



AGENDA

CALL TO ORDER

DISCUSSION ITEMS

1. **Presentation** (*Ryan Spitzer*) – the Old State League presentation.
2. **Miller Farm Development** (*Travis Morgan*) – Consideration of rezoning of a parcel in the Miller Farm property.
3. **Flood Plain Certification** (*Travis Morgan*) – Annual progress report on the implementation of mitigation actions.

CLOSED SESSION per NCGS 143.318.11 (6) for real estate items **and (4)** a personnel item.

ADJOURN

rspitzer@pinevillenc.gov is inviting you to a scheduled Zoom meeting.

Topic: July Work Session

Time: Jul 26, 2021 06:00 PM Eastern Time (US and Canada)

Join Zoom Meeting

<https://us02web.zoom.us/j/86061124071?pwd=TndIUjJudFhybU5hU29EVkNTEWFOUT09>

Meeting ID: 860 6112 4071

Passcode: 058258

One tap mobile

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+13126266799,,86061124071#,,,,*058258# US (Chicago)

Dial by your location

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+1 312 626 6799 US (Chicago)

+1 646 558 8656 US (New York)

+1 253 215 8782 US (Tacoma)

+1 346 248 7799 US (Houston)

+1 669 900 9128 US (San Jose)

Meeting ID: 860 6112 4071

Passcode: 058258

Find your local number: <https://us02web.zoom.us/j/kuw05SvQo>

If you require any type of reasonable accommodation as a result of physical, sensory, or mental disability in order to participate in this meeting, please contact Barbara Monticello, Clerk of Council, at 704-889-2291 or bmonticello@pinevillenc.gov. Three days' notice is required.

Memorandum



To: Mayor and Town Council

From: Ryan Spitzer

Date: 7/23/2021

Re: Old North State League

Overview:

Several members of Council received an email from the Old North State League (wood bat summer league) about the possibility of playing games in Pineville and wanted me to reach out to the league. I spoke with them and they are interested in Pineville for its location between Charlotte and Fort Mill. This is their 3rd season and they try to get players from the local area. The talent they pinpoint is middle to lower tier of the CPL. They have 12 teams throughout the state so far. The season is June 1-July 31 and each team typically has 15 home games (usually 5 double headers and 5 single games).

I have spoken to P&R and have given the league our typical summer schedule. The league says they are able to work around the events and games we generally have during the summer. If we do have the league play at the stadium field there will be increased maintenance and staffing costs for the field.

Parks and Recreation will be at the meeting to answer any questions. Alec Allred and his father (commissioner of the league) will also be in attendance to give a presentation of the league as well as to answer any questions from Council. After the presentation Council will be able to decide if we should enter in to a contract with the league to use the fields and the financial obligation of the league for the use of the fields.

Workshop Meeting

Pineville PLANNING & ZONING

To: Town Council

From: Travis Morgan

Date: 7/26/2021

Re: **Miller Farm Conditional Rezoning Plan** (*Informational Item*)

UPDATES:

Current rezoning and subdivision proposal has been updated to reduce the number of townhomes in favor of a single family to townhome percentage mix more similar to the adjacent McCullough neighborhood. Total units are now 343 units with 205 of those single family and 138 townhomes with allowance up to 350 units. The traffic study has been revised with the new housing numbers.

BACKGROUND:

Interest has been in developing the Miller Farm property beginning with the first presentation to council on 6.24.2019. Prior staff discussions have been about consistency with adopted plans and with adjacent and comparable McCullough property to the South. An initial meeting with the McCullough neighborhood was held in May of this year. Feedback included keeping the stability and property values of McCullough by way of consistency in development type including concern with having a significant percentage of townhomes different than as built in McCullough. This property is recognized as a large and important catalyst and gateway into the Town.

Additional background information includes the removal of two portions from the parent property. The Northern Nations Road frontage and property adjacent to the State line are being retained for a to be determined (TBD) plan in the future. These two areas are not included in the rezoning and will need to come back before council for plans that differ from the current R-44 zoning provisions.

PROPOSAL:

Applicant (Fielding Homes LLC) seeks your consideration and approval for the rezoning of parcel #20504114 located at 13328 Rock Hill-Pineville Rd to allow for 343 housing units consisting of 205 single family units and 138 townhomes but up to 350 units. The proposed rezoning is from single-family residential district (R-44) acre lot size to residential mixed-use with a site-specific conditional zoning plan (RMX-CD) lot sizes as shown. The development is shown with three transportation access points: one onto Nations Ford Road and two onto Highway 51.

(See following development summary)

DEVELOPMENT SUMMARY:

Location: 13328 Rock Hill – Pineville Road (Hwy 51)
Zoning: **Existing:** R-44
Proposed: RMX (CD)
Parcel Size: 135.55± acres (with 22.09± acres retaining existing zoning R-44)
Parcel Size to be Rezoned: 113.30± acres

Total Lots: 343 shown (up to 350 stated)
3.09 Units per acre
59.8% single family
40.2% townhome

Townhome lots: 138 (including 69 Two-Story units and 69 Three-Story units)
Single Family lots: 205 (including 192 48ft wide units and 13 61ft wide units)

Lot Sizes:

Single Family lots: 48ft x 120ft = 5,760 sqft
61ft x 120ft = 7,320 sqft

Two-Story Townhome: End Unit: 3,672 sqft
Interior Unit: 2,040 sqft

Three-Story Townhome: End Unit: 3,060 sqft
Interior Unit: 1,632 sqft

Parking Requirements: TOTAL COMBINED REQUIRED = 859 (449+410)

Townhomes Summary:

Parking Required: 449 spaces 3.25(3 bedroom units) * 138(units) = 448.5 spaces
Parking Provided: 545 spaces

Two-Story end units: (4 spaces per unit) * (28 units) = 112 spaces
2 parking spaces in garage and 2 on parking pad
18ft wide x unknown depth parking pad

Two-Story interior units: (3 spaces per unit) * (36 units) = 108 spaces
1 parking spaces in garage and 2 on parking pad
9ft wide x unknown depth parking pad

Three-Story end units: (4 spaces per unit) * (24units) = 96 spaces
2 parking spaces in garage and 2 on parking pad
18ft wide x unknown depth parking

Three-Story interior units: (2 spaces per unit) * (45 units) = 90 spaces
1 parking spaces in garage and 1 on parking pad
10ft wide x unknown depth parking pad

Townhome On-Street Parking provided: 139 Spaces

(See following development summary)

Single Family Summary:

Parking Required: **410** spaces (2 per unit * 205 units)
 Parking Provided: 1026 spaces?
 (4 spaces per lot) * (205 lots) = 820
 Stated two-car garage and two spaces in driveway
Lot diagram does not show dimensions nor state garage requirement for each unit

48 spaces Amenity Parking
158 On-Street Parking

STAFF COMMENT:

Staff has been concerned with the initial development proposals. Discussions have centered around consistency with adopted plans and prior comparable development approvals regarding parking, driveways, product arrangement, buffers, and traffic. Specific staff comment items are below:

1. Need clarification on intended trash service public/private as it relates to public or private alleys
2. Need confirmation roll-out trash containers can fit particularly in the garage of the 3 story end unit garages.
3. Note 1b. Lot width shall be measured at property line (as stated by the zoning ordinance) not setback line.
4. Minimum driveway lengths not specifically shown for any product but particularly on lot diagrams. Staff recommends excluding shared driveways.
5. 2h. Staff recommends note about garages in the rear yard to revise beyond the 2 foot garage setback noted to match the renderings.
6. Note 3g. Staff recommends stop sign location approval be determined before Town road acceptance to provide additional time for review and need determination.
7. Staff hasn't had enough time to get second opinion on the Traffic Study but Staff strongly opposes the lack of stop lights at the two full-movement entrances into the planned development from Hwy 51. Staff also notes per TIA 5-1 that future "intersection improvements" have been utilized. Staff requests clarification if that includes future South Carolina "pennies project" planned improvements since current alignment with Springhill Farm Road is not shown.
8. Minimum size of center improved amenity area not noted or shown.
9. No streetscape improvements shown along Hwy 51 or Nations ford such as street trees or street lights
10. Staff recommends pedestrian crossing at entrance intersections 1 and 2 to provide general pedestrian accommodations and access to Jack Hughes Park.
11. Staff recommend sidewalk along Nations Ford Rd frontage.
12. Staff recommend Double head streetlight fixture along Nations Ford and Hwy 51 road frontage with single head fixture within the development as is consistent with other approvals.
13. Staff recommend street trees per standard requirements along Nations Ford and Hwy 51
14. Staff recommends on street parking space width increased from 7 foot wide specification shown.
15. Page 5 of the rezoning plan staff opposes the note that says "final parking provided may be less than shown but will exceed ordinance requirement" Staff feels this will allow the possibility to remove on street parking shown.
16. Staff recommend clarification detached rear garages have a 5' setback per accessory structure ordinance standard rather than 10 foot primary building setback shown.
17. Staff would note possible buffer requirements to dissimilar future developments. West buffer detail adjacent to the townhome product labeled but not detailed. Staff would note Nations Ford Rd property

may require buffer as well depending on future use. Buffers shared between property lines should be considered before any development approval.

18. Staff recommends discussion and specifications on the entrance 1 roundabout. Staff recommends larger radius to more comfortably handle fire trucks, add pedestrian crossings, and add driveway/road stub for state line property future development.
19. Staff would strongly recommend for safety purposes no other access from Hwy 51 be permitted for the remainder of this development or future developments of the total property.
20. Staff recommends front porch requirement for all single family units as is graphically represented. Noted is stoop or porch.
21. Porches stated as encouraged but not required per 2g for single family units. Porch requirement stated as two per block for townhome units per note 2i. A minimum percentage or alternate façade material like brick has been utilized by prior developments.
22. Staff recommends clarifying design intent stated with architectural style such as with window grids. Staff assumes design intent is traditional neighborhood development (TND) style similar to meet or exceed adjacent McCullough standard.
23. Staff recommends all front facing gables have decorative vent or minimum 3 brackets.
24. Staff recommends vertical and horizontal aligned and even spaced vertical oriented windows for townhome product.
25. Railings are noted as a requirement but not shown on townhome product renderings.
26. Typical lot diagram shows 1 foot or more front setback of townhome facades but no note to confirm.
27. Staff finds the two story town home elevations busy with 3,4 or more cladding materials in close proximity in addition to the two roofing material. Most approved new townhomes favor horizontal fiber cement siding and brick for the dominate percentage of the front elevations (as does the applicants 3 story townhome elevations).
28. Staff recommends a note requiring variation in roof ridge height and/or front facing roof details to reinforce individual townhome similar to other recent approved townhome developments.

Staff would note single family product, lots, and design have improved. Some larger single family lots are located to face Hwy 51. On street parking has been added/expanded and there is a center usable open space amenity feature. Staff supports three property accesses due to the number of units and property size. Staff also encourages the extension of a Charlotte water main South down Nations Ford Road though this property to create a water service loop with McCullough neighborhood to reduce single access point service from Hwy 51/Downs Road.

PROCEDURE:

This workshop is to gain information about the proposal. This meeting is to familiarize you with the applicant's request go over updates and modifications. It is anticipated more than one workshop meeting will be needed to review the proposal and refine or clarify specifics and specifications.

Office Use Only:

Application #:

Payment Method: Cash Check Credit Card Amount \$ _____ Date Paid _____

Zoning Application

Note: Application will not be considered until all required submittal components listed have been completed

Applicant's Name: Fielding Homes, LLC Phone: 704.634.1703
Applicant's Mailing Address: 227 WEST TRADE STREET, SUITE 1610, CHARLOTTE, NC 28202

Property Information:

Property Location: 13328 ROCK HILL-PINEVILLE RD PINEVILLE NC 28134
Property Owner's Mailing Address: 3685 HIGHWAY 51 N, FORT MILL SC 29715
Property Owner Name: FAMILY LTD PARTNERSHIP, JAMES ROSS MILLER JR Phone: _____
Tax Map and Parcel Number: 20504114 Existing Zoning: R-44

Which are you applying (Check all that apply):

Rezoning by Right Conditional Zoning Conditional Rezoning Text Amendment

Fill out section(s) that apply:

Rezoning by Right:
Proposed Rezoning Designation _____

Conditional Zoning:
Proposed Conditional Use _____
Acreage _____ Square Feet _____ Approximate Height _____ # of Rooms _____
Parking Spaces Required _____ Parking Spaces Provided _____ ****Please Attach Site Specific Conditional Plan**

Conditional Rezoning:
Proposed Conditional Rezoning Designation RESIDENTIAL MIXED USE (RMX)

Text Amendment:
Section _____ Reason _____
Proposed Text Change (Attach if needed) _____

I do hereby certify that all information which I have provided for this application is, to the best of my knowledge, correct.

James H. Martin
Signature of Applicant
Charles Stephen Miller
Signature of Property Owner (If not Applicant)

1-25-21
Date

1-26-21
Date

Signature of Town Official

Date



PLANNING LEGEND

PARCEL DATA:
 CURRENT ZONING: R-44
 PROPOSED ZONING: RMX
 OVERALL PARCEL AREA: 135.55 ACRES
 AREA TO BE REZONED: 113.32 ACRES

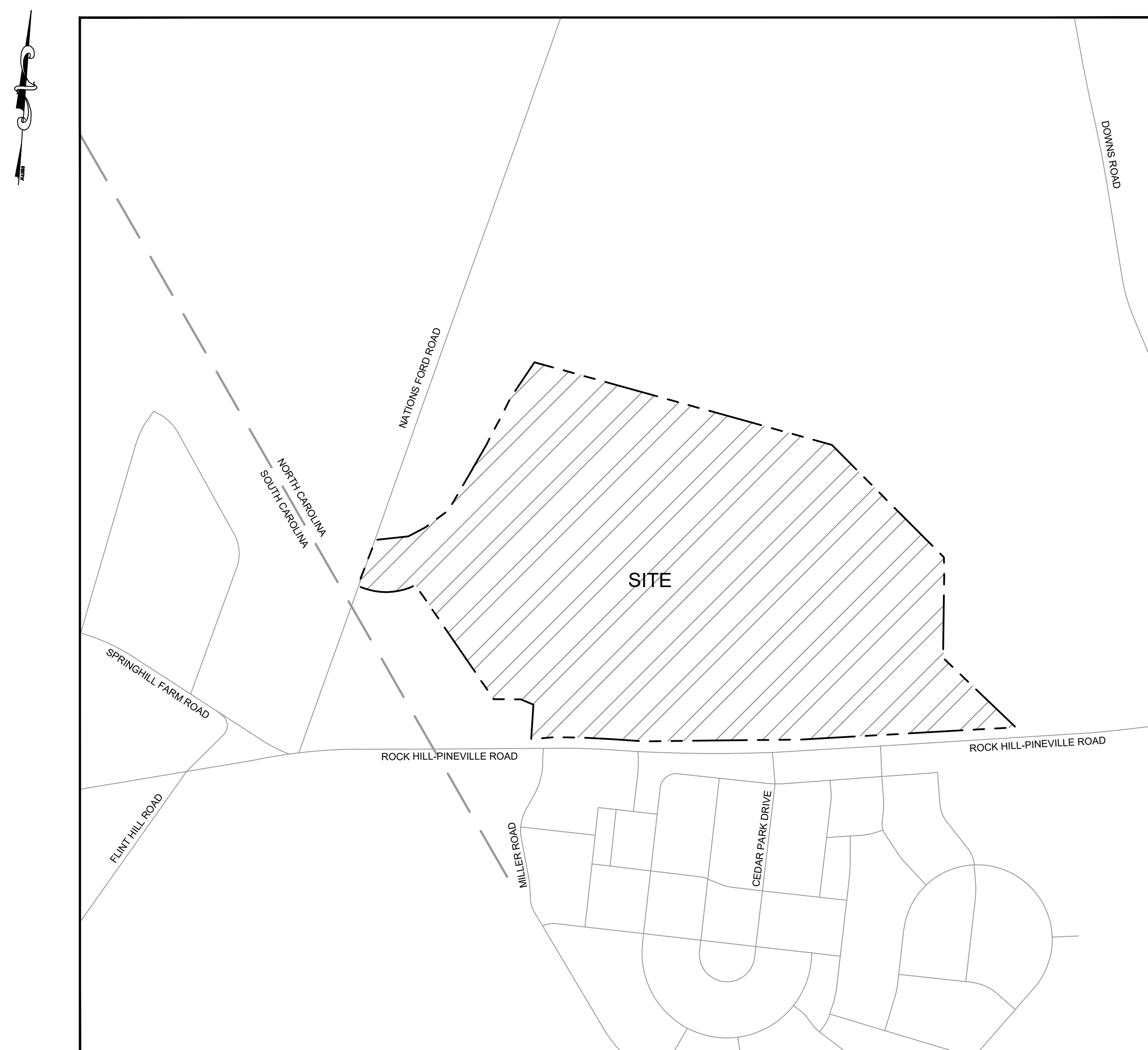
- 69 TOWN HOMES - 2 STORY
- 69 TOWN HOMES - 3 STORY
- 192 SINGLE FAMILY LOTS (48' WIDE)
- 13 SINGLE FAMILY LOTS (61' WIDE)

MILLER FARM
 CONDITIONAL SITE PLAN - JUNE 8, 2021



MILLER FARM CONDITIONAL REZONING PLAN

PINEVILLE, NORTH CAROLINA



VICINITY MAP
SCALE: 1" = 1,000'

Sheet Number	Sheet Title
RZ-000	COVER
RZ-100	CONDITIONAL REZONING PLAN OVERALL
RZ-101	SITE NOTES
RZ-102	TYPICAL LOT DIAGRAMS
RZ-103	PARKING YIELD MAP
RZ-104	SITE DETAILS
RZ-105	ENTRANCE 1 VEHICLE TURNING MOVEMENTS
RZ-106	ENTRANCE 2 VEHICLE TURNING MOVEMENTS
RZ-107	ENTRANCE 3 AND TRAFFIC CIRCLE VEHICLE TURNING MOVEMENTS

Sheet List Table

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Project Contact Email Address: chris.todd@timmons.com

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Professional Seal: Chris Todd
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CHARLOTTE, NC 28202

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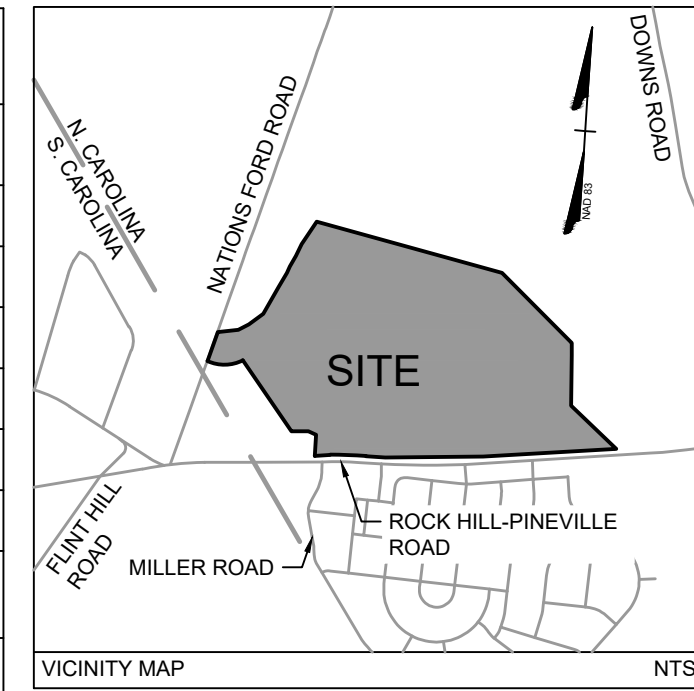
MILLER FARM
PINEVILLE, NORTH CAROLINA
COVER

DATE	REVISED PER COMMENTS	REVISION DESCRIPTION
06/18/2021	-	-
01/29/2021	-	-

JOB NO.
45021
SHEET NO.
RZ-000

ADJACENT PROPERTY OWNERS

LOT	PARCEL NUMBER	PROPERTY OWNER	PROPERTY OWNER MAILING ADDRESS	ZONING
A	20504127	FORECOVE, LLC	12261 NATIONS FORD RD, PINEVILLE, NC 28134	G-1
B	20504128	HJ REAL ESTATE, LLC	12009 REGENT RIDGE LN, CHARLOTTE, NC 28278	G-1
C	20504133	BIN-CLP, LLC & C/O BEACON PARTNERS	500 E MOREHEAD ST, STE 200, CHARLOTTE, NC 28202	G-1
D	20504134	BIN-CLP, LLC & C/O BEACON PARTNERS	500 E MOREHEAD ST, STE 200, CHARLOTTE, NC 28202	G-1
E	20504135	BIN-CLP, LLC & C/O BEACON PARTNERS	500 E MOREHEAD ST, STE 200, CHARLOTTE, NC 28202	G-1
F	20504102	STANLEY MARTIN HOMES, LLC	13000 S TRYON ST, F-205, CHARLOTTE, NC 28278	RMX
G	22101275	MCCULLOUGH NEIGHBORHOOD ASSOCIATION & C/O KUESTER MANAGEMENT GROUP	130 BEN CASEY DR, STE 100, FORT MILL, SC 29708	RMX
H	22101584	MCCULLOUGH NEIGHBORHOOD ASSOCIATION & C/O KUESTER MANAGEMENT GROUP	130 BEN CASEY DR, STE 100, FORT MILL, SC 29708	RMX
I	22101593	MCCULLOUGH NEIGHBORHOOD ASSOCIATION & C/O KUESTER MANAGEMENT GROUP	130 BEN CASEY DR, STE 100, FORT MILL, SC 29708	RMX
J	22101673	MCCULLOUGH NEIGHBORHOOD ASSOCIATION & C/O KUESTER MANAGEMENT GROUP	130 BEN CASEY DR, STE 100, FORT MILL, SC 29708	RMX
K	20504272	MCCULLOUGH TOWNHOMES, LLC	PO BOX 3340, FORT MILL, SC 29716	RMX
L	20504271	MCCULLOUGH TOWNHOMES, LLC	338 S SHARON AMITY RD, FMB 510, CHARLOTTE, NC 28211	RMX
M	20504202	MPV PINEVILLE, LLC	2400 SOUTH BLVD, STE 300, CHARLOTTE, NC 28203	RMX
N	20504129	CHARLES STEPHEN MILLER	3344 SCHOONER LN, CLOVER, SC 29710	UD
O	7250000296	CHARLES STEPHEN MILLER	3344 SCHOONER LN, CLOVER, SC 29710	UD
P	7250000017	CHARLES STEPHEN MILLER	3344 SCHOONER LN, CLOVER, SC 29710	UD
Q	7250000018	CHARLES STEPHEN MILLER	3344 SCHOONER LN, CLOVER, SC 29710	UD
R	7250000068	MONROE PROPERTY MANAGEMENT, LLC	440 OCEANA WAY, CAROLINA BEACH, NC 28428	UD
S	7250000067	SHARON BUILDERS INC	PO BOX 2568, MATTHEWS, NC 28106	UD
T	7250000071	MIGHTY REALTY, LLC	10915 DOWNS RD, PINEVILLE, NC 28134	UD
U	7250000026	MARSH AVIATION INC	40 SUNRISE POINT RD, LAKE WYLIE, SC 29710	UD
V	7250000294	MARTIN MARIETTA MATERIALS, LLC	PO BOX 8040, FT WAYNE, IN 46898	UD
W	20504106	CITY OF CHARLOTTE	600 EAST FOURTH ST, CHARLOTTE, NC 28202	I-2
X	7250000294	MARTIN MARIETTA MATERIALS INC	PO BOX 8040, FORT WAYNE, IN 46898	I-2
Y	7250000004	MARTIN MARIETTA MATERIALS INC	406 MARK TRAIL LN, FORT MILL, SC 29715	I-2



SEE SHEET RZ-101 FOR SITE DEVELOPMENT DATA

HATCH LEGEND

- BMP AREA
- UNDISTURBED STREAM BUFFER

- SEE STREET TYPE MAP ON RZ-101.
- SEE SITE DEVELOPMENT NOTES ON RZ-101.
- SEE RESIDENTIAL LOT TYPE MAP ON RZ-101.
- SEE TYPICAL LOT DIAGRAMS ON RZ-102.
- SEE PARKING YIELD MAP ON RZ-103.
- SEE SITE DETAILS ON RZ-104.
- SEE VEHICLE TURNING MOVEMENTS ON RZ-105 - RZ-107.

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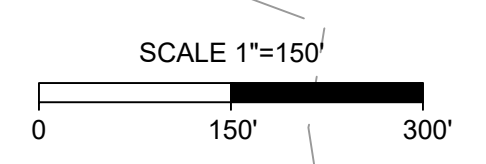
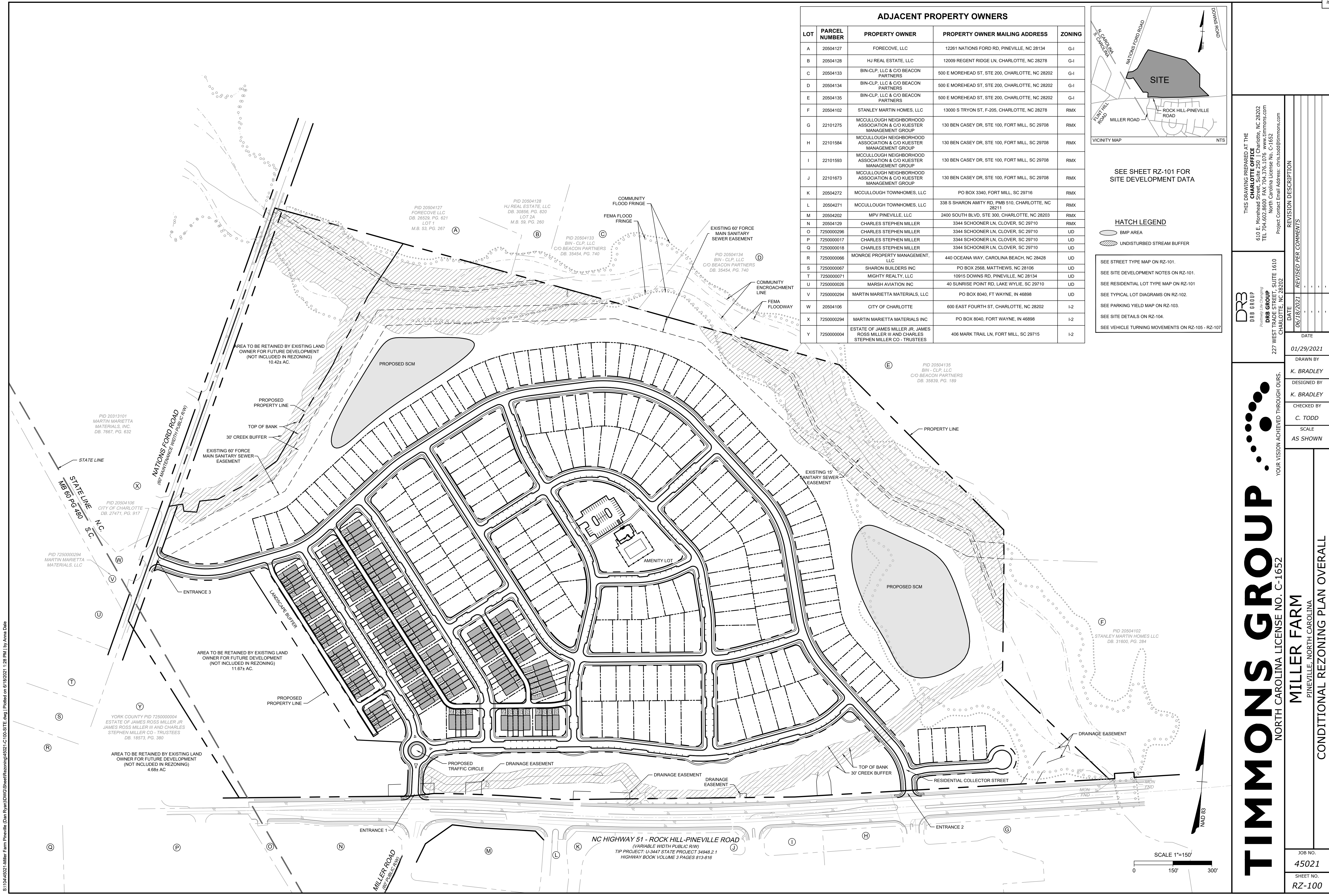
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CONDITIONAL REZONING PLAN OVERALL

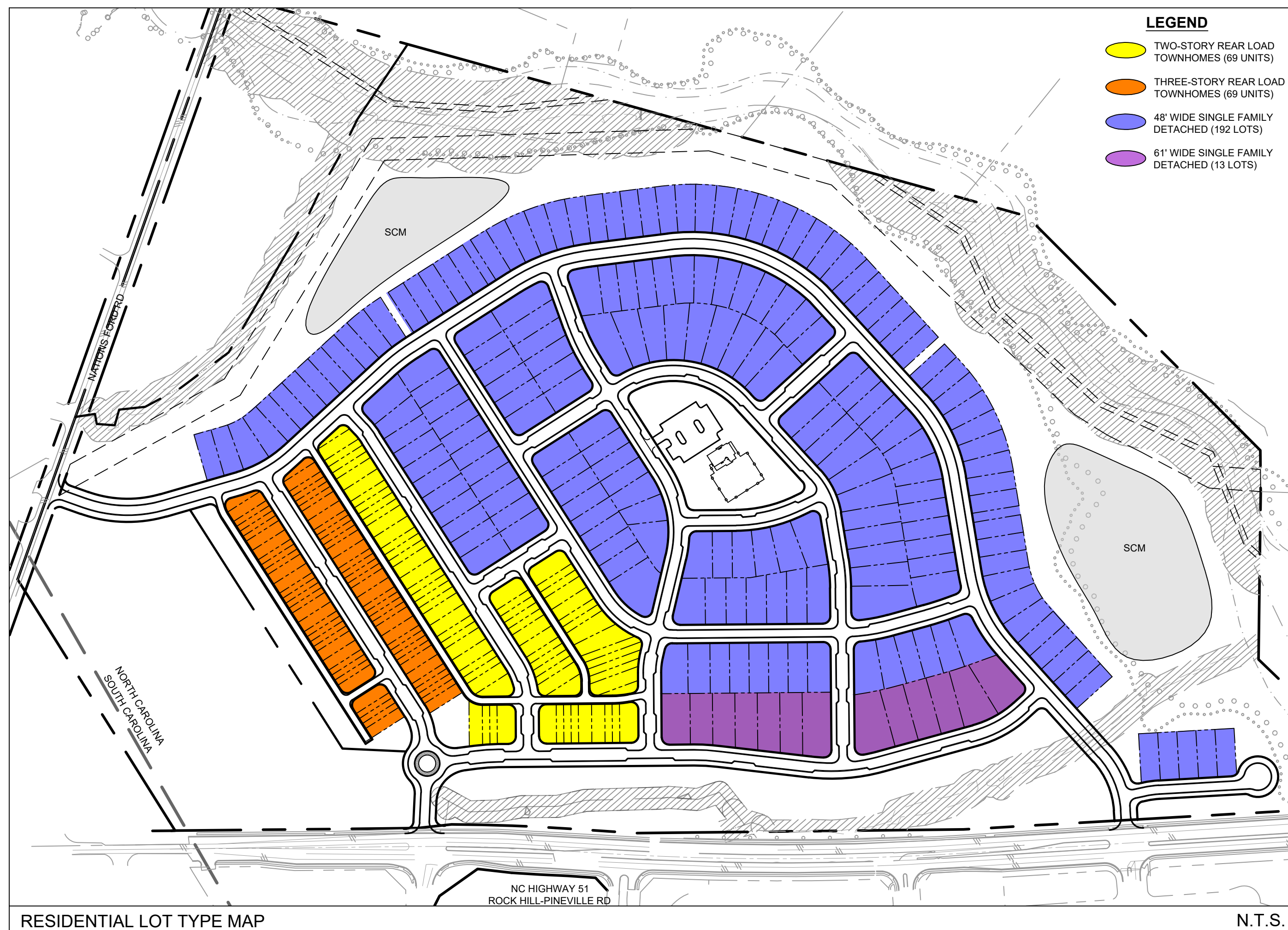
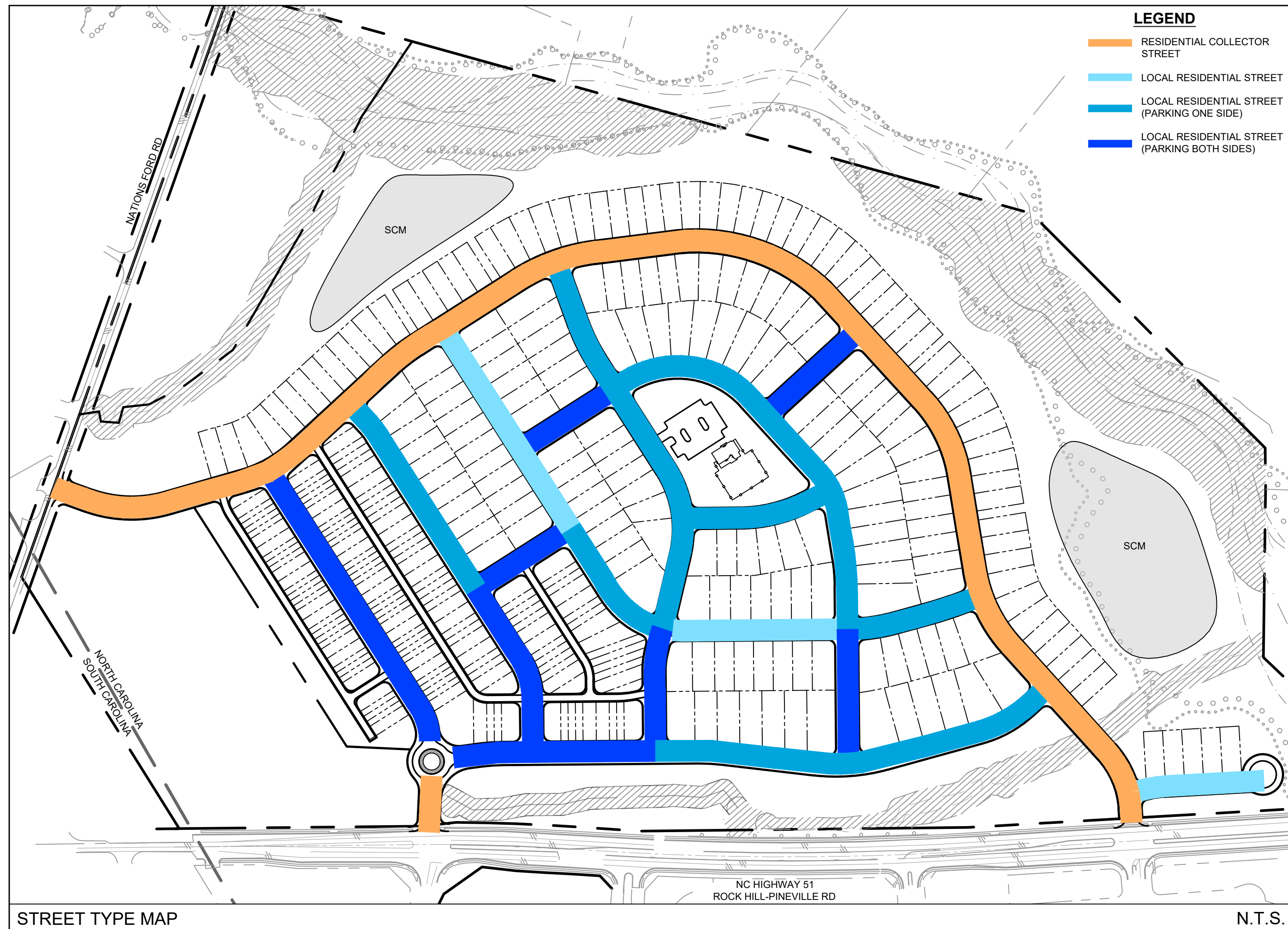
DATE	REVISED PER COMMENTS
06/18/2021	
01/29/2021	

DATE	DRAWN BY	DESIGNED BY	CHECKED BY	SCALE
01/29/2021	K. BRADLEY	K. BRADLEY	C. TODD	AS SHOWN

JOB NO.	SHEET NO.
45021	RZ-100



NC HIGHWAY 51 - ROCK HILL-PINEVILLE ROAD
 (VARIABLE WIDTH PUBLIC R/W)
 TIP PROJECT: U-3447 STATE PROJECT 34948.2.1
 HIGHWAY BOOK VOLUME 3 PAGES 813-816



REZONING NOTES:

GENERAL PROVISIONS:

- SITE LOCATION:** THESE DEVELOPMENT STANDARDS FORM A PART OF THE CONDITIONAL REZONING PLAN ASSOCIATED WITH THE CONDITIONAL REZONING PLAN FILED BY DRB GROUP (PETITIONER) TO ACCOMMODATE THE DEVELOPMENT OF THE PROPOSED RESIDENTIAL MIXED-USE PROJECT ON APPROXIMATELY 113.32 ACRE SITE LOCATED ALONG ROCK HILL-PINEVILLE ROAD (THE "SITE").
- ZONING DISTRICTS / ORDINANCE:** DEVELOPMENT OF THE SITE WILL BE GOVERNED BY THE CONDITIONAL REZONING PLAN AS WELL AS THE APPLICABLE PROVISIONS OF THE TOWN OF PINEVILLE ZONING ORDINANCE (THE "ORDINANCE").
- GRAPHICS AND ALTERATIONS:** THE SCHEMATIC DEPICTIONS OF THE USES, PARKING AREAS, AMENITY AREA, SIDEWALKS, STRUCTURES AND BUILDINGS, DRIVEWAYS, STREETS AND OTHER DEVELOPMENTAL MATTERS AND SITE ELEMENTS (COLLECTIVELY THE "DEVELOPMENT/SITE ELEMENTS") SET FORTH ON THE CONDITIONAL REZONING PLAN SHOULD BE REVIEWED IN CONJUNCTION WITH THE PROVISIONS OF THESE DEVELOPMENT STANDARDS. THE LAYOUT, LOCATIONS, SIZES AND FORMULATIONS OF THE DEVELOPMENT/SITE ELEMENTS DEPICTED ON THE CONDITIONAL REZONING PLAN ARE GRAPHIC REPRESENTATIONS OF THE DEVELOPMENT/SITE ELEMENTS PROPOSED. CHANGES TO THE CONDITIONAL SITE PLAN NOT ANTICIPATED BY THE CONDITIONAL REZONING PLAN WILL BE REVIEWED AND APPROVED.

