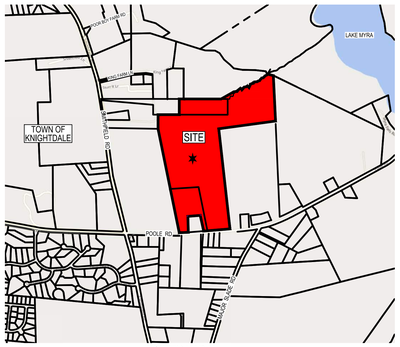
MASTER PLAN FOR

SANCTUARY AT POOLE

PLANNED UNIT DEVELOPMENT

MARK'S CREEK TOWNSHIP, TOWN OF KNIGHDALE, WAKE COUNTY, NC

ZMA-6-22



VICINITY MAP

0 500' 1,000' 2,000'

SCALE: 1" = 1000'

SHEET NUMBER	SHEET TITLE
C0.0	COVER SHEET
C1.0	EXISTING CONDITION / ENVIRONMENTAL SURVEY (ALTA-NSPS LAND TITLE SURVEY) P1
C1.1	EXISTING CONDITION / ENVIRONMENTAL SURVEY (ALTA-NSPS LAND TITLE SURVEY) P2
C1.2	EXISTING CONDITIONS SURVEY
C2.0	SUBDIVISION SITE PLAN
C2.1	MASTER PLAN RENDERING
C2.2	PHASING PLAN
C3.0	TRANSPORTATION PLAN
C3.1	SIGNAGE PLAN
C4.0	UTILITY PLAN
C5.0	STORMWATER MANAGEMENT PLAN
C6.0	OPEN SPACE PLAN
C7.0	CONCEPTUAL OPEN SPACE RENDERINGS
L1.1	LANDSCAPE & LIGHTING PLAN
L1.2	LANDSCAPE & LIGHTING DETAILS

SITE DATA TABLE

PIN NUMBER/SITE AREA:		
PIN #	AREA (AC)	AREA (SF)
TRACT 1A (1762582868)	58.50	2,548,188
TRACT 2 (1762572715)	8.23	358,710
TRACT 3 (1762595569)	6.10	263,952
OFFSITE ROW ACQUISITION (1762483243)	0.79	34,412
SUBTOTAL GROSS AREA	73.62	3,205,262
LESS STREET ROW DEDICATION (POOLE ROAD)	0.31	13,504
NET SITE AREA	**73.31**	**3,191,758**
ZONING:		
EXISTING USE	VACANT/RURAL	
PROPOSED ZONING	PUD GR8	
PROPOSED USE	SINGLE-FAMILY DETACHED, TOWNHOMES, RECREATIONAL AMENITIES	
RESIDENTIAL LOT COUNT:		
60' WIDE SINGLE FAMILY (FRONT LOAD)	85	
35' WIDE SINGLE-FAMILY (REAR/ALLEY LOAD)	115	
TOWNHOMES (REAR/ALLEY LOAD)	37	
TOTAL LOTS	**237**	
DENSITY:		
MAXIMUM DENSITY	(237/73.31) = 3.23 D.U./ACRE +/-	
BUILDING SETBACKS (60' WIDE SINGLE-FAMILY - FRONT LOAD):		
FRONT (FT)	20	
INTERIOR SIDE (FT)	5	
STREET SIDE (FT)	10	
REAR (FT)	25	
MINIMUM LOT WIDTH (FT)	60	
BUILDING SETBACKS (35' WIDE SINGLE-FAMILY - REAR LOAD):		
FRONT (FT)	10	
INTERIOR SIDE (FT)	3	
STREET SIDE (FT)	8	
REAR (FT)	20	
MINIMUM LOT WIDTH (FT)	35	
BUILDING SETBACKS (TOWNHOMES - REAR LOAD):		
FRONT (FT)	5	
BUILDING SEPARATION (FT)	10	
STREET SIDE (FT)	15	
REAR (FT)	20	
TREE SAVE AREA:		
10% OF GROSS AREA (AC)	7.33	
PROVIDED (AC)	7.50	

BEDROOM CALCULATION (OUSIDE 1.2 MILE)				
LOT TYPE	**UNITS**	**BEDS/UNIT**	**TOTAL BEDS**	
TOWNHOMES	37	4	148	
35' SINGLE-FAMILY LOTS (REAR-LOAD)	115	3	345	
60' SINGLE-FAMILY LOTS (FRONT LOAD)	85	4	340	
TOTAL BEDS OUTSIDE 1/2 MILE			833	
REQUIRED OPEN SPACE CALCULATION	**BEDS**	**OPEN SPACE/BED**	**SF**	**AC**
CALCULATION	833	520	433,160	9.94
25% REDUCTION FOR CLUBHOUSE/POOL			324,870	7.46
ACTIVE OPEN SPACE			162,435	3.73
PASSIVE OPEN SPACE			162,435	3.73
PROVIDED OPEN SPACE				**AC**
ACTIVE OPEN SPACE				5.73
PASSIVE OPEN SPACE				5.59
TOTAL OPEN SPACE				11.32

NOTES:

1) A PORTION OF THE SITE IS LOCATED WITHIN LOWER NEUSE RIVER WATERSHED AND NEUSE RIVER BASIN. A PORTION OF THE SITE IS LOCATED WITHIN THE MARKS CREEK WATERSHED AND NEUSE RIVER BASIN.
2) ALL SURVEY INFORMATION PROVIDED TO BGE, SPECIFICALLY THE ALTA/NSPS LAND TITLE SURVEY COMPLETED BY BATEMAN CIVIL SURVEY COMPANY ON FEBRUARY 25, 2022 UNDER THE SUPERVISION OF LICENSED LAND SURVEYOR STEVEN P CARSON, PLS. ANY SUPPLEMENTAL INFORMATION WAS OBTAINED FROM WAKE COUNTY GIS.
3) ALL PROPERTIES SHOWN AND INCLUDED WITH THE MASTER PLAN ARE SITUATED WITHIN ZONE "X" PER NATIONAL INSURANCE PROGRAM FLOOD INSURANCE RATE MAP #3720176200J, DATED 05/02/2006. IN ADDITION, THE PROPERTIES SHOWN HEREON ARE NOT SUBJECT TO ANY FEMA FLOOD HAZARD AREAS.
4) PIN #1762582868, PIN #1762572715, & PIN #1762483243 ARE SUBJECT TO FLOOD PRONE SOILS ACCORDING TO WAKE COUNTY GIS.
5) DELINEATION OF POTENTIAL JURISDICTIONAL STREAMS AND WETLANDS WAS COMPLETED BY S&EC ON DECEMBER 30, 2021.
6) ENVIRONMENTAL IMPACT STATEMENT

ACCORDING TO NORTH CAROLINA GENERAL STATUTE, CHAPTER 113A, 113A-4:

EVERY STATE AGENCY SHALL INCLUDE IN EVERY RECOMMENDATION OR REPORT ON ANY ACTION INVOLVING SIGNIFICANT EXPENDITURE OF PUBLIC MONEYS OR USE OF PUBLIC LAND FOR PROJECTS AND PROGRAMS SIGNIFICANTLY AFFECTING THE QUALITY OF THE ENVIRONMENT OF THIS STATE, A DETAILED STATEMENT BY THE RESPONSIBLE OFFICIAL SETTING FORTH THE FOLLOWING:

A. THE DIRECT ENVIRONMENTAL IMPACT OF THE PROPOSED ACTION;
B. ANY SIGNIFICANT ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED SHOULD THE PROPOSAL BE IMPLEMENTED;
C. MITIGATION MEASURES PROPOSED TO MINIMIZE THE IMPACT;
D. ALTERNATIVES TO THE PROPOSED ACTION;
E. THE RELATIONSHIP BETWEEN THE SHORT-TERM USES OF THE ENVIRONMENT INVOLVED IN THE PROPOSED ACTION AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY; AND
F. ANY IRREVERSIBLE AND IRRETRIEVABLE ENVIRONMENTAL CHANGES WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED.

BASED ON THE ABOVE, THE TOWN OF KNIGHTDALE SHALL DETERMINE IF AN ENVIRONMENTAL IMPACT STATEMENT IS REQUIRED.

7) FLOODPLAIN DEVELOPMENT PERMIT (UNIFIED DEVELOPMENT ORDINANCE - CHAPTER 9 – ENVIRONMENTAL PROTECTION STANDARDS)

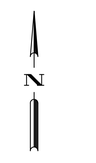
A FLOODPLAIN DEVELOPMENT PERMIT SHALL BE REQUIRED IN CONFORMANCE WITH THE PROVISIONS OF THIS ORDINANCE PRIOR TO THE COMMENCEMENT OF ANY DEVELOPMENT ACTIVITIES WITHIN SPECIAL FLOOD HAZARD AREAS AND FUTURE CONDITIONS FLOOD HAZARD AREAS DETERMINED IN SECTION 9.5 (B)(1)

THE SPECIAL FLOOD HAZARD AREAS AND FUTURE CONDITIONS FLOOD HAZARD AREAS ARE THOSE IDENTIFIED UNDER THE COOPERATING TECHNICAL STATE (CTS) AGREEMENT BETWEEN THE STATE OF NORTH CAROLINA AND FEMA IN ITS FIS DATED JULY 19, 2022, FOR WAKE COUNTY AND ASSOCIATED DFIRM PANELS, INCLUDING ANY DIGITAL DATA DEVELOPED AS PART OF THE FIS, AND ANY REVISION THERETO, WHICH ARE ADOPTED BY REFERENCE AND DECLARED A PART OF THIS ORDINANCE. THE SPECIAL FLOOD HAZARD AREAS AND FUTURE CONDITIONS FLOOD HAZARD AREAS ALSO INCLUDE THOSE DEFINED THROUGH STANDARD ENGINEERING ANALYSIS FOR PRIVATE DEVELOPMENTS OR BY GOVERNMENTAL AGENCIES, BUT WHICH HAVE NOT YET BEEN INCORPORATED IN THE FIRM. THIS INCLUDES, BUT IS NOT LIMITED TO, DETAILED FLOOD DATA:

A. GENERATED AS A REQUIREMENT OF THIS ORDINANCE;
B. PRELIMINARY FIRMS WHERE MORE STRINGENT THAN THE EFFECTIVE FIRM; OR
C. POST-DISASTER FLOOD RECOVERY MAPS.

