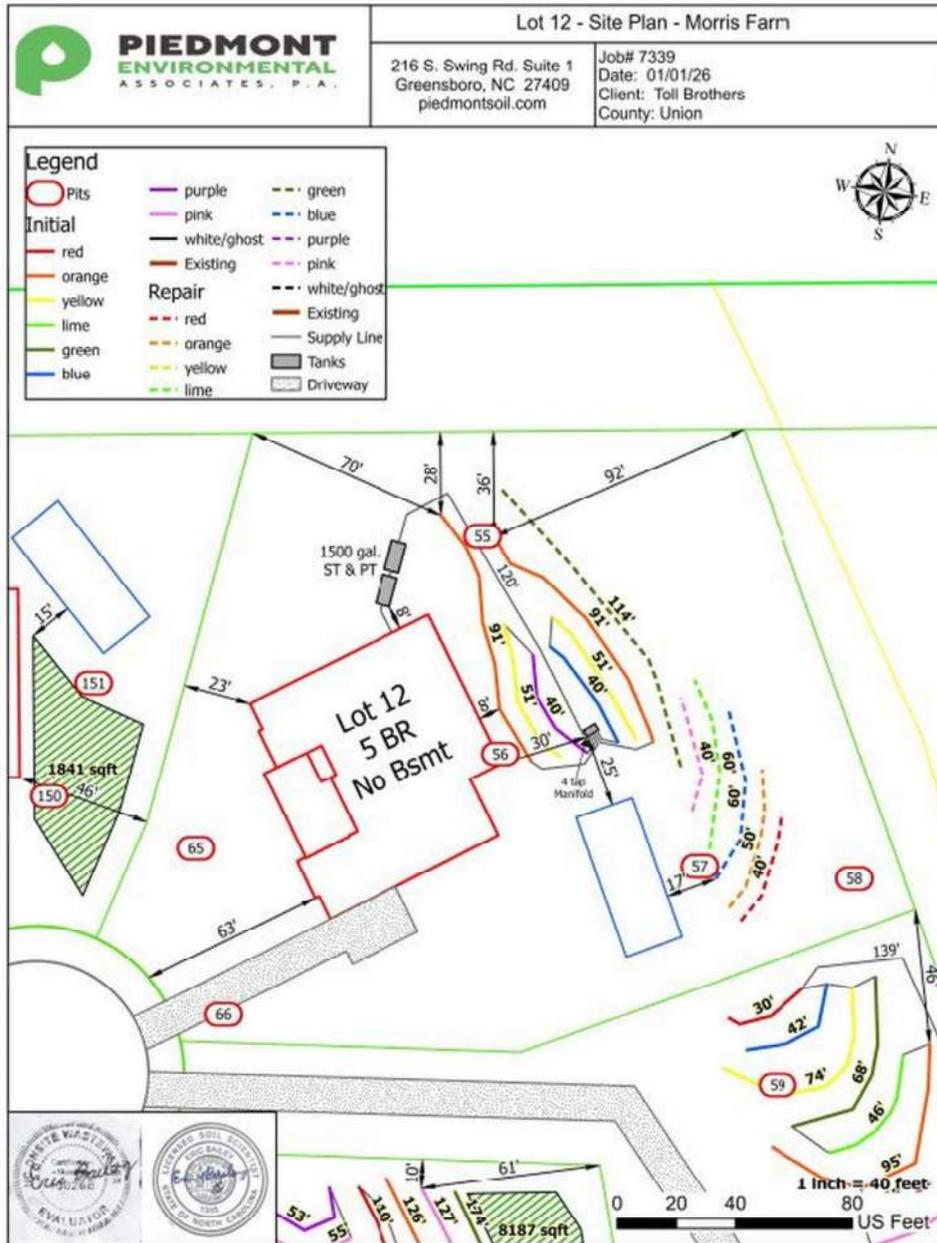
Environmental Health

500 N. Main St
Suite 47
Monroe, NC 28112
T 704-283-3553

unioncountync.gov

Design:

Permit#: A2IP262580



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262581

Date Issued: 01/13/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 13

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

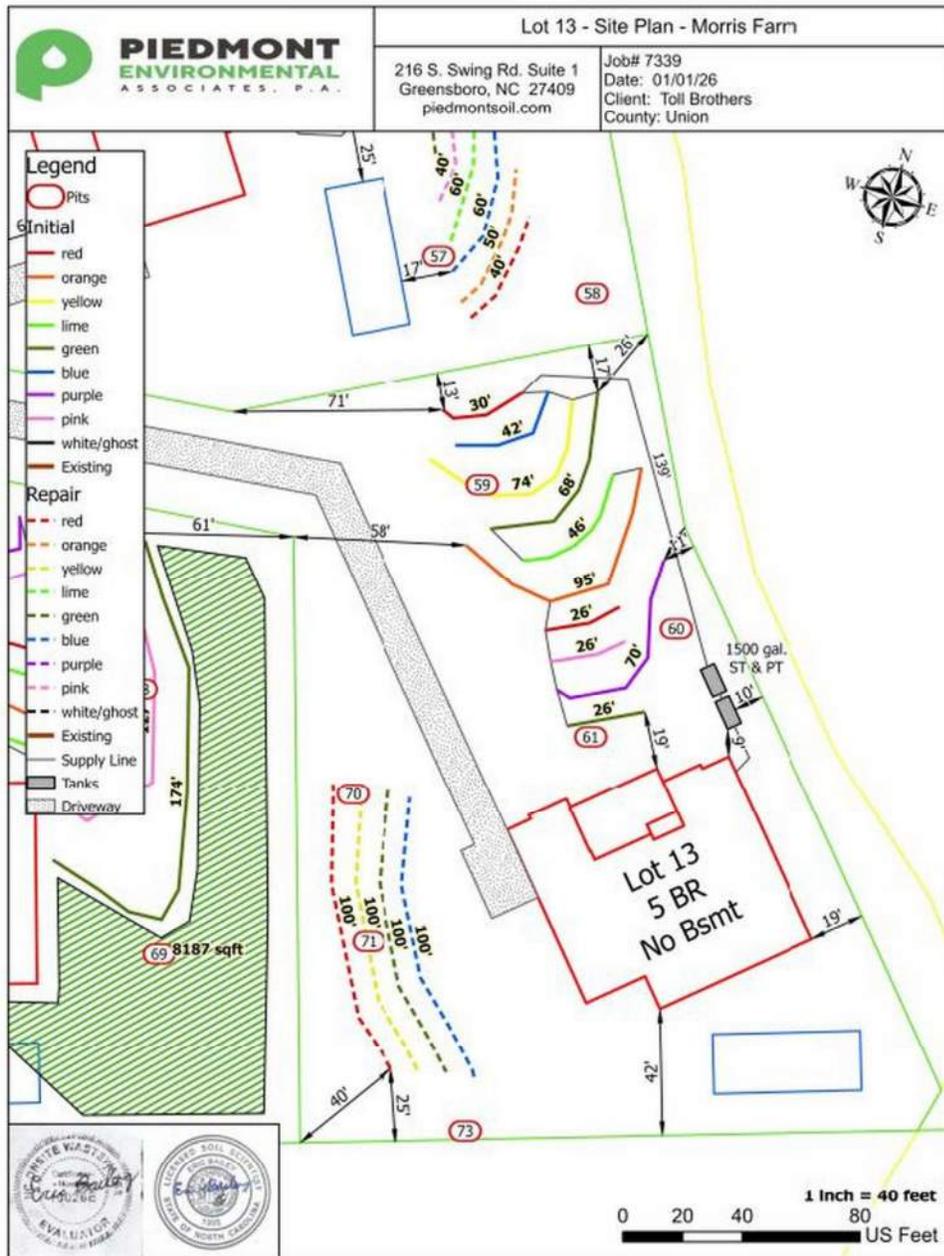
Environmental Health

500 N. Main St
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Design:

Permit#: A2IP262581



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262538

Date Issued: 01/12/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to Approved 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 14

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

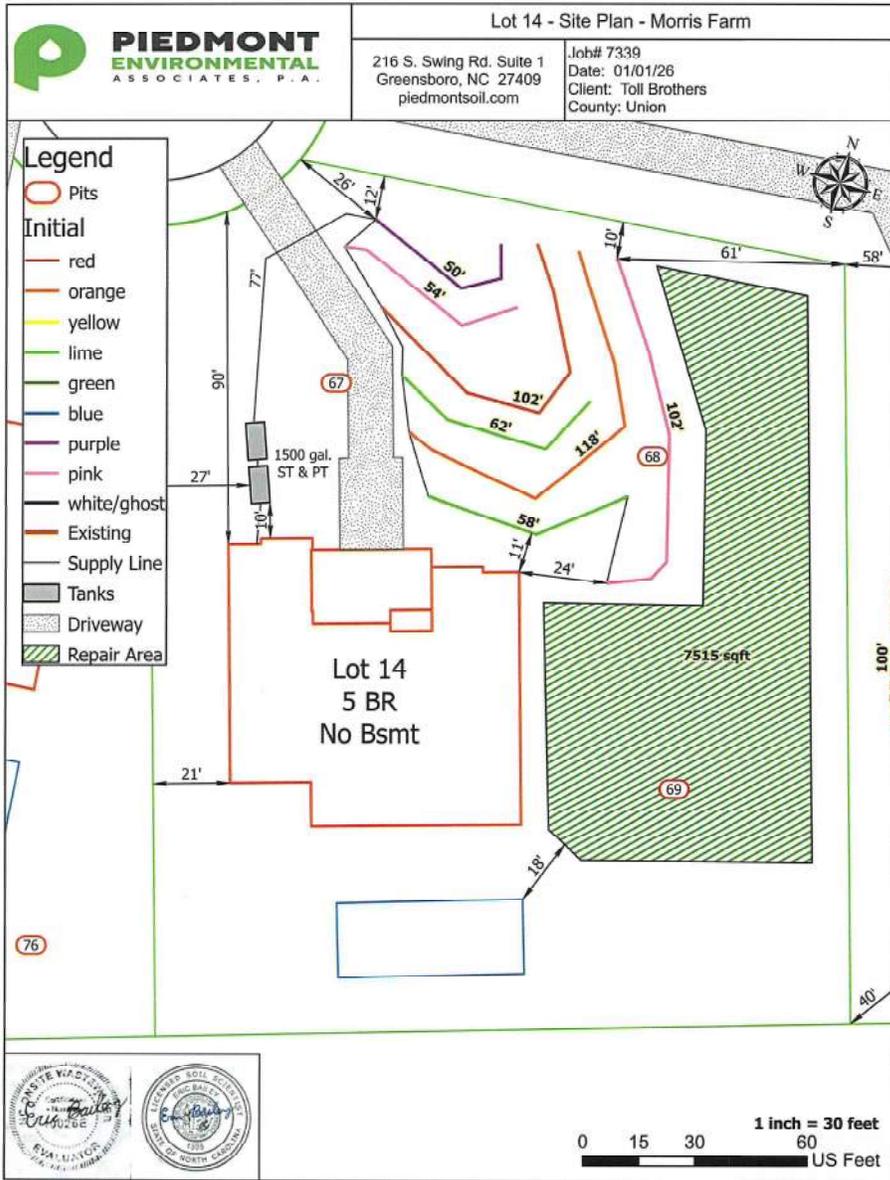
Environmental Health

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Design:

Permit#: A2IP262538



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262541

Date Issued: 01/12/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to Approved 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 15

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

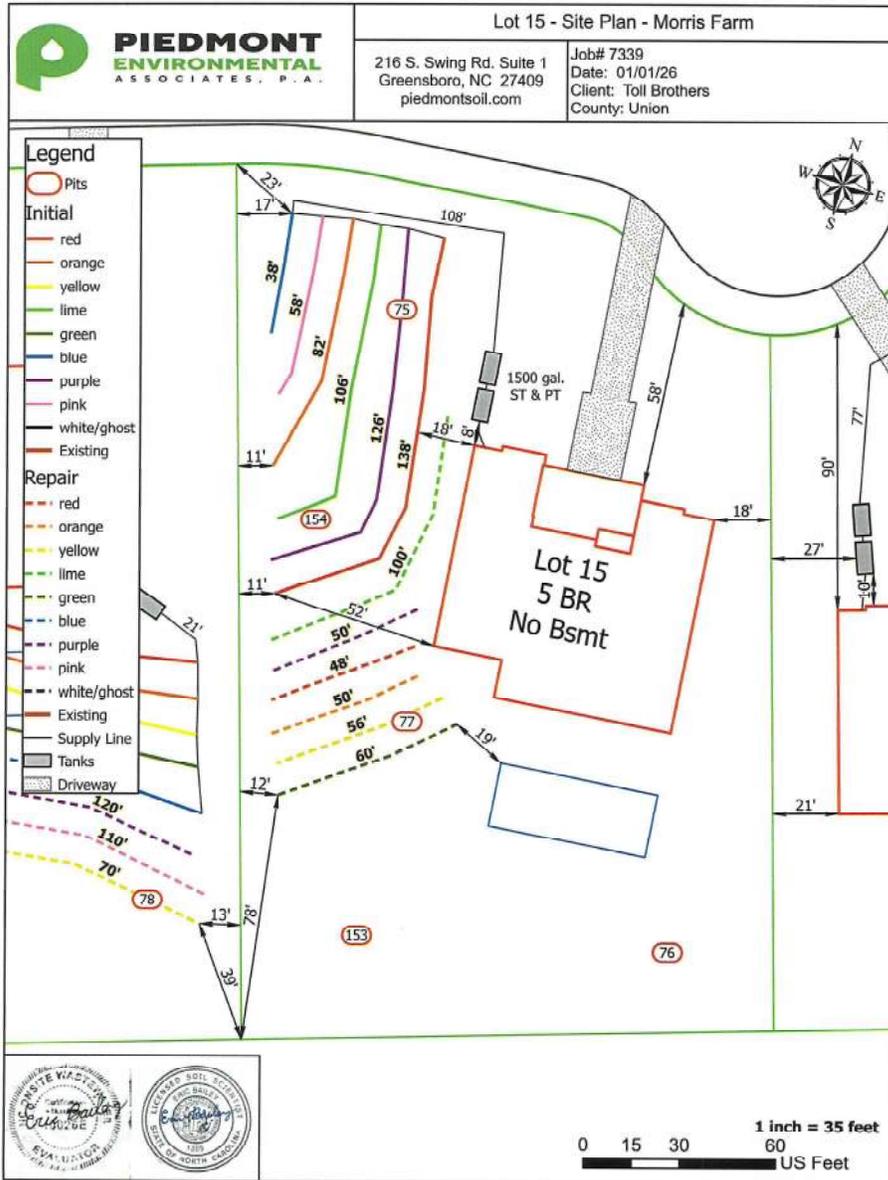
Environmental Health

500 N. Main St
Suite 47
Monroe, NC 28112
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unioncountync.gov

Design:

Permit#: A2IP262541



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262543

Date Issued: 01/12/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to Approved 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd 28104

Subdivision and Lot Number: Morris Farm 16

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

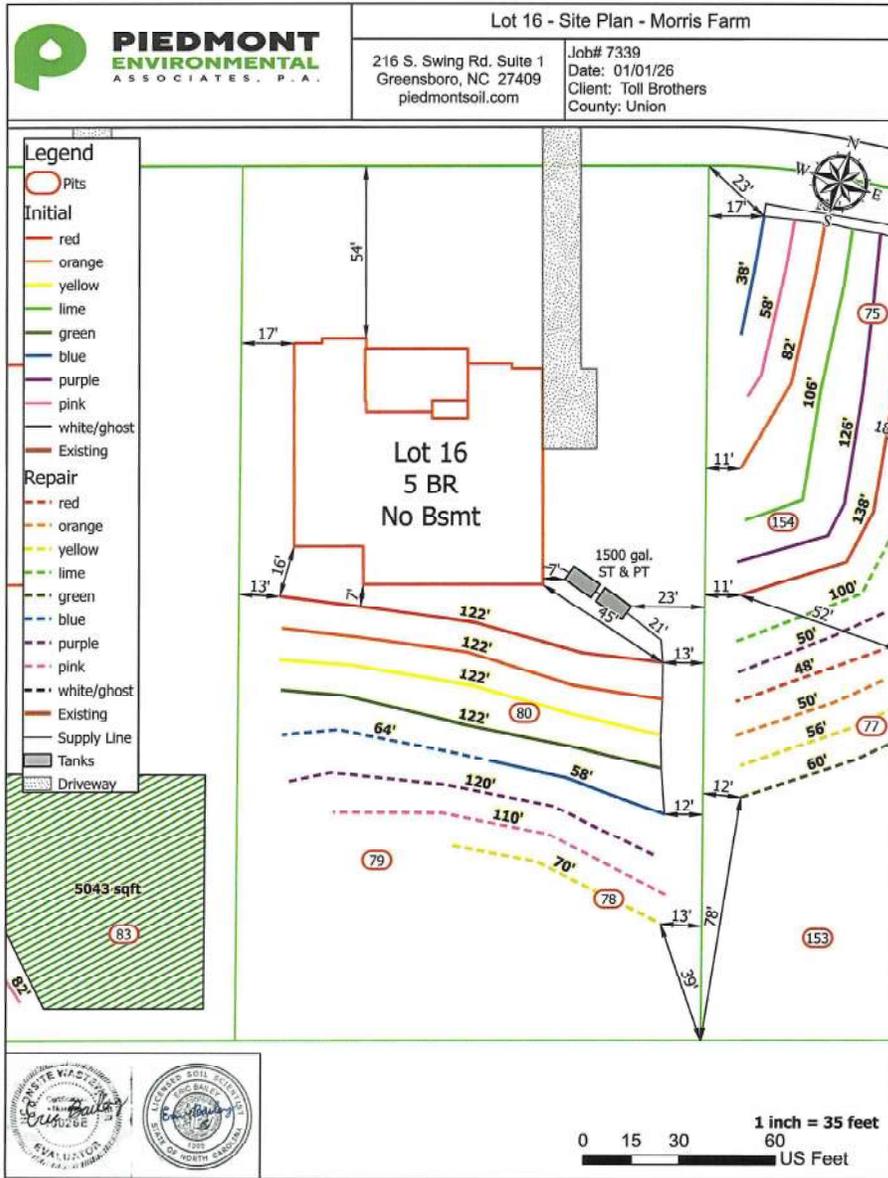
Environmental Health

500 N. Main St
Suite 47
Monroe, NC 28112
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unioncountync.gov

Design:

Permit#: A2IP262543



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262544

Date Issued: 01/12/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to Approved 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd 28104

Subdivision and Lot Number: Morris Farm 17

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

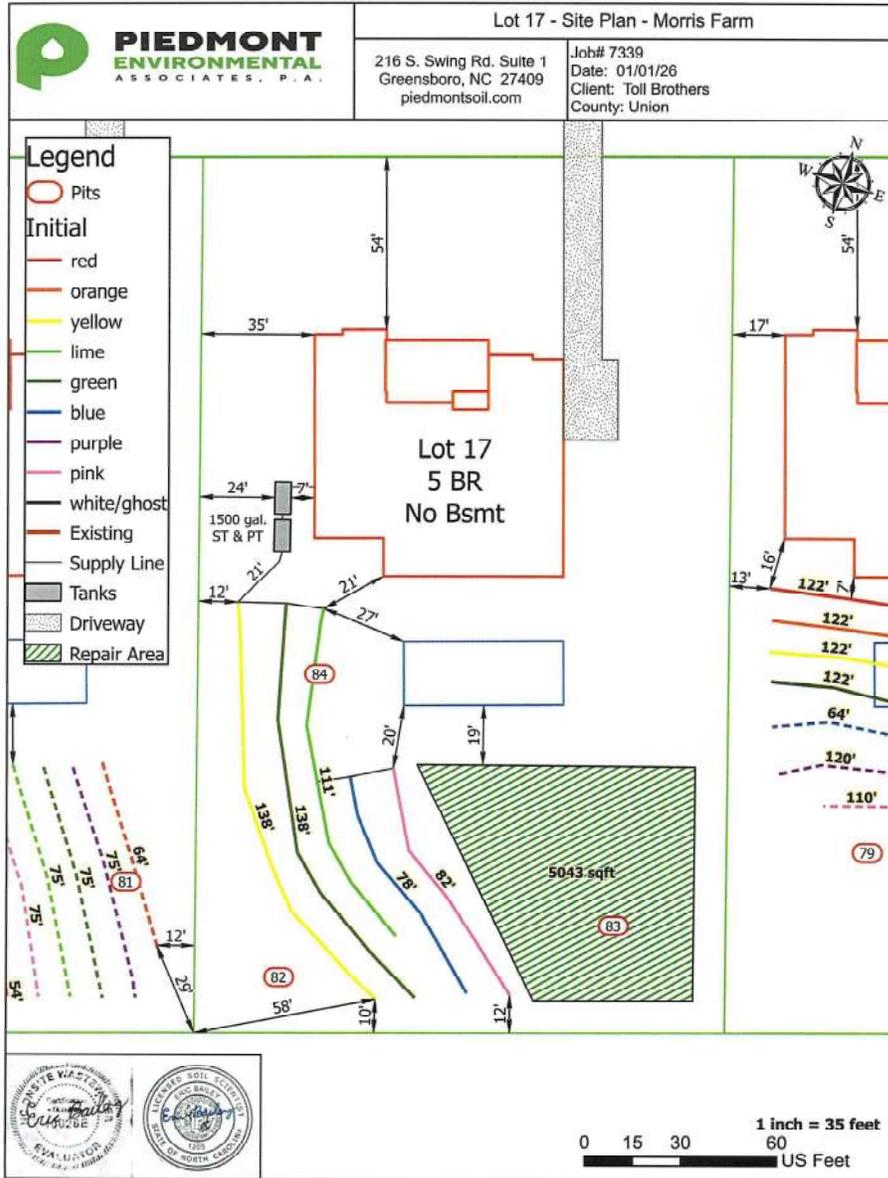
Environmental Health

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Design:

Permit#: A2IP262544



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262545

Date Issued: 01/12/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to Approved 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 18

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

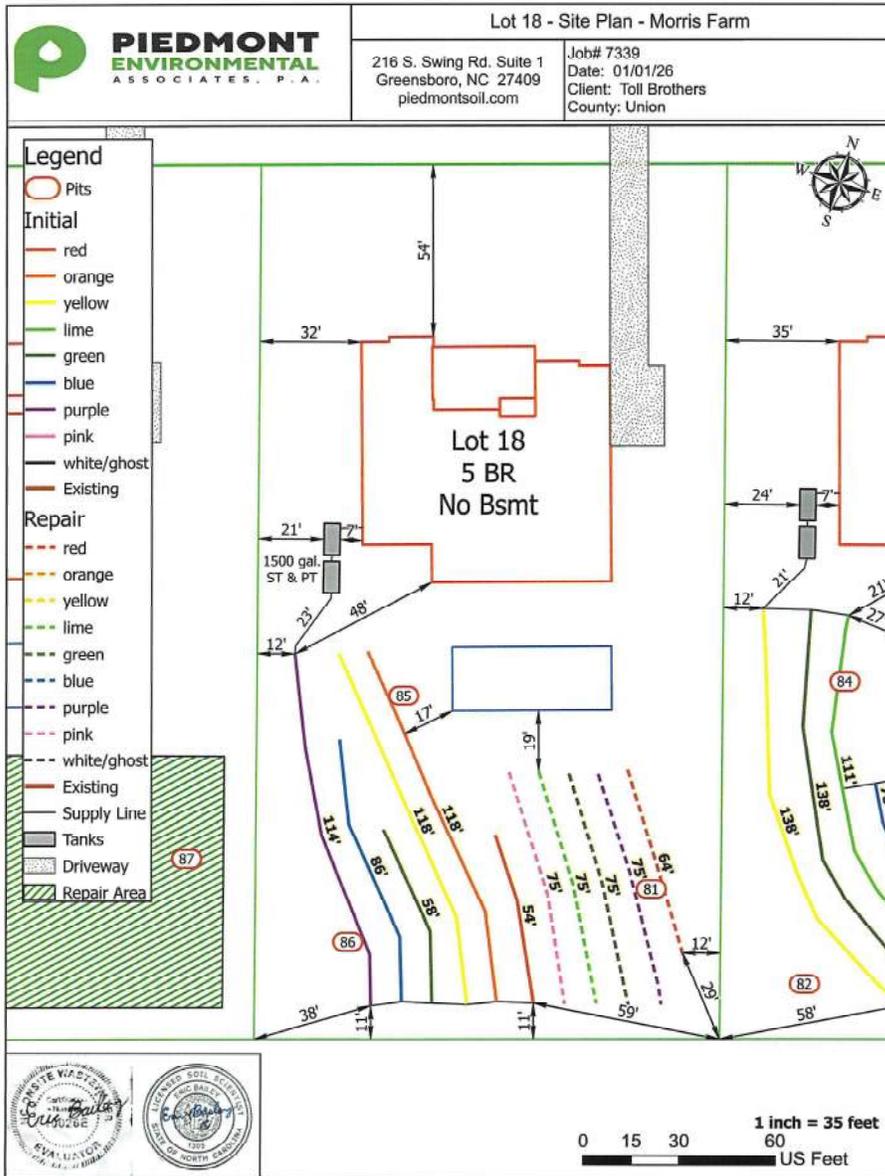
Environmental Health

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Design:

Permit#: A2IP262545



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262546

Date Issued: 01/12/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to Approved 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 19

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

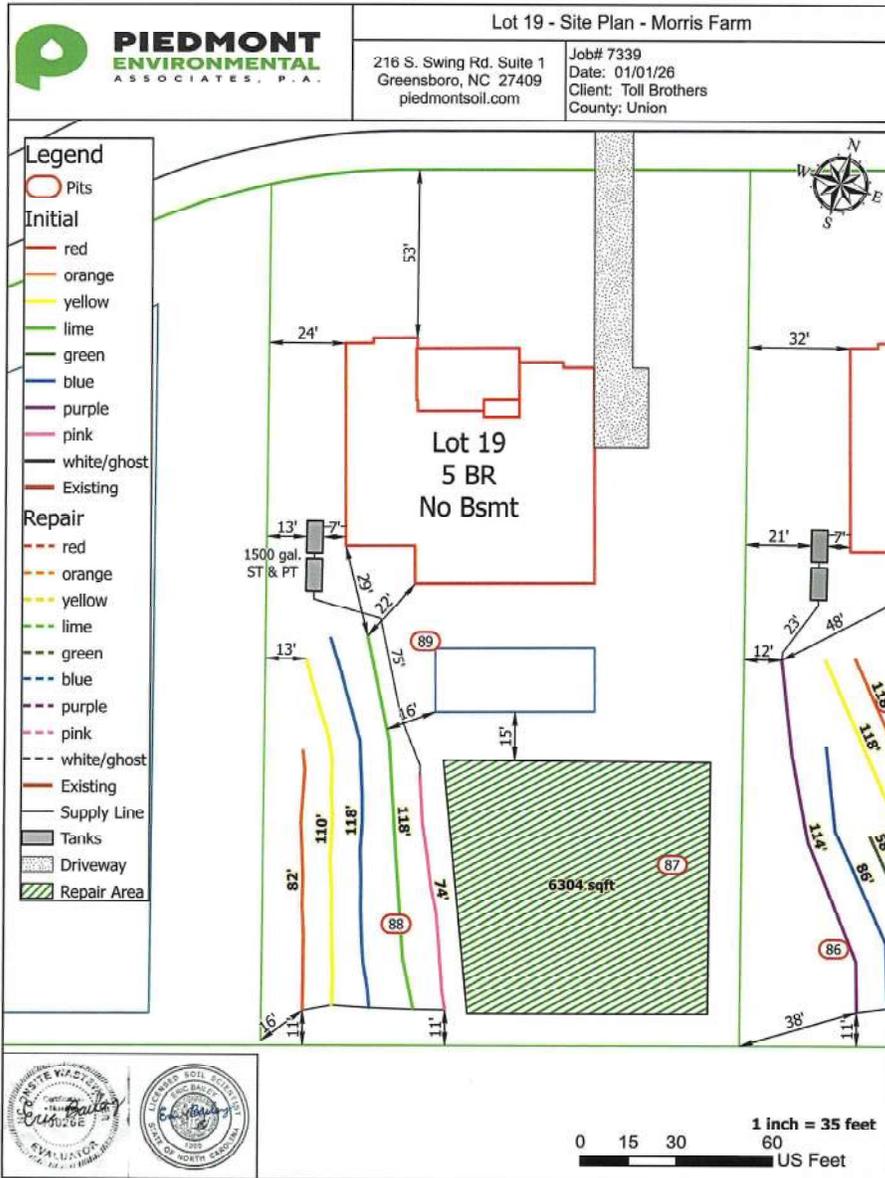
Environmental Health

500 N. Main St
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Design:

Permit#: A2IP262546



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262548

Date Issued: 01/12/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to Approved 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 20

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

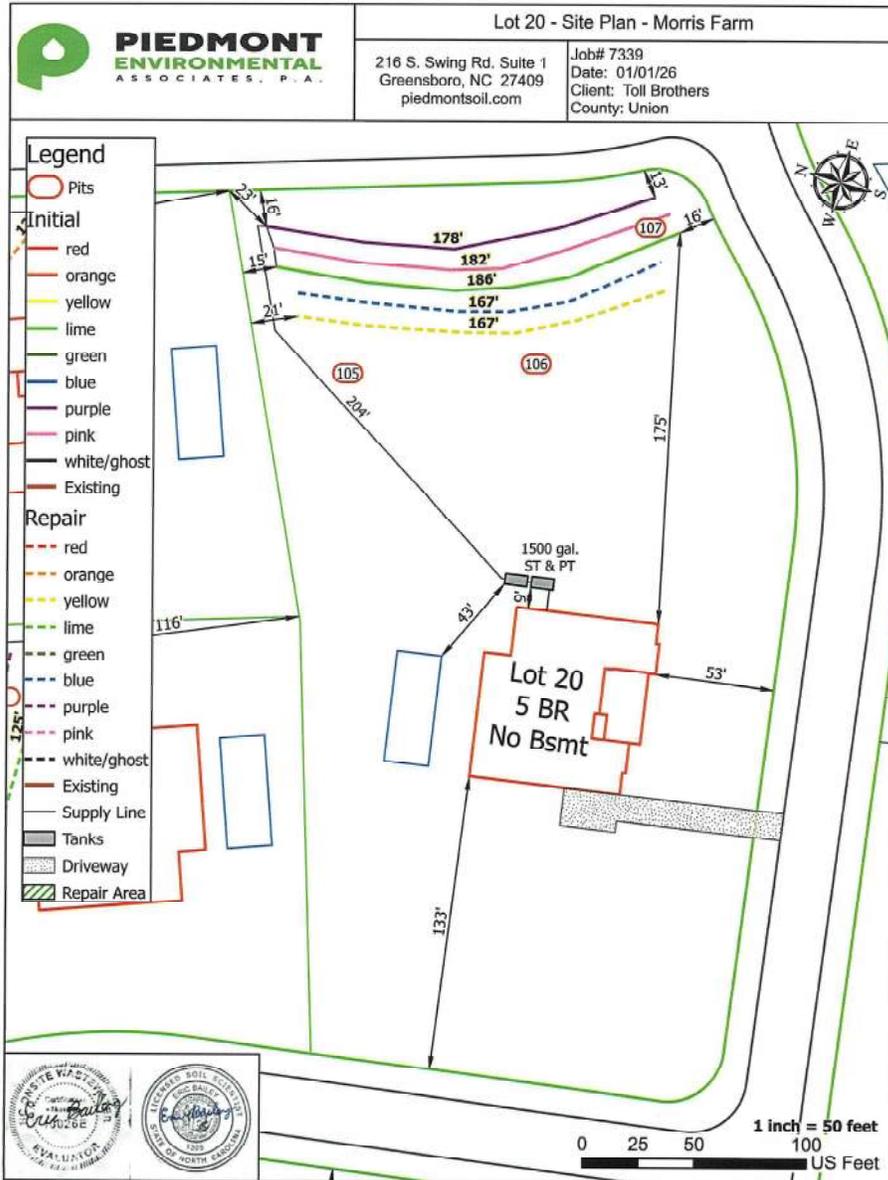
Environmental Health

500 N. Main St
Suite 47
Monroe, NC 28112
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Design:

Permit#: A2IP262548



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262549

Date Issued: 01/12/2026

System Classification: IIb - Accepted wastewater gravity system

System Description: Gravity Approved 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 21