SINCE THE PROJECT HAS NOT UNDERGONE THE DESIGN DEVELOPMENT AND CONSTRUCTION PHASES, IT IS INTENDED THAT THIS CONDITIONAL REZONING PLAN PROVIDE FOR FLEXIBILITY IN ALLOWING SOME ALTERATIONS OR MODIFICATIONS FROM THE GRAPHIC REPRESENTATIONS OF THE DEVELOPMENT/SITE ELEMENTS. THEREFORE, THERE MAY BE INSTANCES WHERE MINOR MODIFICATIONS WILL BE ALLOWED WITHOUT REQUIRING THE ADMINISTRATIVE AMENDMENT PROCESS. THE PLANNING DIRECTOR WILL DETERMINE IF SUCH MINOR MODIFICATIONS ARE ALLOWED PER THIS AMENDED PROCESS, AND IF IT IS DETERMINED THAT THE ALTERATION DOES NOT MEET THE CRITERIA DESCRIBED ABOVE, THE PETITIONER SHALL THEN FOLLOW THE ADMINISTRATIVE AMENDMENT PROCESS.

- NUMBER OF RESIDENTIAL BUILDINGS PRINCIPAL AND ACCESSORY:** THE TOTAL NUMBER OF RESIDENTIAL LOTS TO BE DEVELOPED ON THE SITE SHALL NOT EXCEED 350. ACCESSORY BUILDINGS AND STRUCTURES OCCASIONALLY ON THE SITE SHALL NOT BE CONSIDERED IN ANY LIMITATION ON THE NUMBER OF BUILDINGS ON THE SITE. ACCESSORY BUILDINGS AND STRUCTURES WILL BE CONSTRUCTED UTILIZING SIMILAR BUILDING MATERIALS, COLORS, ARCHITECTURAL ELEMENTS AND DESIGNS AS THE PRINCIPAL BUILDING LOCATED ON THE SITE. ACCESSORY STRUCTURES AND BUILDINGS INCLUDE STRUCTURES AND BUILDINGS SUCH AS BUT NOT LIMITED TO: A MAIL KIOSK, DUMPSTER ENCLOSURES, GAZEBOS, TRELLISES, STORAGE BUILDINGS, CLUBHOUSE.

- PERMITTED USES & DEVELOPMENT AREA LIMITATION:**
 - THE SITE MAY BE DEVELOPED WITH UP TO 350 RESIDENTIAL LOTS TOGETHER WITH ACCESSORY USES ALLOWED IN THE RMX ZONING DISTRICT.

- ACCESS AND TRANSPORTATION:**
 - ACCESS TO THE SITE WILL BE FROM ROCK HILL-PINEVILLE ROAD (HIGHWAY 51) AND NATIONS FORD RD IN THE MANNER GENERALLY DEPICTED ON THE CONDITIONAL SITE PLAN.
 - THE PETITIONER WILL PROVIDE A SIX (6) FOOT PLANTING STRIP AND A FIVE (5) FOOT SIDEWALK ALONG THE PROPOSED PUBLIC STREETS AS GENERALLY DEPICTED ON THE CONDITIONAL SITE PLAN.
 - THE PLACEMENT AND CONFIGURATION OF THE VEHICULAR ACCESS POINT IS SUBJECT TO ANY MINOR MODIFICATIONS REQUIRED TO ACCOMMODATE FINAL SITE DEVELOPMENT AND CONSTRUCTION PLANS AND TO ANY ADJUSTMENTS REQUIRED FOR APPROVAL BY NCDOT & PINEVILLE IN ACCORDANCE WITH APPLICABLE PUBLISHED STANDARDS.
 - THE ALIGNMENT OF THE INTERNAL VEHICULAR CIRCULATION AND DRIVEWAYS MAY BE MODIFIED BY THE PETITIONER TO ACCOMMODATE CHANGES IN TRAFFIC PATTERNS, PARKING LAYOUTS AND ANY ADJUSTMENTS REQUIRED FOR APPROVAL BY TOWN OF PINEVILLE IN ACCORDANCE WITH PUBLISHED STANDARDS.
 - STREET TYPES ARE PROVIDED ON SHEET RZ-101 INSET MAP.
 - ALLEYS MAY BE PUBLIC OR PRIVATE AND WILL BE DETERMINED DURING THE CONSTRUCTION DRAWING PHASE.
 - STOP SIGNS SHALL BE PROVIDED AT ROAD INTERSECTIONS AS DETERMINED BY THE TOWN DURING THE CONSTRUCTION DOCUMENT PHASE.
 - OFF-SITE ROAD IMPROVEMENTS WILL BE PER RECOMMENDATIONS / REQUIREMENTS OF THE TRAFFIC STUDY PREPARED BY TIMMONS GROUP AND APPROVED BY NCDOT / TOWN OF PINEVILLE.
 - UTILITY SERVICES, ADA RAMPS, AND CATCH BASINS / TRANSITIONS ARE NOT ALLOWED IN DRIVEWAYS.

- STREETScape, BUFFERS, YARDS, AND LANDSCAPING:**
 - ABOVE GROUND BACKFLOW PREVENTERS WILL BE SCREENED FROM PUBLIC VIEW AND WILL BE LOCATED BEHIND THE RIGHT-OF-WAY OF PUBLIC STREETS, BUT MAY BE LOCATED WITHIN THE SETBACK BEHIND THE PROPOSED SIDEWALK.
 - STREET TREES AND REQUIRED BUFFER PLANTING WILL BE PROVIDED AS REQUIRED BY THE TOWN ORDINANCE.
 - AMENITY AREA MAY INCLUDE POOL, CABANA, CHILDREN'S PLAY AREA, AND OTHER MENITIZED FEATURES. THE SPECIFIC LAYOUT OF FEATURES MAY BE ALTERED DURING THE CONSTRUCTION DOCUMENT / PERMITTING PHASE.
 - ENTRANCE MONUMENTATION MAY BE PLACED WITHIN THE SETBACKS / BUFFERS BUT NOT THE PUBLIC RIGHT-OF-WAY.

- STORMWATER / UTILITY:**
 - THE PETITIONER SHALL COMPLY WITH THE TOWN OF PINEVILLE APPROVED AND ADOPTED POST CONSTRUCTION CONTROLS ORDINANCE.
 - THE LOCATION, SIZE, AND TYPE OF STORMWATER MANAGEMENT SYSTEMS DEPICTED ON THE REZONING PLAN ARE SUBJECT TO REVIEW AND APPROVAL AS PART OF THE FULL DEVELOPMENT PLAN SUBMITTAL AND ARE NOT IMPLICITLY APPROVED WITH THIS REZONING. ADJUSTMENTS MAY BE NECESSARY IN ORDER TO ACCOMMODATE ACTUAL STORMWATER TREATMENT REQUIREMENTS AND NATURAL SITE DISCHARGE POINTS.
 - ALL UTILITIES WITHIN THE SITE SHALL BE PLACED UNDERGROUND.

- SIGNAGE:**
 - AS ALLOWED BY THE RMX ZONING DISTRICTS.
- AMENDMENTS TO THE CONDITIONAL SITE PLAN PLAN:**
 - FUTURE AMENDMENTS TO THE CONDITIONAL SITE PLAN (WHICH INCLUDES THESE DEVELOPMENT STANDARDS) MAY BE APPLIED FOR BY THE THEN OWNER OR OWNERS OF THE APPLICABLE DEVELOPMENT AREA PORTION OF THE SITE AFFECTED BY SUCH AMENDMENT.

- BINDING EFFECT OF THE CONDITIONAL SITE PLAN:**
 - IF THIS CONDITIONAL SITE PLAN IS APPROVED, ALL CONDITIONS APPLICABLE TO THE DEVELOPMENT OF THE SITE IMPOSED UNDER THE CONDITIONAL SITE PLAN WILL, UNLESS AMENDED IN THE MANNER PROVIDED UNDER THE ORDINANCE, BE BINDING UPON AND INURE TO THE BENEFIT OF THE PETITIONER AND SUBSEQUENT OWNERS OF THE SITE AND THEIR RESPECTIVE HEIRS, DEVISEES, PERSONAL REPRESENTATIVES, SUCCESSORS IN INTEREST OR ASSIGNS.

WATER QUALITY BUFFER MITIGATION NOTES:

- APPROXIMATELY 5.2± ACRES OF PCCO BUFFER TO BE DISTURBED FOR DEVELOPMENT.
- MITIGATION OF BUFFER DISTURBANCE TO BE PER SECTION 6.1.1 OF CHARLOTTE WATER QUALITY BUFFER IMPLEMENTATION GUIDELINES:
 LEVEL 1 REVEGETATION ALLOWS FOR DENSER PLANTING OF SMALLER TREES ON LARGER SITES, AS SUMMARIZED IN TABLE 3 ABOVE. LEVEL 1 REVEGETATION IS ALLOWED FOR ALL VOLUNTARY BUFFER REVEGETATION AND FOR REVEGETATION ASSOCIATED WITH AUTHORIZED DISTURBANCES OF S.W.I.M. AND POST-CONSTRUCTION BUFFERS PROVIDED THE DISTURBED AREA IS GREATER THAN 10,000 SQUARE FEET. LEVEL 1 REVEGETATION IS NOT ALLOWED FOR REVEGETATION ASSOCIATED WITH ILLEGAL BUFFER DISTANCES AND AUTHORIZED DISTURBANCES OF WATER QUALITY WATERSHED, GOOSE AND SIX MILE BUFFERS. THE FOLLOWING CRITERIA APPLY TO A LEVEL 1 REVEGETATION.

- TREE REQUIREMENTS:**
 - 10 TREES MUST BE PLANTED FOR EVERY 1,000 SQUARE FEET (100 SQUARE FEET PER TREE OR 436 TREES PER ACRE)
 - TREES MAY BE LIVE STAKES OR DORMANT CUTTINGS FROM THE PREVIOUS SEASON'S GROWTH. LIVE STAKES MUST BE A MINIMUM OF 3/4 INCH IN DIAMETER AND 3 FEET LONG. DORMANT CUTTINGS MUST BE A MINIMUM OF 1/2 INCH IN DIAMETER AND 2 FEET LONG.
 - 40% TO 60% OF THE TREES MUST BE UNDERSTORY SPECIES.
 - NO GREATER THAN 10% OF THE TREES CAN BE PINES.
- SHRUB REQUIREMENTS:**
 - 20% OF THE AREA TO BE REVEGETATED CAN BE PLANTED IN SHRUBS INSTEAD OF TREES AT A DENSITY OF 30 SHRUBS FOR EVERY 1,000 SQUARE FEET (33 SQUARE FEET/SHRUB OR 1,307 SHRUBS PER ACRE).
 - SHRUBS MUST BE CONTAINERIZED OR BARE ROOT STOCK.
 - SHRUBS MUST BE PLANTED IN GROUPS MORE DENSELY AROUND THE OUTER EDGES OF THE BUFFER TO PREVENT LIGHT PENETRATION AND RECOLONIZATION BY INVASIVE SPECIES.
- GROUND COVER REQUIREMENTS:**
 - ACHIEVE 100% GROUND COVER OF ALL EXPOSED SOIL (NO BARE AREAS LARGER THAN ONE SQUARE FOOT) USING NATIVE SEED SPECIES, GRASS-LIKE PLANTS, AND FORBS FROM THE APPROVED PLANT LIST IN APPENDIX 15); OR MULCH IN ACCORDANCE WITH THE FOLLOWING CRITERIA:
 - WHEN MULCH IS USED AS THE GROUND COVER OPTION, IT MUST BE MAINTAINED FOR A MINIMUM OF TWO (2) YEARS AT A MINIMUM DEPTH OF TWO (2) INCHES. THE MULCH MUST BE SHREDDED OF CHIPPED WOOD OR LEAF MOULD, SAWDUST, PINEWHEAT STRAW OR PINE BARK CANNOT BE USED.
 - MULCH MUST BE MAINTAINED AROUND THE BASES OF ALL TREES AND SHRUBS FOR A MINIMUM FIVE (5) YEARS FOLLOWING PLANTING AT A MINIMUM DEPTH OF TWO (2) INCHES. THE MULCH MUST BE SHREDDED OR CHIPPED WOOD OR LEAF MOULD, SAWDUST, PINEWHEAT STRAW AND PINE BARK CANNOT BE USED.
- ADDITIONAL REQUIREMENTS:**
 - ALL TREES AND SHRUBS MUST BE MAINTAINED IN PERPETUITY AND REPLACED AS NECESSARY TO ENSURE THAT THE ORIGINAL PLANTING DENSITY IS MAINTAINED.
 - THE USE OF TREE SHELTERS IS STRONGLY RECOMMENDED TO PROTECT AGAINST DEER GRAZING AND MOWER DAMAGE.
 - EROSION WITHIN THE BUFFER IS STRICTLY PROHIBITED. IF MULCH IS NOT SUFFICIENT TO PREVENT EROSION, A VEGETATIVE GROUND COVER IS REQUIRED.

SITE DEVELOPMENT DATA:

TAX PARCEL:	20504114 (135.55± ACRES) (22.09± AC. IS NOT BEING REZONED AND WILL RETAIN EXISTING ZONING R-44)
ACREAGE TO BE REZONED	113.30± ACRES
EXISTING ZONING:	R-44
EXISTING USE:	AGRICULTURAL
PROPOSED ZONING:	RMX (RESIDENTIAL MIXED USE)
PROPOSED USES:	RESIDENTIAL MIXED USE
PROPOSED DENSITY:	3.09 DUA
TOTAL LOTS:	343
TOWNHOME LOTS:	138
TWO-STORY REAR LOADED*	69
THREE-STORY REAR LOADED*	69
SINGLE FAMILY LOTS:	205
48' WIDE*	192
61' WIDE*	13
* SEE SHEET RZ-102 FOR TYPICAL LOT DIAGRAMS	
FRONT SETBACK:	20'
CORNER SETBACK:	10'
SIDE SETBACK:	5'
REAR SETBACK:	10'
REQUIRED OPEN SPACE:	28.33± AC. (25%)
PROVIDED OPEN SPACE:	28.33± AC. (25%)

ARCHITECTURAL DESIGN REQUIREMENTS:

- GENERAL PROVISIONS:**
 - HOUSE VARIETY:** FOR SINGLE-FAMILY DETACHED HOMES, SIMILAR HOUSE PLANS OR ELEVATIONS ARE PERMITTED ON LOTS IF THEY VARY IN COLOR, CONTAIN VARIATIONS TO THE DETAILING AND ARE NOT LOCATED WITHIN 3 FEET OF EACH OTHER ON THE SAME STREET AND WITHIN 3 HOUSES ACROSS THE STREET.
 - HEIGHT OF HOUSES:**
 - DETACHED SINGLE FAMILY:** NO DETACHED SINGLE-FAMILY RESIDENTIAL STRUCTURE ERECTED UPON A LOT SHALL CONTAIN MORE THAN TWO AND ONE HALF (2-1/2) STORIES ABOVE GROUND LEVEL OUTSIDE OF THE FRONT DOOR. A FLOOR AREA GREATER THAN 50% OF THE BUILDING FOOTPRINT SHALL BE CONSIDERED A THIRD STORY FOR PURPOSES OF THIS PROVISION.
 - ATTACHED TOWNHOMES:** NO ATTACHED SINGLE-FAMILY RESIDENTIAL STRUCTURE ERECTED UPON A LOT SHALL CONTAIN MORE THAN THREE AND ONE HALF (3-1/2) STORIES ABOVE GROUND LEVEL OUTSIDE OF THE FRONT DOOR. A FLOOR AREA GREATER THAN 50% OF THE BUILDING FOOTPRINT SHALL BE CONSIDERED A FOURTH STORY FOR PURPOSES OF THIS PROVISION.
 - THE FIRST-FLOOR CLEAR CEILING HEIGHT SHALL BE NINE (9) FOOT MINIMUM AND THE SECOND-FLOOR CEILING SHALL BE EIGHT (8) FOOT MINIMUM FOR ALL DWELLING TYPES
 - LOT WIDTHS:** MINIMUM LOT WIDTH FOR SINGLE-FAMILY DETACHED IS 40'. MEASURED AT FRONT BUILDING SETBACK MINIMUM LOT WIDTH FOR SINGLE-FAMILY ATTACHED HOUSING (TOWNHOMES) IS 16'
- EXTERIOR ARCHITECTURAL FEATURES:**
 - FOUNDATIONS:** FOUNDATIONS MAY BE BASEMENT, CRAWLSPACE, OR SLAB ON GRADE. THE FINISH FLOOR ELEVATION SHALL BE A MINIMUM OF TWELVE (12) INCHES ABOVE THE FINISH GRADE OF THE PUBLIC SIDEWALK FRONTING THE UNIT SO THAT EACH UNIT HAS AT LEAST ONE STEP BETWEEN THE FRONT PORCH/STOOP AND THE LEAD WALK. ALL EXPOSED FOUNDATION FINISHES SHALL BE A COLORED PARGE COAT THAT BLENDS WITH THE OVERALL HOUSE COLOR
 - EXTERIOR WALL FINISHES:** CAREFUL ATTENTION MUST BE MADE TO ENSURE THE BUILT PRODUCT IS NOT CLUTTERED WITH TOO MANY DIFFERENT EXTERIOR WALL MATERIALS. GENERALLY SPEAKING, HOMES MUST NOT CONTAIN MORE THAN ONE MASONRY AND TWO SIDING MATERIALS. FOR EXAMPLE, A HOME MIGHT CONTAIN A BRICK PORTION ON THE FRONT ELEVATION, OVERALL HORIZONTAL SIDING AND AN ELEMENT OF BOARD AND BATTEN SIDING. ACCEPTABLE EXTERIOR WALL FINISHES ARE AS FOLLOWS: BRICK VENEER, STONE VENEER, INCLUDING CULTURED STONE VENEER, FIBER-CEMENT SIDING ("HARD-PLANK" OR SIMILAR), VINYL SIDING/MATERIAL MAY BE USED ON THESE HOUSES FOR ACCENT FEATURES SUCH AS GABLES, SOFFITS, TRIM, WINDOWS AND EAVES, SHAKE/SINGLE SIDING. SIDING MUST ABUT TRIM AT CORNERS AND AROUND WINDOWS/DOORS. EXPOSED/UNCOATED CONCRETE MASONRY UNITS (CMU) ARE NOT PERMITTED.
 - ROOFS:** MINIMUM ROOF PITCH FOR MAJOR GABLED ROOF ELEMENTS IS 5:12. SHINGLES SHALL BE A MINIMUM OF 25-YEAR, ARCHITECTURAL SHINGLES ROOF PROTRUSIONS AND ELEMENTS SHALL BE TO THE SIDE OR REAR OF ROOF RIDGE LINES AWAY FROM PUBLIC VIEW WHERE POSSIBLE AND SHALL BE PAINTED TO BLEND WITH THE COLOR OF THE SHINGLES. METAL ROOFS MAY BE PERMITTED AS ACCENT ELEMENTS WHEN CONSISTENT WITH THE ARCHITECTURAL STYLE OF THE HOUSE. ALL HOUSES SHALL HAVE GUTTERS AND DOWNSPOUTS WITH SPLASH BLOCKS USING HALF ROUND OR OGE PROFILE GUTTERS AND ROUND OR RECTANGULAR DOWNSPOUTS IN PAINTED OR PRE-FINISHED METAL. ALL MAIN ROOF STRUCTURES (NOT INCLUDING DORMERS) MUST HAVE A MINIMUM OF 8" OVERHANG ON THE FRONT, SIDES AND REAR. SAID ROOF STRUCTURES ARE ALLOWED TO ENCRoACH INTO THE FRONT, SIDE, AND REAR SETBACKS
 - DORMERS AND SHED ROOFS:** MINIMUM ROOF PITCH FOR DORMERS (WHETHER GABLE OR SHED) AND SHED ROOFS IS 3:12. DORMER WALLS SHALL MEET THE MINIMUM REQUIREMENTS FOR EXTERIOR WALL FINISHES. DORMERS SHALL BE HELD A MINIMUM OF TWO FEET FROM THE SIDE WALLS OF THE HOUSE.
 - WINDOWS:** WINDOWS SHOULD BE THE SAME TYPE AND STYLE ALL AROUND THE HOUSE BUT WINDOW MUNTINS MAY VARY WHERE APPROPRIATE TO MATCH THE ARCHITECTURE. ALL WINDOWS FACING PUBLIC STREETS ARE REQUIRED TO HAVE MUNTINS THAT ARE SYMMETRICAL AND MATCH OTHER WINDOWS ON THE SAME HOME. 1X4 MINIMUM TRIM MATERIAL REQUIRED AROUND ALL WINDOWS. WINDOWS SHOULD BE CLEAR GLASS OR A TINTED GLASS. NO REFLECTIVE OR MIRRORRED GLASS MAY BE USED BUT LOW-E WINDOWS ARE PERMITTED. A MINIMUM OF THREE WINDOWS SHALL BE PROVIDED ON ALL SIDE ELEVATIONS EXPOSED TO PUBLIC STREETS ON CORNER LOTS
 - DOORS:** ENTRANCE DOORS DESIGN SHALL BE IN KEEPING WITH THE STYLE OF ARCHITECTURE. DOORS SHALL BE WOOD, FIBERGLASS OR METAL AND MAY INCLUDE GLAZING AND SIDE LIGHTS WHERE APPROPRIATE. METAL DOORS ARE NOT ALLOWED TO BE PLACED ON THE FRONT ELEVATIONS
 - FRONT PORCHES / ENTRYWAYS:** ALL FRONT ENTRYWAYS MUST BE A COVERED STOOP OR FRONT PORCH. FRONT PORCH ELEVATIONS ON SINGLE-FAMILY DETACHED HOMES ARE HIGHLY ENCOURAGED. IF FRONT PORCHES ARE UTILIZED, THEY MUST HAVE A MINIMUM DIMENSION OF 6' DEEP BY 8' WIDE AND CONTAIN RAILINGS. ALL OTHER COVERED ENTRYWAYS (I.E. FRONT STOODS) MUST BE A MINIMUM DEPTH OF 3'. PORCHES MAY BE ONE OR TWO STORIES TALL WITH FLAT, SHED OR HIPPED ROOFS, AS APPROPRIATE FOR THE ARCHITECTURAL STYLE OF THE HOUSE. FRONT PORCH COLUMNS (ROUND OR SQUARE) MUST HAVE A MINIMUM DIAMETER OF 6". FRONT FACADE PORCHES MAY NOT BE SCREENED BUT MAY BE SHUTTERED ON THE SIDES. PORCHES AND COVERED ENTRANCES SHALL BE IN KEEPING WITH THE STYLE OF THE ARCHITECTURE.
 - GARAGES:** GARAGES MAY BE ATTACHED OR DETACHED. FOR SINGLE-FAMILY DETACHED HOMES, THE GARAGES MUST BE LOCATED A MINIMUM OF 2' BEHIND THE FINISHED FRONT ELEVATION AND NO LESS THAN 40' BEHIND THE FRONT PROPERTY LINE. HOMES MAY EITHER BE SERVED BY AN ALLEY OR VIA A DRIVEWAY THAT EXTENDS FROM THE PUBLIC STREET FRONTING THE HOME INCLUDING A DRIVEWAY THAT EXTENDS ALONG THE SIDE OF THE HOME TO ACCESS THE GARAGE AT THE REAR OF THE HOME. ALL TOWNHOMES TO BE SERVED BY ALLEY-LOADED GARAGES.
 - SPECIFIC CRITERIA FOR TOWNHOMES:** EACH UNIT'S FINISHED FLOOR ELEVATION MUST BE 12'-14" ABOVE THE FRONT ELEVATION GRADE SO THAT AT LEAST ONE STEP IS REQUIRED FROM THE LEAD WALK TO THE FRONT PORCH/STOOP. EACH TOWNHOME BUILDING CONTAINING AT LEAST 4 ADJACENT UNITS MUST CONTAIN AT LEAST 2 ELEVATIONS WITH A FRONT PORCH. THE OTHER ELEVATIONS MUST CONTAIN A COVERED STOOP. TO ENCOURAGE VARIATION WITHIN A BUILDING, NO TWO ROOF DESIGNS CAN BE THE SAME WITHIN A SINGLE BUILDING. FRONT PORCHES, IF PRESENT, MUST CONTAIN RAILINGS AND MUST MEASURE A MINIMUM OF 8' WIDE AND 6' DEEP. EACH UNIT WITHIN A BUILDING MUST BE HORIZONTALLY OFFSET FROM ITS NEIGHBORING UNIT A MINIMUM OF 1.5' (18"). CAREFUL ATTENTION MUST BE SHOWN TO ALLOW FOR ROOF OFFSETS TO GREATLY REDUCE THE EXAMPLES OF MULTIPLE UNITS APPEARING TO HAVE THE SAME ROOF. 8" OVERHANGS REQUIRED ON THE FRONT AND REAR OF EACH UNIT AND ON BOTH SIDES OF EACH BUILDING. ALL FRONT PORCH AND STOOP ROOFS MUST CONTAIN A METAL STANDING SEAM ROOF. THE COLOR PALETTE FOR THE TOWNHOMES MUST UTILIZE MORE MODERN COLORING WHERE EACH UNIT COMPLIMENTS THE NEIGHBORING UNIT VERSUS STANDING OUT AND BEING HIGHLY DIFFERENTIATED. THE PROPER MASONRY SELECTION FOR THE TOWNHOMES WILL BE BRICK VERSUS STONE.

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K. BRADLEY

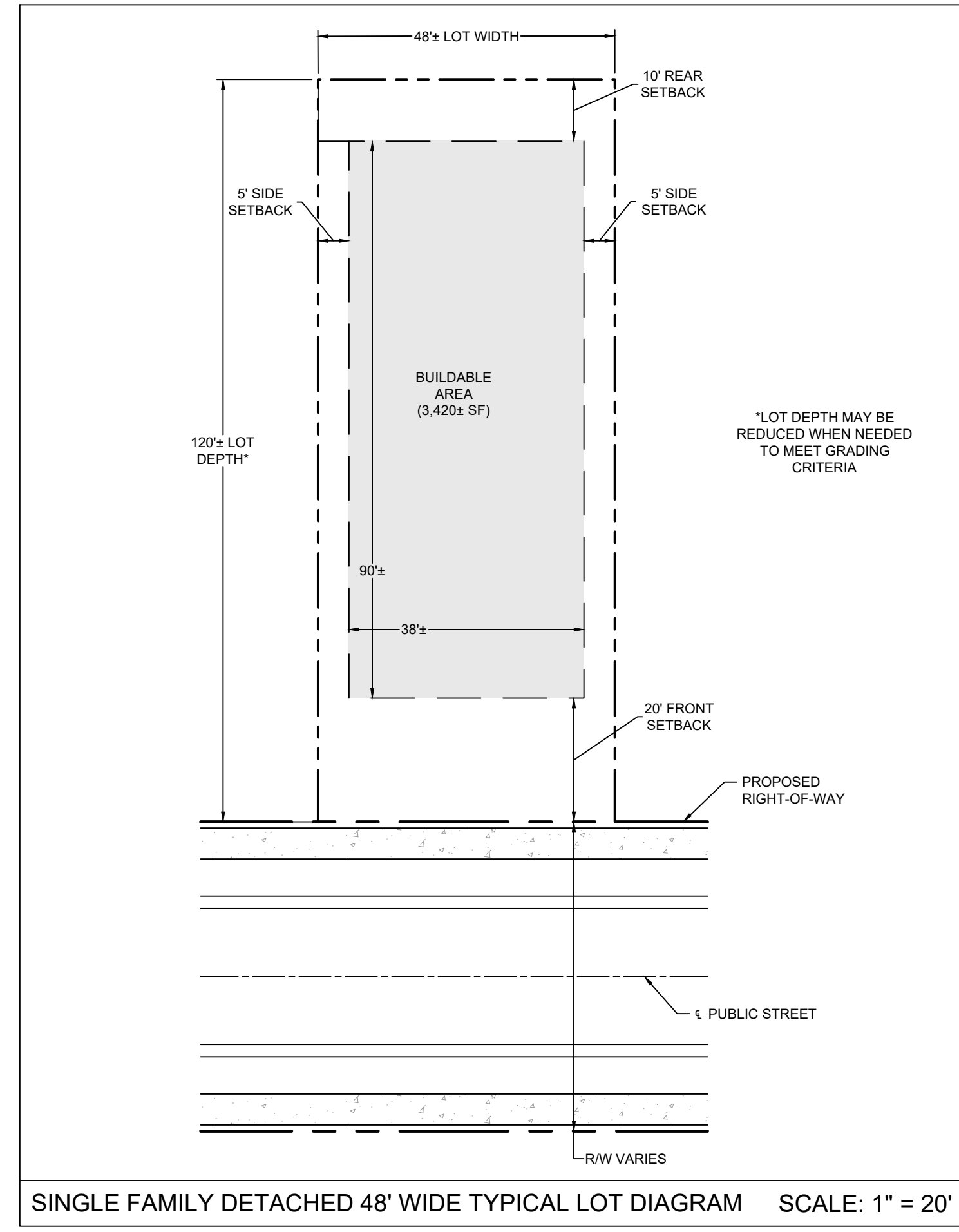
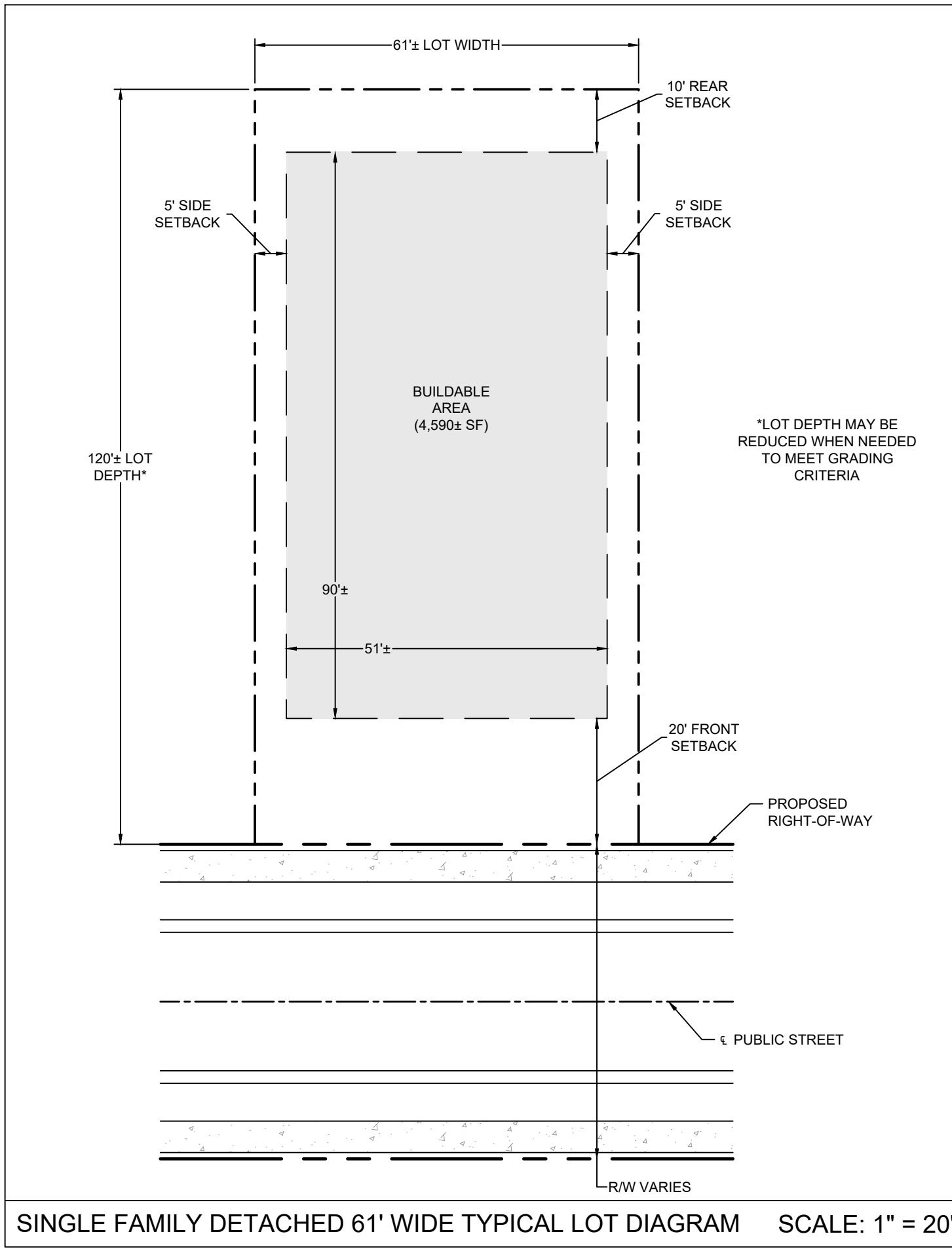
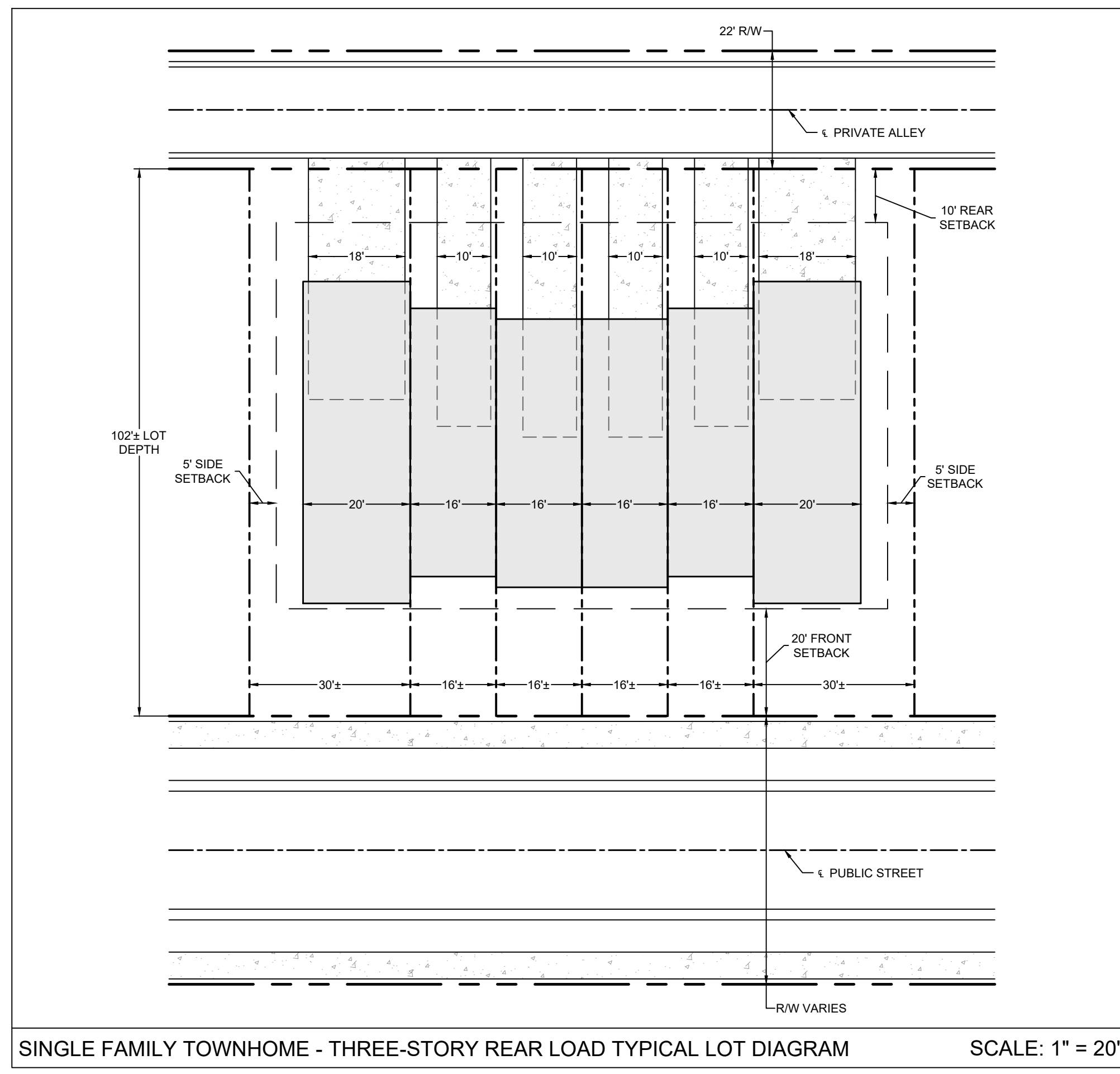
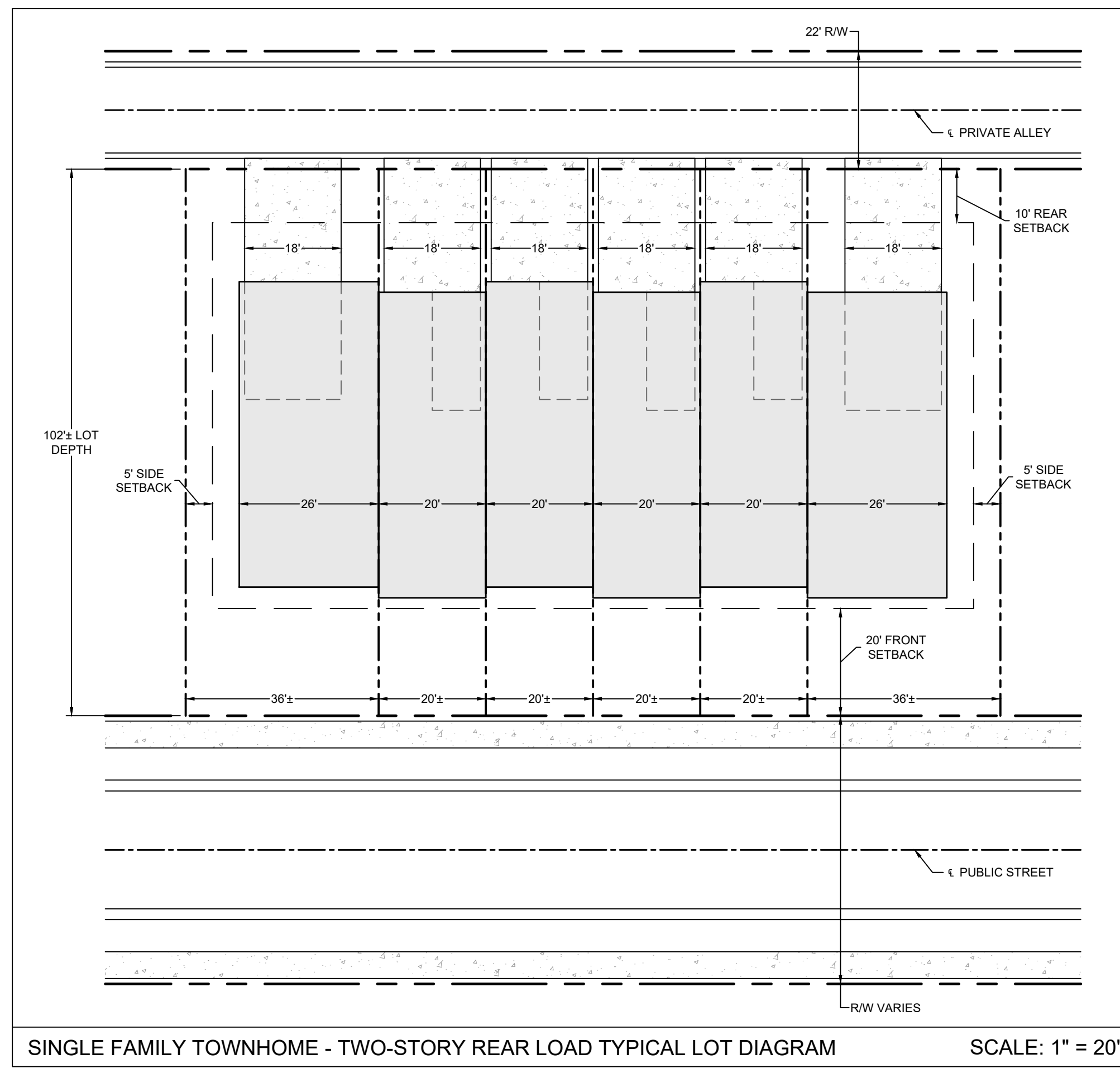
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K. BRADLEY

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SCALE
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 MILLER FARM
 PINEVILLE, NORTH CAROLINA
 NORTH CAROLINA LICENSE NO. C-1652
 YOUR VISION ACHIEVED THROUGH OURS.