THE TRACTS OF LAND SHOWN ON THESE PLANS ARE SITUATED WITHIN ZONE "X" PER THE NATIONAL INSURANCE PROGRAM FLOOD INSURANCE RATE MAP #3720176200J, DATED MAY 2, 2006 AND NOT SUBJECT TO FEMA SPECIAL FLOOD HAZARD AREAS.

PROPERTY OWNER:	DEVELOPER:	CIVIL ENGINEER:	SURVEYOR:	ENVIRONMENTAL SURVEY CONSULTANT:
KEVIN D. WILLIAMS & DEBBIE A. WILLIAMS 3833 S SMITHFIELD RD KNIGHTDALE, NC, 27545-9345	DR HORTON - TERRAMOR, LLC 7208 FALLS OF NEUSE ROAD SUITE 201 RALEIGH, NC 27615 (919) 809-4207 CONTACT: JON HOLTVEDT, P.E.	BGE, INC 5440 WADE PARK BLVD SUITE 102 RALEIGH, NC 27607 (919) 276-0111 CONTACT: JAVIER D. JARAMILLO, P.E.	BATEMAN CIVIL SURVEY COMPANY 2524 RELIANCE AVENUE APEX, NC, 27539 (919) 577-1080 CONTACT: STEVEN P. CARSON, PLS	8412 FALLS OF NEUSE ROAD SUITE 102 RALEIGH, NC 27615 (919) 846-5900 CONTACT: STEVEN BALL, RF, PWS



2nd Master Plan Submittal: November 28, 2022
1st Master Plan Submittal: October 24, 2022

0 50' 100' 200'

SCALE: 1" = 100'

REV	DATE	DESCRIPTION
2	01/03/2023	MASTER PLAN REVISIONS PER TOK 2ND REVIEW COMMENTS
1	11/28/2022	MASTER PLAN REVISIONS PER TOK 1ST REVIEW COMMENTS

DESIGNED BY: BZ
DRAWN BY: DJ
REVIEWED BY: BZ

BGE
5440 WADE PARK BLVD, SUITE 102
RALEIGH, NC 27607
WWW.BGEINC.COM
NC LICENSE #C-4397

DR HORTON - TERRAMOR, LLC
7208 FALLS OF NEUSE ROAD
SUITE 201
RALEIGH, NC 27615
(919) 809 - 4207

SANCTUARY AT POOLE
9701 POOLE ROAD (S.R.1007)
TOWN OF KNIGHTDALE
WAKE COUNTY, NC

COVER SHEET

NORTH CAROLINA PROFESSIONAL SEAL 051656 ENGINEER JAVIER D. JARAMILLO

NOT FOR CONSTRUCTION

FILE NUMBER: 9318-01

DATE: 11/28/2022

C0.0

CLASS OF SURVEY: A
POSITIONAL ACCURACY: 0.06'
TYPE OF GPS FIELD PROCEDURE: NC REAL TIME NETWORK
DATES OF SURVEY: FEBRUARY 2022
DATUM/EPOCH: NAD83(NSRS2011)/SPC
GEOID MODEL: 18
COMBINED GRID FACTOR(S): 0.99990987
UNITS: US SURVEY FEET

SURVEY COMMENTS
SURVEY MADE BY BATEMAN CIVIL SURVEY COMPANY
DATED 03/08/2022, JOB NO. 220127

SCHEDULE A

TRANSACTION IDENTIFICATION DATA FOR REFERENCE ONLY:
ISSUING OFFICE: DHI TITLE OF NORTH CAROLINA, 12276 SAN JOSE BLVD, SUITE 739, JACKSONVILLE, FL 32223
COMMITMENT NO.: 167-22310047OC
PROPERTY ADDRESS: MASTER COMMITMENT FOR POOLE ROAD, N/A, NC 00000

1. COMMITMENT DATE: FEBRUARY 15, 2022 AT 09:00 AM

2. POLICY TO BE ISSUED:
(A) ALTA OWNER'S POLICY (06-16-07)
PROPOSED INSURED: D.R. HORTON, INC., A DELAWARE CORPORATION
PROPOSED POLICY AMOUNT: $10,000.00

3. THE ESTATE OR INTEREST IN THE LAND DESCRIBED OR REFERRED TO IN THIS COMMITMENT IS:
FEE SIMPLE

4. THE TITLE IS, AT THE COMMITMENT DATE, VESTED IN:
KEVIN DAVID WILLIAMS AND WIFE, DEBBIE ANNETTE WILLIAMS

5. THE LAND IS DESCRIBED AS FOLLOWS:

TRACT 1

TRACT #1: BEGINNING AT A STAKE IN WADE SEALEY'S LINE, THE NORTHEAST CORNER OF LOT NO. 7, RUNS THENCE SOUTH 87 DEGREES WEST WITH THE NORTH LINE OF LOTS NOS. 7 AND 6, 2190 FEET TO A STAKE IN THE WILLIAMSON LINE; THENCE NORTH 150 FEET TO AN IRON PIN, A CORNER OF THE WILLIAMSON FARM; THENCE NORTH 84 DEGREES WEST 983 FEET TO A STAKE IN THE KNIGHTDALE ROAD (SMITHFIELD); THENCE NORTH 3 DEGREES WEST THENCE SOUTH 85 DEGREES 30 MINUTES EAST 2240 FEET TO AN IRON STAKE AND PINE STUMP; THENCE NORTH 65 DEGREES EAST 272 FEET; THENCE WITH THE BRANCH NORTH 83 DEGREES EAST 260 FEET, SOUTH 77 DEGREES 30 MINUTES EAST 279 FEET, NORTH 42 DEGREES EAST 210 FEET TO A STAKE, THENCE SOUTH 60 DEGREES 30 MINUTES EAST 125 FEET TO A STAKE, IN THE WADE SEALEY LINE, THENCE SOUTH 2 DEGREES WEST 686 FEET TO A STAKE, THE POINT OF BEGINNING, CONTAINING 43.3 ACRES MORE OR LESS.

AND

TRACT #2: BEGINNING AT A POINT IN THE POOLE ROAD, THE SOUTHWEST CORNER OF LOT NO. 7, RUNS WEST WITH THE CENTER OF SAID ROAD, 948 FEET TO THE EAST LINE OF THE WILLIAMSON FARM; THENCE NORTH 7 DEGREES 15 MINUTES WEST 1854 FEET TO CORNER OF THIS TRACT WITH TRACT NO. 5; THENCE WITH THE SOUTHERN LINE OF LOT 5, NORTH 87 DEGREES EAST 1110 TO A STAKE, THE NORTHWEST CORNER OF LOT NO. 7; THENCE SOUTH 2 DEGREES 30 MINUTES EAST 1903 FEET TO THE CENTER OF THE POOLE ROAD, THE POINT OF BEGINNING, CONTAINING 43.3 ACRES, MORE OF LESS.

LESS AND EXCEPT THE TEN-ACRE TRACT WHICH HAS HERETOFORE BEEN CONVEYED TO HERMAN C. WILLIAMS AND WIFE, JOANNE K. WILLIAMS BY DEED DATED APRIL 28, 1958, AND RECORDED IN BOOK 1315, AT PAGE 339, WAKE COUNTY REGISTRY.

LESS AND EXCEPT ALL OF THAT 10.0003 ACRE TRACT OF LAND AS IS SHOWN BY MAP RECORDED IN BOOK OF MAPS 1989, PAGE 1197, WAKE COUNTY REGISTRY.

LESS AND EXCEPT THAT .862 ACRE TRACT OF LAND SHOWN ON THAT MAP RECORDED IN RECORDED IN BOOK OF MAPS 2004, PAGE 78, WAKE COUNTY REGISTRY, THAT WAS CONVEYED TO KEVIN D. WILLIAMS AND WIFE, DEBBIE A WILLIAMS, VIA THAT DEED RECORDED IN BOOK 10726, PAGE 1095, WAKE COUNTY REGISTRY.

LESS AND EXCEPT THAT CERTAIN 1.575 ACRE TRACT OF LAND AS THE SAME IS SHOWN BY MAP RECORDED IN BOOK OF MAPS 1991, PAGE 186, WAKE COUNTY REGISTRY, TOGETHER WITH THE PERPETUAL RIGHT AND EASEMENT OF INGRESS, EGRESS AND REGRESS, OVER AND TO THAT CERTAIN THIRTY (30) FOOT WIDE JOINT DRIVEWAY ACCESS EASEMENT AS SAID EASEMENT IS SHOWN ON MAP RECORDED IN BOOK OF MAPS 1991, PAGE 186, WAKE COUNTY REGISTRY.

TRACT 2

LYING AND BEING ON THE NORTH SIDE OF THE POOL ROAD AND BEGINNING IN THE NORTHERN BOUNDARY OF THE POOL ROAD IN THE WILLIAMSON LINE, SAID BEGINNING POINT BEING 948 FEET WEST FROM AN OLD IRON CORNER OF LOTS NOS. 6 AND 7 IN THE DIVISION OF THE LANDS OF MRS. IDDIE KNOTT; THENCE NORTH 7 DEGREES 20 MIN. WEST 852.1 FEET TO A POINT IN SAID WILLIAMSON LINE, SAID POINT BEING SOUTH 7 DEGREES 20 MINUTES EAST 1148.5 FEET FROM AN OLD IRON, CORNER OF WILLIAMSON LAND IN KNOTT LAND; THENCE SOUTH 89 DEGREES 48 MIN. EAST 528 FEET TO A POINT, CORNER OF THIS TRACT IN KNOTT LAND; THENCE SOUTH 7 DEGREES 20 MIN. EAST 852.1 FEET TO THE NORTHERN BOUNDARY OF SAID POOL ROAD; THENCE NORTH 89 DEGREES 48 MIN. WEST 528 FEET ALONG THE NORTHERN BOUNDARY OF THE POOL ROAD TO THE POINT OF BEGINNING, CONTAINING TEN (10) ACRES AND BEING A PORTION OF TRACT NO. 6 OF THE MRS. IDDIE KNOTT LAND WHICH WAS ALLOTTED TO J. WESLEY KNOTT IN SPECIAL PROCEEDINGS #9247 IN THE OFFICE OF THE CLERK OF THE SUPERIOR COURT OF WAKE COUNTY, AND SAID TRACT NO. 6 WAS CONVEYED TO D. GRAHAM KNOTT AND MYRTLE C. KNOTT, HIS WIFE, BY J. WESLEY KNOTT AND WIFE BY DEED RECORDED IN THE REGISTER OF DEEDS OFFICE FOR WAKE COUNTY IN BOOK 769, PAGE 228.