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

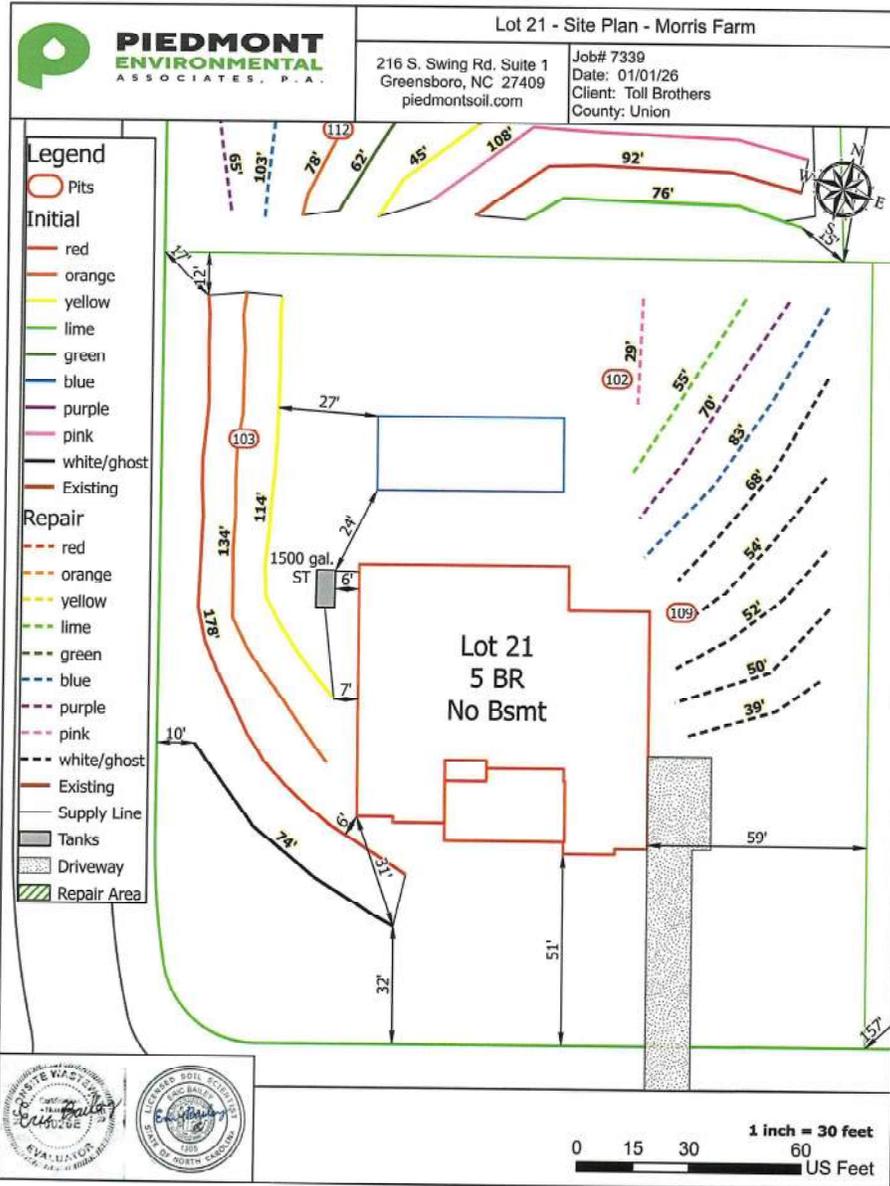
Environmental Health

500 N. Main St
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Design:

Permit#: A2IP262549



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262551

Date Issued: 01/12/2026

System Classification: IIb - Accepted wastewater gravity system

System Description: Gravity Approved 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 22

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

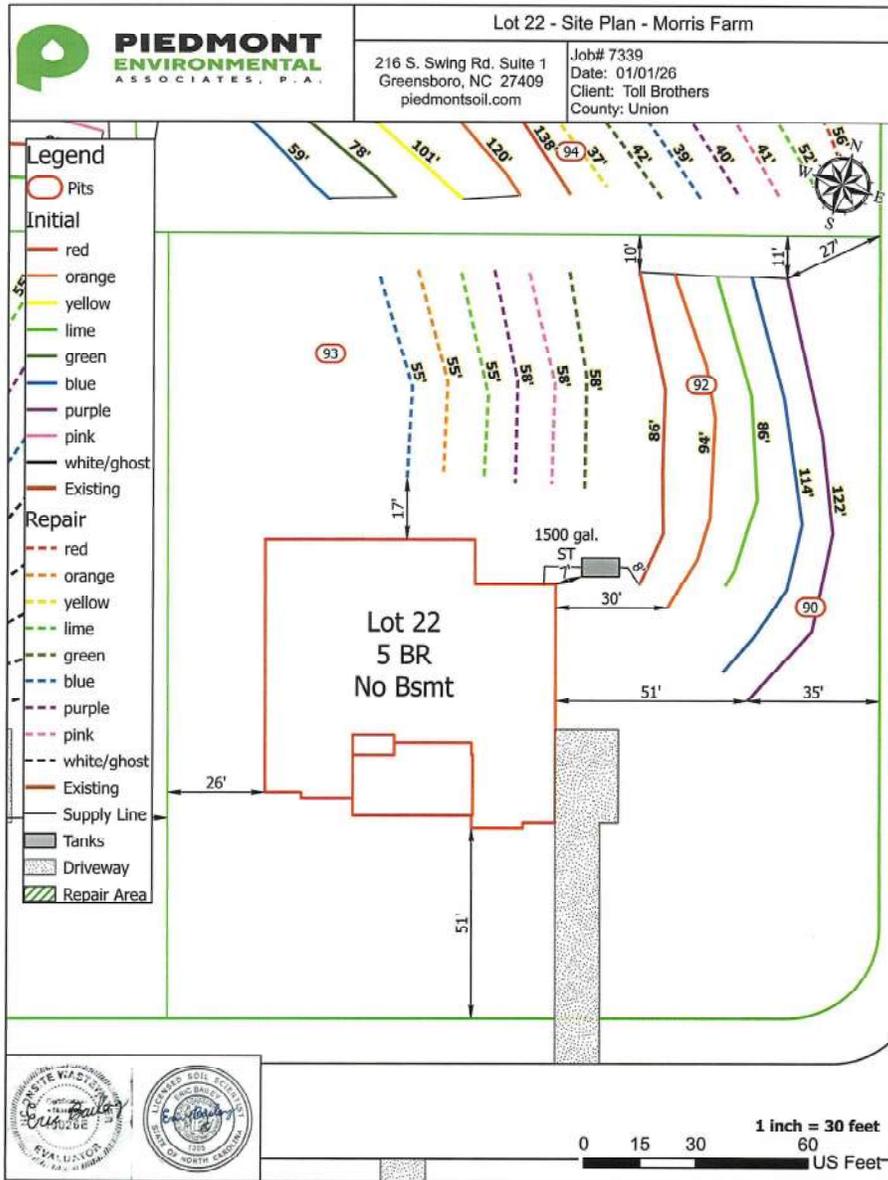
Environmental Health

500 N. Main St
Suite 47
Monroe, NC 28112
T 704-283-3553

unioncountync.gov

Design:

Permit#: A2IP262551



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262555

Date Issued: 01/12/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to Approved 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd 28104

Subdivision and Lot Number: Morris Farm 23

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

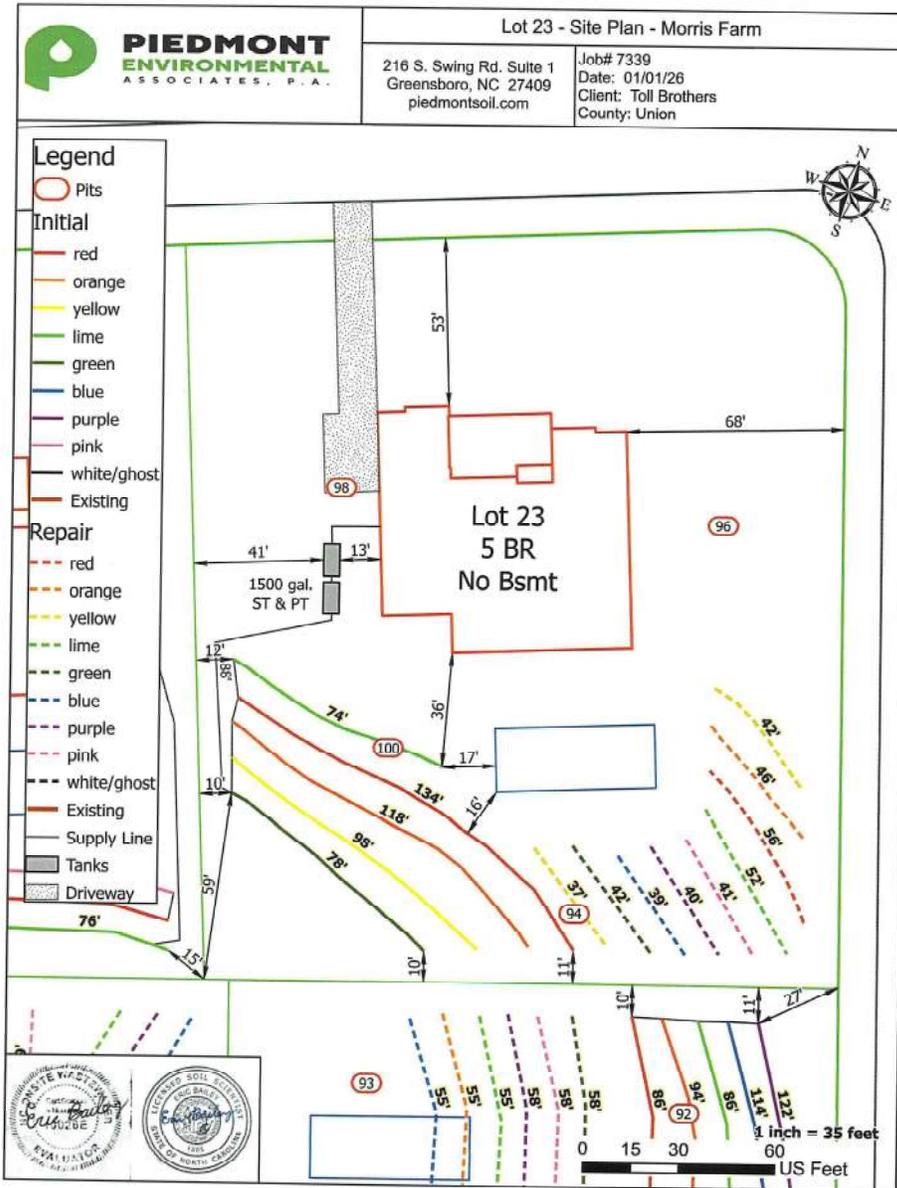
Environmental Health

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Design:

Permit#: A2IP262555



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262556

Date Issued: 01/12/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to Approved 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd 28104

Subdivision and Lot Number: Morris Farm 24

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

Environmental Health

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Design:

Permit#: A2IP262556



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262558

Date Issued: 01/12/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to Approved 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 25