JOB NO.	45021
SHEET NO.	RZ-101



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TIMMONS GROUP
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MILLER FARM
PINEVILLE, NORTH CAROLINA

TYPICAL LOT DIAGRAMS

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CHARLOTTE, NC 28202

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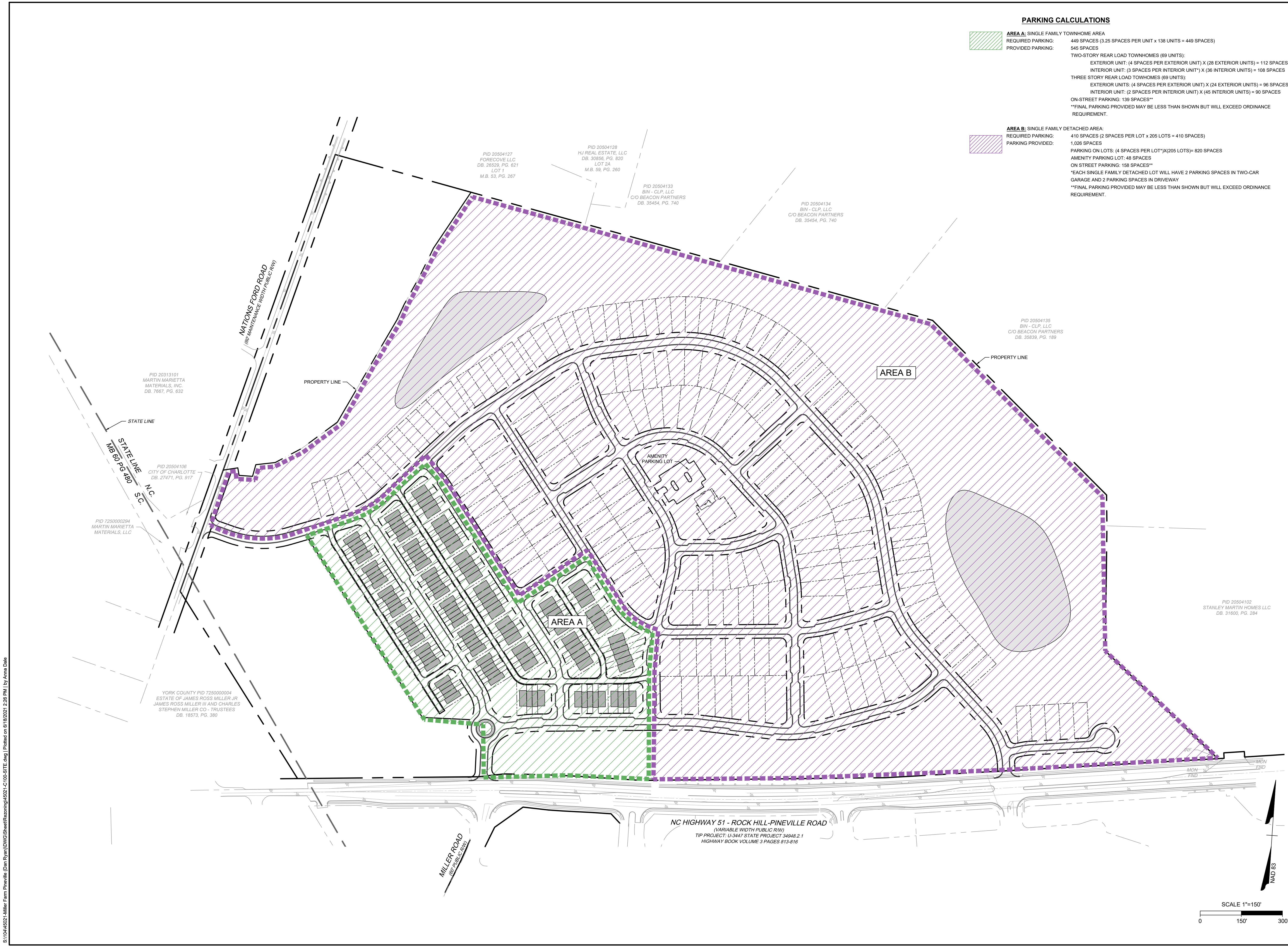
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12

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PARKING CALCULATIONS

AREA A: SINGLE FAMILY TOWNHOME AREA	449 SPACES (3.25 SPACES PER UNIT x 138 UNITS = 449 SPACES)
REQUIRED PARKING:	545 SPACES
PROVIDED PARKING:	TWO-STORY REAR LOAD TOWNHOMES (69 UNITS): EXTERIOR UNIT: (4 SPACES PER EXTERIOR UNIT) X (28 EXTERIOR UNITS) = 112 SPACES INTERIOR UNIT: (3 SPACES PER INTERIOR UNIT) X (36 INTERIOR UNITS) = 108 SPACES THREE STORY REAR LOAD TOWNHOMES (69 UNITS): EXTERIOR UNIT: (4 SPACES PER EXTERIOR UNIT) X (24 EXTERIOR UNITS) = 96 SPACES INTERIOR UNIT: (2 SPACES PER INTERIOR UNIT) X (45 INTERIOR UNITS) = 90 SPACES ON-STREET PARKING: 139 SPACES**
	**FINAL PARKING PROVIDED MAY BE LESS THAN SHOWN BUT WILL EXCEED ORDINANCE REQUIREMENT.
AREA B: SINGLE FAMILY DETACHED AREA:	410 SPACES (2 SPACES PER LOT x 205 LOTS = 410 SPACES)
REQUIRED PARKING:	1,038 SPACES
PARKING PROVIDED:	PARKING ON LOTS: (4 SPACES PER LOT) X (205 LOTS) = 820 SPACES AMENITY PARKING LOT: 48 SPACES ON STREET PARKING: 158 SPACES**
	**EACH SINGLE FAMILY DETACHED LOT WILL HAVE 2 PARKING SPACES IN TWO-CAR GARAGE AND 2 PARKING SPACES IN DRIVEWAY **FINAL PARKING PROVIDED MAY BE LESS THAN SHOWN BUT WILL EXCEED ORDINANCE REQUIREMENT.



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MILLER FARM
 PINEVILLE, NORTH CAROLINA
PARKING YIELD MAP

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CONCRETE SIDEWALK

NOTES:

- REVERSE CURVES NOT NECESSARY IF ADEQUATE DRAINAGE CAN BE PROVIDED THAT WILL ENSURE THAT SEDIMENT, WATER, DEBRIS, ETC., DOES NOT COLLECT IN 90-DEGREE CORNERS.
- PARALLEL ACCESSIBLE SPACES AND LOADING ZONES TO BE REVIEWED ON A CASE-BY-CASE BASIS.
- FOR PARKING BAYS THAT ARE 8 FEET IN WIDTH OR GREATER, THE PAVEMENT MARKINGS SHALL BE SET AT ONE (1) FOOT LESS THAN THE STALL WIDTH.
- GREATER SEPARATION FROM INTERVENING STREETS THAN THE DISTANCES PROVIDED BELOW MAY BE REQUIRED AT THE TOWN ENGINEER'S DISCRETION.
- POSITIVE DRAINAGE SHALL BE PROVIDED EITHER BY INSTALLATION OF APPROPRIATE DRAINAGE STRUCTURES OR SLOPE PARKING AREA TO STREET FLOW LINE. SLOPING PARKING AREA TO STREET FLOW LINE ONLY PERMITTED IF ROAD GRADE IS GREATER THAN 2%.
- IF A BIKE LANE IS REQUIRED ADJACENT TO PARALLEL PARKING, THE MINIMUM WIDTH OF BIKE LANE IS 6'. PROVIDE CATCH BASIN OR SLOPE PARKING AREA TOWARD STREET FLOW LINE.

PARKING ON ONE SIDE OF A SIDEWALK

CONCRETE SIDEWALK

PARKING SPACE (TYP.)

6" (MIN) HIGH CURB (GUTTER NOT SHOWN)

PARKING ON BOTH SIDES OF A SIDEWALK

CONCRETE SIDEWALK

PARKING SPACE (TYP.)

9" (MIN) HIGH CURB (TYP.) (GUTTER NOT SHOWN)

ADDITIONAL PARKING BAYS AND REVERSE CURVES AS APPROPRIATE.

MINIMUM DISTANCE TO NEXT INTERVENING STREET

DRIVEWAY	LOCAL/ COLLECTOR	THURFARE
20'	20'	20'
THOROUGHFARE	20'	50'

PARALLEL PARKING STANDARDS

MEASURE DISTANCE TO NEXT INTERVENING STREET OR ACCESSIBLE RAMP FROM THIS POINT. (SEE MATRIX BELOW)

2'-6" STANDARD CURB & GUTTER

PROVIDE CATCH BASIN OR SLOPE PARKING AREA TOWARD STREET FLOW LINE

EDGE OF TRAVEL LANE

STREET

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT
STANDARDS

2/29/20

REV. DATE

50.09B 4

NOTES:

- SUBGRADE SHALL BE COMPACTED TO PUBLIC STREET STANDARDS.
- STORM DRAINAGE (NOT SHOWN) SHALL BE PROVIDED AS NECESSARY.
- ALLEYS SHALL BE CONSIDERED PRIVATE EASEMENTS AND WILL NOT BE ACCEPTED FOR MAINTENANCE BY THE TOWN OF PINEVILLE.
- DRIVEWAYS SHALL BE SEPARATED BY AT LEAST 5 FEET, OR GREATER IF REQUIRED BY PLANNING (LOT SIZE) REQUIREMENTS AND/OR N.C. BUILDING CODE.

* WITH NO PARKING PAD, DIMENSION D3 IS REQUIRED TO BE MINIMUM 5' BUT NO GREATER THAN 7'. WITH PARKING PAD, DIMENSION D4 IS REQUIRED TO BE A MINIMUM OF 20'.

ALLEY WITH NORMAL CROWN

ALLEY WITH INVERSE CROWN

30' MIN. TO REAR OF PARKING PAD

30' MIN. TO REAR INTERIOR WALL

D3*

10' MIN.

5' MIN.

PARKING PAD

GARAGE (OPTIONAL)

D4*

2'-0" VALLEY GUTTER OR 1'-0" CONCRETE STRIP (TYP.)

A	D1	D2	D3	D4
45'	24'	17'	5'-7"	20'
60'	26.5'	17.8'	5'-7"	20'

PLAN

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT
STANDARDS

RESIDENTIAL ALLEY DETAIL
DOUBLE LOADED WITH TWO-WAY OPERATION

8/1/19

REV. DATE

10.11B 3

TYPICAL SECTION

65' R/W (MINIMUM)

31'-6" (MIN)

13'-0" (MIN)

18'-0"

10'-0"

10'-0"

6'-0"

6'-0"

1'-0"

2.1 CUT MAX. 3:1 FILL MAX.

2.1 CUT MAX. 3:1 FILL MAX.

TYPICAL PAVEMENT SECTION

TACK COAT TO BE APPLIED BETWEEN ASPHALT LIFTS IN ACCORDANCE W/ CURRENT NCDOT SPECIFICATIONS

4" ASPHALT CONCRETE BASE COURSE, TYPE 825.08 OR 8" CABC COMPACTED TO 100% COMPACT TOP OF SUBGRADE TO 100% ASPHALT BASE TO EXTEND 12" IN FRONT AND BACK OF CURB & GUTTER SECTION

NOTES:

- DEVELOPER MAY SUBMIT AN ALTERNATIVE PAVEMENT DESIGN TO TOWN ENGINEER.
- AN ALTERNATIVE PAVEMENT DESIGN MAY BE REQUIRED BY NCDOT BASED ON SPECIFIC TRAFFIC PARAMETERS.
- SIDEWALK EASEMENT MAY BE REQUIRED.
- IRRIGATION SYSTEMS ARE NOT ALLOWED IN THE STREET RIGHTS-OF-WAY UNLESS AN ENCROACHMENT AGREEMENT HAS BEEN ISSUED BY THE TOWN OF PINEVILLE.
- TREES PROPOSED IN THE PLANTING STRIPS OR RIGHTS-OF-WAY SHALL BE APPROVED BY THE TOWN OF PINEVILLE PRIOR TO INSTALLATION.
- ALL PROPOSED ROADWAYS IN COMMERCIAL AND INDUSTRIAL DEVELOPMENTS SHALL BE CONSIDERED COMMERCIAL/ COLLECTOR STREETS.
- REFER TO PLUS SPECIFICATIONS AND SPECIAL PROVISION NOTES FOR COMPACTION TESTING REQUIREMENTS.

KEY

② 2'-6" CURB AND GUTTER

③ 4" CONCRETE SIDEWALK, 6" AT ALL DRIVEWAYS

INSTALL DRIVEWAY APRONS W/ GEODIR 1100 TENSILE (MIN) & COMPACT SUBGRADE TO 100% STANDARD PROCTOR. SEE PLUS SPECIFICATIONS AND SPECIAL PROVISIONS NOTE I.F.1 FOR BASE REQUIREMENTS.

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT
STANDARDS

LOCAL RESIDENTIAL STREET
PARKING ON BOTH SIDES OF STREET

2/29/20

REV. DATE

10.06B 4

PARKING STANDARDS, CONT. N.T.S. RESIDENTIAL ALLEY DETAIL DOUBLE LOADED WITH TWO-WAY OPERATION N.T.S. LOCAL RESIDENTIAL STREET PARKING ON BOTH SIDES OF STREET N.T.S.

RECOMMENDED **MINIMUM** **COMPACT**

PARKING ANGLE 90° (TWO WAY OPERATION ONLY)

PARKING ANGLE 60° (ONE WAY OPERATION ONLY)

PARKING ANGLE 45° (ONE WAY OPERATION ONLY)

NOTES:

- FOR ACCESSIBLE PARKING STANDARDS/SIGNAGE SEE PLUS SECTION A AND B.
- PAVEMENT MARKINGS SHALL BE 4" WHITE PAINT.
- ALTERNATIVE PARKING ANGLES, ASLE WIDTHS, AND OPERATION (TWO-WAY ANGLED PARKING OR REVERSE-ANGLE PARKING) WILL BE CONSIDERED BY TOWN ENGINEER ON A CASE-BY-CASE BASIS.

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT
STANDARDS

PARKING STANDARDS

8/1/19

REV. DATE

50.09A 3

NOTES:

- SUBGRADE SHALL BE COMPACTED TO PUBLIC STREET STANDARDS.
- STORM DRAINAGE (NOT SHOWN) SHALL BE PROVIDED AS NECESSARY.
- ALLEYS SHALL BE CONSIDERED PRIVATE EASEMENTS AND WILL NOT BE ACCEPTED FOR MAINTENANCE BY THE TOWN OF PINEVILLE.
- DRIVEWAYS SHALL BE SEPARATED BY AT LEAST 5 FEET, OR GREATER IF REQUIRED BY PLANNING (LOT SIZE) REQUIREMENTS AND/OR N.C. BUILDING CODE.
- NO CUT SLOPES, OBSTRUCTIONS, HEDGES, ETC. ON NON-LOADED SIDE OF ALLEY WITHIN 20 FEET OF LOADED SIDE EDGE OF PAVEMENT.

* WITH NO PARKING PAD, DIMENSION D3 IS REQUIRED TO BE MINIMUM 5' BUT NO GREATER THAN 7'. WITH PARKING PAD, DIMENSION D4 IS REQUIRED TO BE A MINIMUM OF 20'.

ALLEY WITH NORMAL CROWN

ALLEY WITH INVERSE CROWN

30' MIN. TO REAR INTERIOR WALL OR REAR OF PARKING PAD

D3*

10' MIN.

5' MIN.

PARKING PAD

GARAGE (OPTIONAL)

D4*

2'-0" VALLEY GUTTER OR 1'-0" CONCRETE STRIP (TYP.)

A	D1	D2	D3	D4
45'	24'	17'	5'-7"	20'
60'	26.5'	17.8'	5'-7"	20'

PLAN

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT
STANDARDS

RESIDENTIAL ALLEY DETAIL
SINGLE LOADED WITH TWO-WAY OPERATION

8/1/19

REV. DATE

10.11C 3

TYPICAL SECTION

57' R/W (MINIMUM)

31'-6" (MIN)

25'-6" (MIN)

13'-0" (MIN)

13'-0" (MIN)

1'-0"

2.1 CUT MAX. 3:1 FILL MAX.

2.1 CUT MAX. 3:1 FILL MAX.

TYPICAL PAVEMENT SECTION

TACK COAT TO BE APPLIED BETWEEN ASPHALT LIFTS IN ACCORDANCE W/ CURRENT NCDOT SPECIFICATIONS

4" ASPHALT CONCRETE BASE COURSE, TYPE 825.08 OR 8" CABC COMPACTED TO 100% COMPACT TOP OF SUBGRADE TO 100% ASPHALT BASE TO EXTEND 12" IN FRONT AND BACK OF CURB & GUTTER SECTION

NOTES:

- SIDEWALK SHALL BE PROVIDED ON BOTH SIDES OF THE STREET.
- 2'-0" VALLEY GUTTER MAY BE SUBSTITUTED FOR 2'-6" CURB AND GUTTER ON THE SIDE OF THE STREET WITHOUT PARALLEL PARKING. THIS REDUCES THE MINIMUM RIGHTS-OF-WAY BY SIX INCHES. 2'-0" VALLEY GUTTER MAY NOT BE SUBSTITUTED FOR 2'-6" CURB AND GUTTER ON THE SIDE OF THE STREET WITH PARALLEL PARKING.
- REFER TO PLUS SPECIFICATIONS AND SPECIAL PROVISION NOTES FOR COMPACTION TESTING REQUIREMENTS.

KEY

② 2'-6" CURB AND GUTTER

③ 4" CONCRETE SIDEWALK, 6" AT ALL DRIVEWAYS

INSTALL DRIVEWAY APRONS W/ GEODIR 1100 TENSILE (MIN) & COMPACT SUBGRADE TO 100% STANDARD PROCTOR. SEE PLUS SPECIFICATIONS AND SPECIAL PROVISIONS NOTE I.F.1 FOR BASE REQUIREMENTS.

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT
STANDARDS

LOCAL RESIDENTIAL STREET
PARKING ON ONE SIDE OF STREET

2/29/20

REV. DATE

10.06A 4

PARKING STANDARDS N.T.S. RESIDENTIAL ALLEY DETAIL SINGLE LOADED WITH TWO-WAY OPERATION N.T.S. LOCAL RESIDENTIAL STREET PARKING ON ONE SIDE OF STREET N.T.S.

NOTES:

- ALTERNATIVE CUL-DE-SAC DESIGNS, INCLUDING ISLANDS SHALL BE SUBMITTED TO THE TOWN ENGINEER FOR REVIEW AND APPROVAL.
- SIDEWALK MAY BE REQUIRED TO EXTEND AROUND CUL-DE-SAC BULB WHERE PARKS OR SCHOOLS HAVE FRONTAGE TO THE END OF THE CUL-DE-SAC.
- THE CROWN FOR PAVEMENT SHALL BE 1/4" PER FT FROM THE CENTER OF THE CUL-DE-SAC.
- IRRIGATION SYSTEMS ARE NOT ALLOWED IN THE STREET RIGHTS-OF-WAY UNLESS AN ENCROACHMENT AGREEMENT HAS BEEN ISSUED BY THE TOWN OF PINEVILLE.
- TREES PROPOSED IN THE PLANTING STRIPS OR RIGHTS-OF-WAY SHALL BE APPROVED BY THE TOWN OF PINEVILLE PRIOR TO INSTALLATION.

45' R/W

30' PAVEMENT

30' R

30' R

ACCESSIBLE RAMP (TYP.)

CONC. SIDEWALK (TYP.)

PLANTING STRIP (TYP.)

VARIES

40' R/W

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT
STANDARDS

RESIDENTIAL CUL-DE-SAC

8/1/19

REV. DATE

10.14 3

TYPICAL SECTION

60' R/W (MINIMUM)

30' (MIN)

14'-0"

14'-0"

12'-0"

12'-0"

2'-0"

6'-0"

5'-0"

1'-0"

1'-0" (MIN)

1'-0" (MIN)

2.1 CUT MAX. 3:1 FILL MAX.

2.1 CUT MAX. 3:1 FILL MAX.

1/4" FT

SLOPE 3/8" PER FT.

1/4" FT.

4" ASPHALT CONCRETE BASE COURSE, TYPE 825.08 OR 8" CABC COMPACTED TO 100% COMPACT TOP OF SUBGRADE TO 100% ASPHALT BASE TO EXTEND 12" IN FRONT AND BACK OF CURB & GUTTER SECTION

NOTES:

- DEVELOPER MAY SUBMIT AN ALTERNATIVE PAVEMENT DESIGN TO TOWN ENGINEER.
- AN ALTERNATIVE PAVEMENT DESIGN MAY BE REQUIRED BY NCDOT BASED ON SPECIFIC TRAFFIC PARAMETERS.
- SIDEWALK EASEMENT MAY BE REQUIRED.
- IRRIGATION SYSTEMS ARE NOT ALLOWED IN THE STREET RIGHTS-OF-WAY UNLESS AN ENCROACHMENT AGREEMENT HAS BEEN ISSUED BY THE TOWN OF PINEVILLE.
- TREES PROPOSED IN THE PLANTING STRIPS OR RIGHTS-OF-WAY SHALL BE APPROVED BY THE TOWN OF PINEVILLE PRIOR TO INSTALLATION.
- ANY RESIDENTIAL STREET THAT RECEIVES TRAFFIC FROM 150 OR MORE LOTS SHALL BE CONSIDERED A RESIDENTIAL COLLECTOR STREET.
- REFER TO PLUS SPECIFICATIONS AND SPECIAL PROVISION NOTES FOR COMPACTION TESTING REQUIREMENTS.

KEY

② 2'-0" VALLEY GUTTER

③ 4" CONCRETE SIDEWALK, 6" AT ALL DRIVEWAYS

INSTALL DRIVEWAY APRONS W/ GEODIR 1100 TENSILE (MIN) & COMPACT SUBGRADE TO 100% STANDARD PROCTOR. SEE PLUS SPECIFICATIONS AND SPECIAL PROVISIONS NOTE I.F.1 FOR BASE REQUIREMENTS.

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT
STANDARDS

RESIDENTIAL COLLECTOR STREET

2/29/20

REV. DATE

10.07 4

TYPICAL SECTION

50' R/W (MINIMUM)

25' (MIN)

13'-0"

13'-0"

2'-0"

6'-0"

5'-0"

1'-0"

1'-0" (MIN)

1'-0" (MIN)

2.1 CUT MAX. 3:1 FILL MAX.

2.1 CUT MAX. 3:1 FILL MAX.

1/4" FT

SLOPE 3/8" PER FT.

1/4" FT.

4" ASPHALT CONCRETE BASE COURSE, TYPE 825.08 OR 8" CABC COMPACTED TO 100% COMPACT TOP OF SUBGRADE TO 100% ASPHALT BASE TO EXTEND 12" IN FRONT AND BACK OF CURB & GUTTER SECTION

NOTES:

- SIDEWALK WILL ONLY BE REQUIRED ON ONE SIDE OF STREET AND NOT ALONG CUL-DE-SAC "BULB".
- IRRIGATION SYSTEMS ARE NOT ALLOWED IN THE STREET RIGHTS-OF-WAY UNLESS AN ENCROACHMENT AGREEMENT HAS BEEN ISSUED BY THE TOWN OF PINEVILLE.
- TREES PROPOSED IN THE PLANTING STRIPS OR RIGHTS-OF-WAY SHALL BE APPROVED BY THE TOWN OF PINEVILLE PRIOR TO INSTALLATION.
- ANY RESIDENTIAL STREET THAT RECEIVES TRAFFIC FROM 150 OR MORE LOTS SHALL BE CONSIDERED A RESIDENTIAL COLLECTOR STREET.
- REFER TO PLUS SPECIFICATIONS AND SPECIAL PROVISION NOTES FOR COMPACTION TESTING REQUIREMENTS.

KEY

② 2'-6" CURB AND GUTTER

③ 4" CONCRETE SIDEWALK, 6" AT ALL DRIVEWAYS

INSTALL DRIVEWAY APRONS W/ GEODIR 1100 TENSILE (MIN) & COMPACT SUBGRADE TO 100% STANDARD PROCTOR. SEE PLUS SPECIFICATIONS AND SPECIAL PROVISIONS NOTE I.F.1 FOR BASE REQUIREMENTS.

NOT TO SCALE

TOWN OF PINEVILLE
LAND DEVELOPMENT
STANDARDS

LOCAL RESIDENTIAL STREET

2/29/20

REV. DATE

10.06 4

RESIDENTIAL CUL-DE-SAC N.T.S. RESIDENTIAL COLLECTOR STREET N.T.S. LOCAL RESIDENTIAL STREET N.T.S.