LESS AND EXCEPT THE FOLLOWING PROPERTY:
BEGINNING AT A POINT IN THE NORTHERN EDGE OF THE RIGHT OF WAY OF STATE ROAD 1007 (ALSO REFERRED TO AS POOLE ROAD), SAID POINT BEING THE SOUTHEASTERN CORNER OF THE PROPERTY OF H.C. WILLIAMS; THENCE ALONG THE EASTERN LINE OF H.C. WILLIAMS NORTH 3 DEG. 30 MIN. EAST 297.75 FEET TO A POINT, A NEW CORNER OF H.C. WILLIAMS; THENCE ALONG THE SOUTHERN LINE OF THE SAID H.C. WILLIAMS PROPERTY SOUTH 89 DEG. 43 MIN. EAST 231.48 FEET TO A POINT, ANOTHER NEW CORNER OF H.C. WILLIAMS; THENCE ALONG THE WESTERN LINE OF THE PROPERTY OF H.C. WILLIAMS SOUTH 7DEG. 20 MIN. EAST 300 FEET TO A POINT IN THE NORTHERN EDGE OF THE RIGHT OF WAY OF THE AFOREAID STATE ROAD NO. 1007; THENCE ALONG SAID RIGHT OF WAY NORTH 89 DEG. 43 MIN. WEST287.92 FEET TO THE POINT OF BEGINNING, CONTAINING 1.77 ACRES, AND BEING THE SAME PROPERTY AS SHOWN ON PLAT ENTITLED "PROPERTY OF JAMES L. ETCHELLS AND WIFE, JUNE B ETCHELLS", DATED JULY 24, 1972, AND PREPARED BY JESSE J. PARRISH, REGISTERED LAND SURVEYOR.

TRACT 3
BEING ALL OF THAT 10.0003 ACRE TRACT OF LAND AS SHOWN ON THAT MAP RECORDED IN BOOK OF MAPS 1989, PAGE 1197, WAKE COUNTY REGISTRY, LESS AND EXCEPT THAT PORTION OF THE SAID PROPERTY CONTAINED WITHIN THAT 4.182 ACRE TRACT OF LAND SHOWN ON THAT MAP ENTITLED "RECOMBINATION SURVEY FOR KEVIN D. WILLIAMS AND WIFE DEBBIE A. WILLIAMS," RECORDED IN BOOK OF MAPS 2004, PAGE 78, WAKE COUNTY REGISTRY.

COMMITMENT NO.: 167-22310047OC

SCHEDULE B, PART II
EXCEPTIONS

THIS COMMITMENT DOES NOT REPUBLISH ANY COVENANT, CONDITION, RESTRICTION, OR LIMITATION CONTAINED IN ANY DOCUMENT REFERRED TO IN THIS COMMITMENT TO THE EXTENT THAT THE SPECIFIC COVENANT, CONDITION, RESTRICTION, OR LIMITATION VIOLATES STATE OR FEDERAL LAW BASED ON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, GENDER IDENTITY, HANDICAP, FAMILIAL STATUS, OR NATIONAL ORIGIN.

THE POLICY WILL NOT INSURE AGAINST LOSS OR DAMAGE RESULTING FROM THE TERMS AND PROVISIONS OF ANY LEASE OR EASEMENT IDENTIFIED IN SCHEDULE A, AND WILL INCLUDE THE FOLLOWING EXCEPTIONS UNLESS CLEARED TO THE SATISFACTION OF THE COMPANY:

1. ANY DEFECT, LIEN, ENCUMBRANCE, ADVERSE CLAIM, OR OTHER MATTER THAT APPEARS FOR THE FIRST TIME IN THE PUBLIC RECORDS OR IS CREATED, ATTACHES, OR IS DISCLOSED BETWEEN THE COMMITMENT DATE AND THE DATE ON WHICH ALL OF THE SCHEDULE B, PART I - REQUIREMENTS ARE MET.
(NO MATTER OF SURVEY)

2. TAXES AND ASSESSMENTS FOR THE YEAR 2022, A LIEN NOW DUE AND PAYABLE AND SUBSEQUENT YEARS, A LIEN NOT YET DUE AND PAYABLE.
(NO MATTER OF SURVEY)

3. TITLE TO ANY AREAS WITHIN STREET, HIGHWAY OR RAILROAD RIGHTS OF WAY, IF ANY.
(NO MATTER OF SURVEY)

4. THE CREATION OR LOSS OF LAND BY NATURAL OR ARTIFICIAL CHANGES ALONG WATER FORMING PART OF THE BOUNDARY OF THE LAND; AND/OR TITLE TO LAND LYING BELOW THE HIGHER OF THE MEAN HIGH WATER MARK AND/OR THE NORMAL BOUNDS OF ANY BODY OF WATER; AND/OR RIPARIAN RIGHTS INCIDENT TO ANY BRANCHES, CREEKS, STREAMS, LAKES OR OTHER WATERS COURSING OR ABUTTING THE LAND.
(NO MATTER OF SURVEY)

5. ANY DISCREPANCY, CONFLICT, ACCESS, SHORTAGE IN AREA OR BOUNDARY LINES, ENCROACHMENT, ENCUMBRANCE, VIOLATION, OVERLAP, SETBACK, EASEMENT OR CLAIMS OF EASEMENT, RIPARIAN RIGHT, AND TITLE TO LAND WITHIN ROADS, WAYS, RAILROADS, WATERCOURSES, BURIAL GROUNDS, MARSHES, DREDGED OR FILLED AREAS OR LAND BELOW THE MEAN HIGHWATER MARK OR WITHIN THE BOUNDS OF ANY ADJOINING BODY OF WATER, OR OTHER ADVERSE CIRCUMSTANCE AFFECTING THE TITLE THAT WOULD BE DISCLOSED BY A CURRENT INSPECTION AND ACCURATE AND COMPLETE LAND SURVEY OF THE LAND.
(AS SHOWN ON SURVEY)

6. ALL DEFERRED TAXES.
(NO MATTER OF SURVEY)

7. EASEMENT TO CAROLINA POWER AND LIGHT OF RECORD IN BOOK 2752, PAGE 940.
(EASEMENT IS BLANKET IN NATURE)

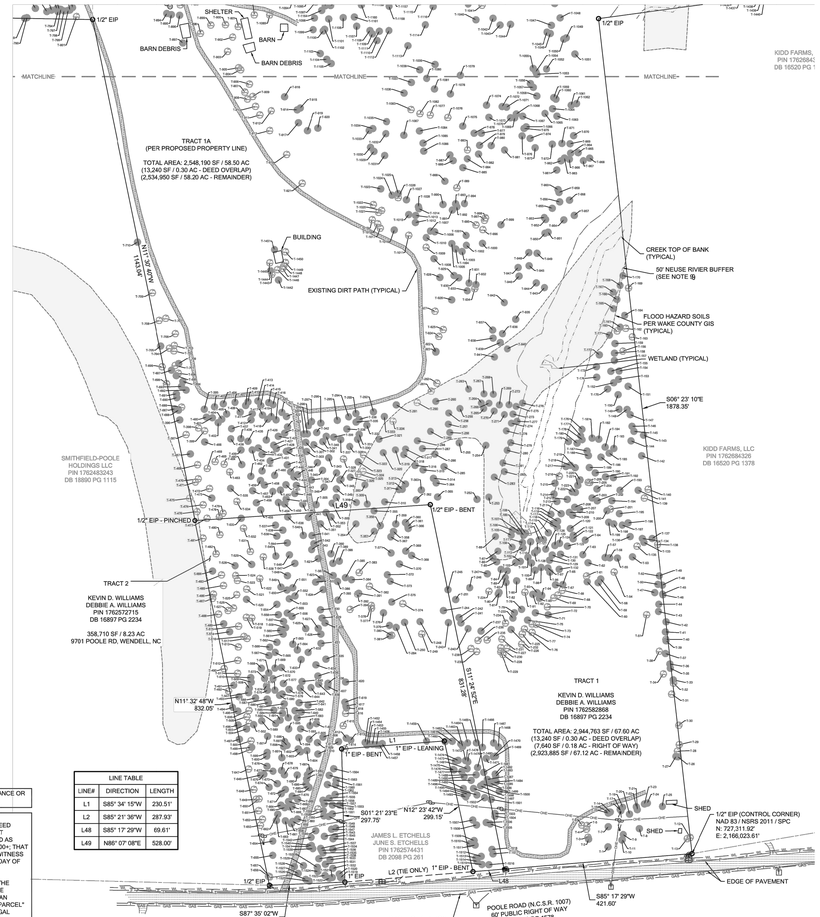
8. ANY RIGHT, EASEMENT, SETBACK, INTEREST, CLAIM, ENCROACHMENT, ENCUMBRANCE, VIOLATION, VARIATIONS OR OTHER ADVERSE CIRCUMSTANCE AFFECTING THE TITLE DISCLOSED BY PLAT(S) RECORDED IN BOOK OF MAPS 1989, PAGE 1197, BOOK OF MAPS 1991, PAGE 186 AND BOOK OF MAPS 2004, PAGE 78.
(AS SHOWN ON SURVEY)

9. MEMORANDUM OF CONTRACT WITH D.R. HORTON-TERRAMOR, LLC OF RECORD IN BOOK 18865, PAGE 60.
(NO MATER OF SURVEY)

10. TITLE TO ANY PORTION OF THE LAND LYING WITHIN THE RIGHT OF WAY OF S. SMITHFIELD RD AND POOLE RD.
(NO MATTER OF SURVEY)