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

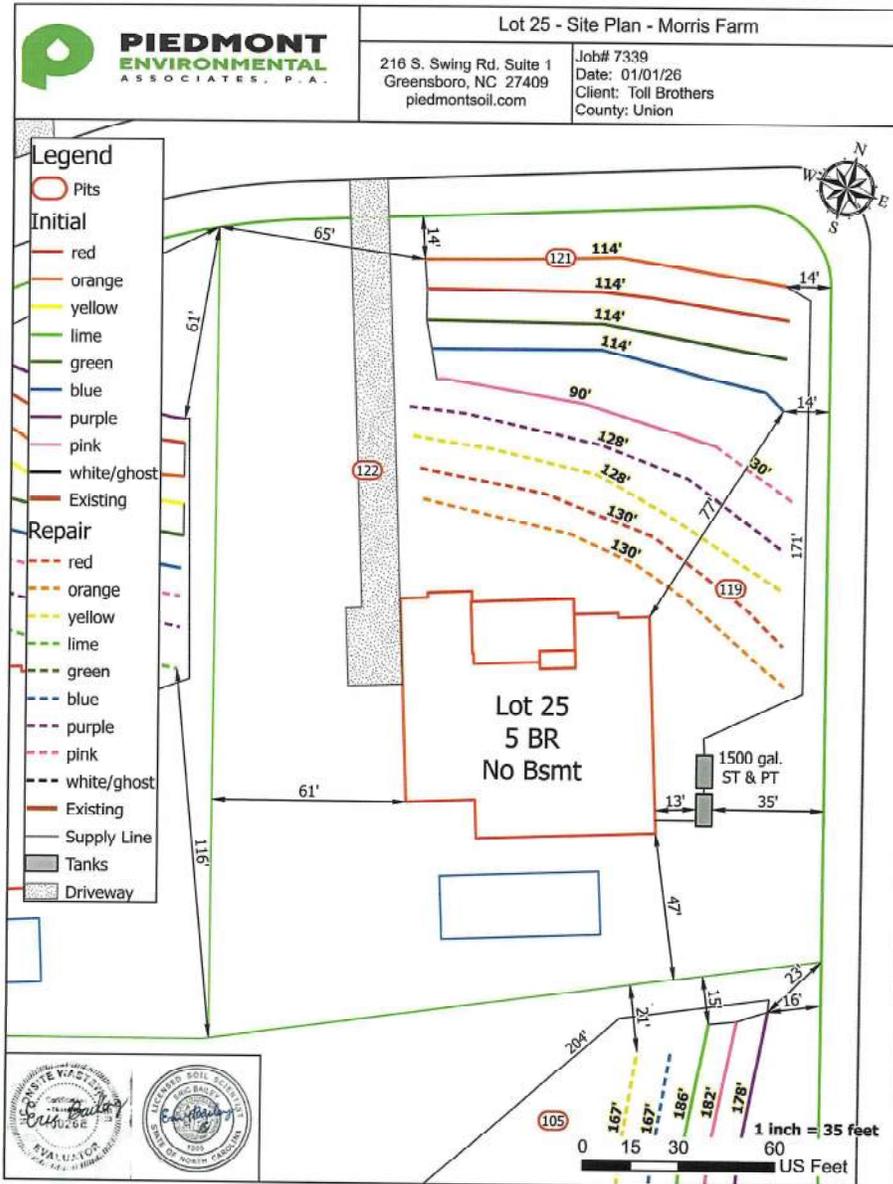
Environmental Health

500 N. Main St
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Design:

Permit#: A2IP262558



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262560

Date Issued: 01/12/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to Approved 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 26

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

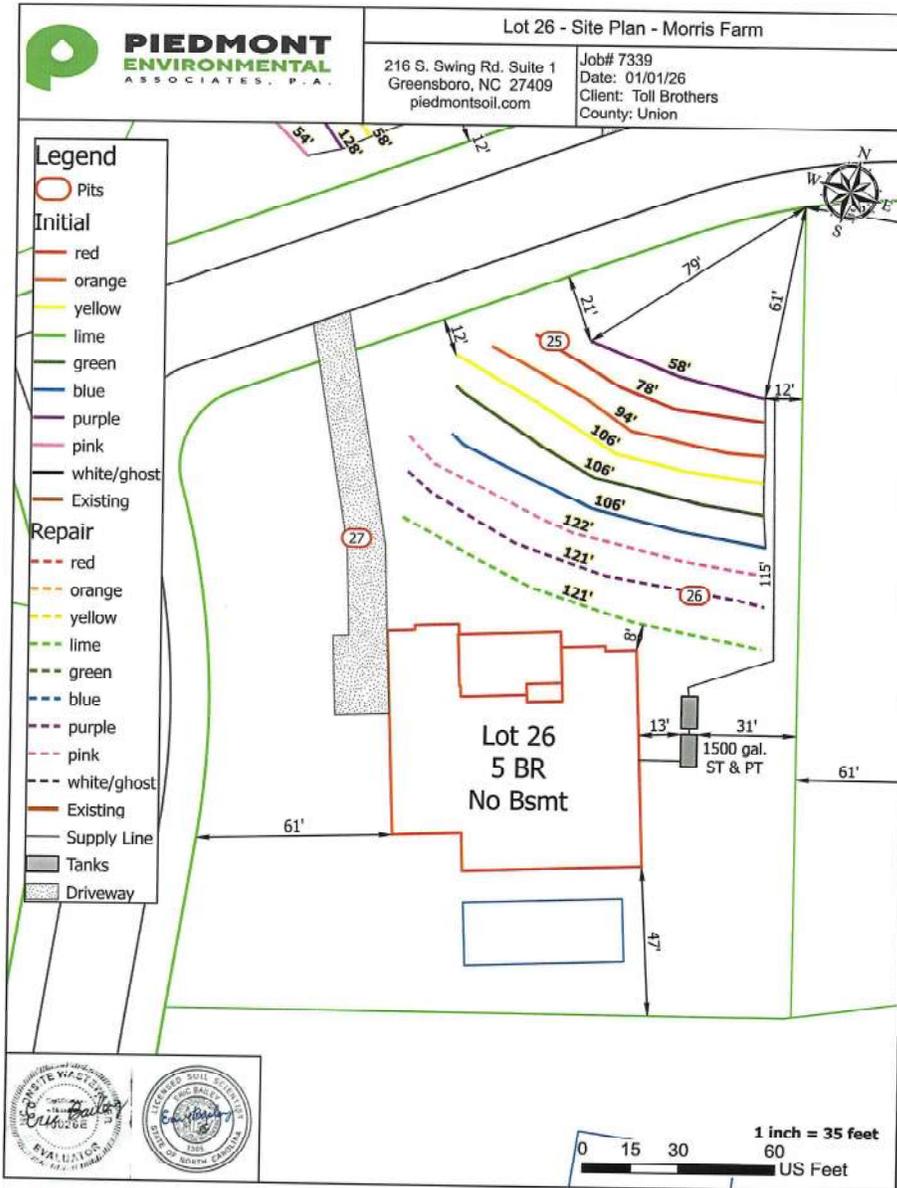
Environmental Health

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Monroe, NC 28112
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Design:

Permit#: A2IP262560



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262553

Date Issued: 01/12/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to 25% Reduction

Tax Parcel Identification Number: Portion of 06-120-011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farms 27

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

Environmental Health

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NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262566

Date Issued: 01/12/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to 25% Reduction

Tax Parcel Identification Number: Portion of 06-120-011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farms 28

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

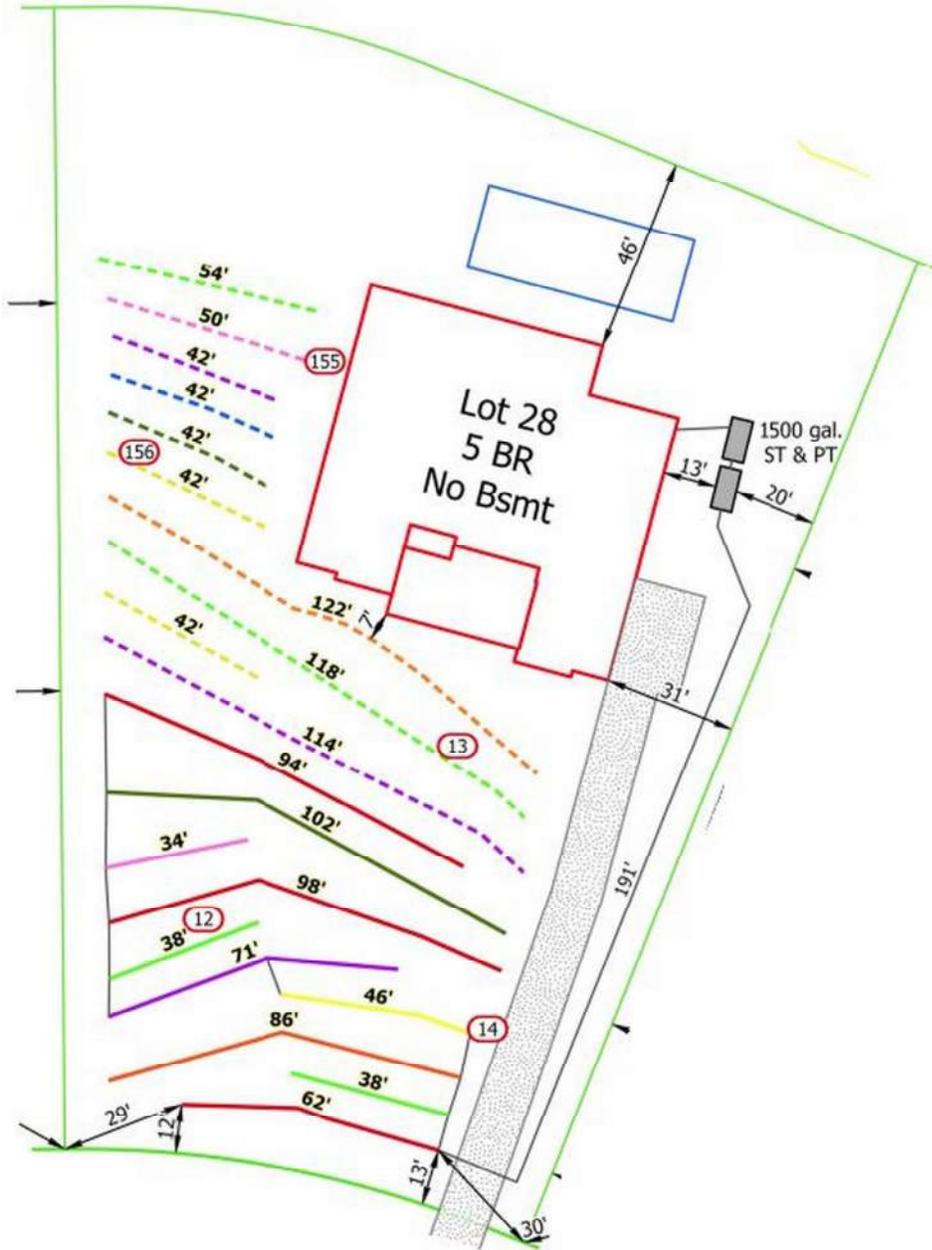
Environmental Health

500 N. Main St
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Monroe, NC 28112
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unioncountync.gov

Design:

Permit#: A2IP262566



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262584

Date Issued: 01/13/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to 25% Reduction

Tax Parcel Identification Number: Portion of 06-120-011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farms 29