Item 2

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

MILLER FARM
PINEVILLE, NORTH CAROLINA
SITE DETAILS

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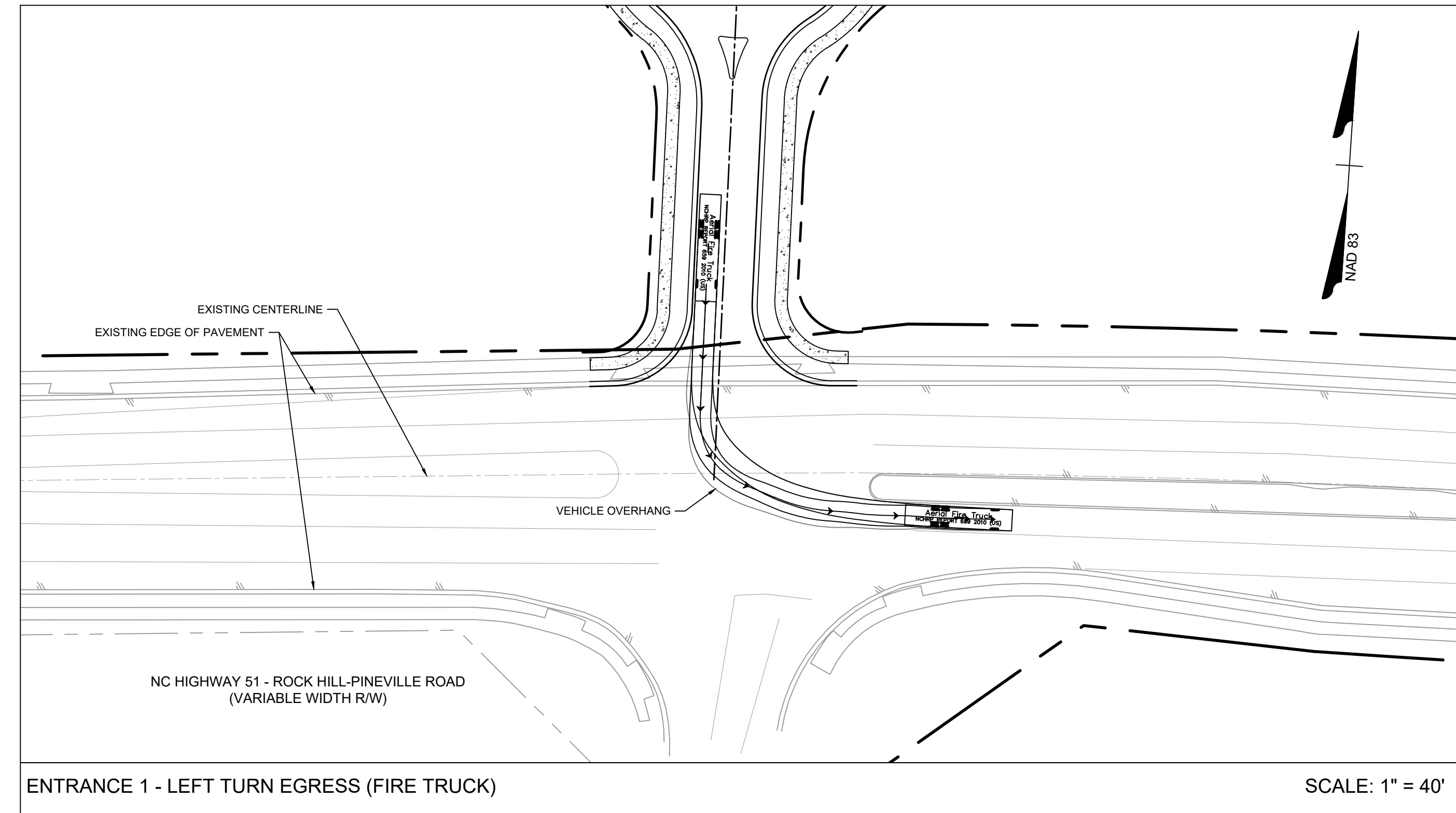
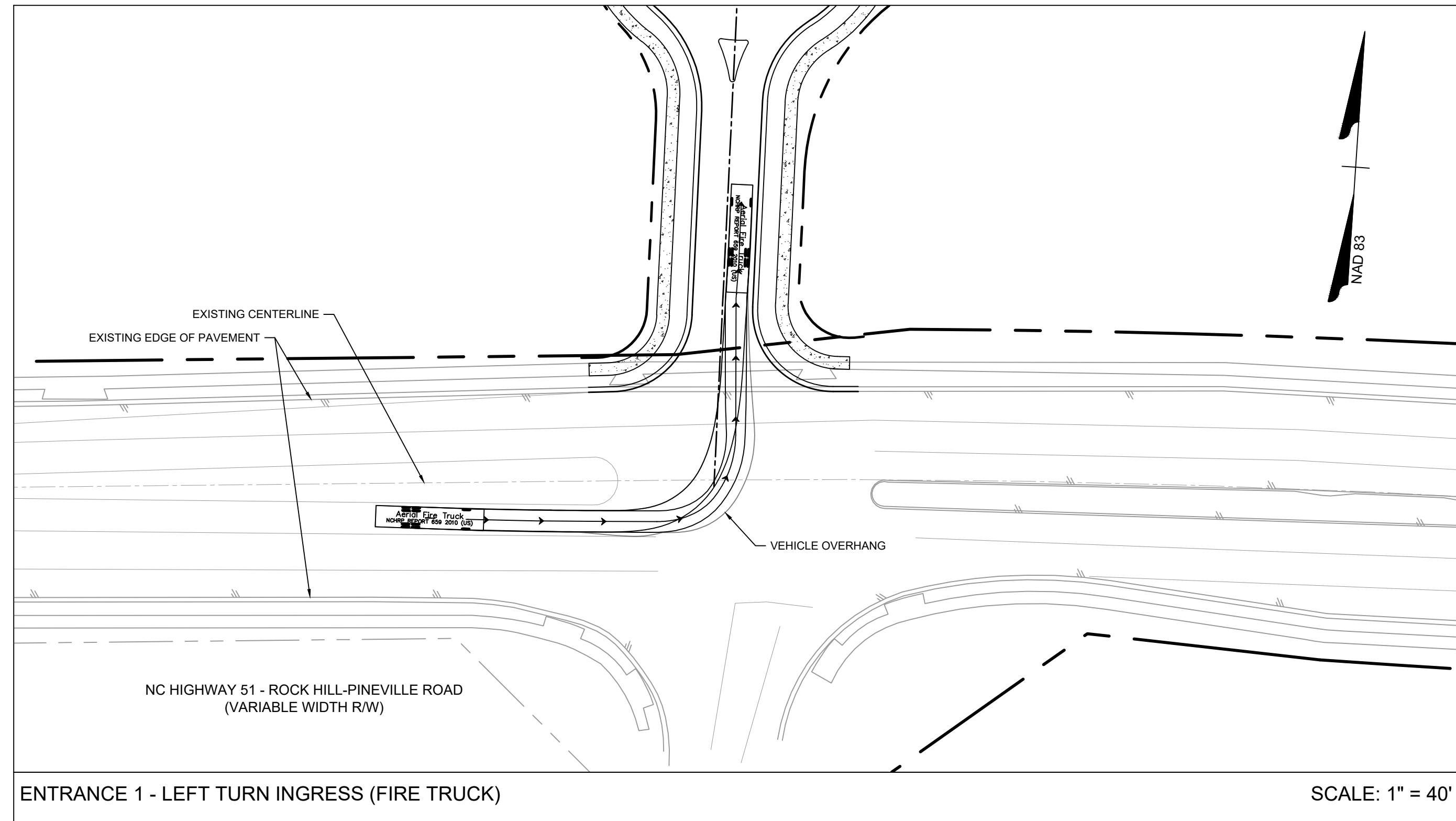
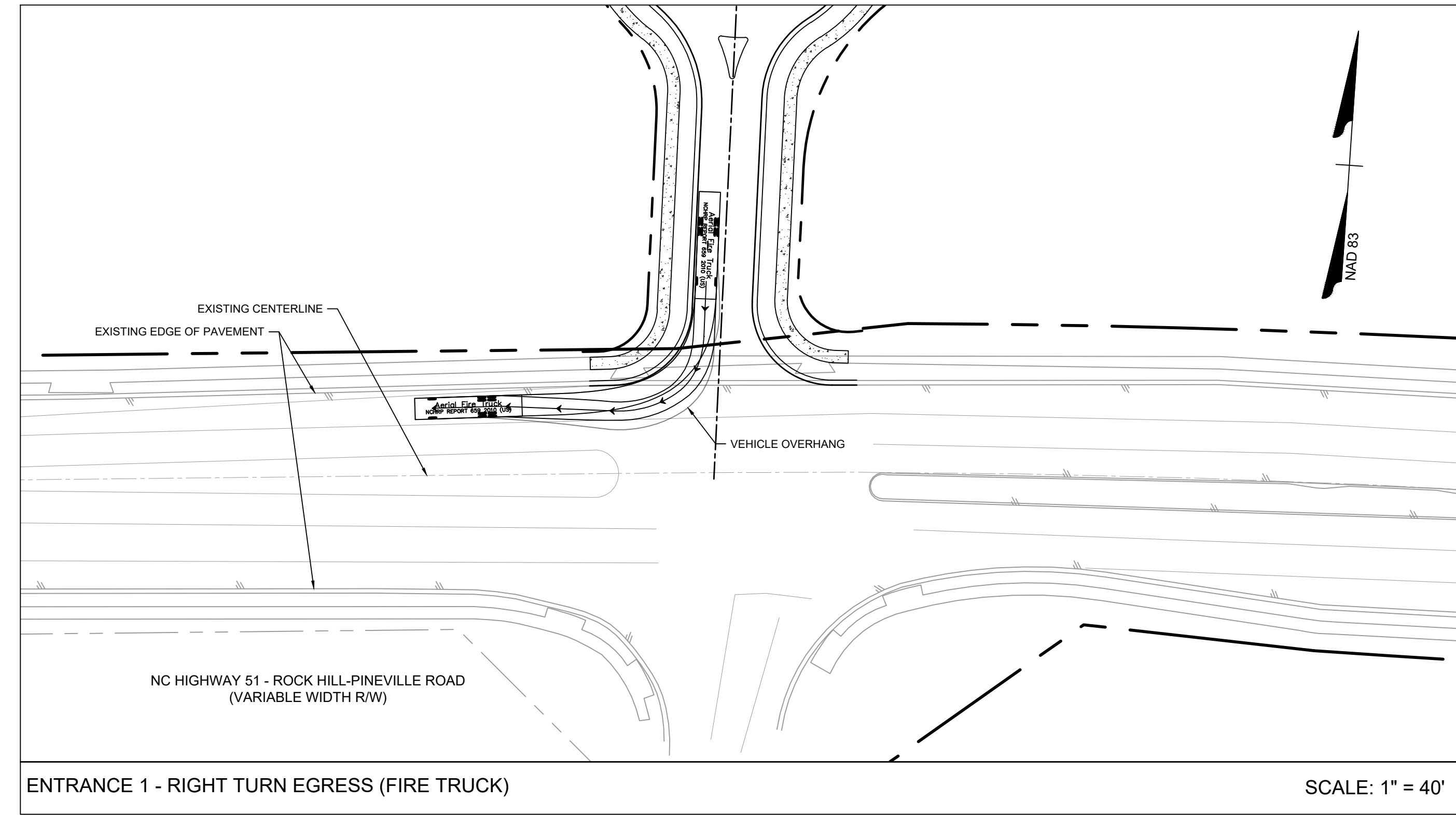
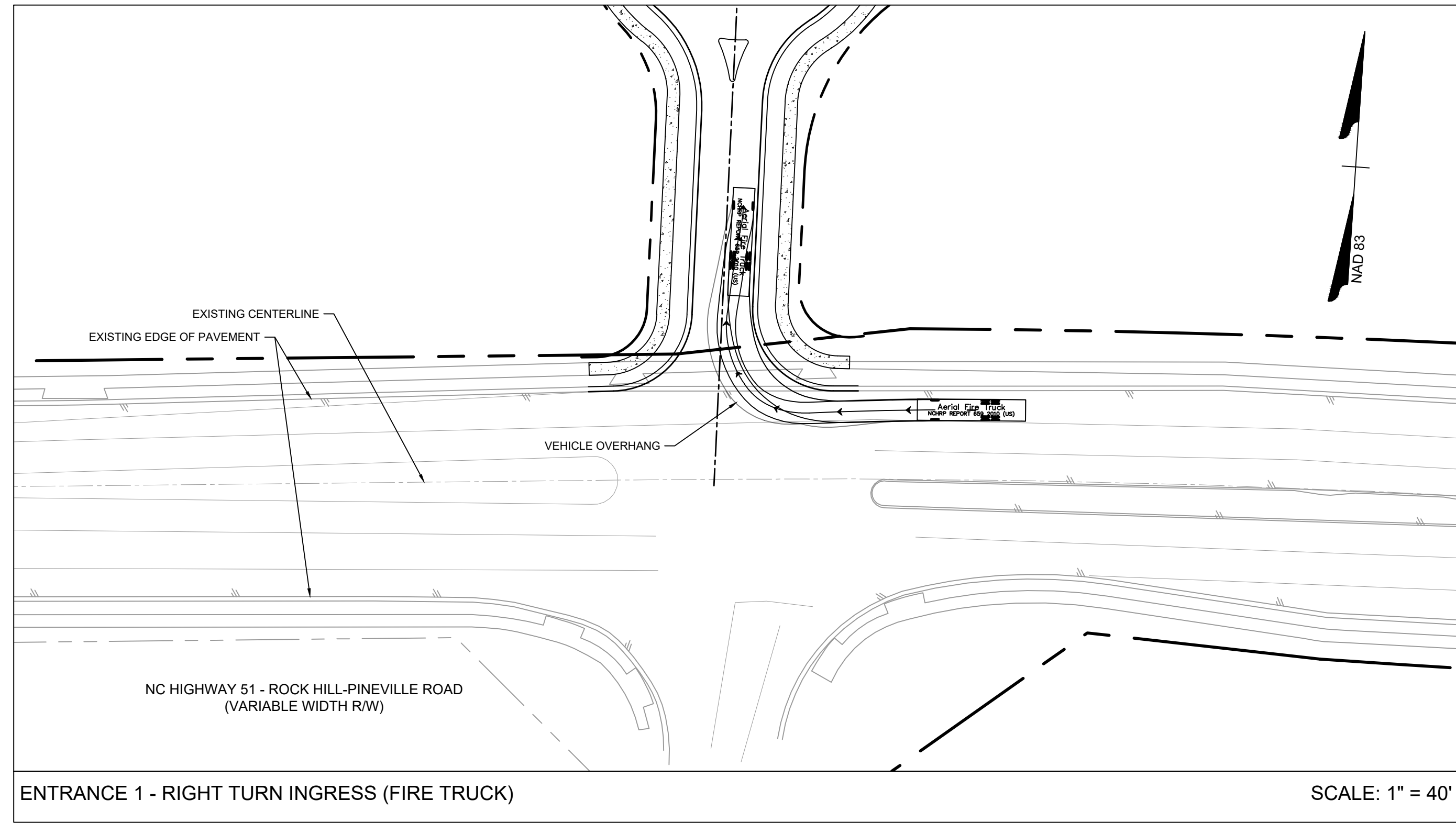
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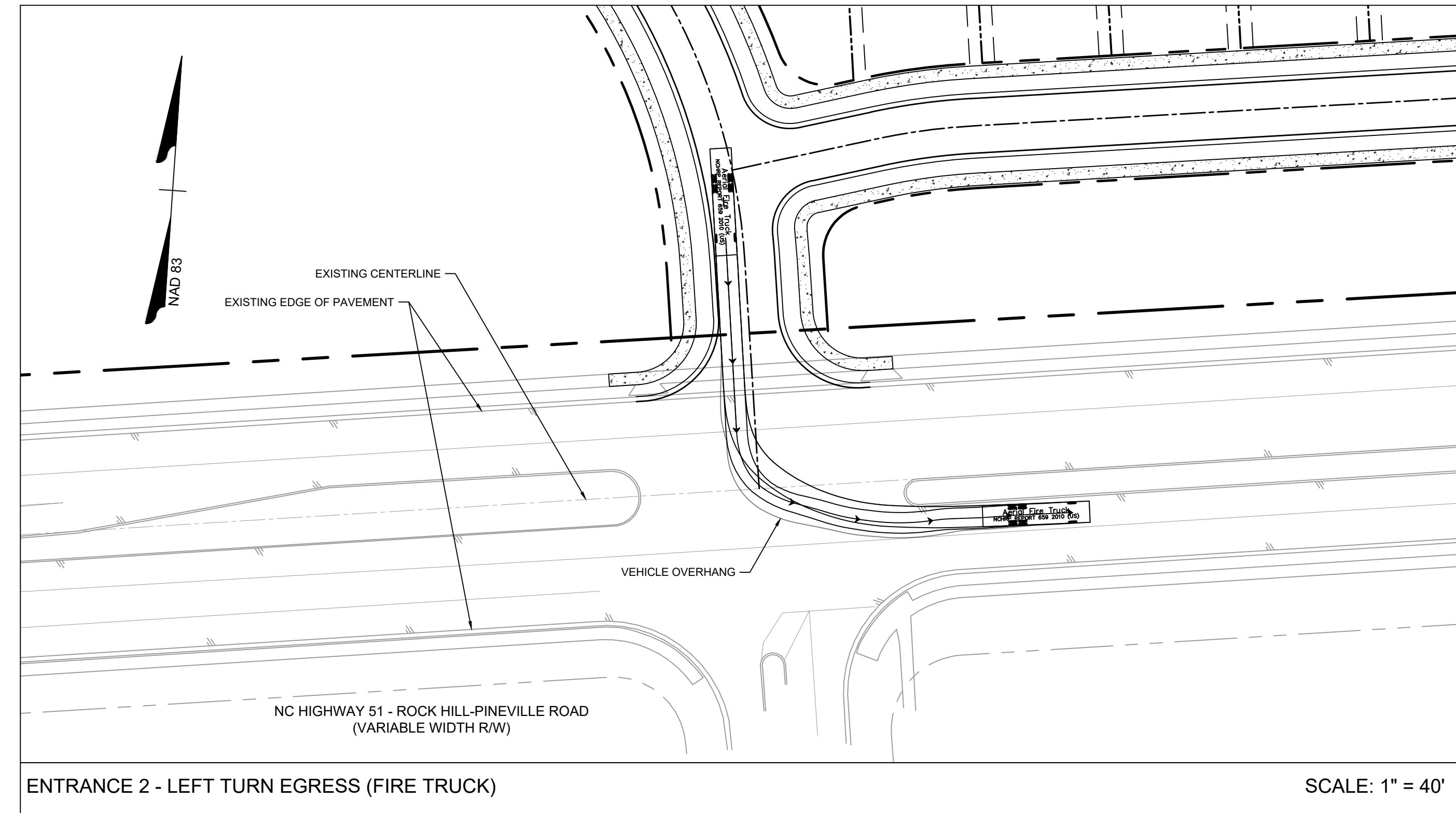
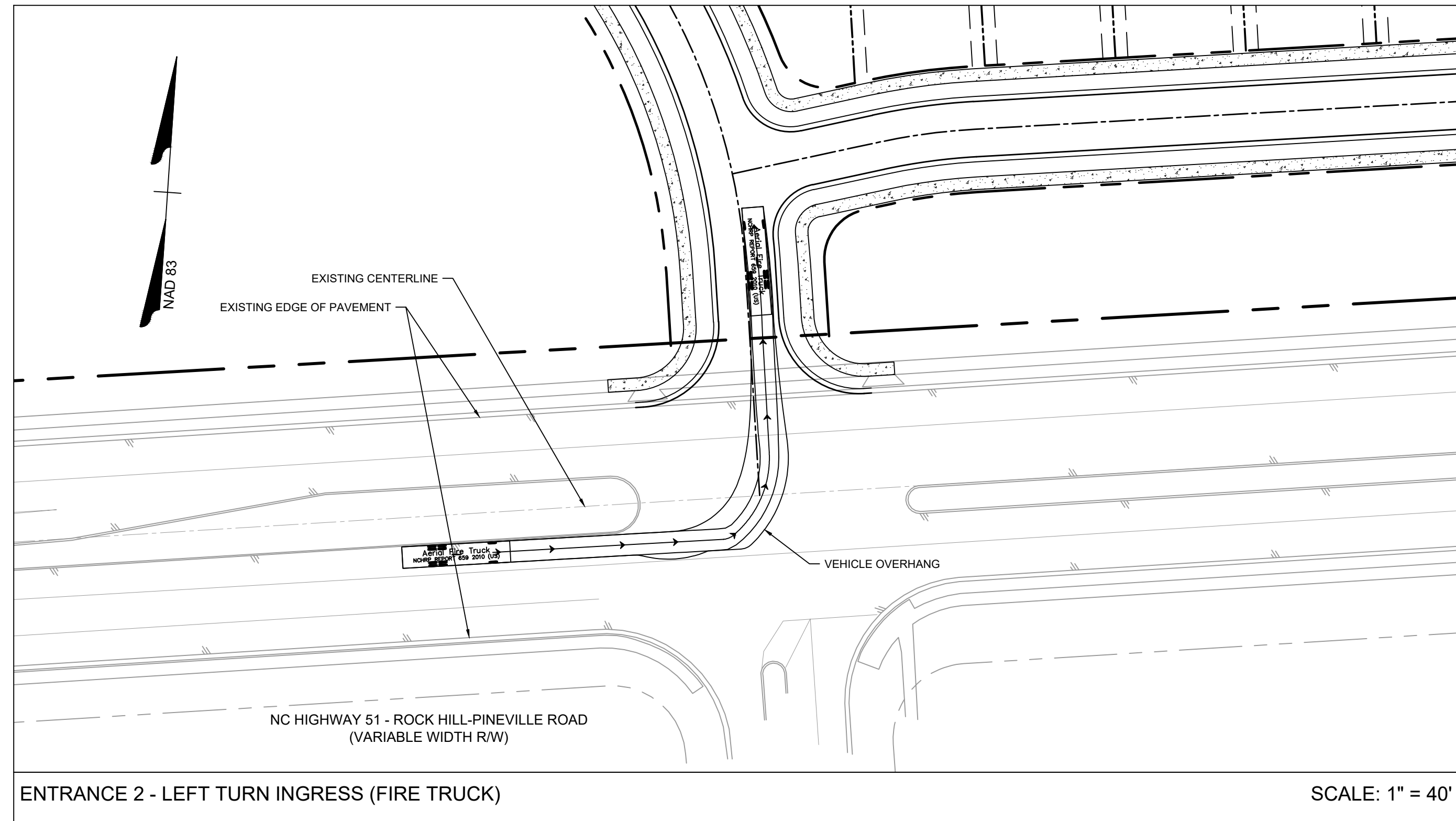
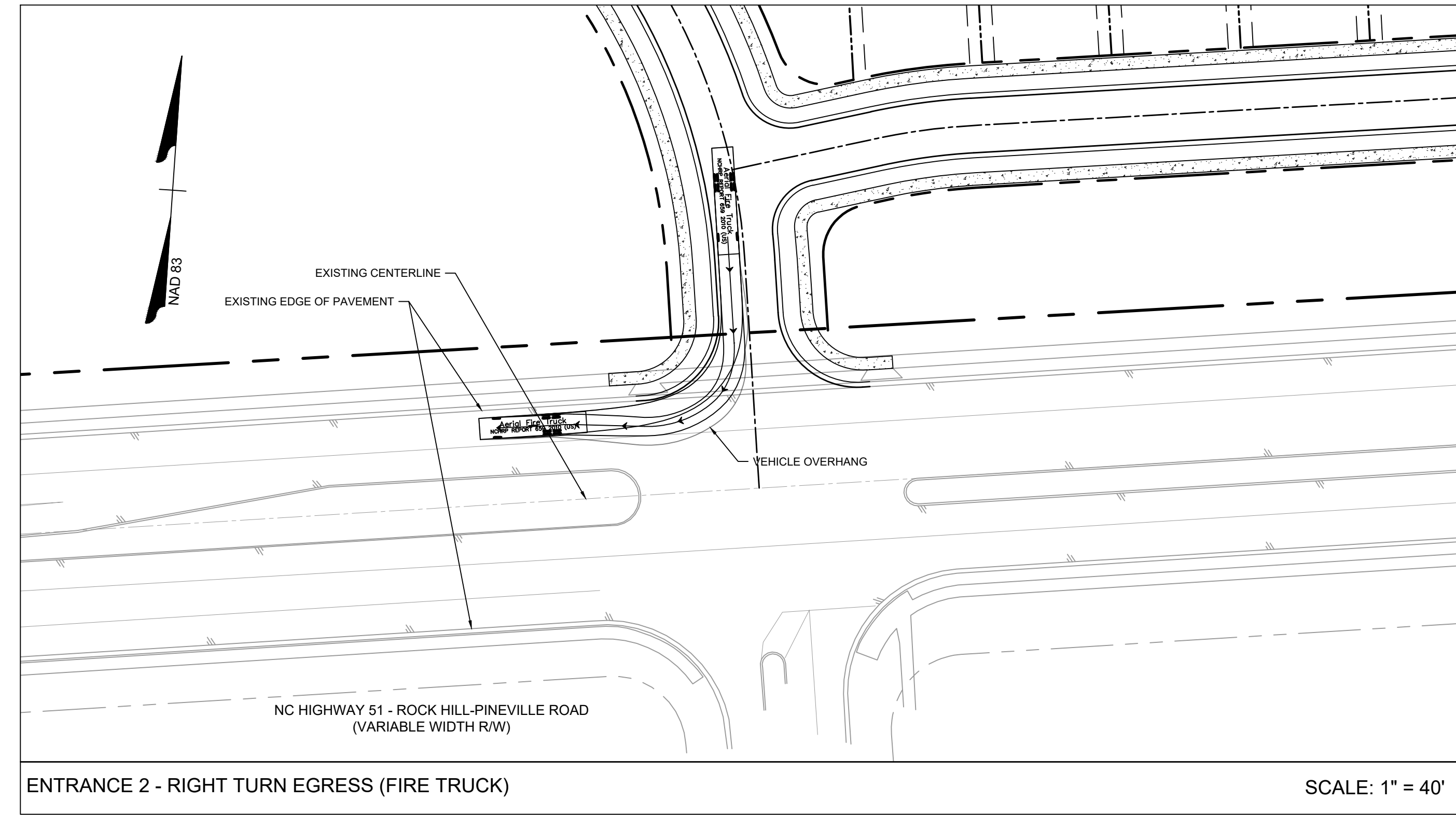
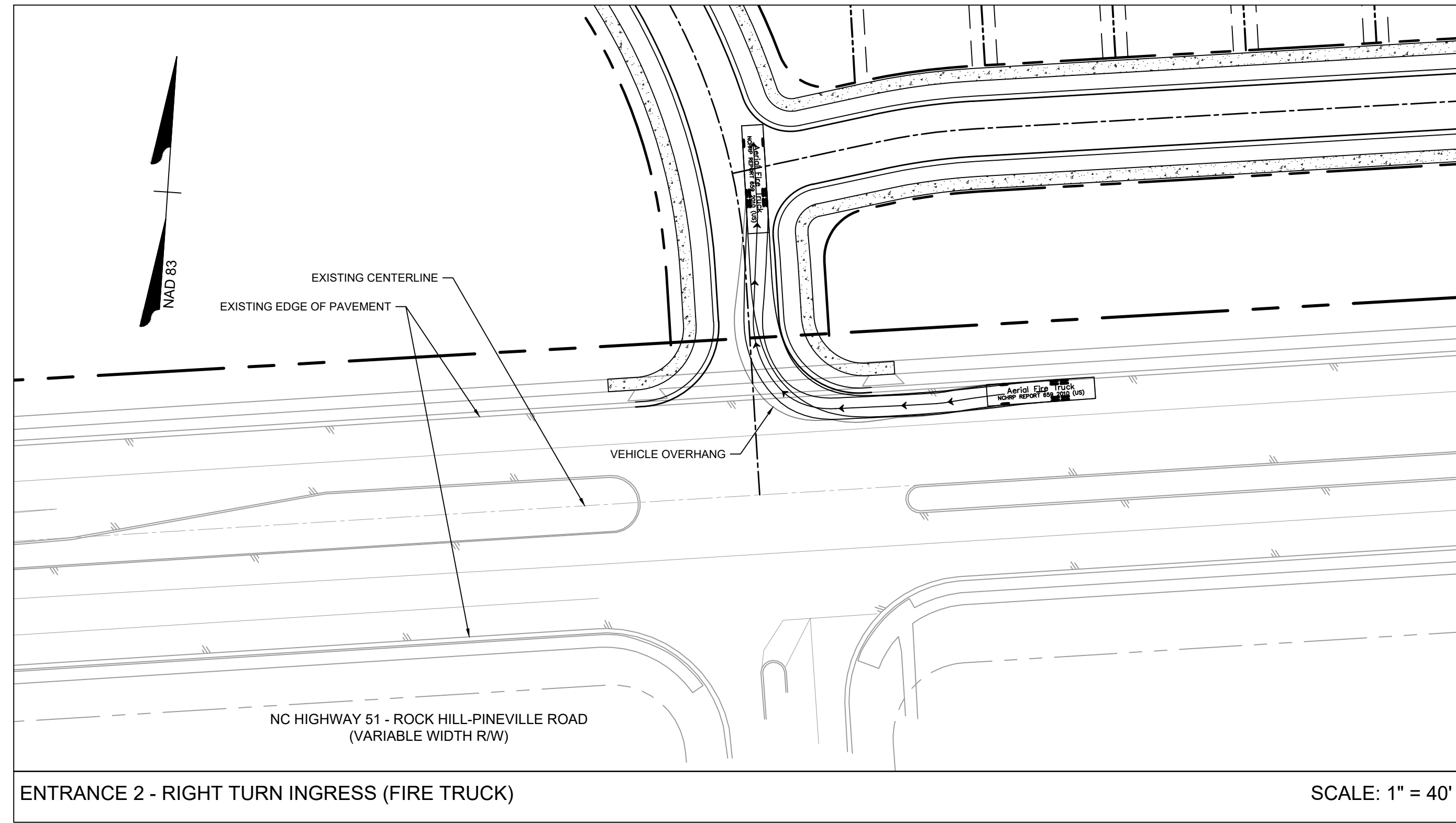
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MILLER FARM
PINEVILLE, NORTH CAROLINA
ENTRANCE 1 VEHICLE TURNING MOVEMENTS

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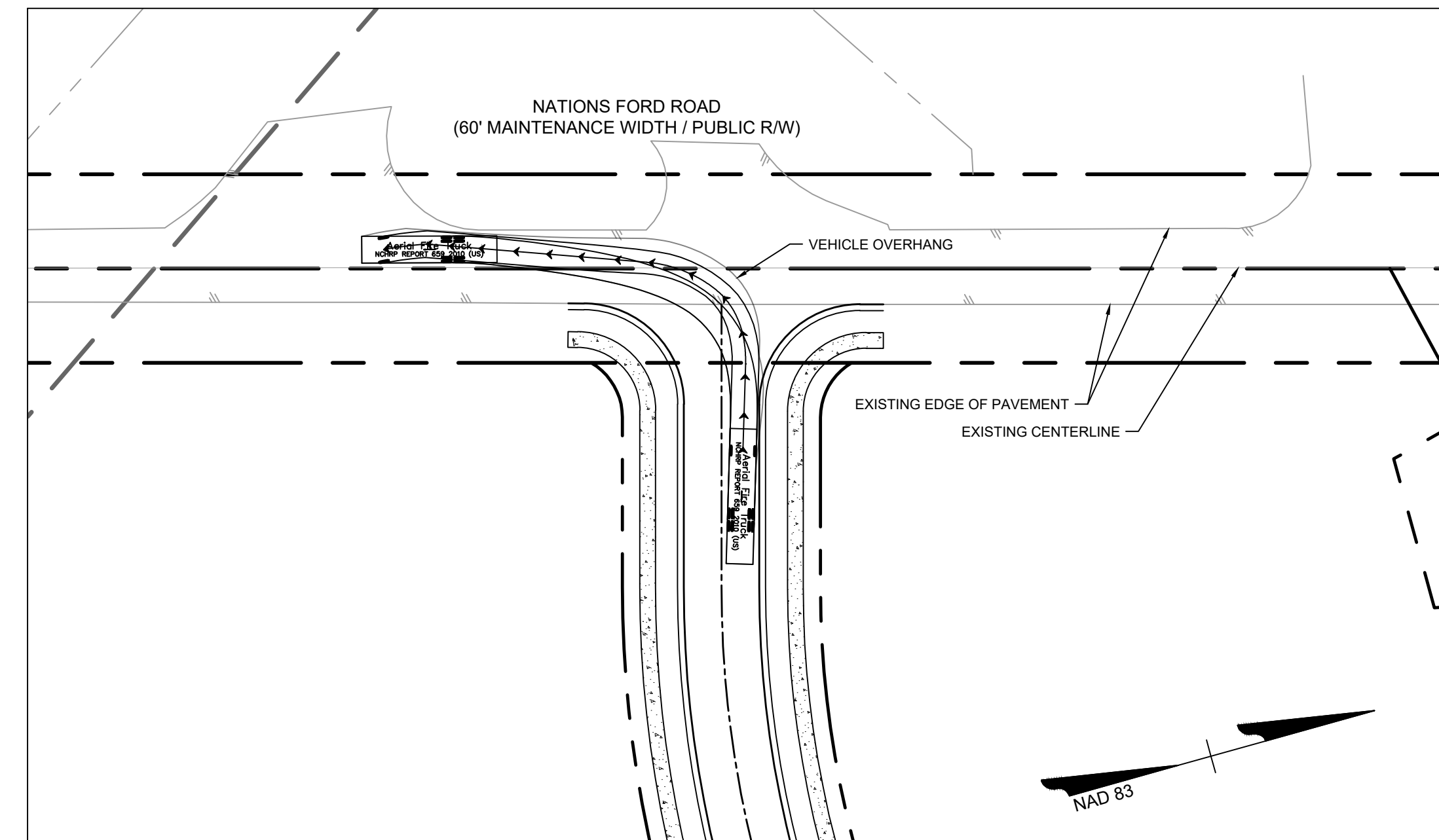
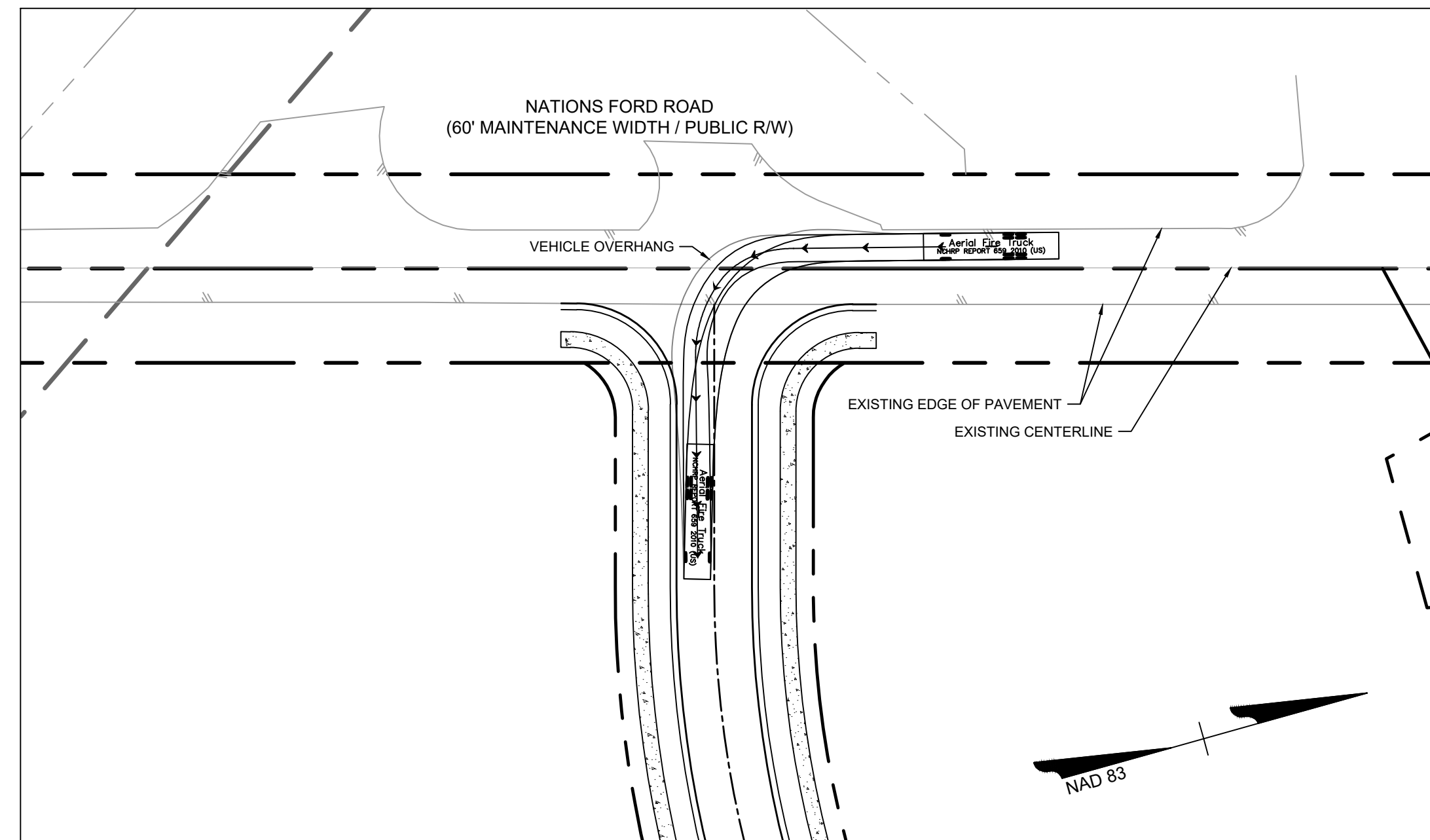
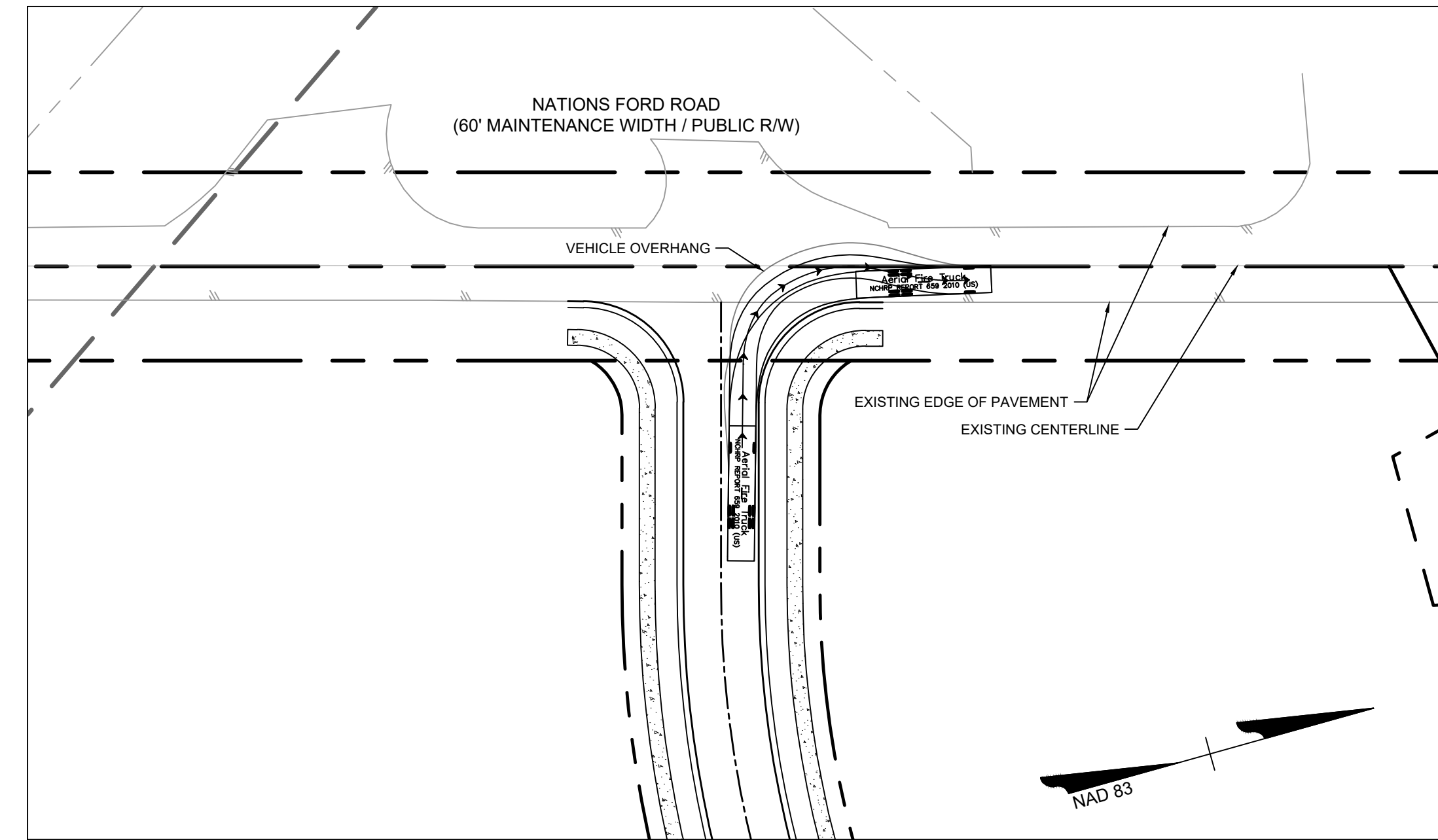
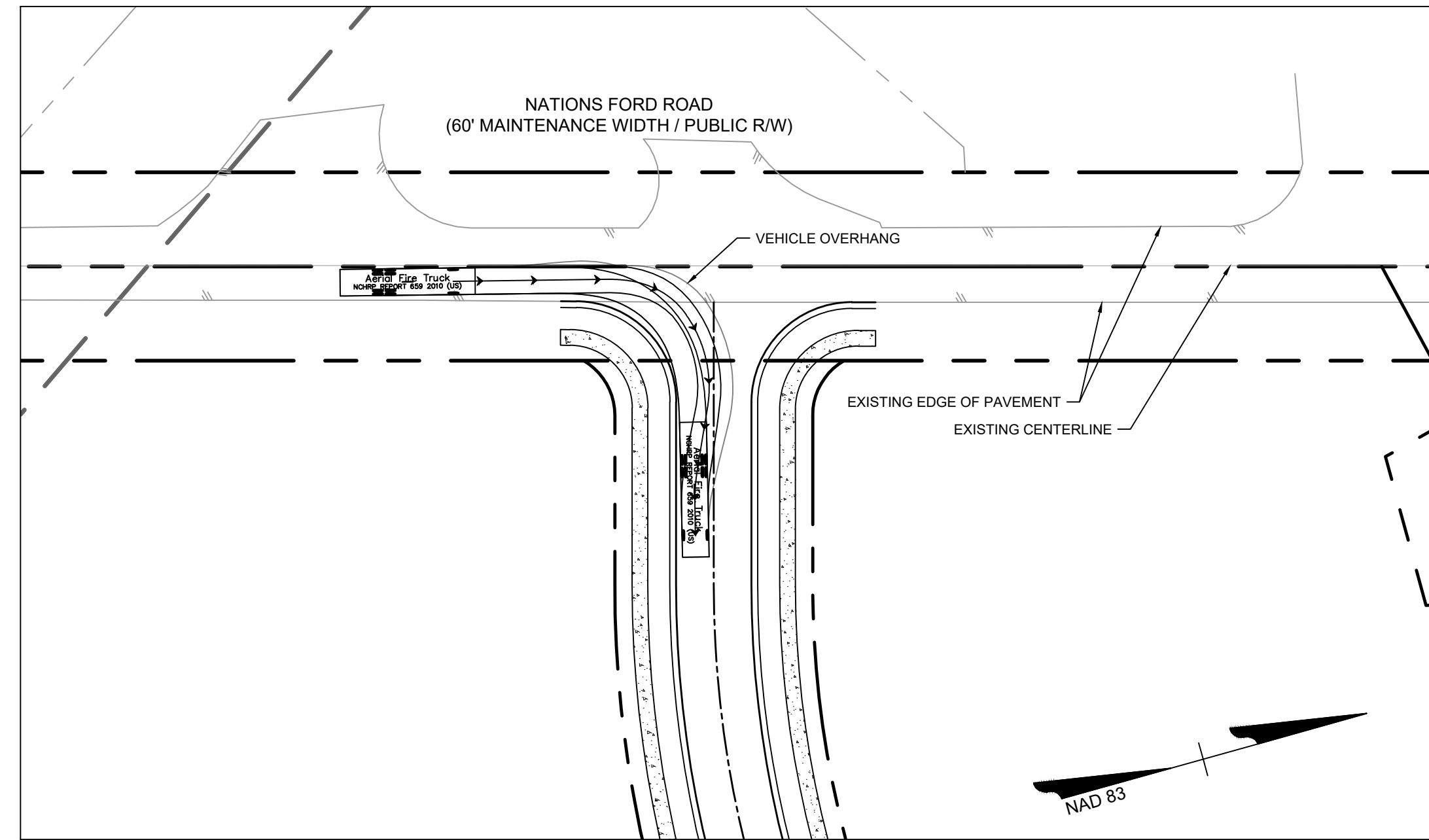
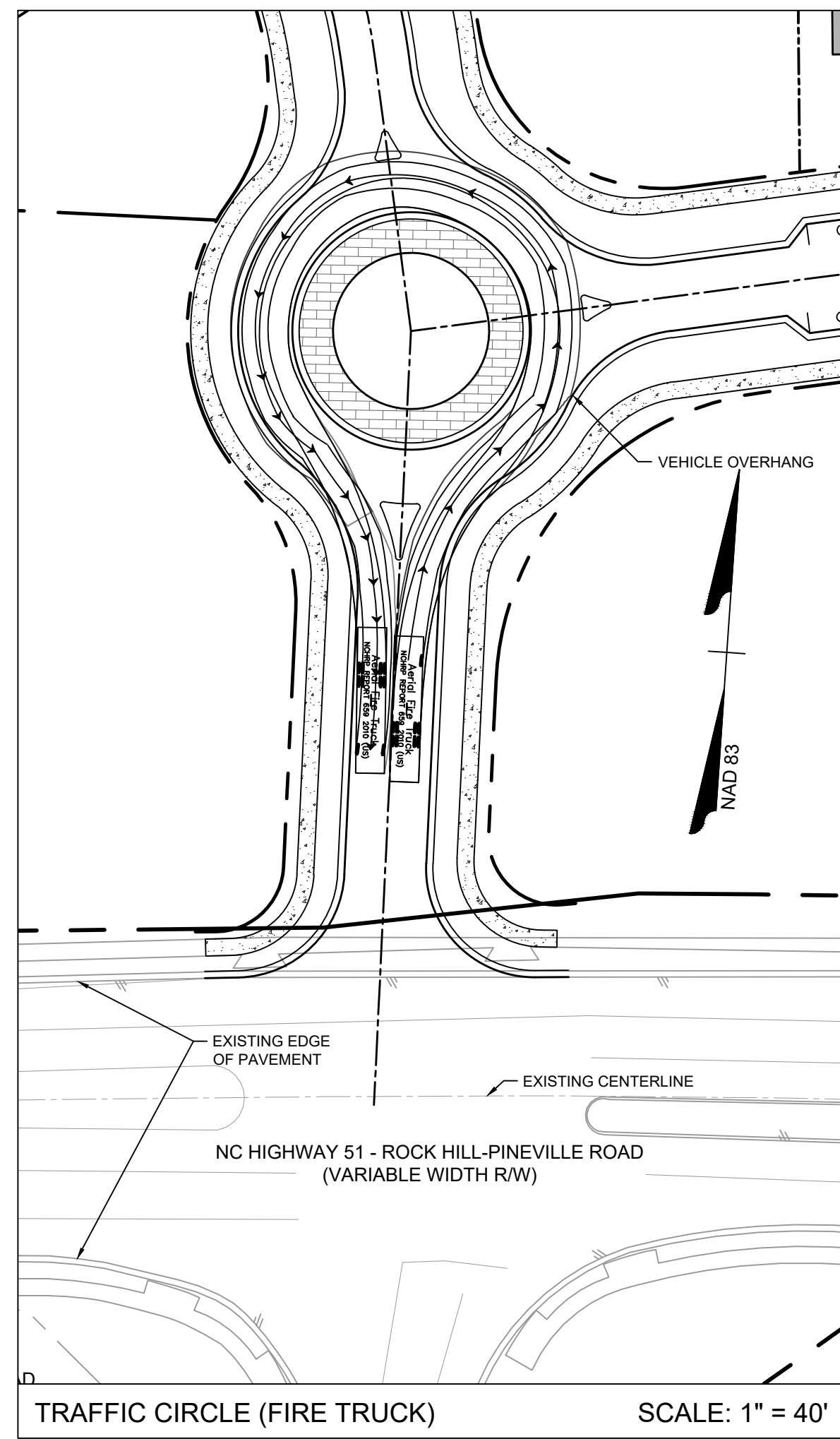
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 PINEVILLE, NORTH CAROLINA