11. LACK OF A RIGHT OF ACCESS TO AND FROM THE LAND. (TRACT 3)
(SEE NOTE 10)

12. NO CLOSING SERVICES INSURANCE: AS TO THE TRANSACTION FOR WHICH THIS COMMITMENT IS ISSUED, THE COMPANY DOES NOT AFFORD INSURED CLOSING PROTECTION/CLOSING SERVICES INSURANCE ABSENT REVISION OF THIS COMMITMENT TO INCLUDE A STATEMENT THAT COVERAGE IS AFFORDED TO THOSE PARTIES IDENTIFIED IN A SEPARATE CLOSING PROTECTION LETTER ISSUED SIMULTANEOUSLY WITH REVISION OF THE COMMITMENT. ANY CLOSING PROTECTION COVERAGE OR LETTER WHICH HERETOFORE MAY HAVE BEEN ISSUED IS HEREBY RESCINDED AND SHALL NOT BE EFFECTIVE AS TO THIS TRANSACTION. ANY CLOSING PROTECTION LETTER SUBSEQUENTLY ISSUED SHALL NOT BE EFFECTIVE AS TO THIS TRANSACTION ABSENT THE ACCOMPANYING REQUISITE REVISION OF THIS COMMITMENT.
(NO MATTER OF SURVEY)



LINE TABLE		
LINE#	DIRECTION	LENGTH
L1	S85° 34' 15"W	230.51'
L2	S85° 21' 36"W	287.93'
L48	S85° 17' 29"W	69.61'
L49	N86° 07' 08"E	528.00'

THIS MAP IS CONSIDERED PRELIMINARY, NOT FOR RECORDATION, CONVEYANCE OR SALES UNLESS SIGNED AND SEALED BY THE LICENSED SURVEYOR.

I, STEVEN P. CARSON, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DEED DESCRIPTION RECORDED IN DB 16897, PG 2234); THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN FROM INFORMATION FOUND AS SHOWN HERE ON; THAT THE RATIO OF PRECISION AS CALCULATED IS 1:10,000+; THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS _____ DAY OF _____, A.D., 2022.

I, FURTHER THAT IN ACCORDANCE WITH G.S. 47-30-F-11-C-1; CERTIFY THAT THE SURVEY IS OF AN EXISTING PARCEL OR PARCELS OF LAND OR ONE OR MORE EXISTING EASEMENTS AND DOES NOT CREATE A NEW STREET OR CHANGE AN EXISTING STREET. FOR THE PURPOSE OF THIS SUBSECTION, AN "EXISTING PARCEL" OR "EXISTING EASEMENT" IS AN AREA OF LAND DESCRIBED IN A SINGLE, LEGAL DESCRIPTION CONVEYED TO A NEW OWNER BY DEED IN ITS EXISTING CONFIGURATION.

PRELIMINARY

STEVEN P. CARSON, PLS — DATE
NC LICENSE NO. L-4752

TO D.R. HORTON, INC., A DELAWARE CORPORATION (I) & DHI TITLE AGENCY (I):

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS OF TABLE A THEREOF (NONE SELECTED). THE FIELDWORK WAS COMPLETED ON FEBRUARY 15TH, 2022.

PRELIMINARY

STEVEN P. CARSON, PLS — DATE
NC LICENSE NO. L-4752

GRAPHIC SCALE
120 0 60 120 240 480
(IN FEET)
1 inch = 120ft.

NAD 83 / NSRS 2011 / SPC

LEGEND
- BOUNDARY CORNER FOUND
- BOUNDARY CORNER SET
- COMPUTED POINT
- MONUMENT
- CLEAN OUT
- TRANSFORMER
- LIGHT POLE
- UTILITY POLE / TOWER
- UTILITY METER
- FIRE HYDRANT
- WATER VALVE
- TELEPHONE PEDESTAL
- CABLE PEDESTAL
- UTILITY HAND HOLE
- MANHOLE
- WELL
- GAS PUMP
- SPIGOT
- GUY WIRE
- UTILITY MARKER
- UNDERGROUND GAS LINE
- UNDERGROUND FIBER LINE
- UNDERGROUND TELEPHONE LINE
- UNDERGROUND WATER LINE
- EASEMENT / BUFFER
- CREEK TOP OF BANK
- OVERHEAD UTILITY LINE
- WETLAND
- PAVEMENT
- SOIL PATH
- GRAVEL
- FLOOD SOILS
- BM BOOK OF MAPS
- DB DEED BOOK
- PG PAGE
- EIP EXISTING IRON PIPE
- EIR EXISTING IRON REBAR

NOTES
1. THIS SURVEY WAS PREPARED BY BATEMAN CIVIL SURVEY COMPANY UNDER THE SUPERVISION OF STEVEN P. CARSON, PLS.
2. ALL DISTANCE ARE HORIZONTAL GROUND DISTANCE AND ALL BEARINGS ARE BASED ON GPS OBSERVATIONS, NAD83 / NSRS 2011 / SPC, UNLESS OTHERWISE SHOWN.
3. PROPERTY LIES IN ZONE "X" PER NATIONAL INSURANCE PROGRAM FLOOD INSURANCE RATE MAP #3720176200J, DATED 05/02/2006.
4. SITE ZONED "R-40" PER WAKE COUNTY GIS.
5. AREAS COMPUTED BY COORDINATE METHOD.
6. THIS MAP HAS NOT BEEN REVIEWED BY A LOCAL GOVERNMENT AGENCY FOR COMPLIANCE WITH ANY APPLICABLE LAND DEVELOPMENT REGULATIONS.
7. BUILDINGS AND STRUCTURES ARE AS SHOWN ON THIS SURVEY.
8. NO CEMETERIES WERE OBSERVED AS A RESULT OF THIS SURVEY.
9. STREAM DETERMINATION BY SOIL & ENVIRONMENTAL CONSULTANTS, DATED 12/30/2021.
10. NO PHYSICAL ACCESS TO A PUBLIC WAY WAS OBSERVED IN THE PROCESS OF CONDUCTING FIELD WORK FOR TRACT 3.

BATEMAN CIVIL SURVEY COMPANY
ENGINEERS • SURVEYORS • PLANNERS
2524 RELIANCE AVENUE, APEX, NC 27539
PHONE: (919) 577-1080 FAX: (919) 577-1081
INFO@BATEMANCIVILSURVEY.COM
NCBELS FIRM# C-2378

ALTA / NSPS LAND TITLE SURVEY
EXCLUSIVELY FOR BGE, INC
AS RECORDED IN DEED BOOK 16897, PAGE 2234
PIN: 1762572715, 1762582868, & 1762595569
MARKS CREEK TWSP - WAKE COUNTY - NORTH CAROLINA

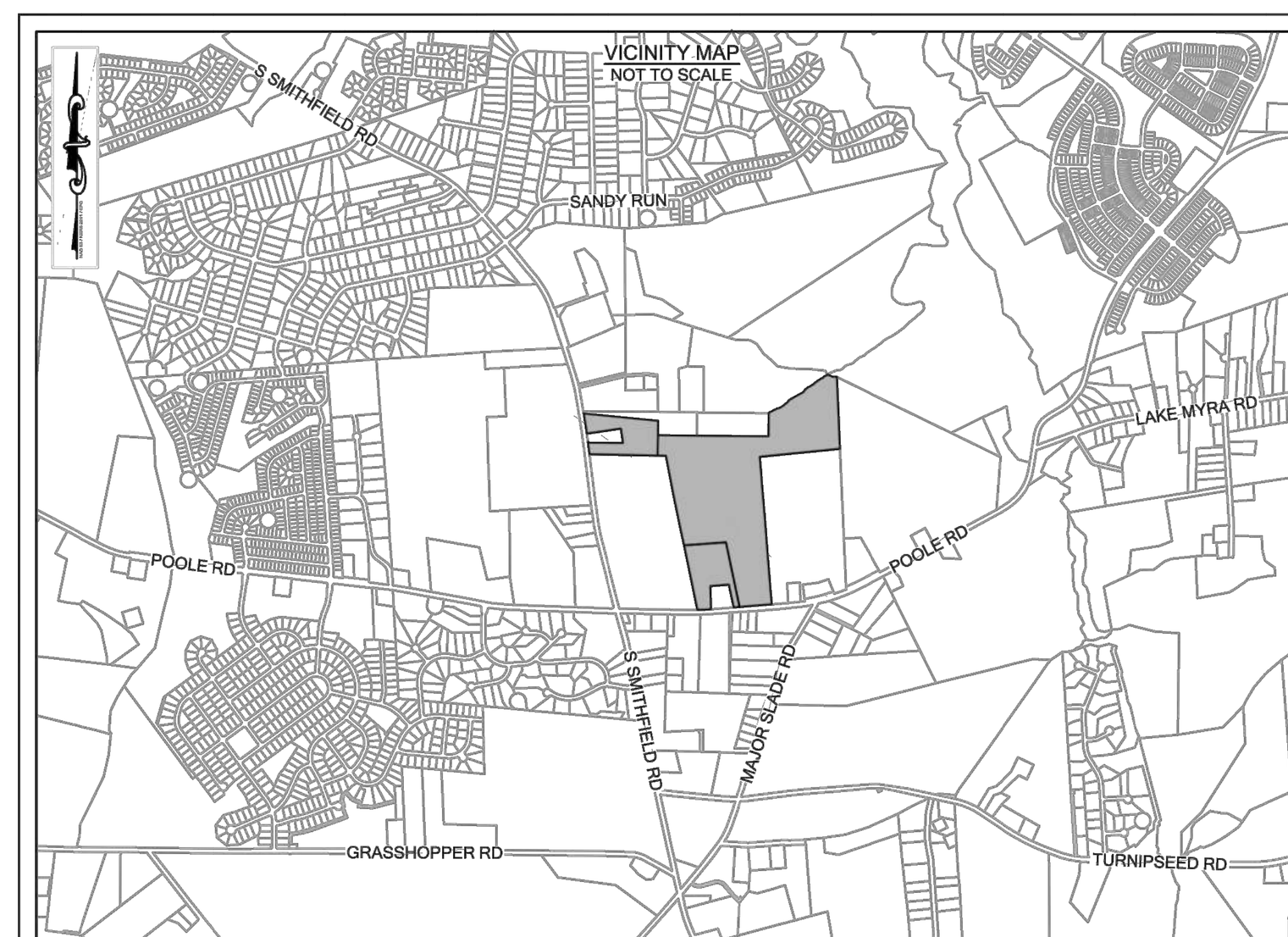
REVISIONS
1. ADDED PROPOSED PROPERTY LINE ELS (6/7/2022)
2. ADDED TREES ELS (8/15/2022)
3. ADDED SUE ELS (10/04/2022)
4. REVISED NEUSE BUFFER NOTE ELS (11/10/2022)
5.
6.