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

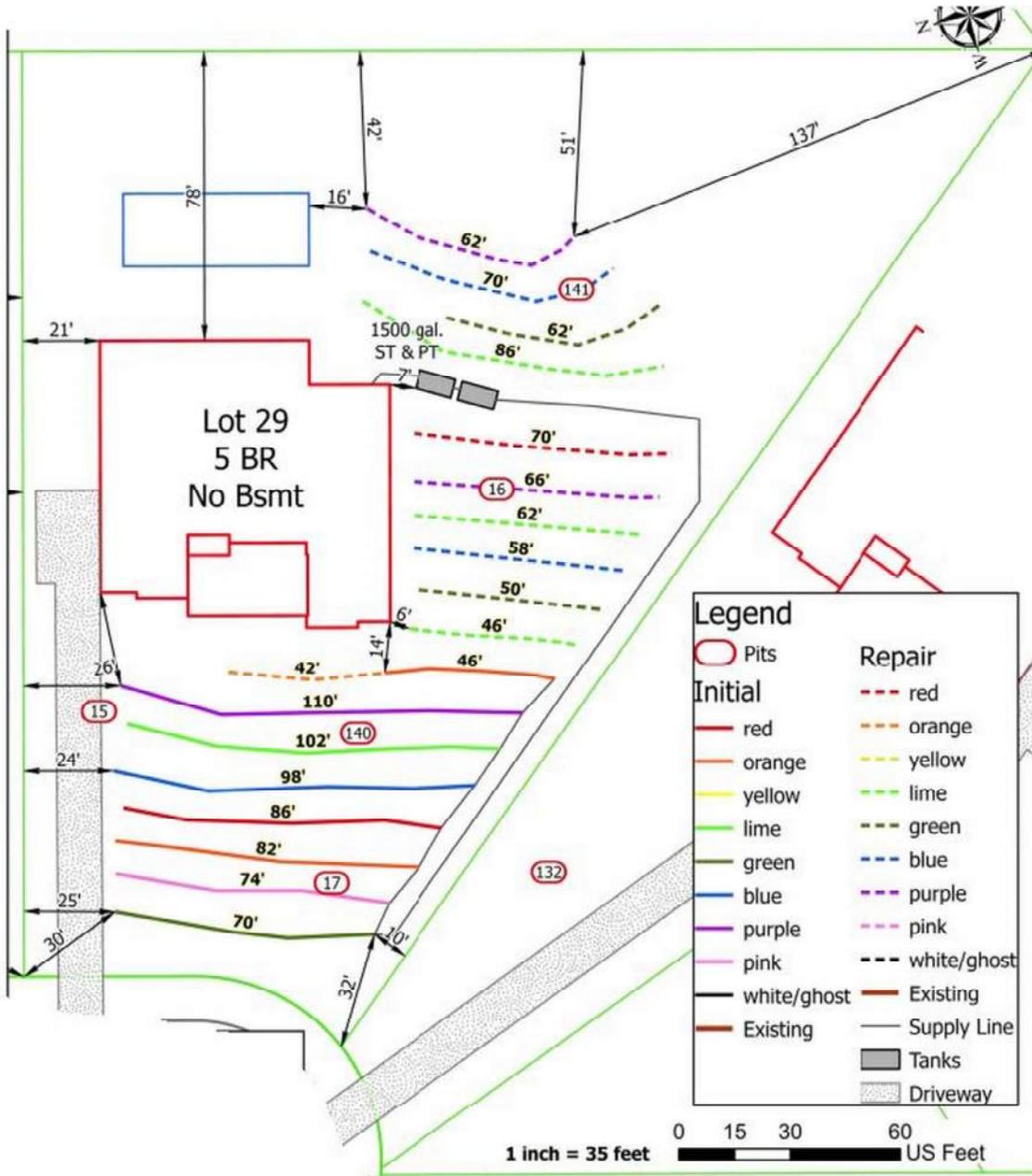
Environmental Health

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Design:

Permit#: A2IP262584



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262557

Date Issued: 01/12/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to 25% Reduction

Tax Parcel Identification Number: Portion of 06-120-011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farms 30

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

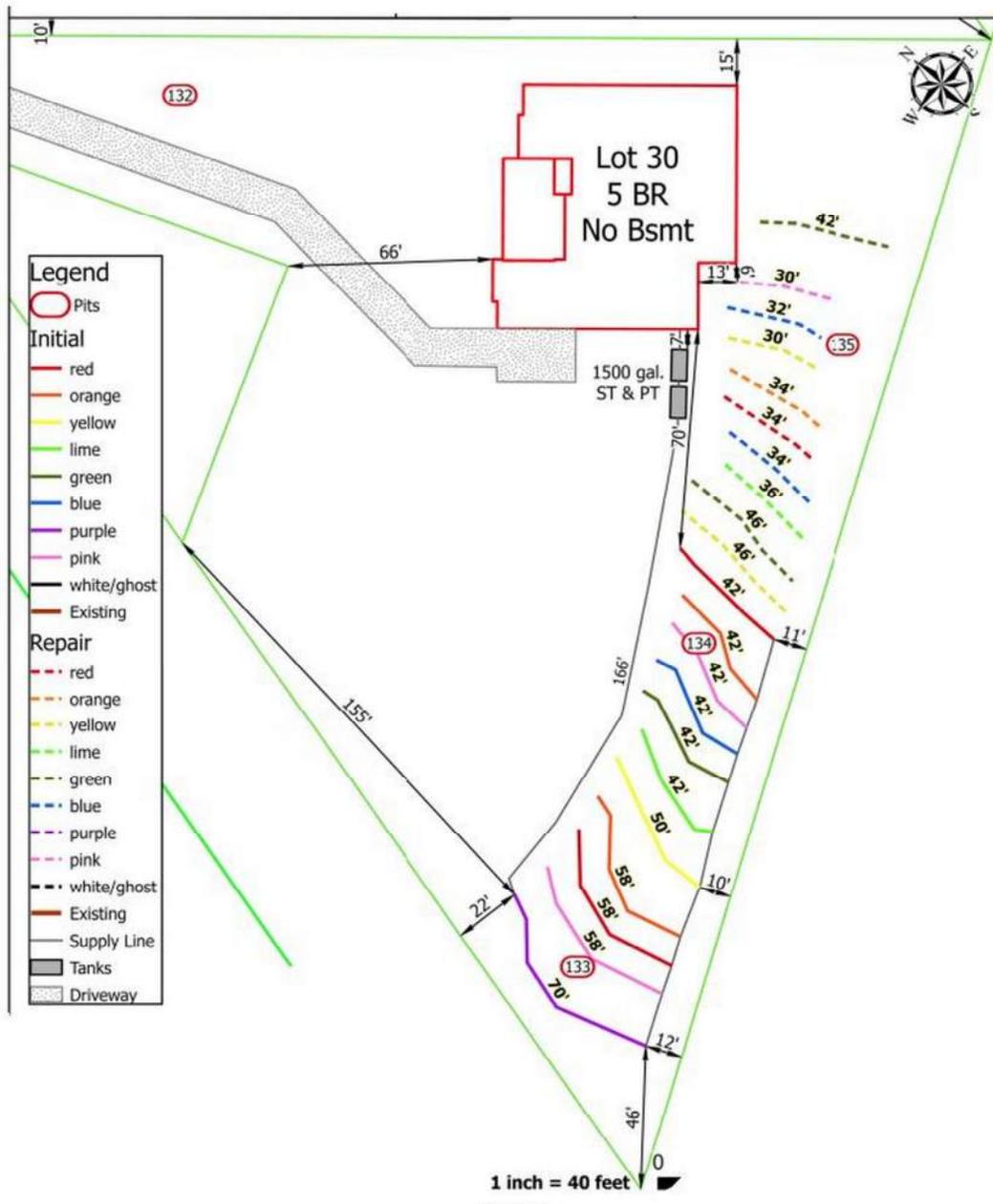
Environmental Health

500 N. Main St
Suite 47
Monroe, NC 28112
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unioncountync.gov

Design:

Permit#: A2IP262557



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262587

Date Issued: 01/13/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 31

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

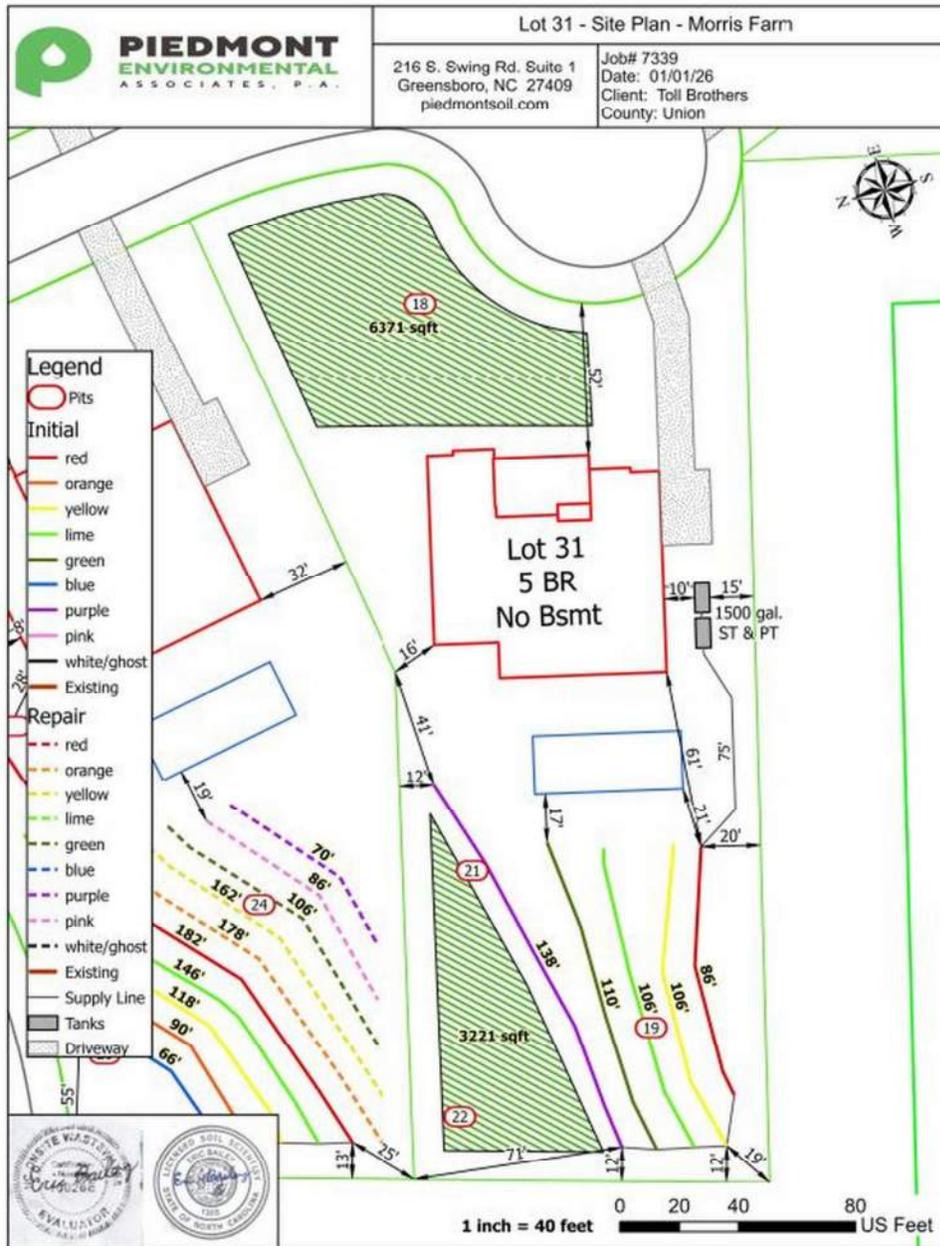
Environmental Health

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Design:

Permit#: A2IP262587



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262590

Date Issued: 01/13/2026

System Classification: IIb - Accepted wastewater gravity system

System Description: 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 32

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

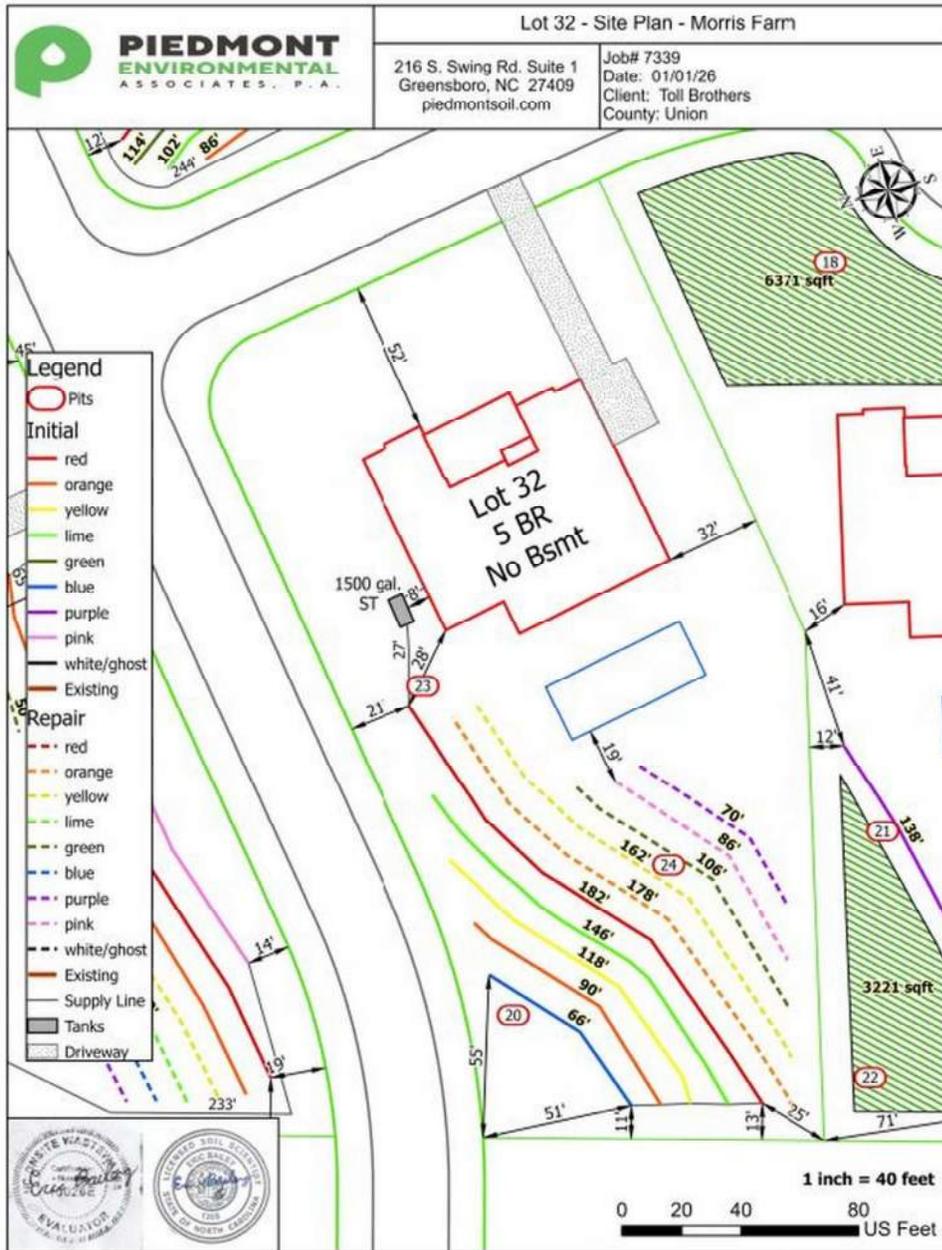
Environmental Health

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Design:

Permit#: A2IP262590



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262563

Date Issued: 01/12/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to 25% Reduction

Tax Parcel Identification Number: Portion of 06-120-011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farms 33

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

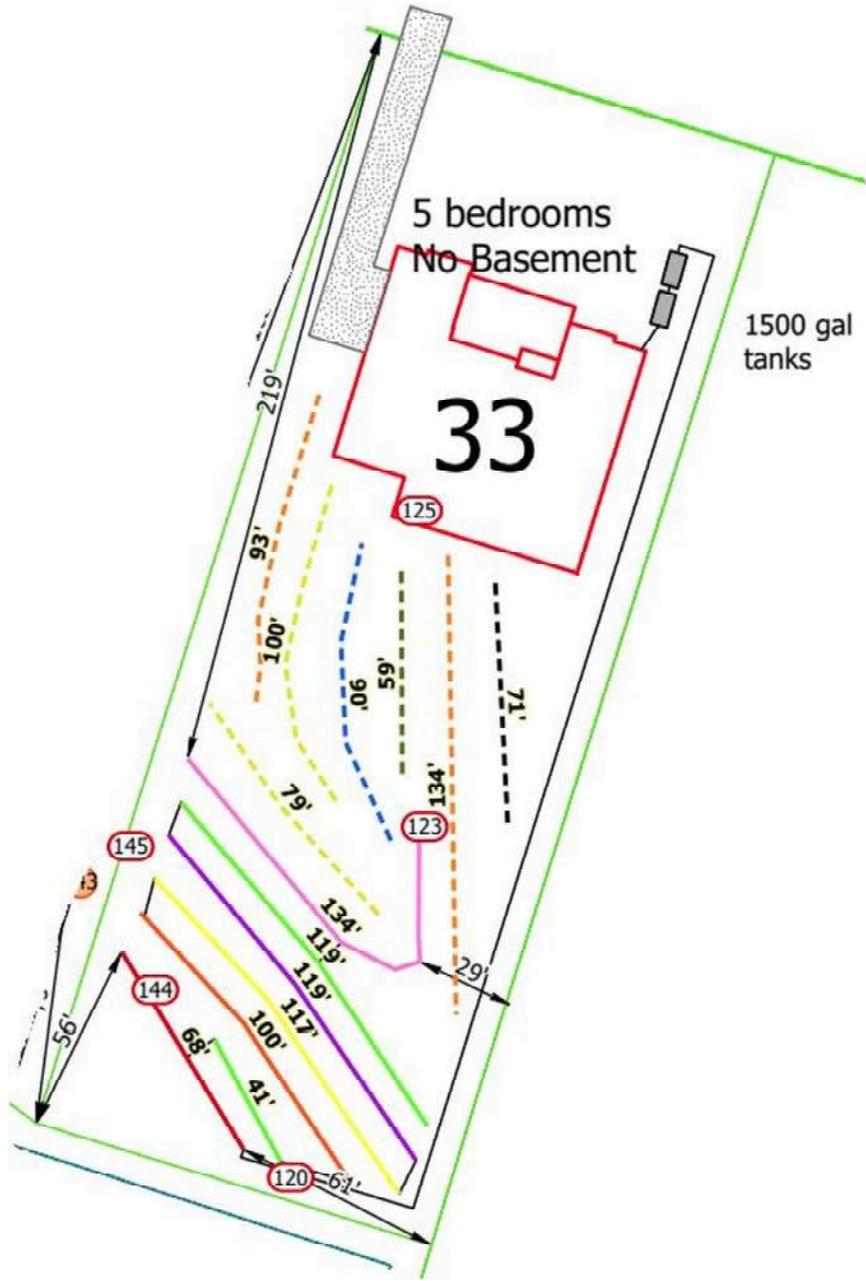
Environmental Health

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Design:

Permit#: A2IP262563



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262586

Date Issued: 01/13/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to 25% Reduction

Tax Parcel Identification Number: Portion of 06-120-011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farms 34

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

Environmental Health

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Design:

Permit#: A2IP262586



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262564

Date Issued: 01/12/2026

System Classification: IIb - Accepted wastewater gravity system

System Description: Gravity to 25% Reduction

Tax Parcel Identification Number: 05-063-022A

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farms 35

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

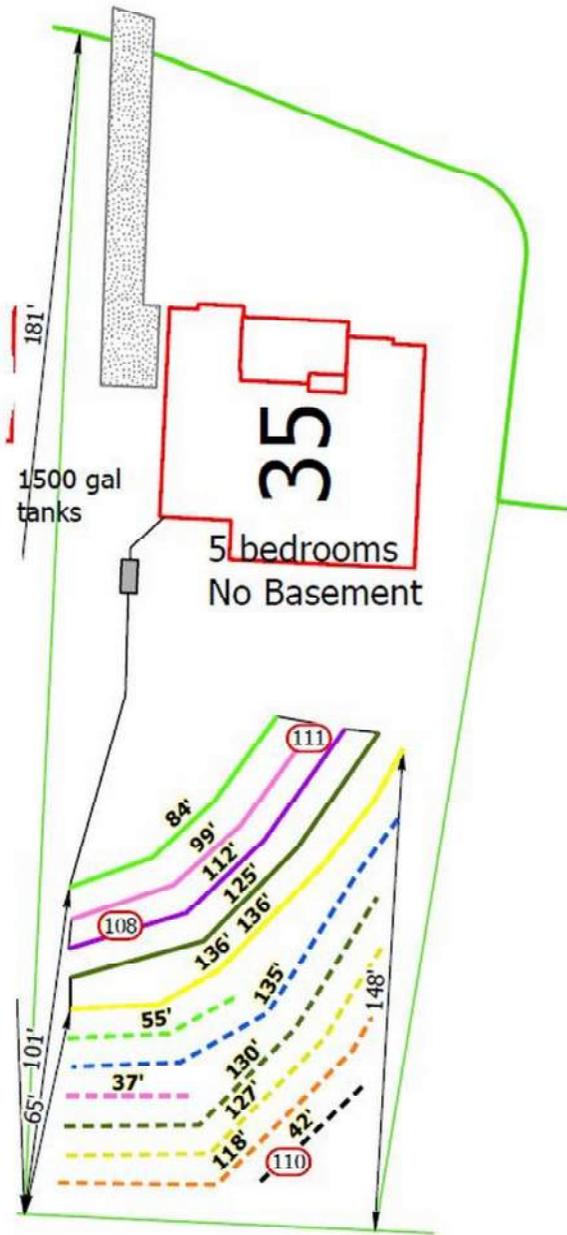
Environmental Health

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Design:

Permit#: A2IP262564



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262591

Date Issued: 01/13/2026

System Classification: IIb - Accepted wastewater gravity system

System Description: Gravity to 25% Reduction

Tax Parcel Identification Number: Portion of 06-120-011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farms 36

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

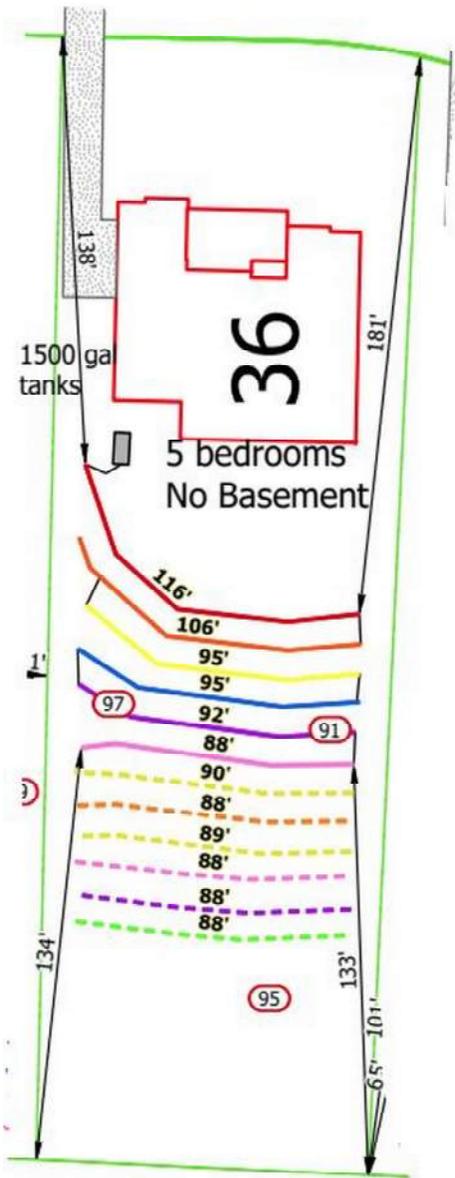
Environmental Health

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Design:

Permit#: A2IP262591



1 inch = 50 feet

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(a2) Improvement Permit Review
Complete

Permit #: A2IP262589

Date Issued: 01/13/2026

System Classification: IIb - Accepted wastewater gravity system

System Description: Gravity to 25% Reduction

Tax Parcel Identification Number: Portion of 06-120-011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farms 37

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

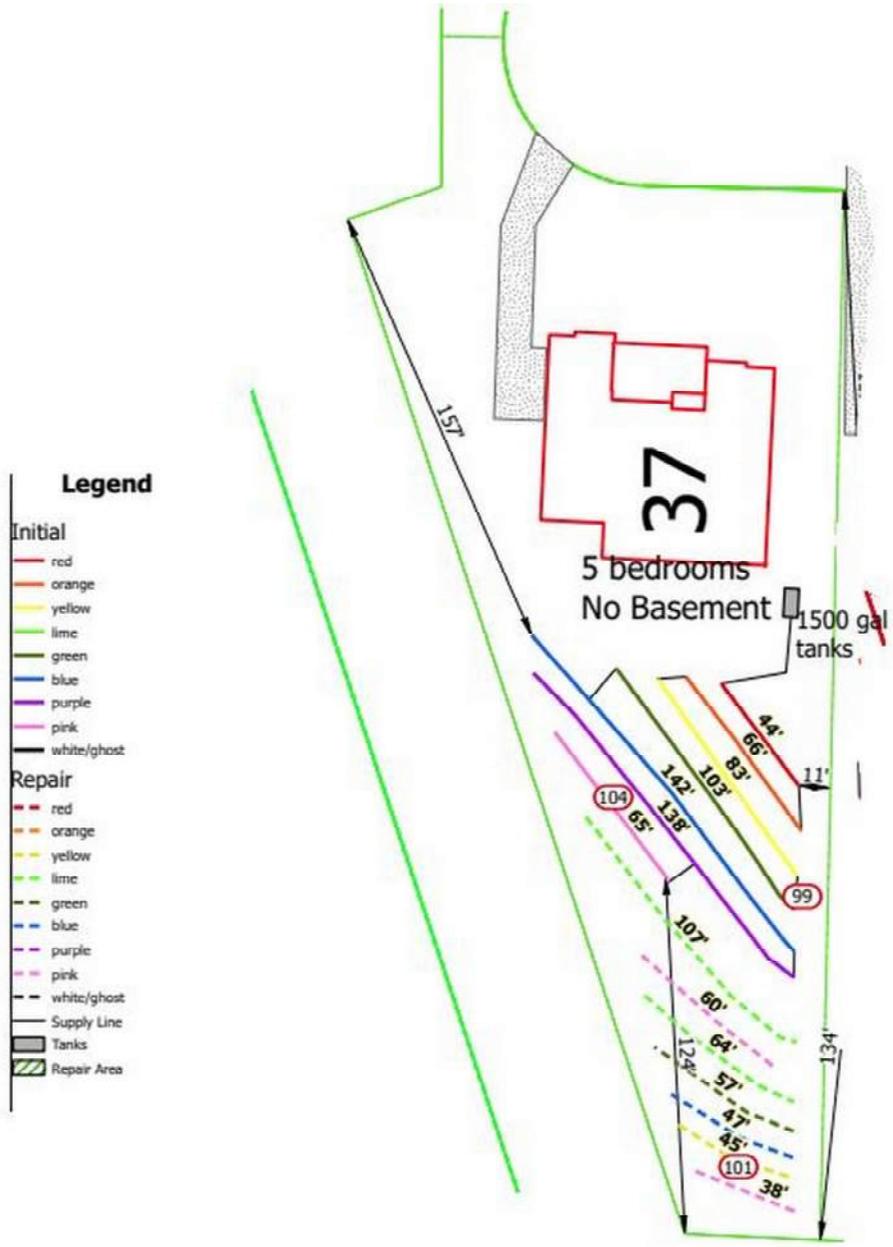
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Design:

Permit#: A2IP262589



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262592

Date Issued: 01/13/2026

System Classification: IIb - Accepted wastewater gravity system

System Description: 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 38

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

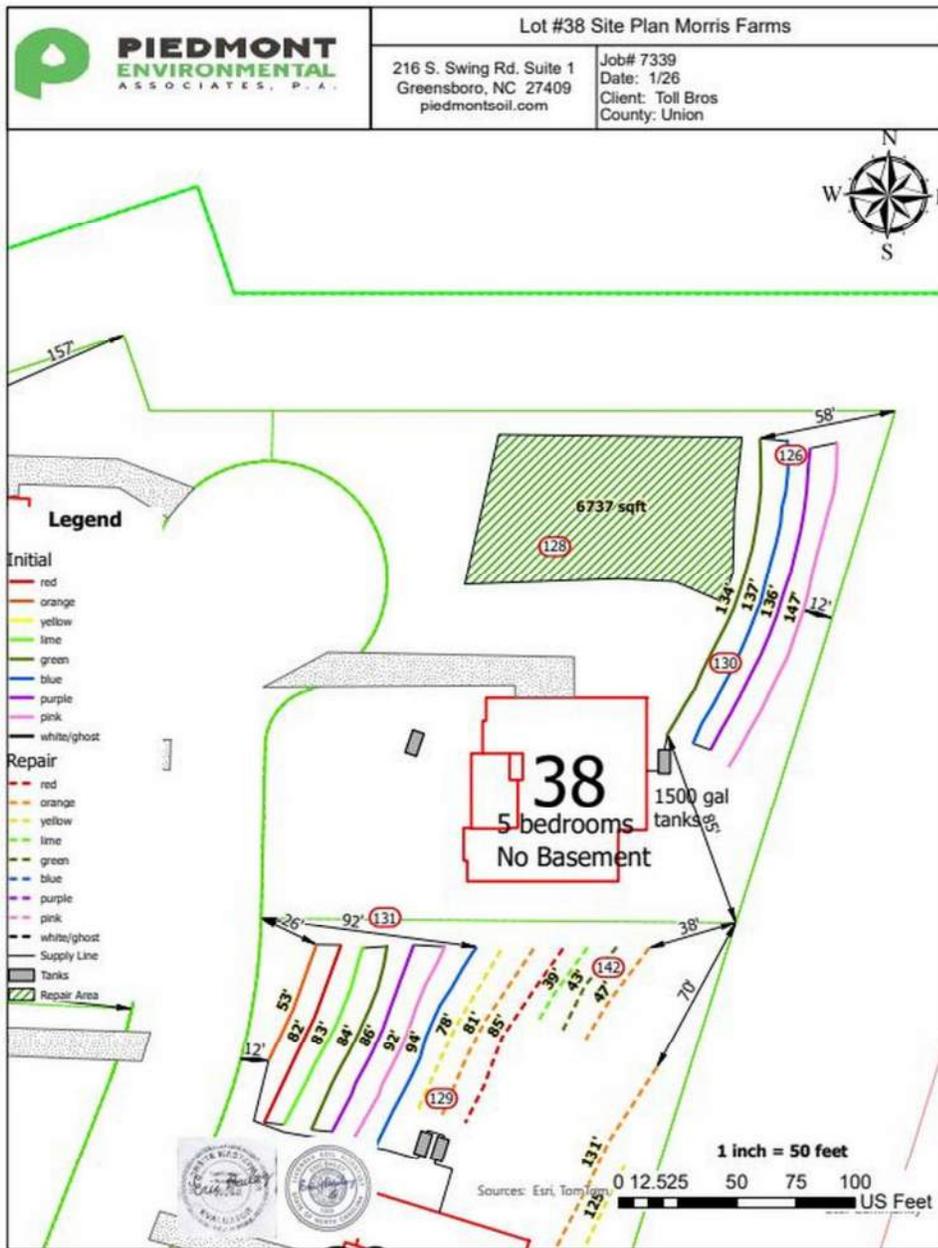
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Design:

Permit#: A2IP262592



NOT FOR PROCESSING A BUILDING PERMIT
(a2) Improvement Permit Review
Complete

Permit #: A2IP262593

Date Issued: 01/13/2026

System Classification: IIIb - Wastewater system with a single pump or

System Description: Pump to 25% Reduction

Tax Parcel Identification Number: part of 06120011

Facility Owner's Name: Andrew Loftin

Mailing Address: 9130 Kings Parade Blvd Charlotte, NC 28273

Phone: (828) 446-0104

Email: aloftin@tollbrothers.com

Property Location: Weddington Matthews Rd Weddington NC 28104

Subdivision and Lot Number: Morris Farm 39

Proposed Use: Single Family Residence / 5 Bedrooms

AOWE (Permitting Agent): Eric Bailey

Phone: (336) 596-7585

Email: eric@piedmontsoil.com

Per NC General Statute 130A-335(a6): 40% of the cumulative total fees to obtain an Improvement, Construction Authorization and Operation Permit for the type of on-site waste system designed.

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