ENTRANCE 2 VEHICLE TURNING MOVEMENTS
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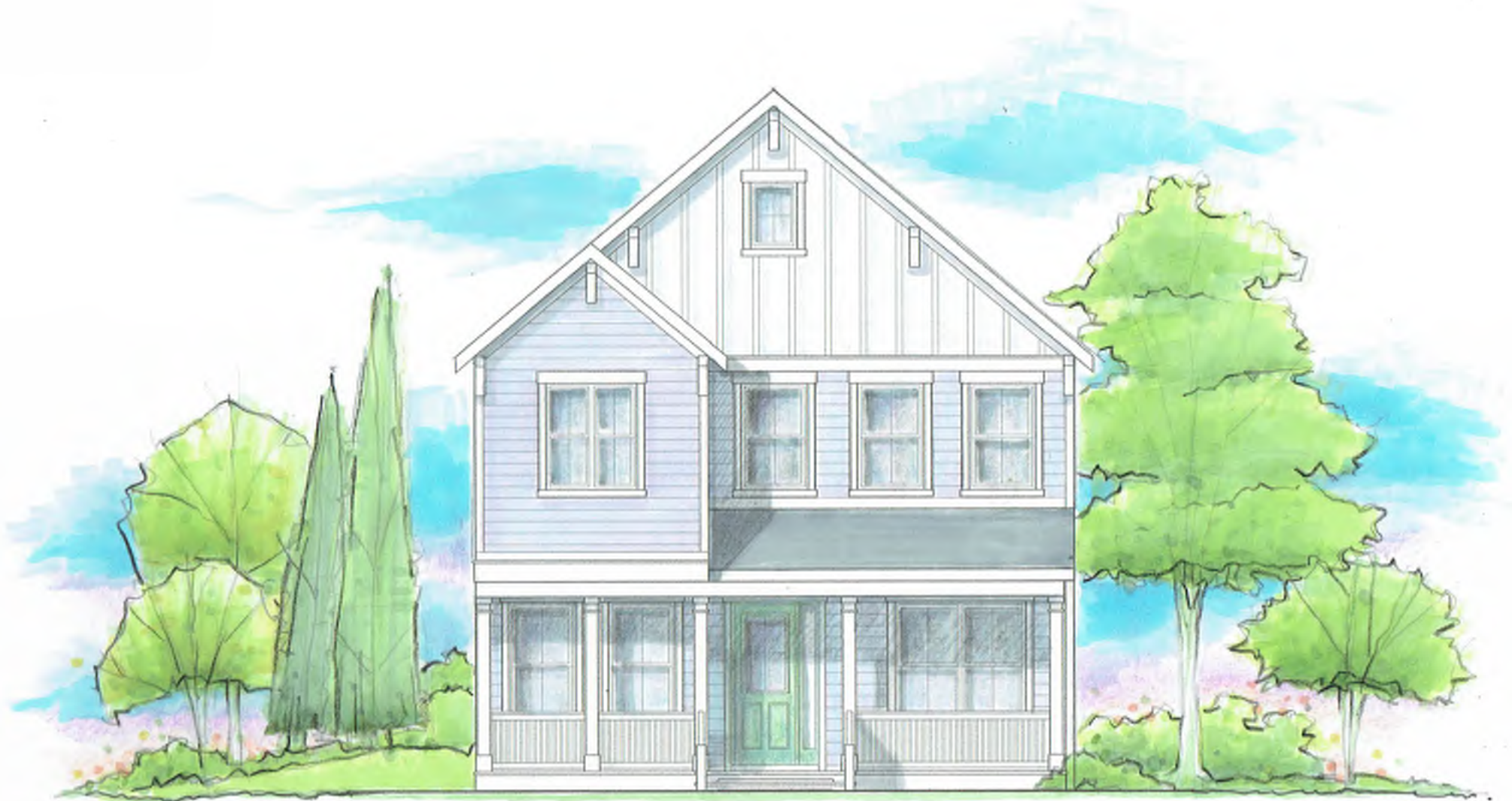
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MILLER FARM
 PINEVILLE, NORTH CAROLINA

ENTRANCE 3 AND TRAFFIC CIRCLE VEHICLE TURNING MOVEMENTS
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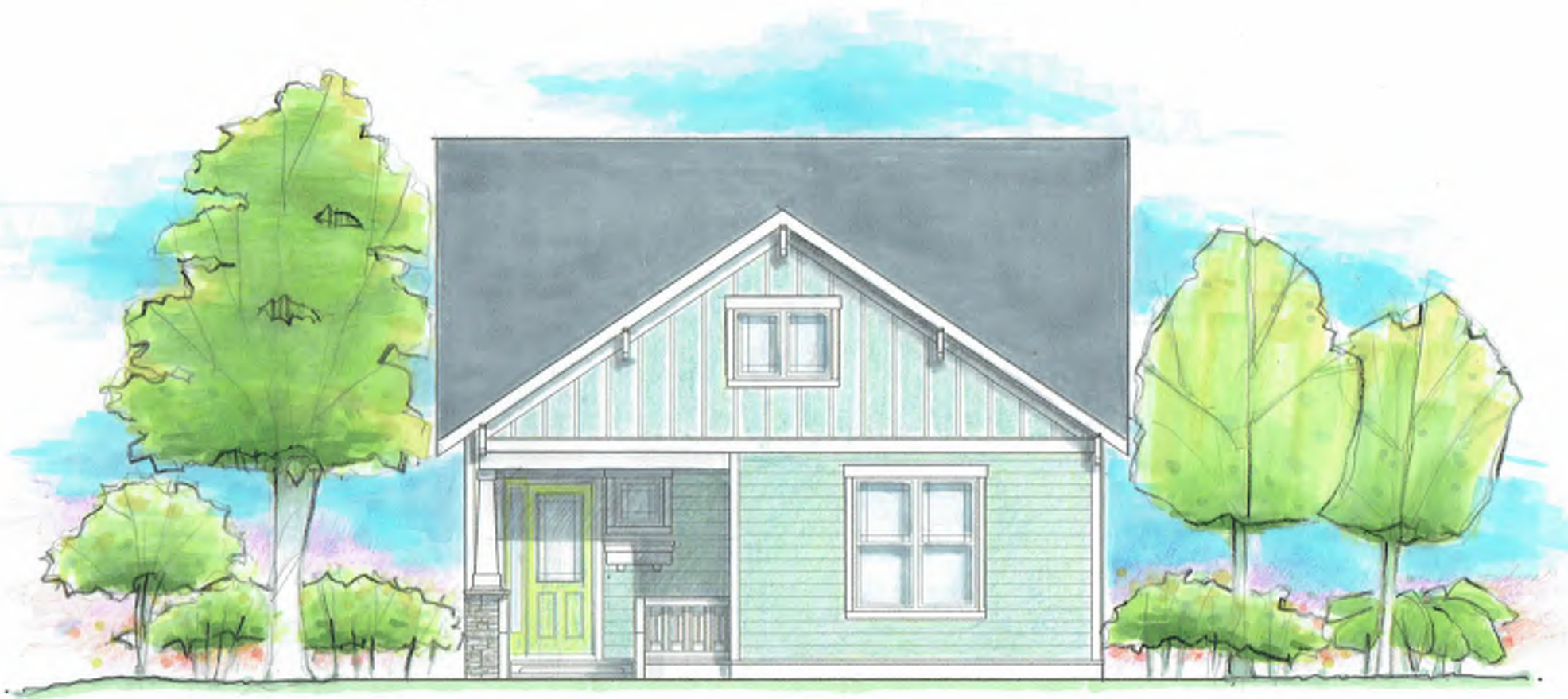
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 DRB GROUP

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MILLER FARM
PRODUCT STUDY

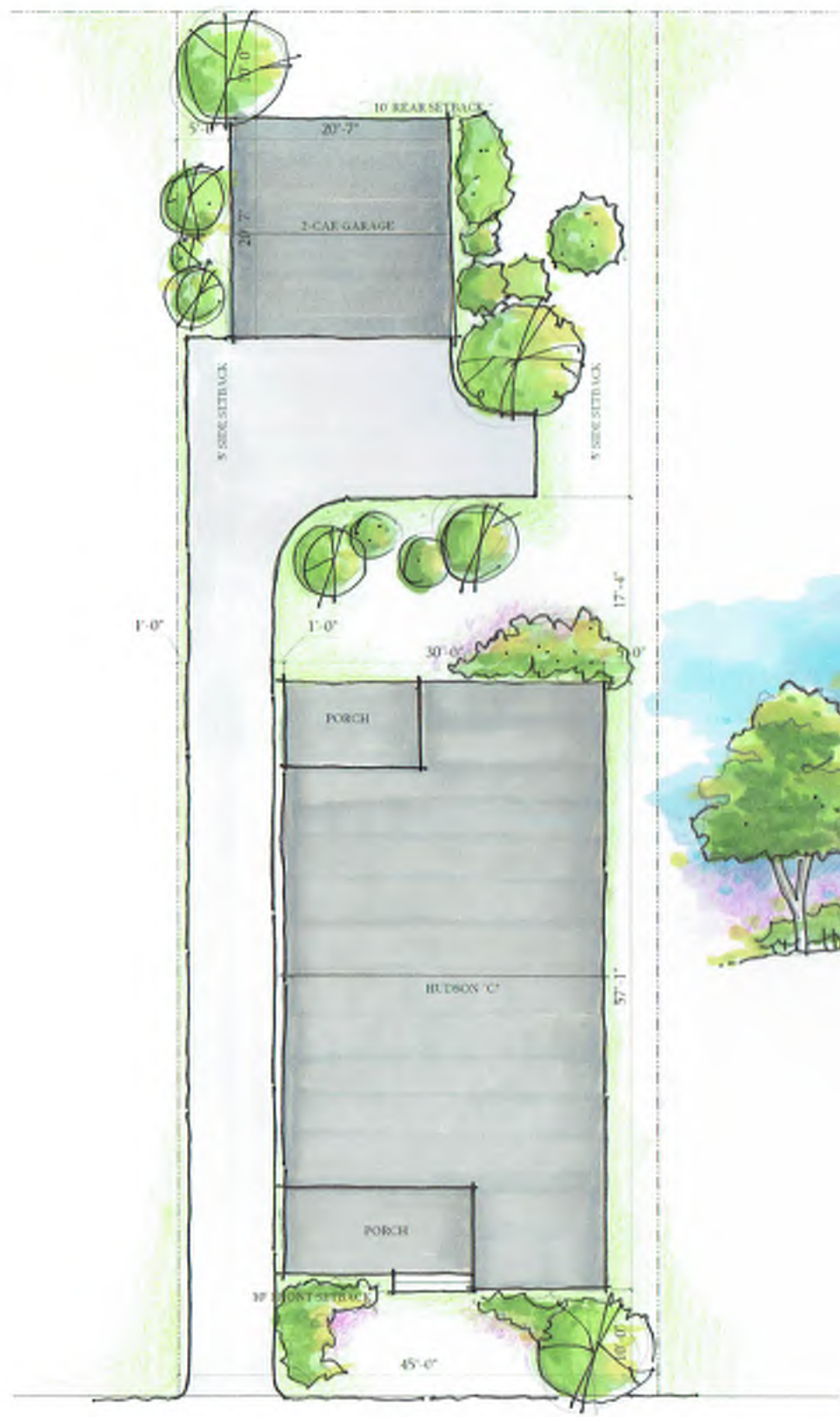
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SP-1





HENLEY II
ELEVATION I
SCALE: 3/8" = 1'-0"

ROCHESTER
ELEVATION 8
SCALE: 3/8" = 1'-0"

LANDON
ELEVATION 5
SCALE: 3/8" = 1'-0"

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 DRB GROUP
 FIELDING
 DRB GROUP

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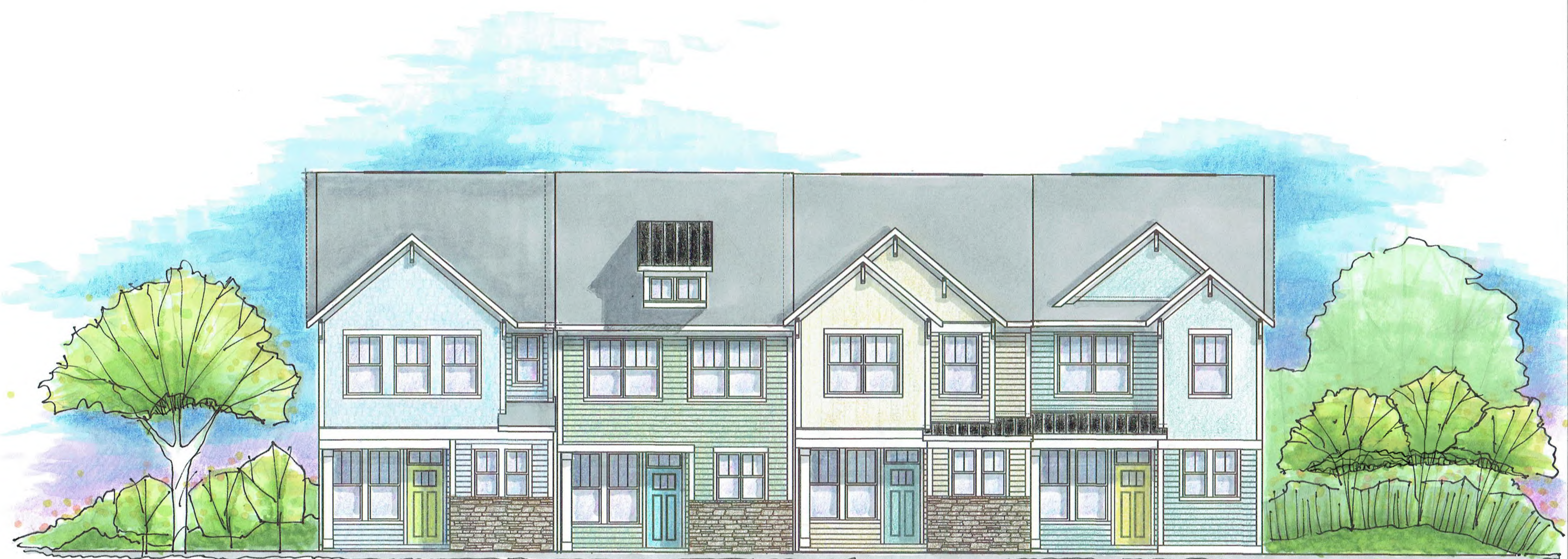
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DRB
DRB GROUP
 FIELDING
DRB
 CONTROL

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DRB
 DRB GROUP
 FIELDING
 DRB Central
 DAN IRWIN
 ARCHITECTS

HOUSE NAME: CHARLOTTE DIVISION
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SHEET No. A.1.1

Miller Farm

Traffic Impact Analysis

Pineville, North Carolina

July 2021

Prepared for:
DRB Group

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1 INTRODUCTION

This report presents the findings of the traffic impact analysis for the proposed Miller Farm Development. The proposed development will be located north of NC-51 (Rock Hill – Pineville Road) and east of SR-1126 (Nations Ford Road) in Pineville, NC (see **Figure 1-1**) and will consist of 215 single-family residential units and 145 townhome units. Construction of the development is proposed to occur over two (2) phases: Phase 1 (2023) and Phase 2 (2025). For purposes of this analysis, the development was only evaluated under full build conditions.

Analyses were completed for the following scenarios:

- 2020 Existing traffic volumes;
- 2025 Background traffic volumes (ambient growth + approved surrounding developments); and
- 2025 Build traffic volumes (Background + site trips).

The following steps were taken to determine the potential traffic impacts associated with this project:

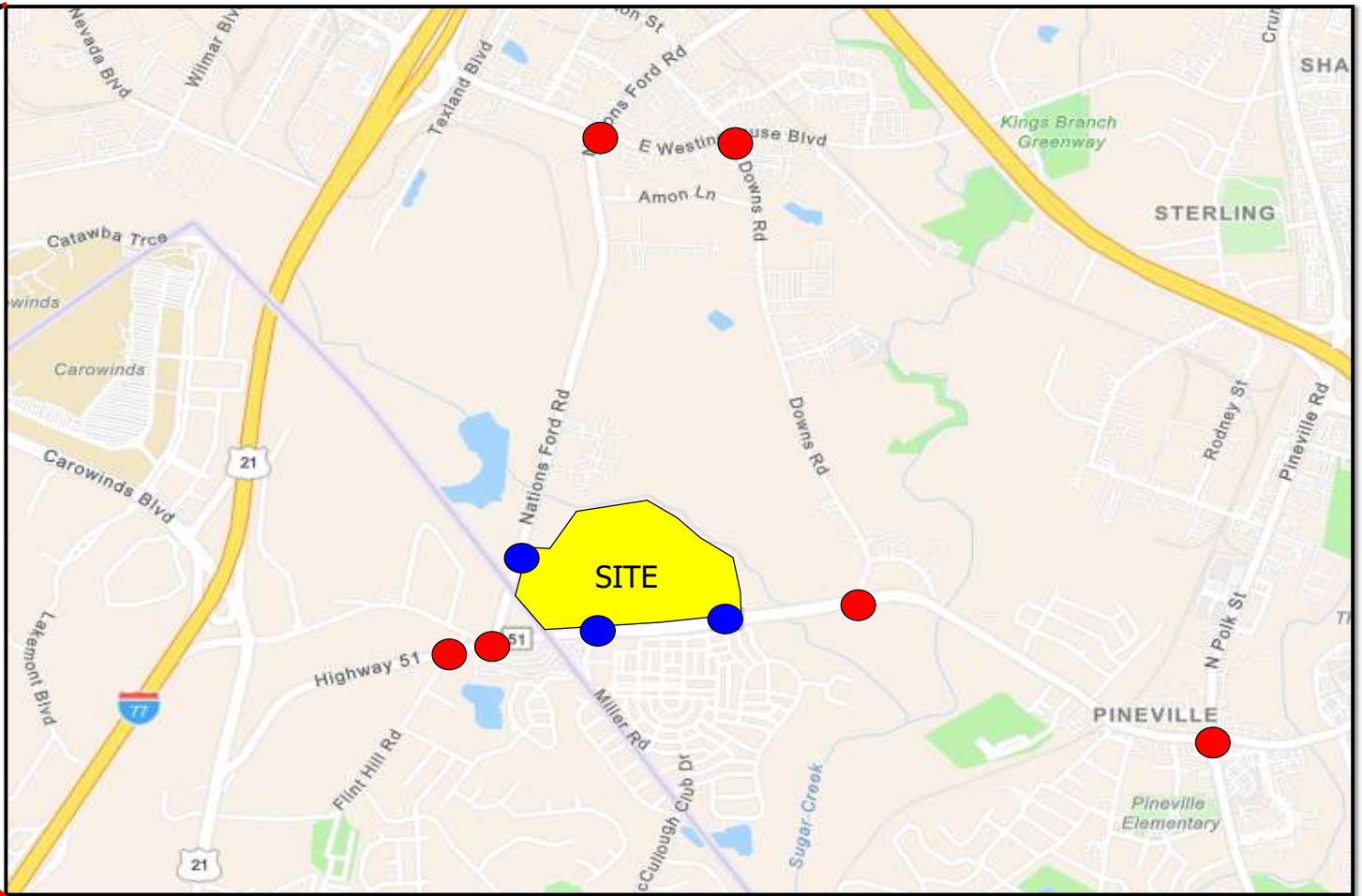
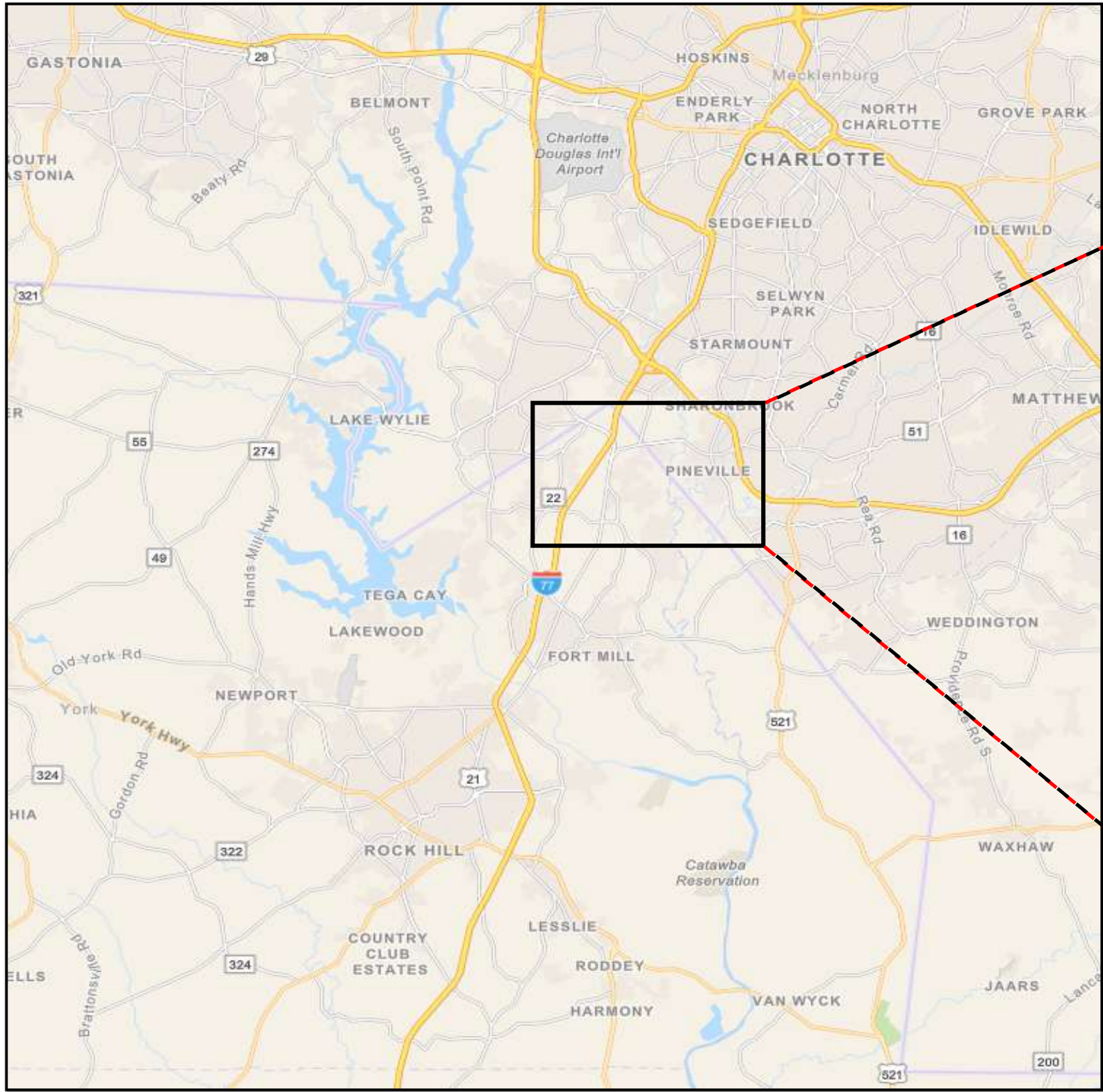
1. Data Collection – Due to current COVID-19 restrictions in North Carolina and South Carolina, Timmons Group was unable to collect turning movement counts at all study area intersections. Per the scoping checklist (see **Appendix A**), Timmons Group utilized count data from nearby development TIAs completed prior to 2020 and adjusted the traffic volumes to account for ambient growth. AM and PM peak hour turning movement counts were obtained for the following intersections:
 - SC-51 / S-641 (Flint Hill Road);
 - SC-51 / S-46-48 (Springhill Farm Road) / Business Driveway;
 - SC-51 / S-328 (Andrew L Tucker Road) / Business Driveway;
 - NC-51 (Rock Hill – Pineville Road) / SR-1129 (Downs Road);
 - NC-51 (Main Street) / NC-51 (Pineville – Matthews Road) / SR-4982 (Polk Street);
 - SR-1128 (Westinghouse Boulevard) / Downs Road; and
 - SR-1128 (Westinghouse Boulevard) / SR-1126 (Nations Ford Road).

At study area intersections where previous count data was unable to be obtained, AM (7:00 – 9:00) and PM (4:00 – 6:00) peak hour turning movement counts were collected in September 2020. These study area intersections include the following:

- NC-51 (Rock Hill – Pineville Road) / Miller Road; and
 - NC-51 (Rock Hill – Pineville Road) / Marfield Lane.
2. Trip Generation/Future Traffic – Traffic generated by the proposed development was estimated using the 10th Edition of the Institute of Transportation Engineers' *Trip Generation Manual*. Trip generation was calculated for the development following the NCDOT standards and practices for trip generation. Projected traffic volumes were calculated using an ambient growth rate of 2% (this percentage was approved by the NCDOT, SCDOT, and York County, SC).
 3. Trip Distribution and Projections – The distribution of site-generated trips was based on the distribution of existing area traffic and engineering judgement. It was assumed, for purposes of analysis, that projected trips would follow similar patterns as existing traffic.

4. Traffic Capacity Analysis – Level of service analyses were performed using SYNCHRO Version 10.3 for the following intersections:
 - SC-51 / S-641 (Flint Hill Road);
 - SC-51 / S-46-48 (Springhill Farm Road) / Business Driveway;
 - SC-51 / S-328 (Andrew L Tucker Road) / Business Driveway;
 - NC-51 (Rock Hill – Pineville Road) / Miller Road / Site Driveway 2;
 - NC-51 (Rock Hill – Pineville Road) / Marfield Lane / Site Driveway 1;
 - NC-51 (Rock Hill – Pineville Road) / SR-1129 (Downs Road);
 - NC-51 (Main Street) / NC-51 (Pineville – Matthews Road) / SR-4982 (Polk Street);
 - SR-1128 (Westinghouse Boulevard) / Downs Road;
 - SR-1128 (Westinghouse Boulevard) / SR-1126 (Nations Ford Road); and
 - SR-1126 (Nations Ford Road) / Site Driveway 3.

5. Review of Proposed Improvements – Roadway improvements proposed to accommodate projected site-generated traffic were evaluated.



LEGEND:

- Study Area Intersection
- Driveway Intersection

2 EXISTING INFORMATION

The proposed development will be located north of NC-51 (Rock Hill – Pineville Road) and east of SR-1126 (Nations Ford Road) in Pineville, NC as shown on **Figure 1-1**.

2.1 STUDY LIMITS

Access to the proposed site will be provided via three (3) driveway connections: one connection to Nations Ford Road and two connections to NC-51. Site Driveway 1 will connect to the existing three-leg intersection of NC-51 / Marfield Lane. Site Driveway 2 will connect to the existing three-leg intersection of NC-51 / Miller Road. The proposed site driveway connection to Nations Ford Road, Site Driveway 3, will be located approximately 1,100-feet (CL to CL) north of the SC-51 / S-328 (Andrew L Tucker Road) / Business Driveway.

The entrances are shown graphically on **Figure 1-1** and on the preliminary site layout for the residential development on **Figure 2-1** (all figures are located at the end of their respective chapter).

The study limits include the following ten (10) intersections:

- SC-51 / S-641 (Flint Hill Road);
- SC-51 / S-46-48 (Springhill Farm Road) / Business Driveway;
- SC-51 / S-328 (Andrew L Tucker Road) / Business Driveway;
- NC-51 (Rock Hill – Pineville Road) / Miller Road / Site Driveway 2;
- NC-51 (Rock Hill – Pineville Road) / Marfield Lane / Site Driveway 1;
- NC-51 (Rock Hill – Pineville Road) / SR-1129 (Downs Road);
- NC-51 (Main Street) / NC-51 (Pineville – Matthews Road) / SR-4982 (Polk Street);
- SR-1128 (Westinghouse Boulevard) / Downs Road;
- SR-1128 (Westinghouse Boulevard) / SR-1126 (Nations Ford Road); and
- SR-1126 (Nations Ford Road) / Site Driveway 3.

All study area intersections and project assumptions were based on the approved scoping checklist (see **Appendix A**). The scoping checklist was reviewed and approved by the NCDOT, SCDOT, and York County, SC.

2.2 EXISTING ROADWAYS

SC-51 is a two-lane undivided facility within South Carolina that runs approximately east-west. The facility, which is classified as a minor arterial, has a posted speed limit of 45-MPH and provides connection between Fort Mill, SC and Pineville, NC. Per 2019 SCDOT Traffic Count maps, SC-51 carries 14,300 VPD east of Andrew L Tucker Road. East of the North Carolina state border SC-51 becomes NC-51 (Rock Hill – Pineville Road).

S-641 (Flint Hill Road) is a two-lane undivided facility within South Carolina that runs approximately southwest-northeast. The facility, which is classified as a local roadway, has a posted speed limit of 35-MPH and services primarily residential and industrial land uses. No AADT data is currently available for Flint Hill Road.

S-46-48 (Springhill Farm Road) is a two-lane undivided facility within South Carolina that runs approximately east-west. The facility, which is classified as a major collector, has a posted speed limit of 40-MPH and services primarily commercial and industrial land uses. Per 2019 SCDOT Traffic Count maps, Springhill Farm Road carries 10,300 VPD.

S-328 (Andrew L Tucker Road) is a two-lane undivided facility within South Carolina that runs approximately north-south. The facility, which is classified as a local roadway, has an assumed speed limit of 35-MPH and services primarily industrial land uses. Per 2019 SCDOT Traffic Count maps, Andrew L Tucker Road carries 4,200 VPD North of the North Carolina state border Andrew L Tucker Road becomes SR-1126 (Nations Ford Road).

NC-51 (Rock Hill – Pineville Road) / (Main Street) / (Pineville-Matthews Road) is a four-lane facility within North Carolina that runs approximately east-west. West of Downs Road the facility is median divided and has a posted speed limit of 45-MPH. East of Downs Road the facility is undivided and has a varying speed limit of 20-MPH to 35-MPH. NC-51 is classified as a minor arterial and provides connection between Fort Mill, SC and Pineville, NC. Per 2018 NCDOT AADT maps, the facility carries 15,500 VPD east of Andrew L Tucker Road. West of the South Carolina state border NC-51 becomes SC-51.

Miller Road and Marfield Lane are both two-lane undivided local facilities within North Carolina that serve residential land uses. Miller Road has a posted speed limit of 25-MPH and Marfield Lane has a posted speed limit of 15-MPH. No AADT data is currently available for either facility.

SR-1129 (Downs Road) is a two-lane undivided facility within North Carolina that runs approximately north-south. The facility, which is classified as a local roadway, has a varying posted speed limit of 35-MPH to 45-MPH and services primarily industrial land uses. Per 2016 NCDOT Traffic Count maps, Downs Road carries 5,400 VPD.

SR-4982 (Polk Street) is an undivided facility with a varying cross section of three-lanes to four-lanes within North Carolina that runs approximately north-south. The facility, which is classified as a minor arterial, has a posted speed limit of 35-MPH and provides connection between Pineville, NC and Charlotte, NC. Per 2018 NCDOT AADT maps, the facility carries 18,000 VPD north of NC-51.

SR-1128 (Westinghouse Boulevard) is an undivided facility with a varying cross section of four-lanes to five-lanes within North Carolina that runs approximately east-west. The facility, which is classified as a minor arterial, has a posted speed limit of 45-MPH and provides connection between Pineville, NC and Steele Creek within Charlotte, NC. Per 2018 NCDOT AADT maps, the facility carries 29,000 VPD west of Nations Ford Road.

SR-1126 (Nations Ford Road) is a two-lane undivided facility within North Carolina that runs approximately north-south. The facility, which is classified as a local roadway, has a posted speed limit of 35-MPH and services primarily industrial land uses. Per 2016 NCDOT Traffic Count maps, Nations Ford Road carries 5,900 VPD south of Westinghouse Boulevard.

2.3 EXISTING INTERSECTIONS

Using available aerial imagery and site visits, Timmons Group compiled the existing geometry for the study area intersection. The existing intersection geometry is shown on **Figure 2-2** and used for the existing and future analyses.

SC-51 / Flint Hill Road is a three-phase signalized intersection with permitted left-turn phasing on westbound SC-51 and split phasing on the side streets. The eastbound SC-51 approach consists of a single shared through / right-turn lane. The westbound SC-51 approach consists of a single shared through / left-turn lane. The northbound Flint Hill Road approach consists of a single shared left / right-turn lane. The southbound Flint Hill Road approach is a one-way inbound facility and consists of left-turn lane and a shared through / right-turn lane.

SC-51 / Springhill Farm Road / Business Driveway is an unsignalized intersection with the Springhill Farm Road and Business Driveway approaches encountering the stopped condition. The east and westbound SC-51 and northbound Business Driveway approaches consist of a single shared left / through / right-turn lane. The southbound Springhill Farm Road approach is a one-way inbound facility and consists of one lane.

SC-51 / Andrew L Tucker Road / Business Driveway is an unsignalized intersection with the Andrew L Tucker and Business Driveway approaches encountering the stopped condition. All approaches at this intersection consist of a single shared left / through / right-turn lane.

NC-51 / Miller Road is an unsignalized T-intersection with the Miller Road approach encountering the stopped condition. The northbound Miller Road approach consists of a left-turn lane and a right-turn lane. The eastbound NC-51 approach consists of two through lanes and an exclusive right-turn lane. The westbound NC-51 approach consists of two through lanes and an exclusive left-turn lane. Note that the westbound through lane terminates and merges immediately west of the subject intersection.

NC-51 / Marfield Lane is an unsignalized T-intersection with the Marfield Lane approach encountering the stopped condition. The northbound Marfield Lane approach consists of a left-turn lane and a right-turn lane. The eastbound NC-51 approach consists of two through lanes and an exclusive right-turn lane. The westbound NC-51 approach consists of two through lanes and an exclusive left-turn lane.

NC-51 / Downs Road is a five-phase signalized intersection with protected only left-turn phasing on both NC-51 approaches. The southbound Downs Road consists of a left-turn lane and a right-turn lane. The eastbound NC-51 approach consists of two through lanes and an exclusive left-turn lane. The westbound NC 51 approach consists of an exclusive U-turn lane, two through lanes, and an exclusive right-turn lane.

NC-51 / Polk Street is an eight-phase signalized intersection with protected only left-turn phasing on all approaches. The northbound Polk Street approach consists of two exclusive left-turn lanes and one shared through / right-turn lane. The southbound Polk Street approach consists of an exclusive left-turn lane, one through lane, and an exclusive right-turn lane. The eastbound NC-51 approach consists of an exclusive left-turn lane, one through lane, and a shared through / right-turn lane. The westbound NC-51 approach consists of an exclusive left-turn lane, two through lanes, and an exclusive right-turn lane.

Westinghouse Boulevard / Downs Road is a two-phase signalized intersection with permitted only left-turn phasing on all approaches. The northbound and southbound Downs Road approaches both consist of an exclusive left-turn lane and one shared through / right-turn lane. The eastbound and westbound Westinghouse Boulevard approaches both consist of an exclusive left-turn lane, one through lane, and one shared through / right-turn lane.

Westinghouse Boulevard / Nations Ford Road is a five-phase signalized intersection with protected / permitted left-turn phasing on the eastbound and westbound approaches and permitted only left-turn phasing on the northbound and southbound approaches. The northbound Nations Ford Road approach consist of an exclusive left-turn lane and a shared through / right-turn lane. The southbound Nations Ford Road approach consist of an exclusive left-turn lane, one through lane, and one exclusive right-turn lane. The eastbound and westbound Westinghouse Boulevard approaches both consist of an exclusive left-turn lane, one through lane, and one shared through / right-turn lane.

2.4 TRAFFIC VOLUMES

Due to current COVID-19 government restrictions in North Carolina and South Carolina, Timmons Group utilized previously collected AM and PM peak period turning movement counts (where available) as outlined in the scoping document (see **Appendix A**). AM and PM peak period turning movement counts were collected at study area intersections where previously conducted counts were not available. Following NCDOT guidelines, the AM and PM peak hours are defined as occurring between 7:00 a.m. – 9:00 a.m. and 4:00 p.m. – 6:00 p.m., respectively. Following SCDOT guidelines, the AM and PM peak hours are defined as occurring between 6:30 a.m. – 8:30 a.m. and 4:30 p.m. – 6:30 p.m., respectively. The AM and PM peak hours were dictated for each intersection depending on its geospatial location. The traffic count collection date for each existing study area intersection is detailed below in **Table 2-1**. The complete traffic count data can be found in **Appendix B**.

Table 2-1: Traffic Count Information

Traffic Count Location	Date of Count
Carowinds Boulevard / Foothills Way / I-77 Southbound Off-Ramp	9/25/2018
Carowinds Boulevard / I-77 Southbound On-Ramp	9/25/2018
US-21 / Carowinds Boulevard / I-77 Northbound On-Ramps	9/25/2018
US-21 / I-77 Northbound Off-Ramp / Springhill Farm Road	9/25/2018
US-21 / SC-51	9/25/2018
SC-51 / Flint Hill Road	1/16/2018 & 1/25/2018
SC-51 / Springhill Farm Road / Business Driveway	1/23/2018 & 1/24/2018
SC-51 / Andrew L Tucker Road / Business Driveway	1/23/2018 & 1/24/2018
NC-51 / Miller Road	9/02/2020
NC-51 / Marfield Lane	9/02/2020
NC-51 / Downs Road	3/04/2020
NC-51 / Polk Street	2/22/2018
Westinghouse Boulevard / Downs Road	2/25/2020
Westinghouse Boulevard / Nations Ford Road	2/25/2020

To account for ambient area growth, 2018 traffic volumes (**Figure 2-3**) were grown for 2 years at a 2% growth rate to determine 2020 traffic volumes. This 2% growth rate was agreed upon within the scoping document (see **Appendix A**). The 2020 traffic volumes, both collected and grown, are shown in **Figure 2-4**.