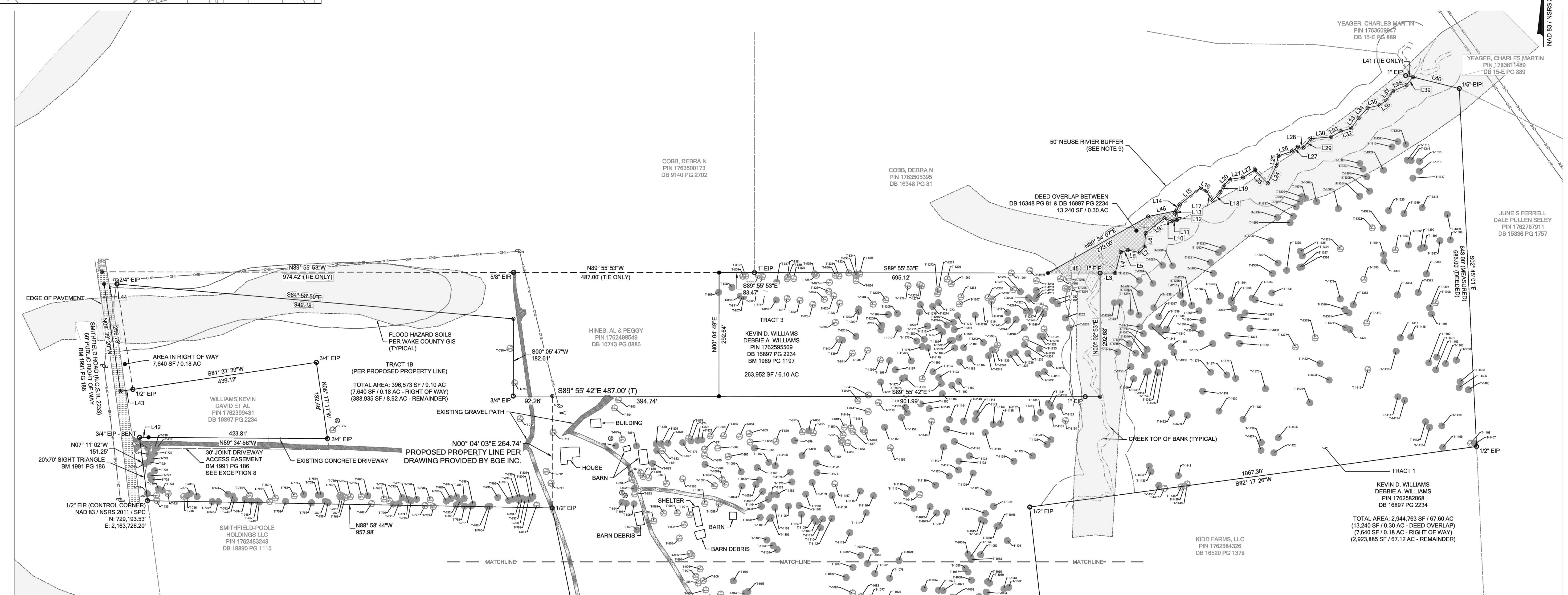
DESIGNED BY: N/A
DRAWN BY: CJM
CHECKED BY: SPC
SCALE: 1" = 120'
DATE: 02/25/2022
JOB NUMBER: 220127

SHEET 1 OF 3

C1.0

TREES	
1	12" PINE
2	12" PINE
3	12" HARDWOOD
4	15" & 12" TWIN HARDWOODS
5	15" HARDWOOD
6	15" HARDWOOD
7	12" PINE
8	12" PINE
9	12" PINE
10	15" PINE
11	15" PINE
12	15" HARDWOOD
13	15" HARDWOOD
14	12" PINE
15	12" PINE
16	12" PINE
17	12" PINE
18	15" PINE
19	12" PINE
20	18" PINE
21	12" PINE
22	15" PINE
23	12" PINE
24	12" PINE
25	12" PINE
26	18" PINE
27	12" PINE
28	24" OAK
29	18" OAK
30	30" OAK
31	15" OAK
32	12" OAK
33	18" PINE
34	12" OAK
35	18" PINE
36	12" PINE
37	12" PINE
38	24" OAK
39	15" PINE
40	12" OAK





LINE TABLE		
LINE#	DIRECTION	LENGTH
L3	S89° 55' 53"E	35.83'
L4	N15° 08' 20"E	51.16'
L5	N72° 38' 54"E	16.91'
L6	S78° 04' 23"E	28.64'
L7	N42° 43' 54"E	17.33'
L8	N04° 08' 38"E	33.38'
L9	N51° 59' 58"E	56.94'
L10	S67° 12' 42"E	18.26'
L11	N76° 01' 54"E	12.79'
L12	N16° 39' 09"W	16.17'
L13	N28° 04' 51"E	7.07'

LINE TABLE		
LINE#	DIRECTION	LENGTH
L14	N28° 04' 51"E	17.10'
L15	N51° 32' 31"E	63.66'
L16	S62° 38' 19"E	15.27'
L17	S31° 05' 07"E	27.23'
L18	N43° 48' 43"E	27.46'
L19	N28° 21' 51"E	19.68'
L20	N45° 24' 00"E	19.00'
L21	N82° 17' 10"E	30.71'
L22	N57° 51' 38"E	33.08'
L23	S44° 21' 23"E	44.03'
L24	N25° 41' 49"E	46.45'

LINE TABLE		
LINE#	DIRECTION	LENGTH
L25	N11° 18' 59"E	23.79'
L26	N71° 54' 40"E	33.56'
L27	N53° 10' 24"E	18.53'
L28	S81° 58' 09"E	13.36'
L29	N38° 05' 54"E	26.48'
L30	N85° 13' 22"E	48.93'
L31	N59° 51' 17"E	26.63'
L32	N73° 26' 36"E	25.65'
L33	N35° 43' 22"E	29.53'
L34	N41° 53' 58"E	32.00'
L35	N77° 05' 34"E	29.23'

LINE TABLE		
LINE#	DIRECTION	LENGTH
L36	N53° 55' 39"E	20.23'
L37	N35° 22' 35"E	25.88'
L38	N65° 15' 39"E	35.80'
L39	N39° 05' 09"E	24.24'
L40	S75° 59' 32"E	113.00'
L41	N79° 44' 15"W	17.81'
L42	N89° 34' 56"W	21.30'
L43	S81° 37' 39"W	29.94'
L44	S89° 49' 03"E	30.44'
L45	S89° 55' 53"E	123.24'
L46	N78° 34' 07"E	68.03'

LEGEND

- BOUNDARY CORNER FOUND
- BOUNDARY CORNER SET
- COMPUTED POINT
- MONUMENT
- CLEAN OUT
- TRANSFORMER
- LIGHT POLE
- UTILITY POLE / TOWER
- UTILITY METER
- FIRE HYDRANT
- WATER VALVE
- TELEPHONE PEDESTAL
- CABLE PEDESTAL
- UTILITY HAND HOLE
- MANHOLE
- WELL
- GAS PUMP
- SPIGOT
- GUY WIRE
- UTILITY MARKER

- GAS — UNDERGROUND GAS LINE
- F — UNDERGROUND FIBER LINE
- T — UNDERGROUND TELEPHONE LINE
- WL — UNDERGROUND WATER LINE

- EASEMENT / BUFFER
- CREEK TOP OF BANK
- OHE — OVERHEAD UTILITY LINE

- WETLAND
- PAVEMENT
- SOIL PATH
- GRAVEL
- FLOOD SOILS

- BM BOOK OF MAPS
- DB DEED BOOK
- PG PAGE
- EIP EXISTING IRON PIPE
- EIR EXISTING IRON REBAR

THIS MAP IS CONSIDERED PRELIMINARY, NOT FOR RECORDATION, CONVEYANCE OR SALES UNLESS SIGNED AND SEALED BY THE LICENSED SURVEYOR.

GRAPHIC SCALE

120 0 60 120 240 480

(IN FEET)
1 inch = 120ft.