Traffic counts at two study area intersections were collected while COVID-19 restrictions were in place: NC-51 / Miller Road and NC-51 / Marfield Lane. In order to account for these restrictions, collected peak hour data was factored up utilizing the agreed upon methodology (see **Appendix A**). To determine the "COVID-19 adjustment factor", Timmons Group conducted a 48-hour tube count on NC-51 just east of the North Carolina / South Carolina border in September 2020. Traffic counts revealed that NC-51 experienced a daily traffic volume of 14,316 VPD (see **Appendix B**). This resulting traffic volume was then compared to historical AADT data located at the same location (grown to 2020). As noted earlier in the document, per 2018 NCDOT AADT maps, NC-51 carries approximately 15,500 VPD just east of the North Carolina / South Carolina border. Utilizing the agreed upon annual growth rate of 2% (see **Appendix A**), NC-51 would be expected to experience an AADT of approximately 17,500 VPD in 2020 (if COVID-19 restrictions were not in place). This anticipated 2020 AADT volume is approximately 12% greater than the 2020 collected daily traffic volume. To account for this discrepancy, collected traffic volumes at the two aforementioned intersections were grown by 12%. Additionally, the through traffic volumes on NC-51 were balanced at these two intersections based on the collected traffic counts at NC-51 / Downs Road intersection. The 2020 adjusted traffic volumes are shown in **Figure 2-5**. To account

for ambient area growth, 2020 adjusted traffic volumes (**Figure 2-5**) were grown for 1 year at a 2% growth rate to determine the 2021 traffic volumes (**Figure 2-6**).

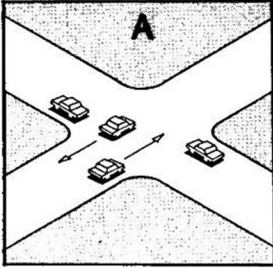
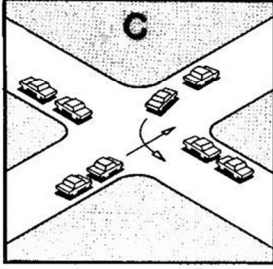
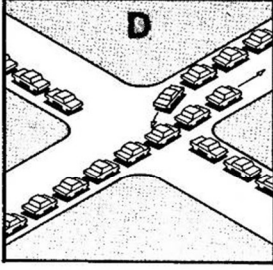
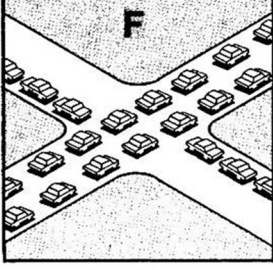
Note that due to a future SCDOT public project within the study area (described below in **Section 3.2**) traffic volumes were rerouted at the intersections of SC-51 / Flint Hill Road and SC-51 / Andrew Tucker Road / Business Driveway (as appropriate) due to roadway realignment. As this project is scheduled for completion in 2023, the 2021 rerouted traffic volumes are shown in **Figure 2-7** for utilization in ambient growth purposes only.

2.5 CAPACITY ANALYSIS

Using field observations, aerial photography, and traffic count data, traffic operations were analyzed during 2021 (existing) and 2025 (without and with the proposed development site trips).

Capacity analysis allows traffic engineers to determine the impacts of traffic on the surrounding roadway network. The Transportation Research Board's (TRB) *Highway Capacity Manual* (HCM) methodologies govern how the capacity analyses are conducted and how the results are interpreted. There are six letter grades of Levels of Service (LOS) from A to F, with LOS A representing the best operating conditions and LOS F the worst operating conditions. At signalized intersections, an overall intersection LOS E is generally considered unacceptable. At unsignalized intersections, a LOS E is generally considered acceptable only if the side street encounters delay. Nevertheless, side streets typically function at a LOS F during peak traffic periods, because the traffic volumes often do not warrant a traffic signal to assist side street traffic. **Table 2-2** shows in detail how each of these levels of service are interpreted.

Table 2-2: Level of Service Definitions

Level of Service	Roadway Segments or Controlled Access Highways	Intersections	
A	Free flow, low traffic density.	No vehicle waits longer than one signal indication.	
B	Delay is not unreasonable, stable traffic flow.	On a rare occasion motorists wait through more than one signal indication.	
C	Stable condition, movements somewhat restricted due to higher volumes, but not objectionable for motorists.	Intermittently drivers wait through more than one signal indication, and occasionally backups may develop behind left turning vehicles, traffic flow still stable and acceptable.	
D	Movements more restricted, queues and delays may occur during short peaks, but lower demands occur often enough to permit clearing, thus preventing excessive backups.	Delays at intersections may become extensive with some, especially left-turning vehicles waiting two or more signal indications, but enough cycles with lower demand occur to permit periodic clearance, thus preventing excessive backups.	
E	Actual capacity of the roadway involves delay to all motorists due to congestion.	Very long queues may create lengthy delays, especially for left-turning vehicles.	
F	Forced flow with demand volumes greater than capacity resulting in complete congestion. Volumes drop to zero in extreme cases.	Backups from locations downstream restrict or prevent movement of vehicles out of approach creating a storage area during part or all of an hour.	

SOURCE: "A Policy on Design of Design of Urban Highways and Arterial Streets" - AASHTO, 1973 based upon material published in "Highway Capacity Manual", National Academy of Sciences, 1965.

For signalized and unsignalized intersections, level of service is defined in terms of **delay**, a measure of driver discomfort, frustration, fuel consumption and lost travel time. **Table 2-3** summarizes the delay associated with each LOS category:

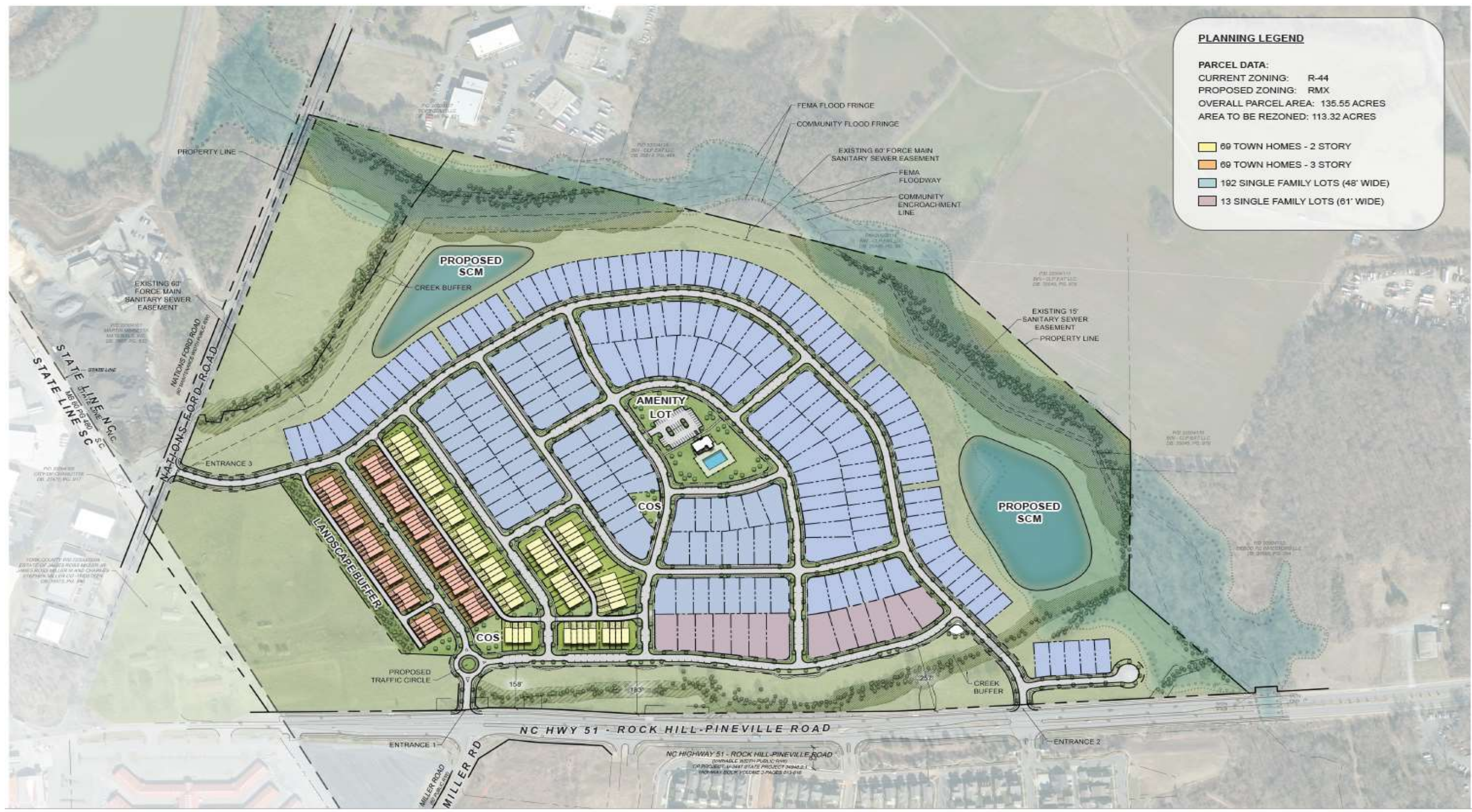
Table 2-3: Signalized and Unsignalized Intersection Level of Service Criteria

Signalized Intersections		Unsignalized Intersections	
Level of Service	Control Delay per Vehicle (sec/veh)	Level of Service	Average Control Delay (sec/veh)
A	≤ 10	A	0 to 10
B	> 10 to ≤ 20	B	> 10 to ≤ 15
C	> 20 to ≤ 35	C	> 15 to ≤ 25
D	> 35 to ≤ 55	D	> 25 to ≤ 35
E	> 55 to ≤ 80	E	> 35 to ≤ 50
F	> 80	F	> 50

Source: Exhibit 16-2 and Exhibit 17-2 from TRB's "Highway Capacity Manual 2000"

Capacity analyses were performed to assess operational conditions. Study area intersections were analyzed using SYNCHRO Version 10.3 based on Highway Capacity Manual (HCM) methodologies with the following assumptions:

- Existing grades;
- 12-foot lane widths;
- No parking activity, bus stops, or pedestrians;
- AM and PM Peak Hour Factors (PHFs) of 0.90;
- Heavy vehicle percentages 2%;
- Minimum turning movement of 4 vehicles per hour (VPH) for all allowed movements;
- Existing signal data found in the provided traffic signal plans (see **Appendix E**); and
- Optimization of signal cycle lengths, splits, and offsets as appropriate.

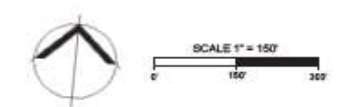


PLANNING LEGEND

PARCEL DATA:
 CURRENT ZONING: R-44
 PROPOSED ZONING: RMX
 OVERALL PARCEL AREA: 135.55 ACRES
 AREA TO BE REZONED: 113.32 ACRES

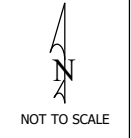
- 69 TOWN HOMES - 2 STORY
- 69 TOWN HOMES - 3 STORY
- 192 SINGLE FAMILY LOTS (48' WIDE)
- 13 SINGLE FAMILY LOTS (61' WIDE)

MILLER FARM
 CONDITIONAL SITE PLAN - JULY 14, 2021



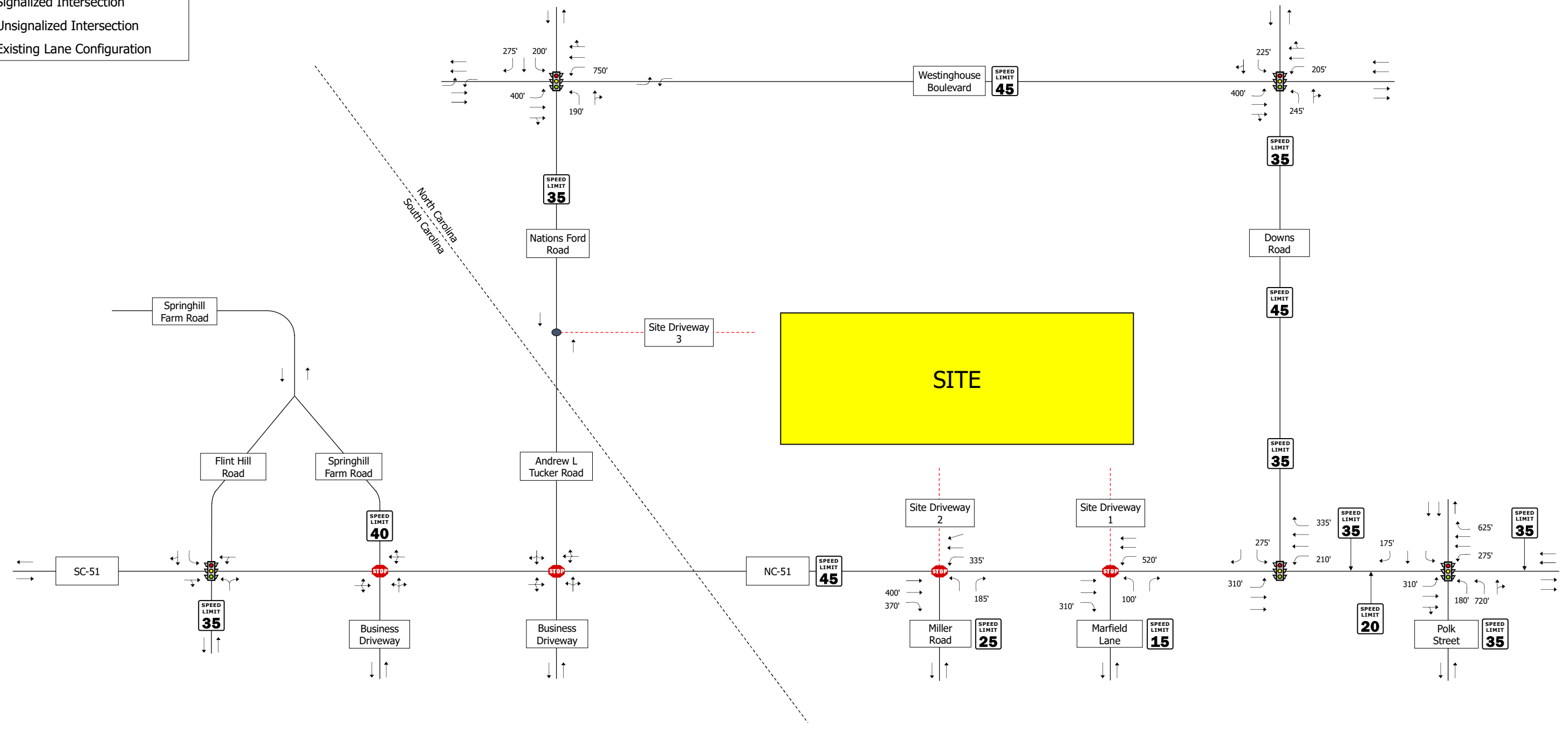
Miller Farm Traffic Impact Analysis
 Preliminary Site Plan

Figure 2-1



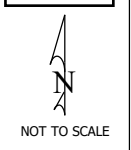
LEGEND:

- Existing Road
- - - Proposed Road
- Signalized Intersection
- Unsignalized Intersection
- Existing Lane Configuration



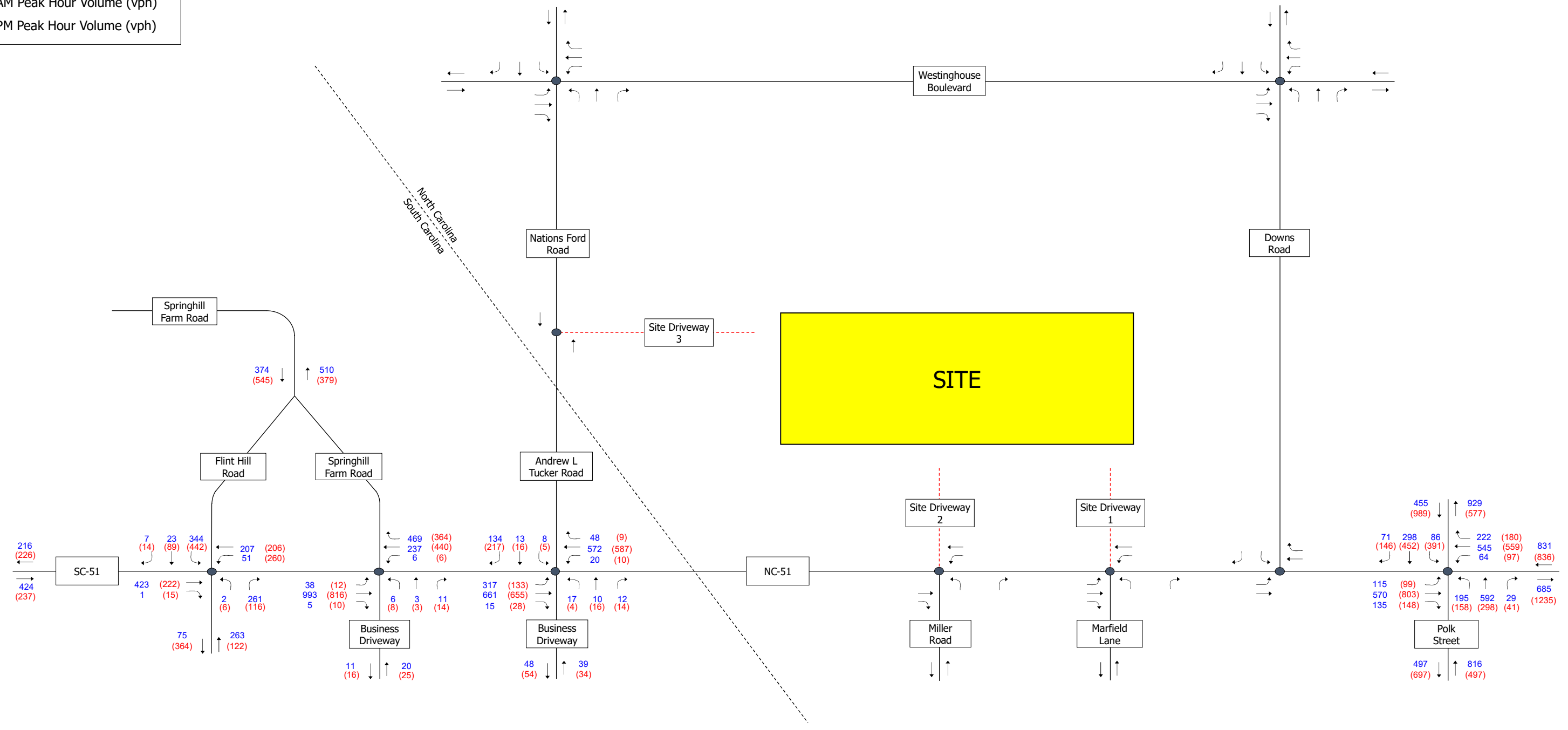
Miller Farm Traffic Impact Analysis
2021 Existing Lane Configuration

Figure 2-2



LEGEND:

- Existing Road
- - - Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)

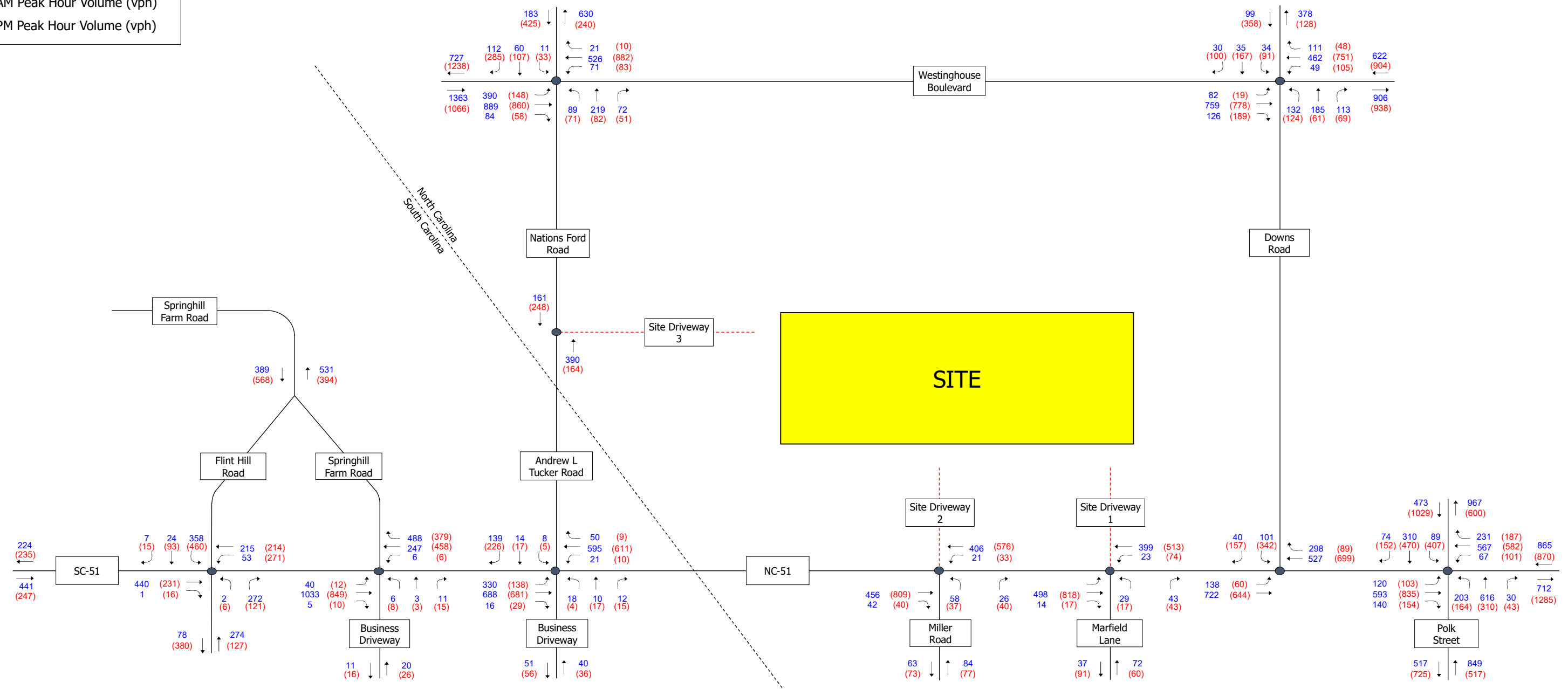


Miller Farm Traffic Impact Analysis 2018 Traffic Volumes

Figure 2-3

LEGEND:

- Existing Road
- - - Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)



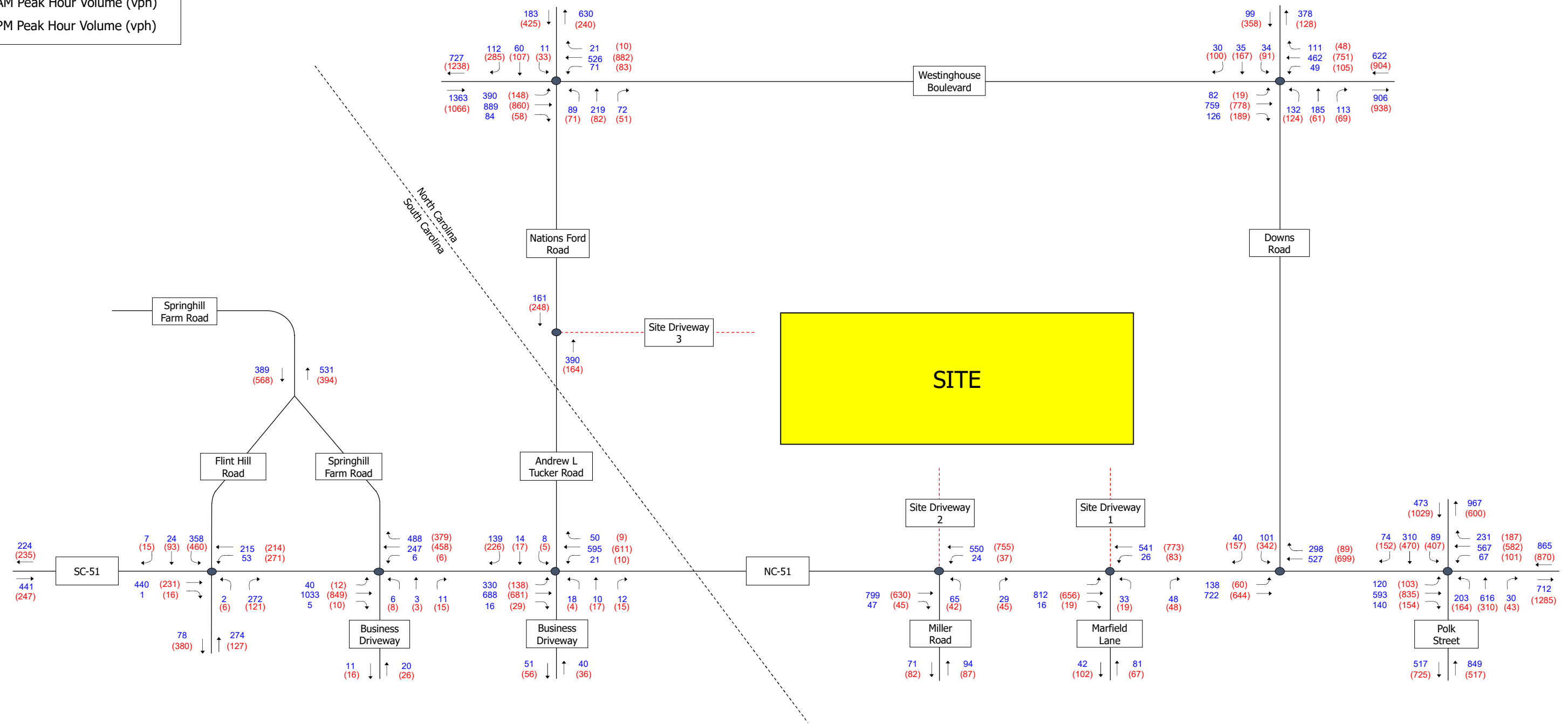
Miller Farm Traffic Impact Analysis
2020 Traffic Volumes

Figure 2-4



LEGEND:

- Existing Road
- - - Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)

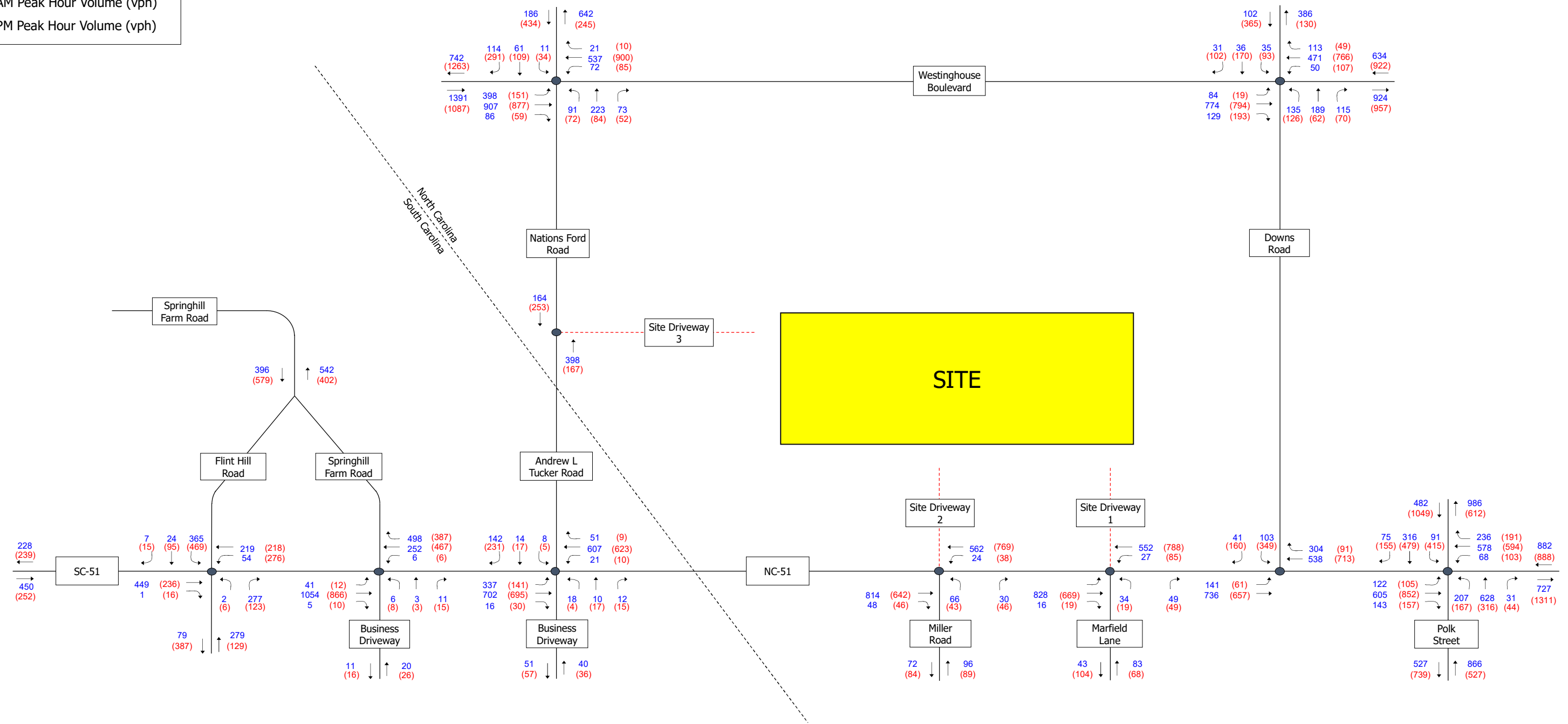


Miller Farm Traffic Impact Analysis
2020 Adjusted Traffic Volumes

Figure 2-5

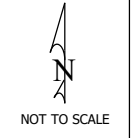
LEGEND:

- Existing Road
- - - Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)



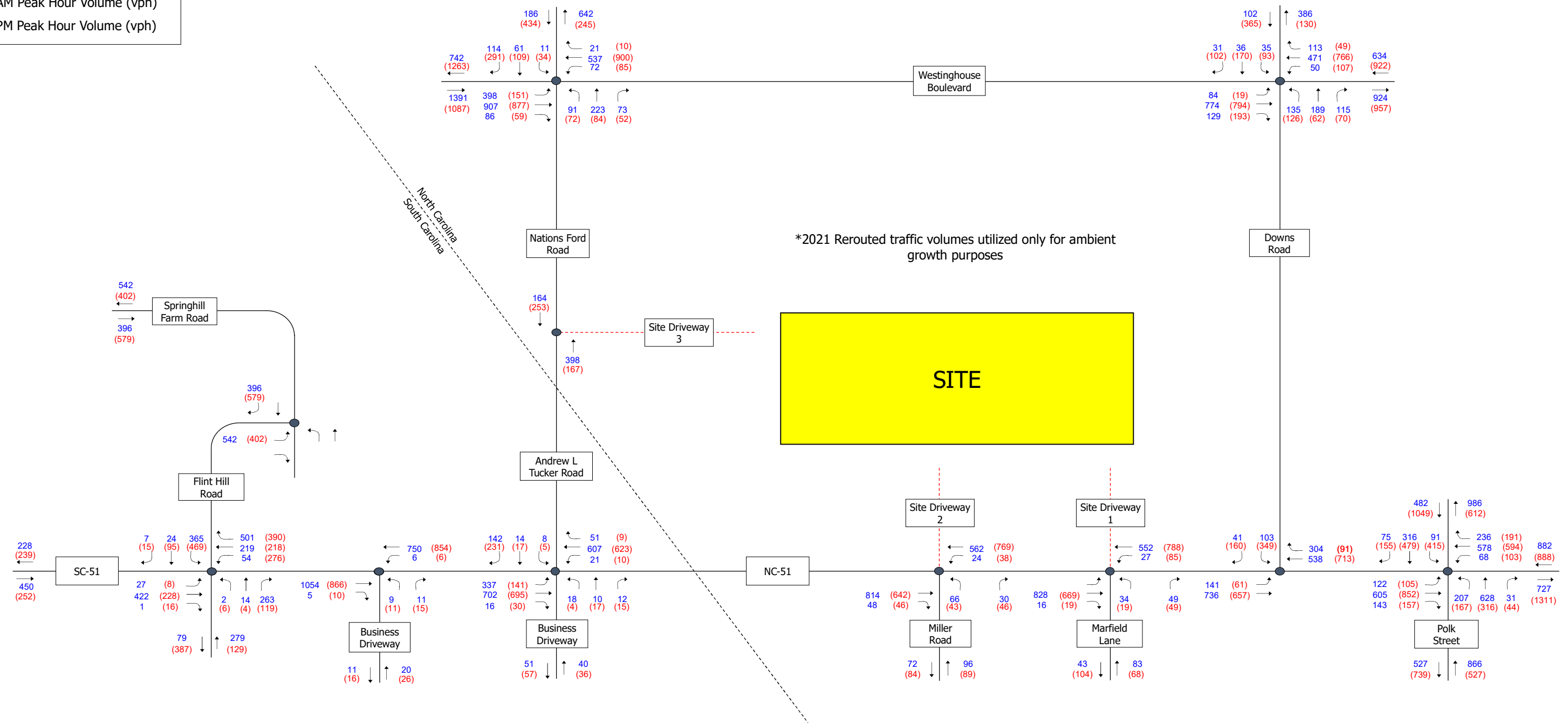
Miller Farm Traffic Impact Analysis
 2021 Traffic Volumes

Figure 2-6



LEGEND:

- Existing Road
- - - Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)



Miller Farm Traffic Impact Analysis
 2021 Adjusted Traffic Volumes - Rerouted for SCDOT Project

Figure 2-7

3 EXISTING AND BACKGROUND CONDITIONS AND ANALYSIS

3.1 2021 ANALYSES

Tables 3-1a and 3-1b summarize the 2021 Existing intersection LOS and delay based on the geometry shown on **Figure 2-2** and the 2021 traffic volumes shown on **Figure 2-6**. The corresponding SYNCHRO outputs are included in **Appendix F**.

South Carolina Study Area Intersections:

The signalized intersection of SC-51 / Flint Hill Road is currently operating at a LOS D and a LOS E during the 2021 Existing AM and PM peak hours, respectively. The westbound, northbound, and southbound approaches are currently operating unacceptably during at least one peak hour. The eastbound approach is currently operating at a LOS C or better during both peak hours.

The northbound approach at the unsignalized intersection of SC-51 / Springhill Farm Road / Business Driveway is currently operating at a LOS E and a LOS D during the 2021 Existing AM and PM peak hours, respectively. All other approaches are currently operating at a LOS A during both peak hours.

The northbound and southbound approaches at the unsignalized intersection of SC-51 / Andrew L Tucker Road / Business Driveway are currently operating at a LOS F during both 2021 Existing AM and PM peak hours. All other approaches are currently operating at a LOS A during both peak hours.

Table 3-1a: Intersection Level of Service and Delay Summary for South Carolina Study Area Intersections – 2021 Traffic Volumes

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	*95th Percentile Queue Length	Sim Traffic Max Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	*95th Percentile Queue Length	Sim Traffic Max Queue Length (ft)
5: Flint Hill Road & SC-51	EB Thru/Right		33.3	C	364	2233	17.6	B	160	214
	EB Approach		33.3	C	--	--	17.6	B	--	--
	WB Left/Thru		51.9	D	#306	295	89.5	F	#549	420
	WB Approach		51.9	D	--	--	89.5	F	--	--
	NB Left/Thru/Right		65.1	E	#330	1002	72.2	E	#181	117
	NB Approach		65.1	E	--	--	72.2	E	--	--
	SB Left		57.5	E	#392	334	96.4	F	#526	308
	SB Thru/Right		24.5	C	38	329	25.4	C	97	284
	SB Approach		54.9	D	--	--	82.8	F	--	--
Overall		49.4	D	--	--	72.9	E	--	--	
6: Business Driveway/Springhill Farm Road & SC-51	EB Left/Thru/Right		0.4	A	0.2	428	0.1	A	0.1	387
	EB Approach		0.4	A	--	--	0.1	A	--	--
	WB Left/Thru/Right		0.1	A	0	35	0.1	A	0	126
	WB Approach		0.1	A	--	--	0.1	A	--	--
	NB Left/Thru/Right		40.6	E	0.7	116	31.4	D	0.6	117
	NB Approach		40.6	E	--	--	31.4	D	--	--
7: Business Driveway/Andrew L Tucker Road & SC-51	EB Left/Thru/Right		3.9	A	2.2	124	1.6	A	0.6	127
	EB Approach		3.9	A	--	--	1.6	A	--	--
	WB Left/Thru/Right		0.3	A	0.1	248	0.1	A	0	1038
	WB Approach		0.3	A	--	--	0.1	A	--	--
	NB Left/Thru/Right		+	F	ERROR	802	206.5	F	3.4	289
	NB Approach		+	F	--	--	206.5	F	--	--
	SB Left/Thru/Right		+	F	ERROR	1032	142.5	F	12.6	1037
	SB Approach		+	F	--	--	142.5	F	--	--

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

+ Delay greater than 9999.99 seconds cannot be calculated by SYNCHRO

* - 95th percentile queues for unsignalized intersections reported in number of vehicles.

SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

North Carolina Study Area Intersections:

The eastbound approach at the unsignalized intersection of NC-51 / Miller Road is currently operating at a LOS E and a LOS C during the 2021 Existing AM and PM peak hours, respectively. All other approaches are currently operating at a LOS A during both peak hours.

All approaches at the unsignalized intersection of NC-51 / Marfield Lane are currently operating at a LOS C or better during the 2021 Existing AM and PM peak hours.

The signalized intersection of NC-51 / Downs Road is currently operating at a LOS B during both 2021 Existing AM and PM peak hours. All approaches are currently operating at a LOS C or better during both peak hours.

The signalized intersection of NC-51 / Polk Street is currently operating at a LOS D and a LOS E during the 2021 Existing AM and PM peak hours, respectively. The eastbound, northbound, and southbound approaches are all operating unacceptably during at least one peak hour. The westbound approach is operating at a LOS D during both peak hours.