C1.1

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ALTA / NSPS LAND TITLE SURVEY

EXCLUSIVELY FOR BGE, INC

AS RECORDED IN DEED BOOK 16897, PAGE 2234
PIN: 1762572715, 1762582868, & 1762595569
MARKS CREEK TWSP • WAKE COUNTY • NORTH CAROLINA

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DESIGNED BY: N/A

DRAWN BY: CJM

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SCALE: 1" = 120'

DATE: 02/25/2022

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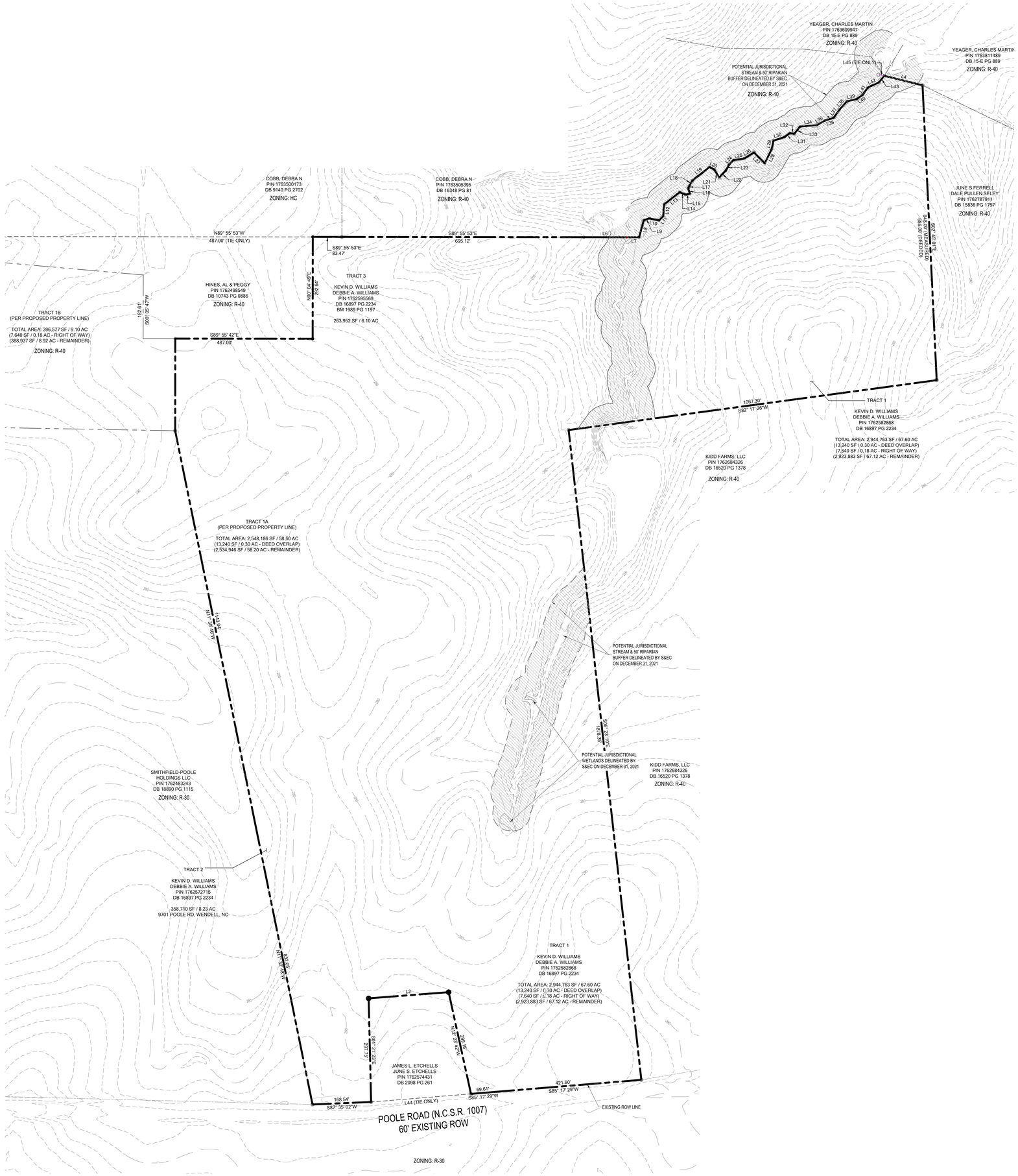

GENERAL NOTES:

1) THE CONTOUR INTERVALS SHOWN ON THIS PLAN WERE OBTAINED FROM WAKE COUNTY GIS.
2) BOUNDARY DATA SHOWN ON THIS PLAN IS BASED ON THE ALTA/NSPS LAND TITLE SURVEY COMPLETED BY BATEMAN CIVIL SURVEY COMPANY.

REV	DATE	DESCRIPTION
4		
3		
2	01/03/2023	MASTER PLAN REVISIONS PER TOK 2ND REVIEW COMMENTS
1	11/28/2022	MASTER PLAN REVISIONS PER TOK 1ST REVIEW COMMENTS

DESIGNED BY: BZ
DRAWN BY: DJ
REVIEWED BY: BZ

BGE
5440 WADE PARK BLVD, SUITE 102
RALEIGH, NC 27607
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NC LICENSE #C-4397

DR HORTON - TERRAMOR, LLC
7208 FALLS OF NEUSE ROAD
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(919) 809 - 4207

SANCTUARY AT POOLE
9701 POOLE ROAD (S.R.1007)
TOWN OF KNIGHTDALE
WAKE COUNTY, NC

EXISTING CONDITION SURVEY PLAN

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 051656 JARED JARAMILLO

NOT FOR CONSTRUCTION

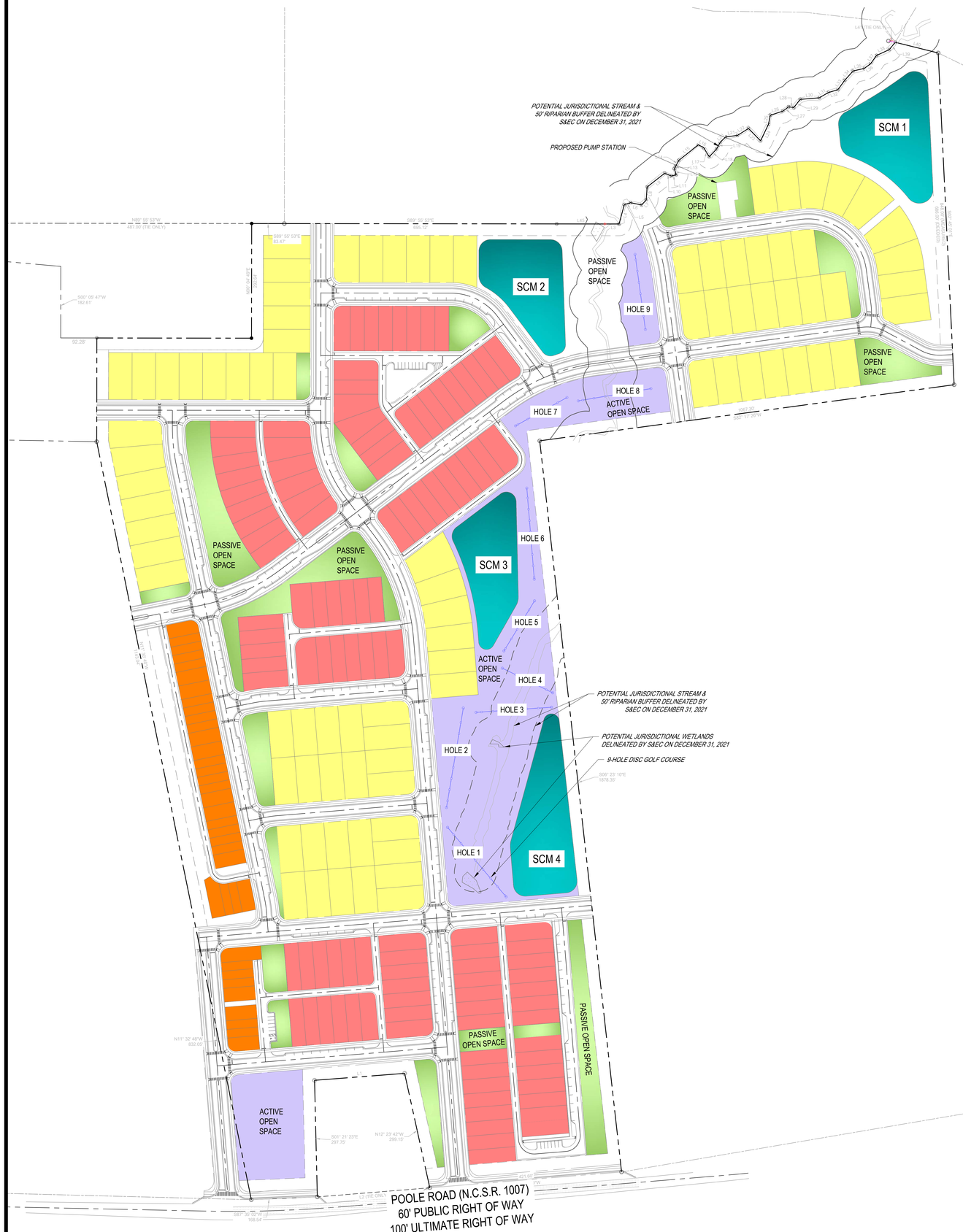
FILE NUMBER: 9318-01

DATE: 11/28/2022

C1.2

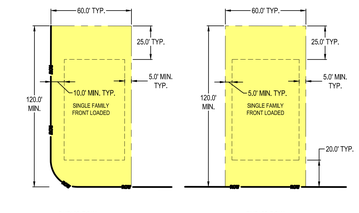
N

0 50' 100' 200'
SCALE: 1" = 100'



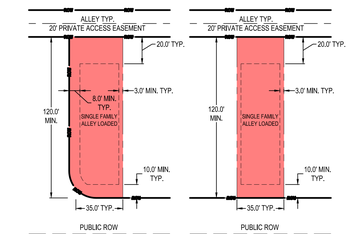
NOTES

1. HOA SHALL MAINTAIN ALL AREAS OF COMMON OPEN SPACE INCLUDING LANDSCAPE MEDIANS AT ENTRANCES.
2. ALL SQUARE FOOTAGES AND ACREAGE SHOWN ARE APPROXIMATE. ACTUAL NUMBERS TO BE DETERMINED DURING FINAL PLAT REVIEW AND APPROVAL.
3. ACTIVE RECREATION USES MAY INCLUDE BUT ARE NOT LIMITED TO: POOL AND CLUBHOUSE, PLAY AREAS, GATHERING SPACES, MULTI-USE TRAILS AND TRAIL CONNECTIONS TO COMMUNITY PARK.