The signalized intersection of Westinghouse Boulevard / Downs Road is currently operating at a LOS B during both 2021 Existing AM and PM peak hours. All approaches are currently operating at a LOS C or better during both peak hours.

The signalized intersection of Westinghouse Boulevard / Nations Ford Road is currently operating at a LOS C during both 2021 Existing AM and PM peak hours. The northbound approach is currently operating at a LOS D and a LOS E during the AM and PM peak hours, respectively. All other approaches are currently operating at a LOS D or better during both peak hours.

Table 3-1b: Intersection Level of Service and Delay Summary for North Carolina Study Area Intersections – 2021 Traffic Volumes

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	*95th Percentile Queue Length	Sim Traffic Max Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	*95th Percentile Queue Length	Sim Traffic Max Queue Length (ft)
9: Miller Road & NC-51	EB Thru		0.0	A	0	0	0.0	A	0	0
	EB Right	370	0.0	A	0	2	0.0	A	0	2
	EB Approach		0.0	A	--	--	0.0	A	--	--
	WB Left	335	10.2	B	0.1	50	9.5	A	0.2	54
	WB Thru		0.0	A	0	41	0.0	A	0	126
	WB Approach		0.4	A	--	--	0.4	A	--	--
	NB Left		48.0	E	2.2	100	36.3	E	1.2	117
	NB Right	185	11.9	B	0.2	53	11.1	B	0.3	56
10: Marfield Lane & NC-51	EB Thru		0.0	A	0	0	0.0	A	0	2
	EB Right	310	0.0	A	0	0	0.0	A	0	0
	EB Approach		0.0	A	--	--	0.0	A	--	--
	WB Left	520	10.2	B	0.1	44	9.8	A	0.4	83
	WB Thru		0.0	A	0	0	0.0	A	0	0
	WB Approach		0.5	A	--	--	1.0	A	--	--
	NB Left	100	36.9	E	0.9	60	40.2	E	0.6	42
	NB Right		12.3	B	0.3	58	11.3	B	0.3	51
11: NC-51 & Downs Road	NB Approach		22.4	C	--	--	19.4	C	--	--
	EB Left	310	23.0	C	103	112	35.0	D	77	90
	EB Thru		7.0	A	161	102	13.1	B	222	144
	EB Approach		9.6	A	--	--	14.9	B	--	--
	WB U-Turn	210	23.5	C	9	26	35.0	C	13	34
	WB Thru		15.7	B	140	148	23.6	C	264	245
	WB Right	335	0.3	A	0	94	0.1	A	0	0
	WB Approach		10.2	B	--	--	21.0	C	--	--
	SB Left	275	23.7	C	82	121	30.5	C	282	251
	SB Right		8.2	A	24	68	10.7	B	87	133
	SB Approach		19.3	B	--	--	24.2	C	--	--
12: Polk Street & NC-51	Overall		10.6	B	--	--	19.7	B	--	--
	EB Left	310	79.1	E	#207	183	67.8	E	150	384
	EB Thru/Right		50.8	D	#444	333	74.0	E	#622	637
	EB Approach		54.7	D	--	--	73.4	E	--	--
	WB Left	275	71.2	E	#120	129	106.7	F	#199	184
	WB Thru		50.5	D	313	266	41.5	D	308	348
	WB Right	625	33.2	C	237	245	14.1	B	126	170
	WB Approach		47.5	D	--	--	43.2	D	--	--
	NB Dual Lefts	450	58.7	E	132	407	71.7	E	#125	478
	NB Thru/Right		57.9	E	#800	714	123.3	F	#549	862
	NB Approach		58.1	E	--	--	106.9	F	--	--
	SB Left		86.0	F	#173	148	113.2	F	#608	749
	SB Thru		30.3	C	296	305	43.6	D	507	524
	SB Right	175	14.6	B	58	203	16.6	B	111	275
SB Approach		38.4	D	--	--	67.2	E	--	--	
13: Downs Road & Westinghouse Boulevard	Overall		51.1	D	--	--	69.0	E	--	--
	EB Left	400	8.5	A	m71	84	4.2	A	m8	38
	EB Thru/Right		8.7	A	274	249	5.4	A	145	265
	EB Approach		8.7	A	--	--	5.4	A	--	--
	WB Left	205	12.3	B	35	80	20.0	C	#96	144
	WB Thru/Right		9.1	A	108	117	8.3	A	127	155
	WB Approach		9.4	A	--	--	9.6	A	--	--
	NB Left	245	19.2	B	80	143	42.3	D	#122	165
	NB Thru/Right		24.8	C	166	272	20.4	C	85	137
	NB Approach		23.1	C	--	--	31.1	C	--	--
	SB Left	225	16.5	B	29	63	21.2	C	66	96
	SB Thru/Right		15.1	B	42	101	28.6	C	170	229
	SB Approach		15.6	B	--	--	26.7	C	--	--
14: Nations Ford Road & Westinghouse Boulevard	Overall		12.1	B	--	--	12.6	B	--	--
	EB Left	400	15.2	B	256	264	5.9	A	54	129
	EB Thru/Right		18.1	B	394	306	11.2	B	275	228
	EB Approach		17.3	B	--	--	10.5	B	--	--
	WB Left	750	9.2	A	34	85	3.8	A	m20	85
	WB Thru/Right		29.2	C	244	232	11.6	B	290	317
	WB Approach		26.9	C	--	--	10.9	B	--	--
	NB Left	190	39.3	D	107	165	61.4	E	107	117
	NB Thru/Right		56.4	E	317	270	60.2	E	175	188
	NB Approach		52.4	D	--	--	60.6	E	--	--
	SB Left	200	35.3	D	23	39	52.3	D	60	103
	SB Thru		35.1	D	74	97	53.5	D	142	177
	SB Right	275	13.2	B	64	120	48.0	D	292	276
SB Approach		21.7	C	--	--	49.7	D	--	--	
Overall		25.2	C	--	--	20.7	C	--	--	

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

+ Delay greater than 9999.99 seconds cannot be calculated by SYNCHRO

* - 95th percentile queues for unsignalized intersections reported in number of vehicles.

SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

3.2 2025 BACKGROUND TRAFFIC VOLUMES

The 2025 ambient traffic volumes, shown on **Figure 3-1**, were calculated by applying a 2% growth rate to the 2021 traffic volumes for four years.

Per discussions with NCDOT and SCDOT (see **Appendix A**), there is currently one approved development in the project study area that will be partially or fully built-out by 2025. This development, Carolina Logistics Park, is to be located between Nations Ford Road and Downs Road in Pineville, NC. Per the TIA (prepared by Ramey Kemp and Associates in July 2020) the development is to be constructed over two phases with completion of phase 1 occurring in 2023 and phase 2 in 2026. Phase 1 is to comprise of a 2,500,000 SF industrial warehouse and phase 2 is to construct an additional 1,000,000 SF industrial warehouse. Trip distribution for the development was assumed to follow the same pattern as outlined within the TIA (see **Appendix C**). For study area intersections not included in the Carolina Logistics Park TIA, trip distribution was based on existing area traffic. Per the TIA, there are no off-site improvements at any of the study area intersections. The projected and distributed trips from the approved development are shown in in **Figure 3-2**.

The approved development trips shown in **Figure 3-2** were added to the 2025 ambient traffic volumes (shown on **Figure 3-1**) to determine the 2025 Background traffic volumes (shown on **Figures 3-3**).

Currently, there is one public project scheduled for completion within the project study area: a South Carolina Pennies for Progress project improving US-21 and SC-51 (see **Appendix D**). This project has an assumed build-out year of 2023 and will therefore be included in all future year analyses. Project improvements include: widening of US-21, realignment of the US-21 / SC-51 intersection, widening of SC-51, realignment of the SC-51 / Flint Hill Road intersection, and severance of the Springhill Farm Road approach at the existing intersection of SC-51 / Springhill Farm Road / Business Driveway. The project begins at SC-460 (Springfield Parkway) in York County, South Carolina, and ends northwards prior to the intersection of US-21 / I-77 Northbound Off-Ramp / Springhill Farm Road and eastwards at the North Carolina / South Carolina border (see **Appendix D**).

3.3 2025 BACKGROUND TRAFFIC ANALYSIS

Tables 3-2a and **3-2b** summarize the 2025 Background intersection LOS and delay based on the future lane geometry and the 2025 Background traffic volumes shown on **Figure 3-3**. The corresponding SYNCHRO outputs are included in **Appendix F**.

South Carolina Study Area Intersections:

The signalized intersection of SC-51 / Flint Hill Road is projected to operate at a LOS C during both 2025 Background AM and PM peak hours. All approaches are projected to operate at a LOS D or better during both peak hours.

The northbound approach at the unsignalized intersection of SC-51 / Business Driveway is projected to operate at a LOS E and a LOS D during the 2025 Background AM and PM peak hours, respectively. All other approaches are projected to operate at a LOS A during both peak hours.

The northbound and southbound approaches at the unsignalized intersection of SC-51 / Andrew L Tucker Road / Business Driveway are projected to operate at a LOS F during both 2025 Background AM and PM peak hours. All other approaches are projected to operate at a LOS A during both peak hours.

Table 3-2a: Intersection Level of Service and Delay Summary for South Carolina Study Area Intersections – 2025 Background Traffic Volumes

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	*95th Percentile Queue Length	Sim Traffic Max Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	*95th Percentile Queue Length	Sim Traffic Max Queue Length (ft)
5: Flint Hill Road & SC-51	EB Left	200	27.1	C	37	71	14.3	B	12	30
	EB Thru/Right		31.8	C	187	217	16.2	B	77	117
	EB Approach		31.6	C	--	--	16.2	B	--	--
	WB Left	200	40.9	D	74	113	41.0	D	258	261
	WB Thru		27.1	C	97	116	16.0	B	71	164
	WB Right	350	15.7	B	336	307	6.6	A	145	196
	WB Approach		20.7	C	--	--	19.2	B	--	--
	NB Left	150	22.8	C	10	25	33.3	C	17	27
	NB Thru/Right		38.4	D	268	265	41.3	D	#146	154
	NB Approach		38.2	D	--	--	40.9	D	--	--
	SB Dual Lefts	250	26.1	C	167	205	31.9	C	220	206
	SB Thru/Right		23.1	C	40	81	28.0	C	115	124
	SB Approach		25.9	C	--	--	31.2	C	--	--
Overall			26.9	C	--	--	24.0	C	--	--
6: Business Driveway & SC-51	EB Thru/Right		0.0	A	0	235	0.0	A	0	33
	EB Approach		0.0	A	--	--	0.0	A	--	--
	WB Left/Thru		0.3	A	0	54	0.2	A	0	73
	WB Approach		0.3	A	--	--	0.2	A	--	--
	NB Left/Right		41.0	E	0.7	69	31.4	D	0.7	53
	NB Approach		41.0	E	--	--	31.4	D	--	--
7: Business Driveway/Andrew L Tucker Road & SC-51	EB Left	150	14.5	B	3.3	116	10.6	B	0.9	104
	EB Thru/Right		0.0	A	0	2	0.0	A	0	8
	EB Approach		4.8	A	--	--	1.9	A	--	--
	WB Left/Thru		0.6	A	0.1	68	0.2	A	0	70
	WB Thru/Right		0.6	A	0	58	0.2	A	0	23
	WB Approach		0.6	A	--	--	0.2	A	--	--
	NB Left/Thru/Right		+	F	ERROR	360	183.4	F	3.3	66
	NB Approach		+	F	--	--	183.4	F	--	--
	SB Left/Thru/Right		+	F	ERROR	961	143.7	F	14.8	303
SB Approach		+	F	--	--	143.7	F	--	--	

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

+ Delay greater than 9999.99 seconds cannot be calculated by SYNCHRO

* - 95th percentile queues for unsignalized intersections reported in number of vehicles.

SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

North Carolina Study Area Intersections:

The northbound approach at the unsignalized intersection of NC-51 / Miller Road is projected to operate at a LOS F and a LOS D during the 2025 Background AM and PM peak hours, respectively. All other approaches are projected to operate at a LOS A during both peak hours.

All approaches at the unsignalized intersection of NC-51 / Marfield Lane are projected to operate at a LOS D or better during the 2025 Background AM and PM peak hours.

The signalized intersection of NC-51 / Downs Road is projected to operate at a LOS B and a LOS C during the 2025 Background AM and PM peak hours, respectively. All approaches are projected to operate at a LOS C or better during both peak hours.

The signalized intersection of NC-51 / Polk Street is projected to operate at a LOS E and a LOS F during the 2025 Background AM and PM peak hours, respectively. The eastbound, northbound, and southbound

approaches are projected to operate unacceptably during at least one peak hour. The westbound approach is projected to operate at a LOS D during both peak hours.

The signalized intersection of Westinghouse Boulevard / Downs Road is projected to operate at a LOS B during both 2025 Background AM and PM peak hours. All approaches are projected to operate at a LOS D or better during both peak hours.

The signalized intersection of Westinghouse Boulevard / Nations Ford Road is projected to operate at a LOS D and a LOS C during the 2025 Background AM and PM peak hours, respectively. The northbound approach is projected to operate at a LOS E during both AM and PM peak hours. All other approaches are projected to operate at a LOS D or better during both peak hours.

Table 3-2b: Intersection Level of Service and Delay Summary for North Carolina Study Area Intersections – 2025 Background Traffic Volumes

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	*95th Percentile Queue Length	Sim Traffic Max Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	*95th Percentile Queue Length	Sim Traffic Max Queue Length (ft)
9: Miller Road & NC-51	EB Thru		0.0	A	0	0	0.0	A	0	0
	EB Right	370	0.0	A	0	12	0.0	A	0	4
	EB Approach		0.0	A	--	--	0.0	A	--	--
	WB Left	335	10.8	B	0.1	54	9.8	A	0.2	61
	WB Thru		0.0	A	0	0	0.0	A	0	0
	WB Approach		0.4	A	--	--	0.5	A	--	--
	NB Left		73.6	F	3.3	144	48.1	E	1.6	78
	NB Right	185	12.5	B	0.2	50	11.5	B	0.3	66
10: Marfield Lane & NC-51	NB Approach		54.6	F	--	--	29.2	D	--	--
	EB Thru		0.0	A	0	0	0.0	A	0	0
	EB Right	310	0.0	A	0	2	0.0	A	0	6
	EB Approach		0.0	A	--	--	0.0	A	--	--
	WB Left	520	10.7	B	0.2	50	10.2	B	0.4	77
	WB Thru		0.0	A	0	0	0.0	A	0	0
	WB Approach		0.5	A	--	--	1.0	A	--	--
	NB Left	100	48.8	E	1.3	72	52.9	F	0.9	51
11: NC-51 & Downs Road	NB Right		13.0	B	0.4	68	11.7	B	0.3	55
	NB Approach		27.7	D	--	--	23.4	C	--	--
	EB Left	310	24.7	C	129	140	41.1	D	100	104
	EB Thru		7.2	A	185	135	15.0	B	270	180
	EB Approach		10.3	B	--	--	17.4	B	--	--
	WB U-Turn	210	26.2	C	10	30	40.2	D	13	27
	WB Thru		17.3	B	168	183	26.8	C	321	242
	WB Right	335	0.4	A	0	164	0.1	A	0	0
	WB Approach		11.1	B	--	--	23.6	C	--	--
	SB Left	275	25.9	C	98	138	33.1	C	349	309
	SB Right		8.5	A	29	71	11.7	B	115	220
	SB Approach		20.6	C	--	--	26.1	C	--	--
12: Polk Street & NC-51	Overall		11.5	B	--	--	22.1	C	--	--
	EB Left	310	90.7	F	#233	319	81.5	F	#199	410
	EB Thru/Right		78.6	E	#521	523	105.9	F	#714	1066
	EB Approach		80.3	F	--	--	103.5	F	--	--
	WB Left	275	77.4	E	#133	135	121.3	F	#219	252
	WB Thru		56.8	E	#375	318	42.0	D	332	396
	WB Right	625	35.4	D	263	238	13.6	B	131	165
	WB Approach		52.7	D	--	--	45.0	D	--	--
	NB Dual Lefts	450	60.5	E	143	550	77.5	E	#141	550
	NB Thru/Right		71.7	E	#893	950	154.0	F	#608	1007
	NB Approach		69.0	E	--	--	129.6	F	--	--
	SB Left		99.6	F	#191	185	143.3	F	#674	932
	SB Thru		31.7	C	324	310	48.7	D	#604	826
	SB Right	175	14.8	B	66	190	17.6	B	127	275
SB Approach		41.7	D	--	--	81.4	F	--	--	
13: Downs Road & Westinghouse Boulevard	Overall		63.3	E	--	--	86.4	F	--	--
	EB Left	400	7.6	A	m41	108	5.8	A	m7	46
	EB Thru/Right		9.5	A	198	265	11.6	B	139	289
	EB Approach		9.3	A	--	--	11.5	B	--	--
	WB Left	205	17.9	B	57	101	53.0	D	#135	156
	WB Thru/Right		8.9	A	108	131	9.7	A	148	153
	WB Approach		9.9	A	--	--	15.0	B	--	--
	NB Left	245	21.7	C	100	152	65.4	E	#174	261
	NB Thru/Right		29.0	C	198	257	20.0	B	100	211
	NB Approach		26.6	C	--	--	43.4	D	--	--
	SB Left	225	19.3	B	34	66	20.6	C	71	103
	SB Thru/Right		16.0	B	48	94	26.5	C	179	252
SB Approach		17.1	B	--	--	25.0	C	--	--	
14: Nations Ford Road & Westinghouse Boulevard	Overall		13.4	B	--	--	18.4	B	--	--
	EB Left	400	53.5	D	462	398	47.6	D	207	212
	EB Thru/Right		23.0	C	483	372	17.6	B	398	318
	EB Approach		31.3	C	--	--	21.6	C	--	--
	WB Left	750	66.2	E	124	140	61.5	E	m128	167
	WB Thru/Right		33.8	C	272	321	23.2	C	452	448
	WB Approach		37.5	D	--	--	26.3	C	--	--
	NB Left	190	42.6	D	143	288	74.1	E	175	221
	NB Thru/Right		62.7	E	366	411	50.3	D	172	231
	NB Approach		57.3	E	--	--	61.7	E	--	--
	SB Left	200	38.8	D	26	46	44.1	D	58	82
	SB Thru		36.2	D	83	101	46.3	D	141	158
SB Right	275	10.7	B	64	100	29.8	C	280	249	
SB Approach		20.7	C	--	--	35.1	D	--	--	
Overall		35.9	D	--	--	29.0	C	--	--	

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

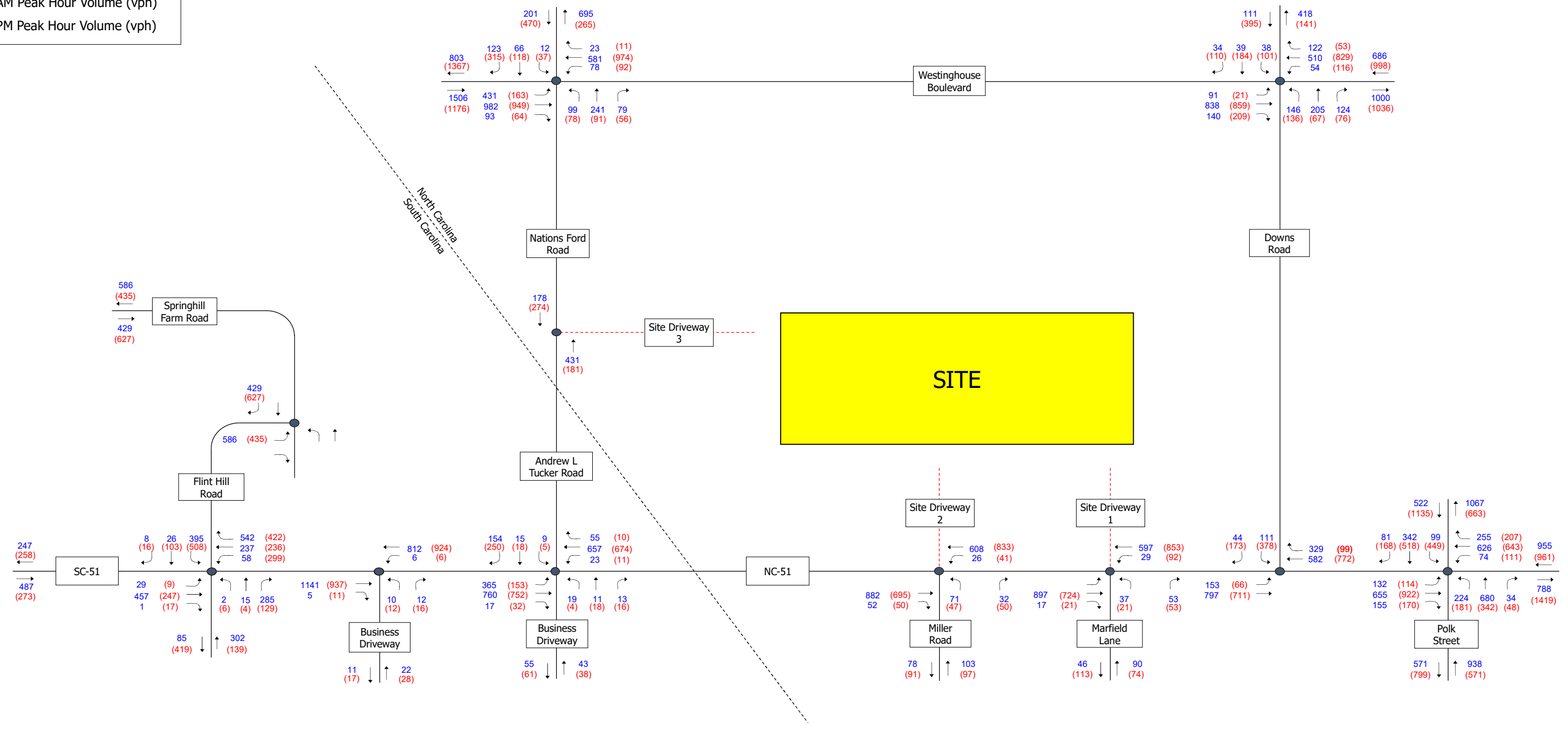
+ Delay greater than 9999.99 seconds cannot be calculated by SYNCHRO

* - 95th percentile queues for unsignalized intersections reported in number of vehicles.

SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

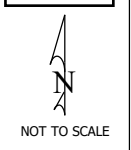
LEGEND:

- Existing Road
- - - Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)



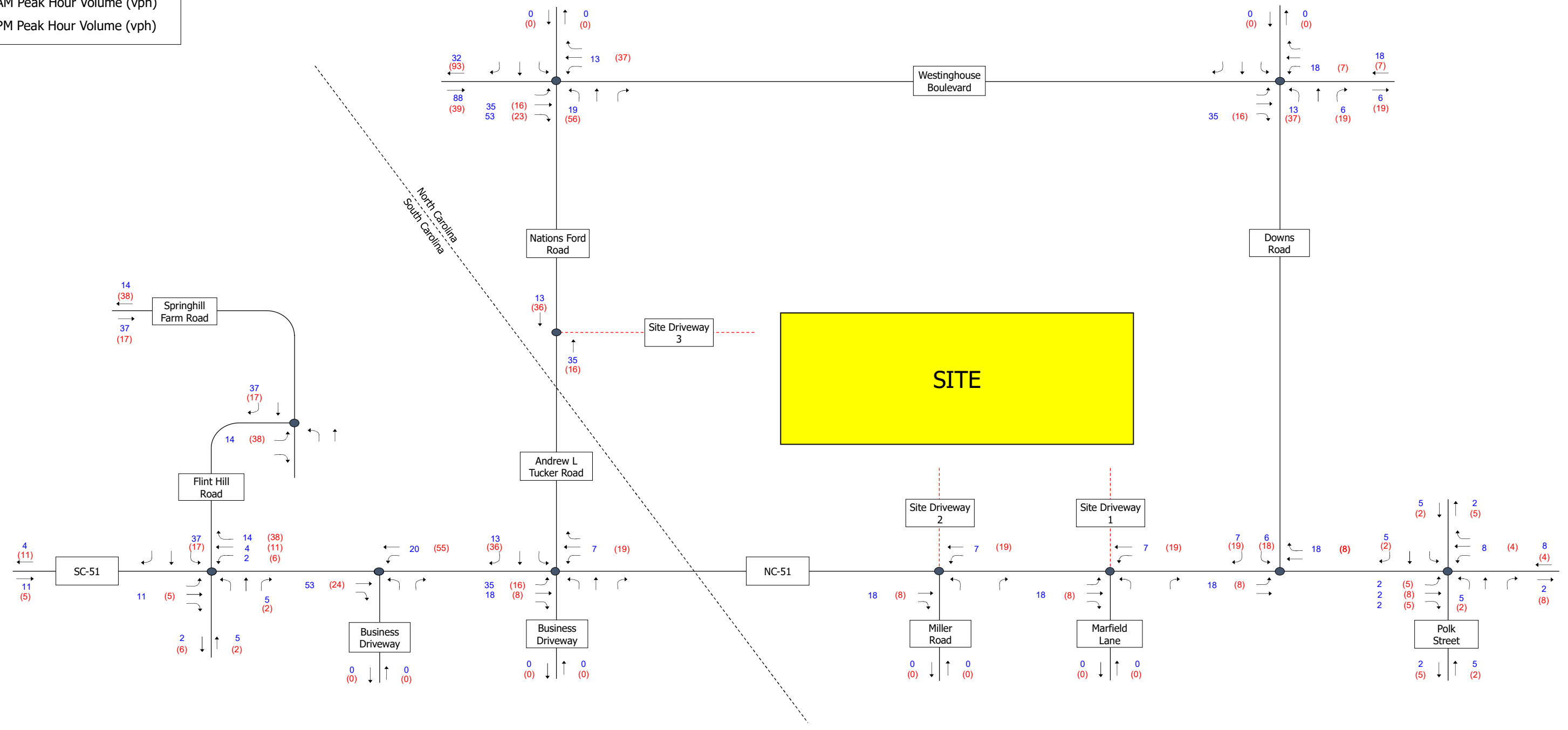
Miller Farm Traffic Impact Analysis
2025 Ambient Traffic Volumes

Figure 3-1



LEGEND:

- Existing Road
- - - Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)

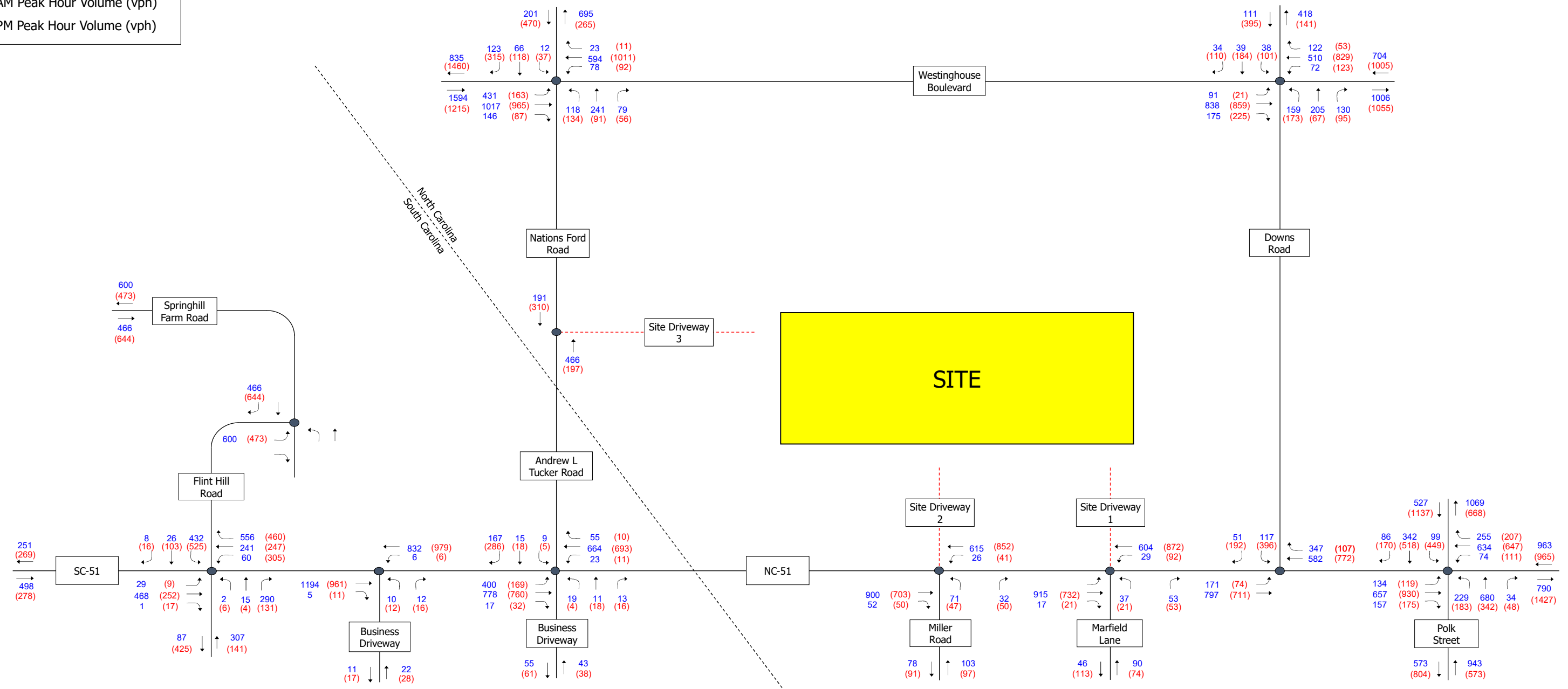


Miller Farm Traffic Impact Analysis
Approved Development 2023 Traffic Volumes - Carolina Logistics Park

Figure 3-2

LEGEND:

- Existing Road
- - - Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)



Miller Farm Traffic Impact Analysis
2025 Background Traffic Volumes

Figure 3-3

4 SITE TRIP GENERATION AND DISTRIBUTION

Site trips for the development were estimated based on the proposed land uses supplied by the developer and subsequently distributed onto the surrounding roadway network.

4.1 TRIP GENERATION

The site-generated trips shown in **Table 4-1** are based on trip generation information provided in the 10th Edition of the Institute of Transportation Engineer's (ITE's) *Trip Generation Manual* and the anticipated size of the residential development. The trip generation was calculated using the proposed number of residential units as the independent variable and the provided equation (per NCDOT standards).

Table 4-1: Trip Generation Summary

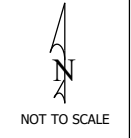
ITE Land Use Code	Independent Variable	AM Peak Hour			PM Peak Hour			Daily Traffic
		In	Out	Total	In	Out	Total	
210 – Single Family Detached Housing	215 DU	39	118	157	133	79	212	2,103
220 – Multifamily Housing (Low Rise)	145 DU	16	52	68	52	30	82	1,055
Total:		55	170	225	185	109	294	3,158

SOURCE: Institute of Transportation Engineers' *Trip Generation Manual* 10th Edition (2017)

AM peak hour trips totaled 55 incoming and 170 outgoing where PM peak hour trips totaled 185 incoming and 109 outgoing. Average daily traffic (ADT) volumes generated by the development totaled 3,158 VPD.

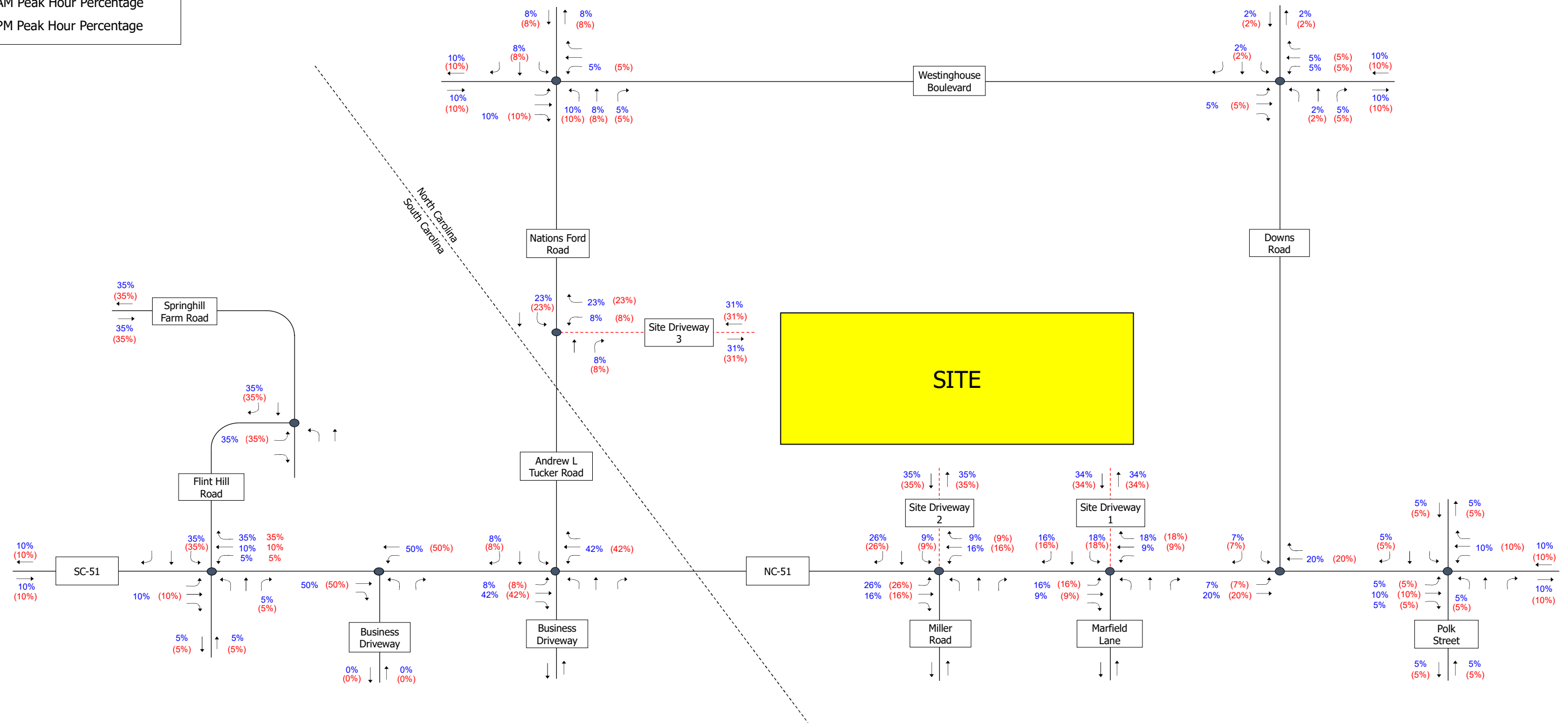
4.2 TRIP DISTRIBUTION

The directional traffic patterns, or trip distribution, of the site-generated traffic was determined using the existing AM and PM peak hour traffic characteristics and engineering judgement. It was assumed, for purposes of this study, that all site traffic would enter and exit the study area in a similar manner as the existing traffic. Area trip distribution is based on the traffic counts utilized by Timmons Group. Total trips into and out of the study area using SC-51, Flint Hill Road, Springhill Farm Road, Nations Ford Road, Westinghouse Boulevard, Downs Road, NC-51, and Polk Street form the basis for the percentage distribution. Distribution percentages into and out of the study area were calculated using existing traffic volumes entering and exiting the study area. The percentages were routed, via shortest path, to and from the proposed development. The distribution percentages were then applied to the generated trips to predict routes and project traffic volumes for the 2025 Build scenario. **Figure 4-1** shows the distribution percentages and **Figure 4-2** shows the trip distribution volumes for the proposed development.



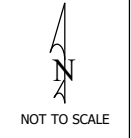
LEGEND:

- Existing Road
- - - Proposed Road
- XX AM Peak Hour Percentage
- (XX) PM Peak Hour Percentage



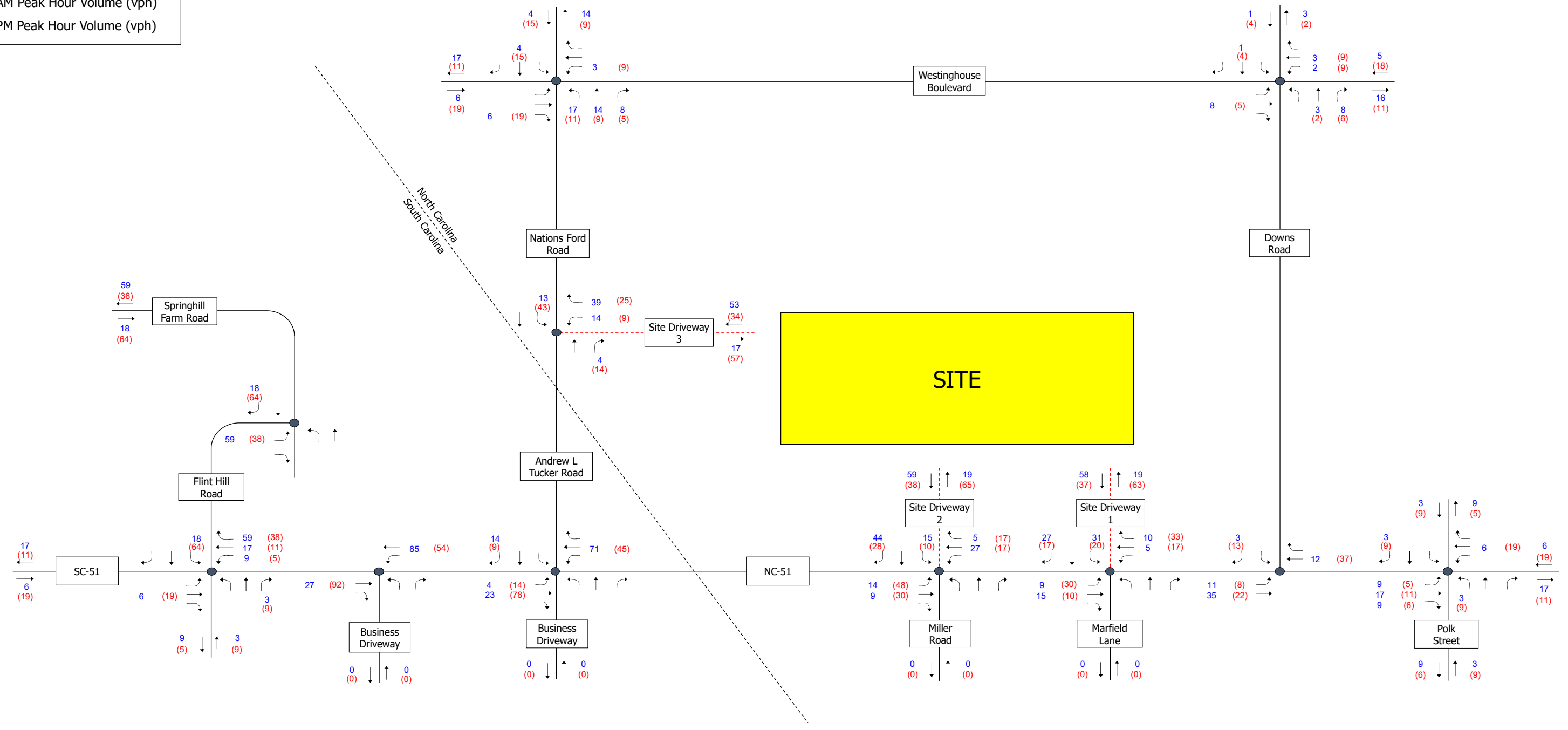
Miller Farm Traffic Impact Analysis
Trip Distribution Percentages

Figure 4-1



LEGEND:

- Existing Road
- - - Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)



Miller Farm Traffic Impact Analysis
Trip Distribution Volumes

Figure 4-2

5 BUILD CONDITION AND ANALYSIS

To complete the Build analyses (including the proposed development), the estimated site trips were added to the Background traffic volumes. The projected total volumes, along with the future intersection geometry and optimized existing signal timings, were used to complete the capacity analyses.