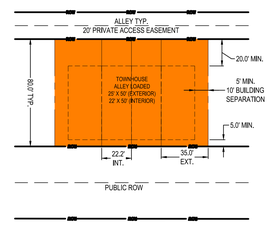
TYPICAL SINGLE-FAMILY CORNER LOT DETAIL
SCALE: 1" = 40'

TYPICAL SINGLE-FAMILY INTERIOR LOT DETAIL
SCALE: 1" = 40'

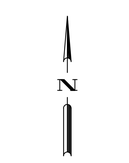


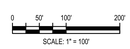
TYPICAL SINGLE-FAMILY ALLEY ACCESS CORNER LOT DETAIL
SCALE: 1" = 40'

TYPICAL SINGLE-FAMILY ALLEY ACCESS INTERIOR LOT DETAIL
SCALE: 1" = 40'



TYPICAL TOWNHOME LOT DETAIL
SCALE: 1" = 40'





SCALE: 1" = 100'

REV	DATE	DESCRIPTION
1	01/03/2023	MASTER PLAN REVISIONS PER TOK 2ND REVIEW COMMENTS
2	11/28/2022	MASTER PLAN REVISIONS PER TOK 1ST REVIEW COMMENTS

DESIGNED BY: BZ
DRAWN BY: DJ
REVIEWED BY: BZ

BGE
5440 WADE PARK BLVD, SUITE 102
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(919) 808 - 4201

SANCTUARY AT POOLE
9701 POOLE ROAD (S.R.1007)
TOWN OF KNIGHTDALE
WAKE COUNTY, NC

MASTER PLAN RENDERING

NORTH CAROLINA PROFESSIONAL SEAL 051656 ENGINEER JARED JARMELO

NOT FOR CONSTRUCTION

FILE NUMBER: 9318-01

DATE: 11/28/2022

C2.0

GENERAL NOTES:

1) A PORTION OF THE SITE IS LOCATED WITHIN LOWER NEUSE RIVER WATERSHED AND NEUSE RIVER BASIN. A PORTION OF THE SITE IS LOCATED WITHIN THE MARKS CREEK WATERSHED AND NEUSE RIVER BASIN.

2) ALL SURVEY INFORMATION PROVIDED TO BGE, SPECIFICALLY THE ALTA/NSPS LAND TITLE SURVEY COMPLETED BY BATEMAN CIVIL SURVEY COMPANY ON FEBRUARY 25, 2022 UNDER THE SUPERVISION OF LICENSED LAND SURVEYOR STEVEN P CARSON, PLS. ANY SUPPLEMENTAL INFORMATION WAS OBTAINED FROM WAKE COUNTY GIS.

3) ALL PROPERTIES SHOWN AND INCLUDED WITH THE MASTER PLAN ARE SITUATED WITHIN ZONE "X" PER NATIONAL INSURANCE PROGRAM FLOOD INSURANCE RATE MAP #3720176200J, DATED 05/02/2006. IN ADDITION, THE PROPERTIES SHOWN HEREON ARE NOT SUBJECT TO ANY FEMA FLOOD HAZARD AREAS.

4) PIN #1762582868, PIN #1762572715, & PIN #1762483243 ARE SUBJECT TO FLOOD PRONE SOILS ACCORDING TO WAKE COUNTY GIS.

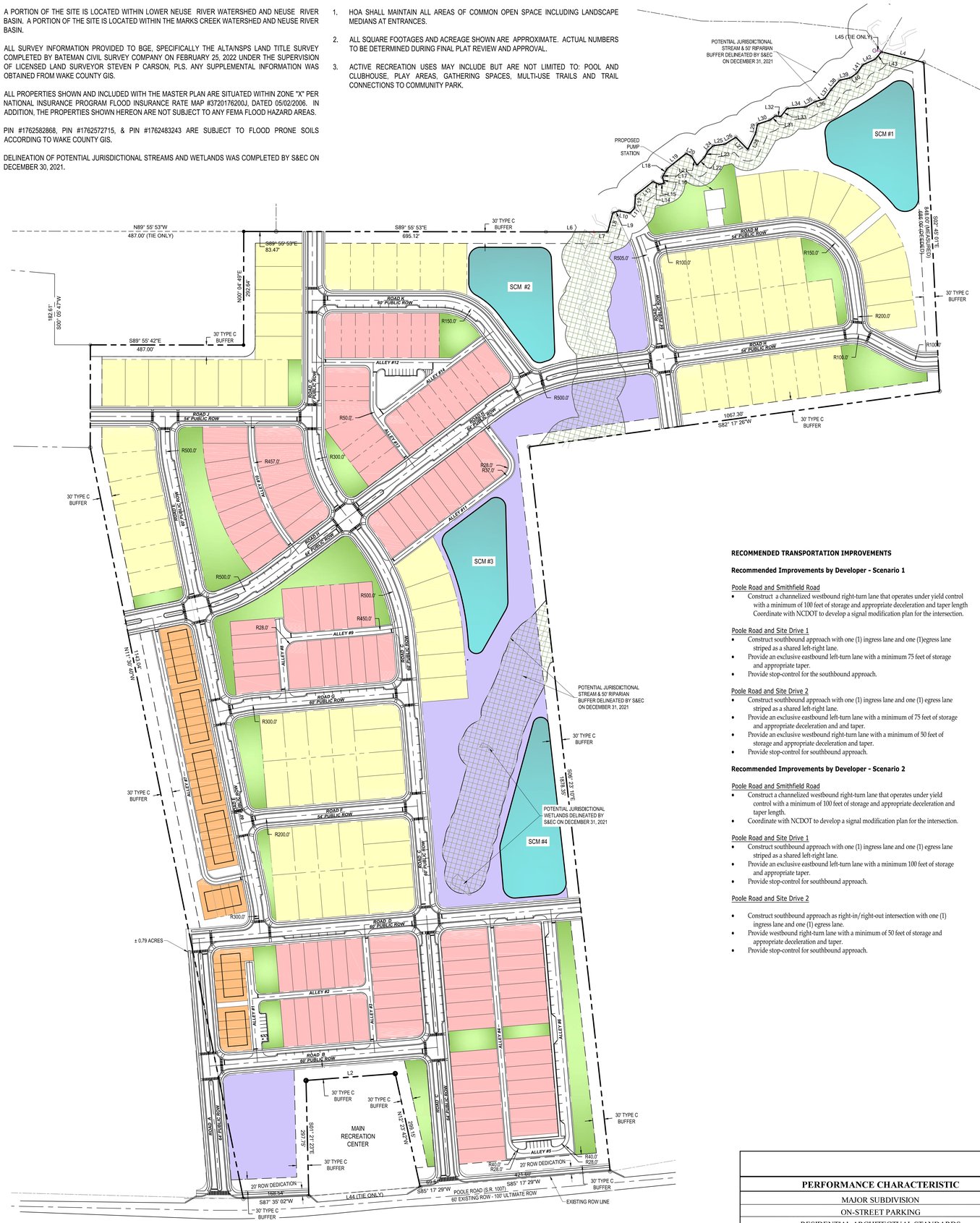
5) DELINEATION OF POTENTIAL JURISDICTIONAL STREAMS AND WETLANDS WAS COMPLETED BY S&EC ON DECEMBER 30, 2021.

MASTER PLAN NOTES:

1. HOA SHALL MAINTAIN ALL AREAS OF COMMON OPEN SPACE INCLUDING LANDSCAPE MEDIANS AT ENTRANCES.

2. ALL SQUARE FOOTAGES AND ACREAGE SHOWN ARE APPROXIMATE. ACTUAL NUMBERS TO BE DETERMINED DURING FINAL PLAT REVIEW AND APPROVAL.

3. ACTIVE RECREATION USES MAY INCLUDE BUT ARE NOT LIMITED TO: POOL AND CLUBHOUSE, PLAY AREAS, GATHERING SPACES, MULTI-USE TRAILS AND TRAIL CONNECTIONS TO COMMUNITY PARK.



RECOMMENDED TRANSPORTATION IMPROVEMENTS

Recommended Improvements by Developer - Scenario 1

Poole Road and Smithfield Road
- Construct a channelized westbound right-turn lane that operates under yield control with a minimum of 100 feet of storage and appropriate deceleration and taper length Coordinate with NCDOT to develop a signal modification plan for the intersection.

Poole Road and Site Drive 1
- Construct southbound approach with one (1) ingress lane and one (1)egress lane striped as a shared left-right lane.
- Provide an exclusive eastbound left-turn lane with a minimum 75 feet of storage and appropriate taper.
- Provide stop-control for the southbound approach.

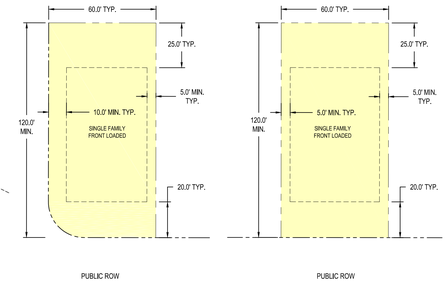
Poole Road and Site Drive 2
- Construct southbound approach with one (1) ingress lane and one (1) egress lane striped as a shared left-right lane.
- Provide an exclusive eastbound left-turn lane with a minimum of 75 feet of storage and appropriate deceleration and and taper.
- Provide an exclusive westbound right-turn lane with a minimum of 50 feet of storage and appropriate deceleration and taper.
- Provide stop-control for southbound approach.

Recommended Improvements by Developer - Scenario 2

Poole Road and Smithfield Road
- Construct a channelized westbound right-turn lane that operates under yield control with a minimum of 100 feet of storage and appropriate deceleration and taper length.
- Coordinate with NCDOT to develop a signal modification plan for the intersection.

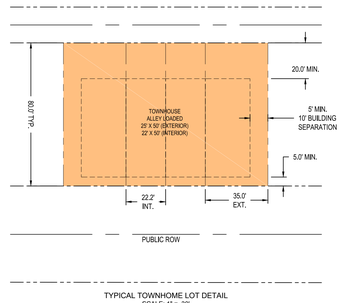
Poole Road and Site Drive 1
- Construct southbound approach with one (1) ingress lane and one (1) egress lane striped as a shared left-right lane.
- Provide an exclusive eastbound left-turn lane with a minimum 100 feet of storage and appropriate taper.
- Provide stop-control for southbound approach.

Poole Road and Site Drive 2
- Construct southbound approach as right-in/right-out intersection with one (1) ingress lane and one (1) egress lane.
- Provide westbound right-turn lane with a minimum of 50 feet of storage and appropriate deceleration and taper.
- Provide stop-control for southbound approach.