The 2025 Background traffic volumes (**Figure 3-1**) were added to the projected site trips from the residential development (**Figure 4-1**) to generate the 2025 Build traffic volumes (background + site) shown on **Figure 5-1**.

To summarize, the 2025 Build traffic volumes shown on **Figure 5-1** contain the following:

- 2021 traffic volumes grown by an ambient growth rate of 2% per year for four years;
- Traffic volumes from the study area approved development; and
- Site trips generated by the subject development.

5.1 2025 BUILD ANALYSIS

Tables 5-1a and **5-1b** summarize the 2025 Build intersection LOS and delay based on the future lane geometry and the 2025 Build traffic volumes shown on **Figure 5-1**. The corresponding SYNCHRO outputs are included in **Appendix F**.

South Carolina Study Area Intersections:

The signalized intersection of SC-51 / Flint Hill Road is projected to operate at a LOS C during both 2025 Build AM and PM peak hours. All approaches are projected to operate at a LOS D or better during both peak hours. Because the intersection is anticipated to operate acceptably overall, no improvements are recommended due to the construction of the proposed development.

The northbound approach at the unsignalized intersection of SC-51 / Business Driveway is projected to operate at a LOS E during the 2025 Build AM and PM peak hours. All other approaches are projected to operate at a LOS A during both peak hours. It should be noted that the northbound approach is projected to operate unacceptably during the 2025 Background AM peak hour condition without construction of the proposed development. Additionally, the northbound approach is a business driveway with minimal traffic during both peak hours with volume to capacity ratios not projected to exceed 0.21 and projected queue lengths of less than three vehicles. No improvements are recommended at this intersection due to the construction of the proposed development.

The northbound and southbound approaches at the unsignalized intersection of SC-51 / Andrew L Tucker Road / Business Driveway are projected to operate at a LOS F during the 2025 Build AM and PM peak hours. All other approaches are projected to operate at a LOS A during both peak hours. To assist with mitigation of the excessive queuing and delay present on the northbound and southbound intersection approaches, it is recommended that the development pay a fee-in-lieu (proportionate to the development's impact) for intersection signalization due to construction of the proposed development. Based on the 2025 Background and 2025 Build scenarios, the proposed development is projected to increase the subject intersection traffic volumes by a maximum of 7.3% (maximum occurs during the PM peak hour).

Table 5-1a: Intersection Level of Service and Delay Summary for South Carolina Study Area Intersections – 2025 Build Traffic Volumes

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	*95th Percentile Queue Length	Sim Traffic Max Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	*95th Percentile Queue Length	Sim Traffic Max Queue Length (ft)
5: Flint Hill Road & SC-51	EB Left	200	27.4	C	37	70	13.7	B	12	39
	EB Thru/Right		32.9	C	190	243	16.1	B	80	129
	EB Approach		32.6	C	--	--	16.0	B	--	--
	WB Left	200	48.8	D	#86	116	43.1	D	261	278
	WB Thru		27.9	C	103	120	15.8	B	72	129
	WB Right	350	17.5	B	388	329	6.7	A	154	193
	WB Approach		22.7	C	--	--	19.5	B	--	--
	NB Left	150	23.8	C	10	22	34.2	C	17	25
	NB Thru/Right		40.5	D	#302	296	45.1	D	#178	164
	NB Approach		40.3	D	--	--	44.7	D	--	--
	SB Dual Lefts	250	25.9	C	172	183	34.4	C	#273	238
	SB Thru/Right		22.8	C	40	47	28.0	C	115	137
	SB Approach		25.7	C	--	--	33.3	C	--	--
Overall			28.0	C	--	--	25.1	C	--	--
6: Business Driveway & SC-51	EB Thru/Right		0.0	A	0	345	0.0	A	0	43
	EB Approach		0.0	A	--	--	0.0	A	--	--
	WB Left/Thru		0.3	A	0	46	0.3	A	0	62
	WB Approach		0.3	A	--	--	0.3	A	--	--
	NB Left/Right		45.9	E	0.8	72	37.9	E	0.8	65
	NB Approach		45.9	E	--	--	37.9	E	--	--
7: Business Driveway/Andrew L Tucker Road & SC-51	EB Left	150	16.2	C	3.9	116	11.1	B	1	105
	EB Thru/Right		0.0	A	0	9	0.0	A	0	12
	EB Approach		5.3	A	--	--	1.9	A	--	--
	WB Left/Thru		0.6	A	0.1	68	0.3	A	0.1	76
	WB Thru/Right		0.6	A	0	55	0.3	A	0	23
	WB Approach		0.6	A	--	--	0.3	A	--	--
	NB Left/Thru/Right		+	F	ERROR	564	359.8	F	4.3	73
	NB Approach		+	F	--	--	359.8	F	--	--
	SB Left/Thru/Right		+	F	ERROR	893	266.5	F	20.4	514
SB Approach		+	F	--	--	266.5	F	--	--	

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

+ Delay greater than 9999.99 seconds cannot be calculated by SYNCHRO

* - 95th percentile queues for unsignalized intersections reported in number of vehicles.

SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

North Carolina Study Area Intersections:

The northbound and southbound approaches at the unsignalized intersection of NC-51 / Miller Road / Site Driveway 2 are projected to operate unacceptably during at least one of the 2025 Build AM and PM peak hours. All other approaches are projected to operate at a LOS A during both peak hours. Per the NCDOT Policy on Street and Driveway Access to North Carolina Highways Manual:

"Generally left and right turn lanes and tapers shall be considered when:

- In accordance with G.S. 136-18(29), the average daily traffic meets or exceeds 4,000 vehicles per day on any secondary route (the average daily traffic should include both the existing traffic plus traffic generated by the proposed development)"*

With AADTs along NC-51 exceeding 4,000 VPD, an eastbound left-turn lane is recommended at Site Driveway 2. Per the nomograph (provided in the Driveway Manual – see **Appendix G**), and projected

2025 Build traffic volumes, a 100-foot eastbound left-turn lane (with appropriate taper) is recommended (see **Figure 6-1**). As shown in **Table 5-2**, following the construction of this improvement, the northbound and southbound approaches are projected to continue to operate unacceptably during at least one peak hour. Despite the fact that these approaches are projected to operate unacceptably, no additional improvements are recommended at this intersection due to the construction of the proposed development. Outside of signalization, no feasible amount of geometric improvements will result in an acceptable level of service for the failing minor street approaches. Based on projected volumes and peaking characteristics of developments in the area, traffic signal warrants will likely not be met for the MUTCD's 4-hour and 8-hour volume warrants (which the NCDOT typically requires for signalization). Additionally, proposed and existing turn lane storage is projected to adequately contain all 95th percentile and SimTraffic queue lengths.

The northbound and southbound approaches at the unsignalized intersection of NC-51 / Marfield Lane / Site Driveway 1 are projected to operate unacceptably during both 2025 Build AM and PM peak hours. All other approaches are projected to operate at a LOS A during both peak hours. Per the nomograph (provided in the Driveway Manual – see **Appendix G**), and projected 2025 Build traffic volumes, a 100-foot eastbound left-turn lane (with appropriate taper) is recommended (see **Figure 6-1**). As shown in **Table 5-2**, following the construction of this improvement, the northbound and southbound approaches are projected to continue to operate unacceptably during at least one peak hour. Despite the fact that these approaches are projected to operate unacceptably, no additional improvements are recommended at this intersection due to the construction of the proposed development. Outside of signalization, no feasible amount of geometric improvements will result in an acceptable level of service for the failing minor street approaches. Based on projected volumes and peaking characteristics of developments in the area, traffic signal warrants will likely not be met for the MUTCD's 4-hour and 8-hour volume warrants (which the NCDOT typically requires for signalization). Additionally, proposed and existing turn lane storage is projected to adequately contain all 95th percentile and SimTraffic queue lengths and projected volume / capacity ratios are not expected to exceed 0.69 during either peak.

The signalized intersection of NC-51 / Downs Road is projected to operate at a LOS B and a LOS C during the 2025 Build AM and PM peak hours, respectively. All approaches are projected to operate at a LOS C or better during both peak hours. Because the intersection is anticipated to operate acceptably overall, no improvements are recommended due to the construction of the proposed development. Additionally, the percent difference between the 2025 Background and 2025 Build intersection delays are less than 25%, which does not trigger requirement for improvement recommendations per NCDOT's Driveway Manual.

The signalized intersection of NC-51 / Polk Street is projected to operate at a LOS E and a LOS F during the 2025 Build AM and PM peak hours, respectively. The eastbound, northbound, and southbound approaches are projected to operate unacceptably during at least one peak hour. The westbound approach is projected to operate at a LOS D during both peak hours. Despite the fact that the intersection is anticipated to operate unacceptably, no improvements are recommended due to the construction of the proposed development. The percent difference between the 2025 Background and 2025 Build intersection delays are less than 25%, which does not trigger requirement for improvement recommendations per NCDOT's Driveway Manual.

The signalized intersection of Westinghouse Boulevard / Downs Road is projected to operate at a LOS B and a LOS C during the 2025 Build AM and PM peak hours, respectively. All approaches are projected to operate at a LOS D or better during both peak hours. Because the intersection is anticipated to operate acceptably overall, no improvements are recommended due to the construction of the proposed development. Additionally, the percent difference between the 2025 Background and 2025 Build intersection delays are less than 25%, which does not trigger requirement for improvement recommendations per NCDOT's Driveway Manual.

The signalized intersection of Westinghouse Boulevard / Nations Ford Road is projected to operate at a LOS D and a LOS C during both 2025 Build AM and PM peak hours, respectively. The northbound approach is projected to operate at a LOS E during both peak hours. All other approaches are projected to operate at a LOS D or better during both peak hours. Because the intersection is anticipated to operate acceptably overall, no improvements are recommended due to the construction of the proposed development. Additionally, the percent difference between the 2025 Background and 2025 Build intersection delays are less than 25%, which does not trigger requirement for improvement recommendations per NCDOT's Driveway Manual.

All approaches at the unsignalized intersection of Nations Ford Road / Site Driveway 3 are projected to operate at a LOS B or better during the 2025 Build AM and PM peak hours. Per the nomograph (provided in the Driveway Manual – see **Appendix G**), and projected 2025 Build traffic volumes, a 100-foot eastbound left-turn lane (with appropriate taper) is recommended (see **Figure 6-1**). As shown in **Table 5-2**, following the construction of this improvement, all approaches are projected to continue to operate acceptably during both peak hours. It should be noted that the excessive queuing shown occurring at this intersection in **Table 5-2** is due to queue spillback from the intersection of SC-51 / Andrew L Tucker Road / Business Driveway.

Table 5-1b: Intersection Level of Service and Delay Summary for North Carolina Study Area Intersections – 2025 Build Traffic Volumes

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	*95th Percentile Queue Length	Sim Traffic Max Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	*95th Percentile Queue Length	Sim Traffic Max Queue Length (ft)
9: Miller Road/Site Driveway 2 & NC-51	EB Left/Thru		0.3	A	0.1	52	1.2	A	0.2	88
	EB Right	370	0.0	A	0	4	0.0	A	0	8
	EB Approach		0.3	A	--	--	1.2	A	--	--
	WB Left	335	10.8	B	0.1	50	10.0	B	0.2	51
	WB Thru/Right		0.0	A	0	0	0.0	A	0	20
	WB Approach		0.4	A	--	--	0.4	A	--	--
	NB Left/Thru		248.5	F	6.3	166	205.9	F	4.3	100
	NB Right	185	12.6	B	0.2	50	11.7	B	0.3	61
	NB Approach		178.0	F	--	--	109.8	F	--	--
	SB Left/Thru/Right		28.8	D	1.3	70	50.0	F	1.5	68
SB Approach		28.8	D	--	--	50.0	F	--	--	
10: Marfield Lane/Site Driveway 1 & NC-51	EB Left/Thru		0.2	A	0	50	0.9	A	0.2	84
	EB Right	310	0.0	A	0	2	0.0	A	0	2
	EB Approach		0.2	A	--	--	0.9	A	--	--
	WB Left	520	10.8	B	0.2	41	10.3	B	0.4	72
	WB Thru/Right		0.0	A	0	5	0.0	A	0	2
	WB Approach		0.5	A	--	--	0.9	A	--	--
	NB Left/Thru	100	104.4	F	2.6	83	144.3	F	2.1	81
	NB Right		13.1	B	0.4	64	11.8	B	0.3	61
	NB Approach		52.9	F	--	--	54.3	F	--	--
	SB Left/Thru/Right		48.4	E	2.1	87	133.8	F	3	83
SB Approach		48.4	E	--	--	133.8	F	--	--	
11: NC-51 & Downs Road	EB Left	310	24.9	C	136	162	43.2	D	112	129
	EB Thru		7.3	A	196	117	15.0	B	282	170
	EB Approach		10.4	B	--	--	17.9	B	--	--
	WB U-Turn	210	26.8	C	10	27	41.8	D	14	33
	WB Thru		17.8	B	176	180	27.3	C	342	259
	WB Right	335	0.4	A	0	190	0.1	A	0	0
	WB Approach		11.4	B	--	--	24.2	C	--	--
	SB Left	275	26.4	C	99	139	34.6	C	360	316
	SB Right		8.5	A	29	73	12.5	B	129	214
	SB Approach		20.7	C	--	--	27.1	C	--	--
Overall		11.7	B	--	--	22.7	C	--	--	
12: Polk Street & NC-51	EB Left	310	88.2	F	#242	382	77.7	E	#200	410
	EB Thru/Right		77.8	E	#533	576	112.7	F	#731	1194
	EB Approach		79.3	E	--	--	109.2	F	--	--
	WB Left	275	77.4	E	#133	152	121.3	F	#219	206
	WB Thru		57.1	E	#381	345	44.0	D	347	349
	WB Right	625	35.3	D	263	248	14.1	B	134	165
	WB Approach		52.9	D	--	--	46.4	D	--	--
	NB Dual Lefts	450	58.8	E	143	550	71.0	E	#139	550
	NB Thru/Right		78.2	E	#905	985	154.0	F	#608	1017
	NB Approach		73.4	E	--	--	126.6	F	--	--
	SB Left		99.6	F	#191	173	143.3	F	#674	1085
	SB Thru		33.4	C	334	309	51.6	D	#617	1032
	SB Right	175	15.3	B	69	198	17.8	B	133	275
	SB Approach		42.7	D	--	--	82.3	F	--	--
Overall		64.6	E	--	--	88.4	F	--	--	
13: Downs Road & Westinghouse Boulevard	EB Left	400	7.9	A	m40	108	5.8	A	m8	41
	EB Thru/Right		9.5	A	204	270	10.9	B	164	291
	EB Approach		9.4	A	--	--	10.8	B	--	--
	WB Left	205	19.2	B	#61	102	62.0	E	#146	194
	WB Thru/Right		9.1	A	109	125	9.6	A	151	181
	WB Approach		10.1	B	--	--	16.3	B	--	--
	NB Left	245	21.4	C	100	184	74.2	E	#176	261
	NB Thru/Right		30.0	C	#213	294	20.5	C	104	211
	NB Approach		27.3	C	--	--	47.6	D	--	--
	SB Left	225	19.6	B	34	66	21.0	C	71	111
	SB Thru/Right		15.9	B	48	94	27.4	C	#186	232
	SB Approach		17.1	B	--	--	25.8	C	--	--
	Overall		13.7	B	--	--	19.2	B	--	--

Table 5-1b: Intersection Level of Service and Delay Summary for North Carolina Study Area Intersections – 2025 Build Traffic Volumes (Continued)

14: Nations Ford Road & Westinghouse Boulevard	EB Left	400	54.8	D	#469	398	48.5	D	207	227
	EB Thru/Right		24.9	C	506	383	19.8	B	434	322
	EB Approach		33.0	C	--	--	23.6	C	--	--
	WB Left	750	67.3	E	129	143	60.4	E	m135	158
	WB Thru/Right		35.1	D	274	325	23.0	C	m375	434
	WB Approach		38.9	D	--	--	26.4	C	--	--
	NB Left	190	42.1	D	158	289	78.2	E	191	225
	NB Thru/Right		61.0	E	386	430	49.1	D	186	228
	NB Approach		55.6	E	--	--	62.9	E	--	--
	SB Left	200	37.3	D	26	47	42.6	D	58	81
	SB Thru		34.7	C	86	102	45.4	D	155	196
	SB Right	275	10.1	B	62	100	28.7	C	276	262
SB Approach		20.1	C	--	--	34.4	C	--	--	
Overall			37.1	D	--	--	30.1	C	--	--
15: Andrew L Tucker Road/Nations Ford Road & Site Driveway 3	WB Left/Right		13.3	B	0.4	497	11.0	B	0.2	55
	WB Approach		13.3	B	--	--	11.0	B	--	--
	NB Thru/Right		0.0	A	0	0	0.0	A	0	0
	NB Approach		0.0	A	--	--	0.0	A	--	--
	SB Left/Thru		0.5	A	0	1370	1.0	A	0.1	81
	SB Approach		0.5	A	--	--	1.0	A	--	--

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

+ Delay greater than 9999.99 seconds cannot be calculated by SYNCHRO

* - 95th percentile queues for unsignalized intersections reported in number of vehicles.

SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

**Table 5-2: Intersection Level of Service and Delay Summary –
2025 Build + Improvements Traffic Volumes**

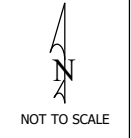
Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	*95th Percentile Queue Length	Sim Traffic Max Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	*95th Percentile Queue Length	Sim Traffic Max Queue Length (ft)
9: Miller Road/Site Driveway 2 & NC 51	EB Left	100	9.2	A	0.1	24	10.6	B	0.2	49
	EB Thru		0.0	A	0	0	0.0	A	0	0
	EB Right	370	0.0	A	0	2	0.0	A	0	15
	EB Approach		0.1	A	--	--	0.6	A	--	--
	WB Left	335	10.8	B	0.1	41	10.0	B	0.2	65
	WB Thru/Right		0.0	A	0	4	0.0	A	0	7
	WB Approach		0.4	A	--	--	0.4	A	--	--
	NB Left/Thru		234.9	F	6.1	144	181.7	F	4.1	105
	NB Right	185	12.6	B	0.2	44	11.7	B	0.3	65
	NB Approach		168.4	F	--	--	97.5	F	--	--
	SB Left/Thru/Right		28.2	D	1.3	74	45.6	E	1.4	86
SB Approach		28.2	D	--	--	45.6	E	--	--	
10: Marfield Lane/Site Driveway 1 & NC-51	EB Left	100	9.0	A	0	24	10.6	B	0.2	42
	EB Thru		0.0	A	0	2	0.0	A	0	0
	EB Right	310	0.0	A	0	2	0.0	A	0	4
	EB Approach		0.1	A	--	--	0.4	A	--	--
	WB Left	520	10.8	B	0.2	41	10.3	B	0.4	78
	WB Thru/Right		0.0	A	0	0	0.0	A	0	6
	WB Approach		0.5	A	--	--	0.9	A	--	--
	NB Left/Thru		102.1	F	2.6	74	135.6	F	2.1	61
	NB Right		13.1	B	0.4	60	11.8	B	0.3	52
	NB Approach		51.9	F	--	--	51.5	F	--	--
	SB Left/Thru/Right		47.9	E	2.1	82	123.6	F	2.9	69
SB Approach		47.9	E	--	--	123.6	F	--	--	
15: Andrew L Tucker Road/Nations Ford Road & Site Driveway 3	WB Left/Right		13.3	B	0.4	529	10.9	B	0.2	60
	WB Approach		13.3	B	--	--	10.9	B	--	--
	NB Thru/Right		0.0	A	0	0	0.0	A	0	0
	NB Approach		0.0	A	--	--	0.0	A	--	--
	SB Left	100	8.5	A	0	185	7.8	A	0.1	65
	SB Thru		0.0	A	0	1469	0.0	A	0	34
	SB Approach		0.5	A	--	--	1.0	A	--	--

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

+ Delay greater than 9999.99 seconds cannot be calculated by SYNCHRO

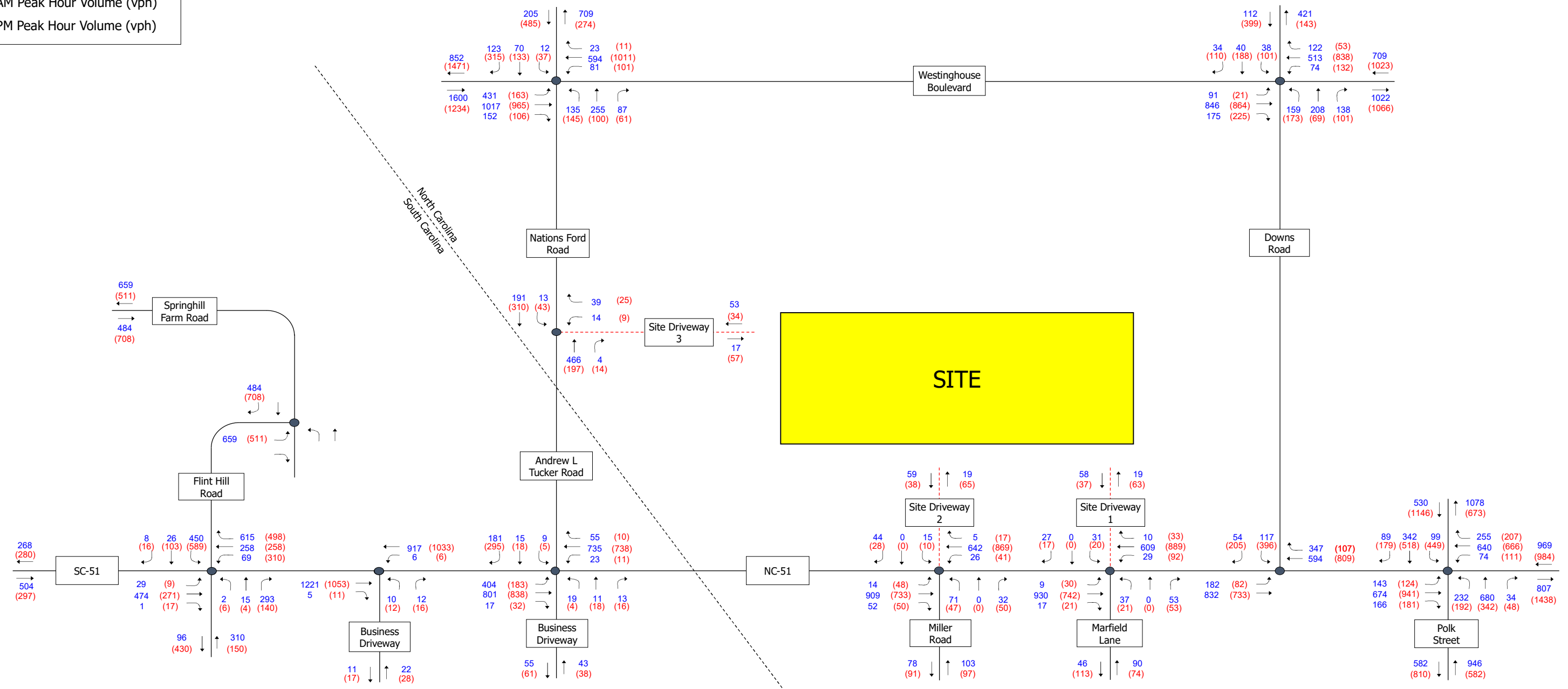
* - 95th percentile queues for unsignalized intersections reported in number of vehicles.

SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.



LEGEND:

- Existing Road
- - - Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)



Miller Farm Traffic Impact Analysis 2025 Build Traffic Volumes

Figure 5-1

6 CONCLUSIONS AND RECOMMENDATIONS

Capacity analyses were performed for the following scenarios:

- 2021 Existing traffic volumes;
- 2025 Background traffic volumes (ambient growth + approved surrounding developments); and
- 2025 Build traffic volumes (Background + site trips).

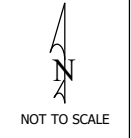
In closing, the following improvements (see **Figure 6-1**) are recommended in conjunction with the construction of the proposed development:

South Carolina Study Area Intersections:

- SC-51 / Andrew L Tucker Road / Business Driveway
 - Fee-in-lieu (proportionate to the development's impact) for intersection signalization

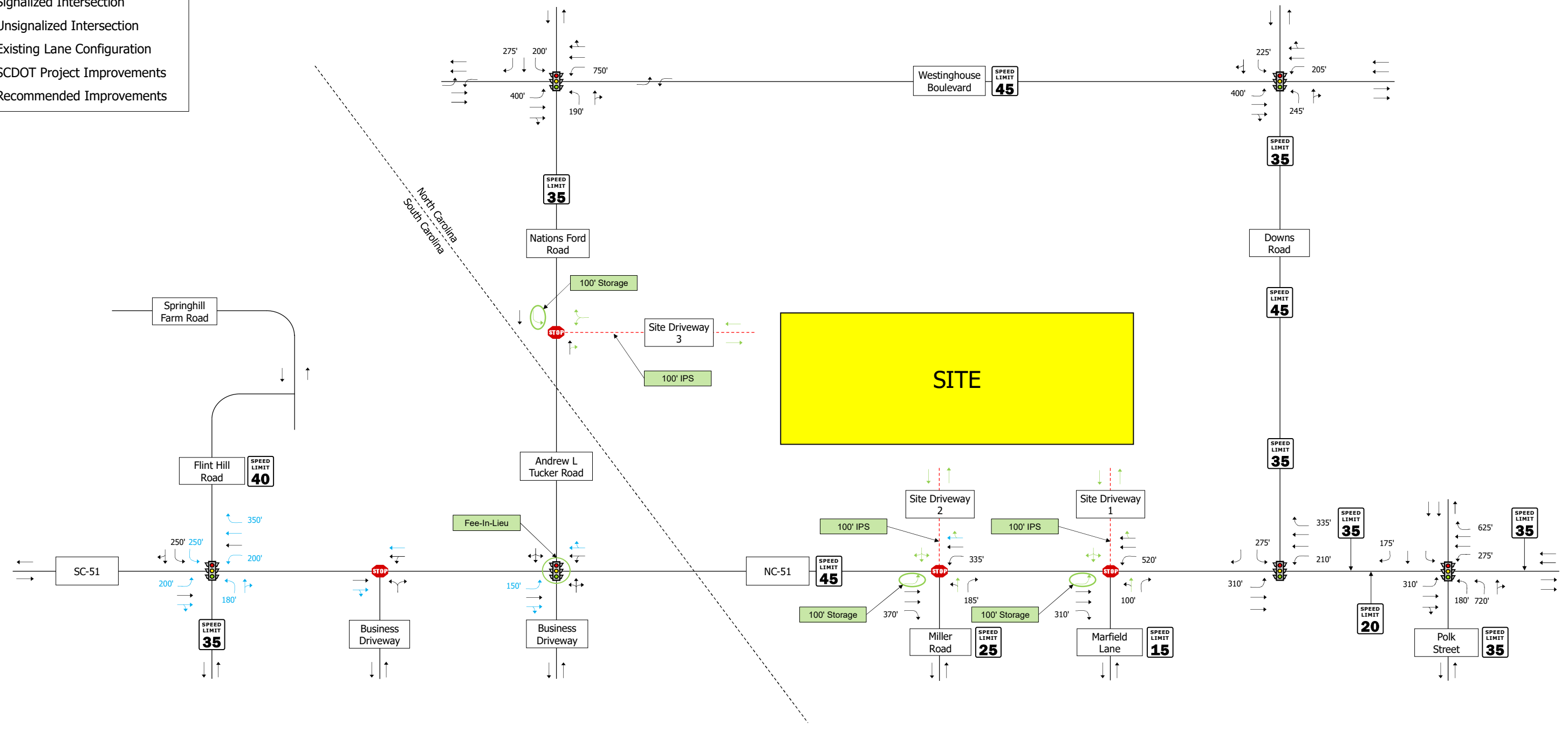
North Carolina Study Area Intersections:

- NC-51 / Miller Road / Site Driveway 2
 - Construction of a 100-foot eastbound left-turn lane (with appropriate taper)
 - 100-Foot internally protected storage (IPS)
- NC-51 / Marfield Lane / Site Driveway 1
 - Construction of a 100-foot eastbound left-turn lane (with appropriate taper)
 - 100-Foot IPS
- Nations Ford Road / Site Driveway 3
 - Construction of a 100-foot southbound left-turn lane (with appropriate taper)
 - 100-Foot IPS



LEGEND:

- Existing Road
- - - Proposed Road
- Signalized Intersection
- Unsignalized Intersection
- Existing Lane Configuration
- SCDOT Project Improvements
- Recommended Improvements



Miller Farm Traffic Impact Analysis
2025 Proposed Lane Configuration

Figure 6-1



Mecklenburg County Multi-Jurisdictional Hazard Mitigation Plan 2021 Progress Report – Town of Pineville

1 Introduction

To maintain the Community Rating System (CRS) status within the National Flood Insurance Program, **the Town of Pineville** is required to provide an annual progress report on the implementation of each of the mitigation actions the town proposed in the Mecklenburg County Multi-Jurisdictional Hazard Mitigation Plan (HMP). The objective of this evaluation is to ensure that there is a continual and responsive planning process that will keep the HMP plan dynamic and responsive to the needs and capabilities of all the jurisdictions.

The HMP was developed in response to requirements of the Disaster Mitigation Act of 2000. The initial version was completed in 2005 and since then, there have been scheduled updates at five-year intervals. The current version of plan was adopted by the Town Council on October 26, 2020 and approved by FEMA on December 3, 2020. A copy of the current HMP is available from the Charlotte-Mecklenburg Emergency Management website at: <https://charlottenc.gov/EmergencyManagement/Plans/Pages/default.aspx>.

During the development of the 2020 plan, the Mecklenburg County Hazard Mitigation Planning Committee (HMPC) met four times between January 2019 and July 2020. Later meetings were virtual due to the COVID-19 pandemic. A website (<http://www.mecknchmp.com/index.html>) was created for the 2020 HMP plan update where you can find information about Hazard Mitigation Planning Committee meetings, public meetings, review draft documents, and learn more about the hazards that affect Mecklenburg County.

2 Implementation

The hazard mitigation planning process involves the setting of goals and objectives, the review of community vulnerabilities and capabilities and the development of a series of mitigation actions that when implemented will make the **Town of Pineville** more resilient during natural hazards. The goals and objectives of the 2020 plan includes:

- Identify and implement hazard mitigation projects designed to reduce the impact of future hazard events on existing critical facilities and infrastructure as well as public and private property.
- Conduct education and outreach activities intended to better inform people about hazards and encourage personal responsibility for preparedness and mitigation

- Improve emergency preparedness and response capabilities
- Enact planning and policy measures to reduce the impacts of identified hazards and make future development more resilient to hazards
-

The implementation status of individual mitigation actions outlined in chapter seven (7) of the plan is summarized in a tabular format in **Section 5 (Review of Mitigation Actions)** of this report.

3 Recommendations

Implementation and maintenance of the plan is critical to the overall success of hazard mitigation planning. It is recommended that the CRS Coordinator work closely with Charlotte-Mecklenburg Emergency Management (CMEMO) and HMPC in all plan monitoring and update procedures to meet CRS requirements:

4 Dissemination

This Progress Report was submitted to the Town Council at a formal meeting on 7.2 The report was made available to the public via <https://www.pinevillenc.gov/planning-meetings-and-projects/>. Additionally, copies are available at the Charlotte Mecklenburg Storm Water Services office located at 2145 Suttle Avenue, Charlotte, NC 28208. For more information, please call (980) 314-3229.

5 Review of Mitigation Actions

Action#	Mitigation Action	2021 Implementation Status Update
Pineville- 1	Seek grant funding to retrofit critical facilities and Town-owned facilities for improved resilience to all hazards with the use of the latest building materials and technology. This could include, but is not limited to: wind retrofits, low water consumption fixtures, leak detectors, backup generators, ignition-resistant materials, 320 or 361 compliant safe rooms, lightning protection, hail-resistant roofing, and anchoring fixed building equipment.	In progress: Mecklenburg County retroFIT flood hazard mitigation grant program rolled out in FY16 project to identify and partially fund various mitigation projects using techniques such as floodproofing.
Pineville- 2	Seek grant funding to install backup generators or quick connect hook ups for mobile generators on any newly constructed county/town critical facilities.	In Progress. New Town Hall facility that is under construction will have backup generator.
Pineville- 3	Maintain continued compliance with the National Flood Insurance Program (NFIP) through implementation and periodic evaluation of the following higher regulatory standard (in addition to basic required compliance actions): a) Development standards linked to Community Floodplain (Future Conditions) b) Require critical facilities protection to 500- year flood levels c) Require parking lots to be elevated (no more than six inches deep in any parking space during Community Flood event) d) Require dry land access for new or substantially improved buildings (above Community Flood BFE) e) Levee restrictions f) Cumulative substantial damage improvement provision g) Prohibit basements below flood level on filled lots	In Progress: Municipal Ordinance Updates to City, County, and town floodplain ordinances completed as Flood Insurance Rate Map revisions become effective. Staff participated in FEMA/NCDEM training E273 “Managing Floodplain Development through the National Flood Insurance Program”.
Pineville- 4	In coordination with CMSWS, continue participation in the NFIP Community Rating System (CRS) with the goal of increasing CRS credit points to become a Class 5 community or better within five years.	Completed: Achieved CRS class 5 rating during the 2020 cycle verification.
Pineville- 5	Advertise and promote the availability of flood insurance.	In Progress: Annual “Floodplain Flash” newsletter distributed by USPS in November 2020. NFIP information is also presented through traditional media and social media throughout the year. NFIP information is also posted on the CMSWS website.

.Pineville- 6	Preserve lands subject to repetitive flooding.	In Progress. The Mecklenburg County Flood Risk Assessment and Risk Reduction Tool (RARRT) is now used to guide local mitigation program actions. Flood risk scores, mitigation priority scores and planning level mitigation techniques were developed for all buildings with property touching the floodplain with updated floodplain maps. This data is now used to develop and prioritize local mitigation efforts.
Pineville- 7	Continue to limit future development in identified flood hazard areas and prohibit new critical facilities from being located with the 500-year floodplain as required in the Town's flood damage prevention ordinance.	In Progress. Town maintains Zoning and Subdivision Ordinances to attain this goal. In process of developing a new Comprehensive Plan and updating the Zoning Ordinance. Zoning Ordinance has been completed and new Comprehensive Plan is underway.
Pineville- 8	Conduct cumulative impact analysis/studies for multiple development projects within the same watershed.	In Progress: Staff continues to require extensive studies for development projects within watersheds.
Pineville- 9	Continue to coordinate with CMEMO on enhancements to the Town's early warning system and procedures for imminent hazard events.	In Progress: Continue to coordinate with CMEMO on an ongoing basis.
Pineville- 10	On an annual basis, coordinate with Charlotte-Mecklenburg Emergency Management on a widespread public outreach activity to provide information on all natural hazards facing the area to local residents, including methods for preventing damages from hazardous conditions and how to respond when an imminent hazard threatens.	In Progress: All Hazards Advisory Committee (AHAC) Conference held 05-13-21
Pineville- 11	On an annual basis, coordinate with Charlotte-Mecklenburg Emergency Management to provide information on all natural hazards facing the area to local planning staff and elected officials. This should be combined with an annual progress report on the status of local mitigation actions as identified in the Multi-jurisdictional Hazard Mitigation Plan.	In Progress: All Hazards Advisory Committee (AHAC) Conference held 05-13-21
Pineville- 12	Acquire safe sites for public facilities, including schools, police and fire stations, etc.	Achieved/Ongoing. Belle Johnston Community Center can function as a safe site and any other current or future public facilities that qualify.
Pineville- 13	Develop early warning system for hazard events.	In April, 2021 Mecklenburg County in partnership with the Department of Homeland Security – Science and Technology Directorate implemented a real-time flood inundation mapping system utilizing real-time stream height data transmitted by recently installed low-cost flood sensors. This effort complemented the existing FINs system and early flood warning notification. The inundation mapping system is based on data developed from the H&H models, elevation certificate information and topography. The system provides real-time flood intelligence that can be shared with Emergency Management and other agencies to improve early flood

		warning, flood disaster response, and recovery. Two flood sensors were installed in the town of Pineville to warn town staff when flood waters are threatening two of the towns critical facilities.
Pineville-14	Develop traffic response plan addressing how to deal with traffic in a commercial area for ingress/egress in the event of a disaster or emergency.	Completed/Ongoing. The Police Department has traffic control measures in place. The Town is currently working on re-aligning a traffic light for better and more efficient traffic flow.