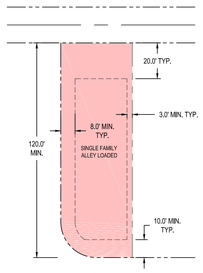


TYPICAL SINGLE-FAMILY CORNER LOT DETAIL
SCALE: 1" = 30'

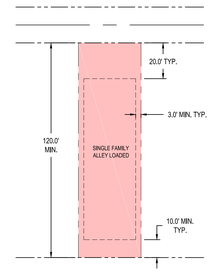
TYPICAL SINGLE-FAMILY INTERIOR LOT DETAIL
SCALE: 1" = 30'



TYPICAL TOWNHOME LOT DETAIL
SCALE: 1" = 30'



TYPICAL SINGLE-FAMILY ALLEY ACCESS CORNER LOT DETAIL
SCALE: 1" = 30'



TYPICAL SINGLE-FAMILY ALLEY ACCESS INTERIOR LOT DETAIL
SCALE: 1" = 30'

SITE DATA TABLE

PIN NUMBER/SITE AREA:		
PIN #	AREA (AC)	AREA (SF)
TRACT 1A (1762582868)	58.50	2,548,188
TRACT 2 (1762572715)	8.23	358,710
TRACT 3 (1762595569)	6.10	263,952
OFFSITE ROW ACQUISITION (1762483243)	0.79	34,412
SUBTOTAL GROSS AREA	73.62	3,205,262
LESS STREET ROW DEDICATION (POOLE ROAD)	0.31	13,504
NET SITE AREA	**73.31**	**3,191,758**

ZONING:	
EXISTING USE	VACANT/RURAL
PROPOSED ZONING	PUD GR8
PROPOSED USE	SINGLE-FAMILY DETACHED, TOWNHOMES, RECREATIONAL AMENITIES

RESIDENTIAL LOT COUNT:	
60' WIDE SINGLE FAMILY (FRONT LOAD)	85
35' WIDE SINGLE-FAMILY (REAR/ALLEY LOAD)	115
TOWNHOMES (REAR/ALLEY LOAD)	37
TOTAL LOTS	**237**

DENSITY:	
MAXIMUM DENSITY	(237/73.31) = 3.23 D.U./ACRE +/-

BUILDING SETBACKS (60' WIDE SINGLE-FAMILY - FRONT LOAD):	
FRONT (FT)	20
INTERIOR SIDE (FT)	5
STREET SIDE (FT)	10
REAR (FT)	25
MINIMUM LOT WIDTH (FT)	60

BUILDING SETBACKS (35' WIDE SINGLE-FAMILY - REAR LOAD):	
FRONT (FT)	10
INTERIOR SIDE (FT)	3
STREET SIDE (FT)	8
REAR (FT)	20
MINIMUM LOT WIDTH (FT)	35

BUILDING SETBACKS (TOWNHOMES - REAR LOAD):	
FRONT (FT)	5
BUILDING SEPARATION (FT)	10
STREET SIDE (FT)	15
REAR (FT)	20

TREE SAVE AREA:	
10% OF GROSS AREA (AC)	7.33
PROVIDED (AC)	7.50

BEDROOM CALCULATION (OUSIDE 1.2 MILE)				
LOT TYPE	**UNITS**	**BEDS/UNIT**	**TOTAL BEDS**	
TOWNHOMES	37	4	148	
35' SINGLE-FAMILY LOTS (REAR-LOAD)	115	3	345	
60' SINGLE-FAMILY LOTS (FRONT LOAD)	85	4	340	
TOTAL BEDS OUTSIDE 1/2 MILE			833	
REQUIRED OPEN SPACE CALCULATION	**BEDS**	**OPEN SPACE/BED**	**SF**	**AC**
CALCULATION	833	520	433,160	9.94
25% REDUCTION FOR CLUBHOUSE/POOL			324,870	7.46
ACTIVE OPEN SPACE			162,435	3.73
PASSIVE OPEN SPACE			162,435	3.73
PROVIDED OPEN SPACE				**AC**
ACTIVE OPEN SPACE				5.73
PASSIVE OPEN SPACE				5.59
TOTAL OPEN SPACE				11.32

MUNICIPAL WATER ALLOCATION WORKSHEET

PERFORMANCE CHARACTERISTIC	POINTS	TYPE/DESCRIPTION OF POINTS
MAJOR SUBDIVISION	15	BASE
ON-STREET PARKING	4	BONUS (CATEGORY 2 - GREEN DEVELOPMENT STANDARDS)
RESIDENTIAL ARCHITECTUAL STANDARDS	15	BONUS (CATEGORY 2 - GREEN DEVELOPMENT STANDARDS - SECTION 2C)
PUBLIC ART (OUTDOOR DISPLAY)	4	BONUS (CATEGORY 3 - OUTDOOR ENHANCEMENT & TRANSIT IMPROVEMENTS - SECTION 3A)
ENHANCED ROADSIDE LANDSCAPE	2	BONUS (CATEGORY 3 - OUTDOOR ENHANCEMENT & TRANSIT IMPROVEMENTS - SECTION 3A)
RESORT STYLE POOL	2	BONUS (CATEGORY 4 - AMENITIES - PROJECTS WITH RESIDENTIAL COMPONENTS - SECTION 4B)
CLUBHOUSE (MEETING SPACE W/O KITCHEN - 1,500 - 2,499 S.F.	5	BONUS (CATEGORY 4 - AMENITIES - PROJECTS WITH RESIDENTIAL COMPONENTS - SECTION 4E)
IPEMA PLAYGROUND EQUIPMENT (TOT LOT)	4	BONUS (CATEGORY 4 - AMENITIES - SECTION 4F)
DISC GOLF COURSE (9-HOLE)	4	BONUS (CATEGORY 4 - AMENITIES - SECTION 4F)
TOTAL (50 POINTS MINIMUM)	**55**	**BASED ON TOWN OF KNIGHTDALE WATER ALLOCATION ORDINANCE**

N

0 50' 100' 200'
SCALE: 1" = 100'

REV	DATE	DESCRIPTION
2	01/03/2023	MASTER PLAN REVISIONS PER TOK 2ND REVIEW COMMENTS
1	11/28/2022	MASTER PLAN REVISIONS PER TOK 1ST REVIEW COMMENTS

DESIGNED BY: BZ
DRAWN BY: DJ
REVIEWED BY: BZ

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(919) 809 - 4207

SANCTUARY AT POOLE
9701 POOLE ROAD (S.R.1007)
TOWN OF KNIGHTDALE
WAKE COUNTY, NC

SUBDIVISION SITE PLAN

NORTH CAROLINA PROFESSIONAL SEAL 05656 ENGINEER VIVEK D. JARIWALA

NOT FOR CONSTRUCTION

FILE NUMBER: 9318-01

DATE: 11/28/2022

C2.1

CONNECTIVITY INDEX

(NOT TO SCALE)

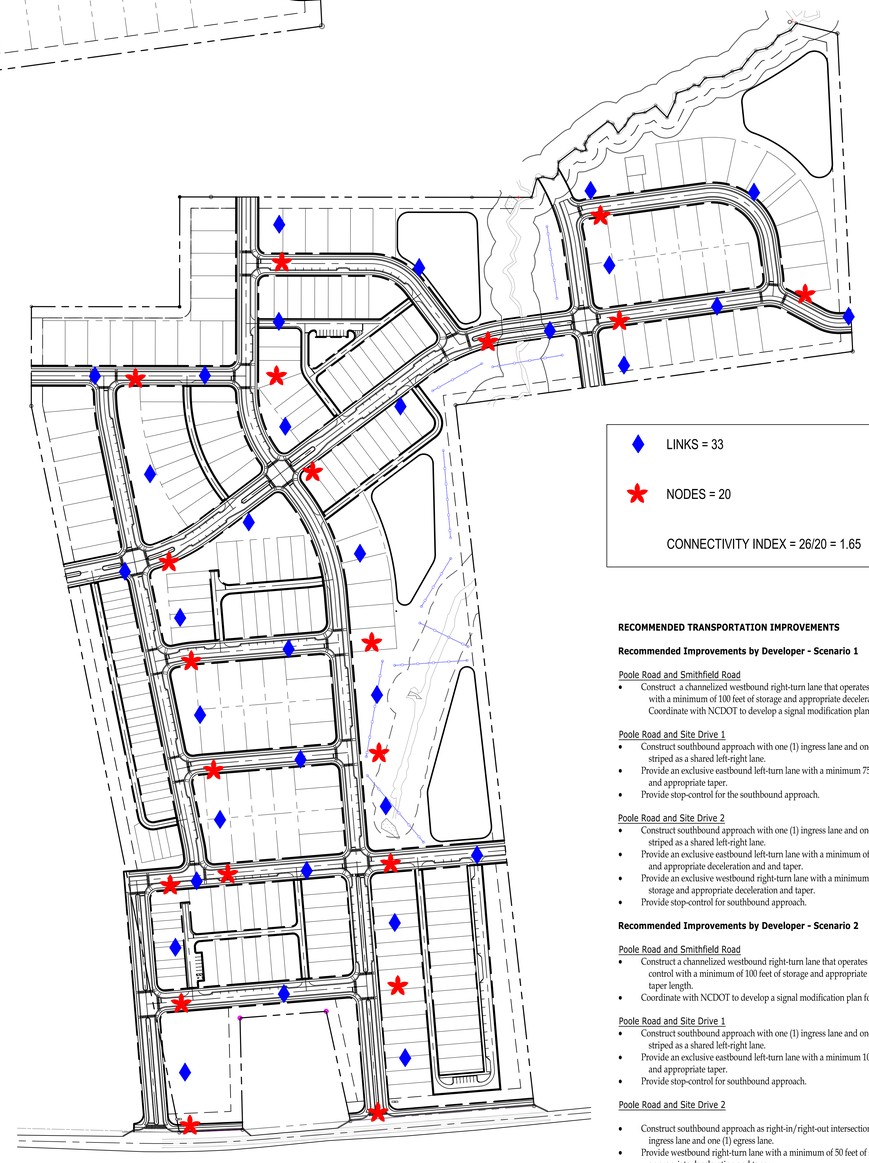
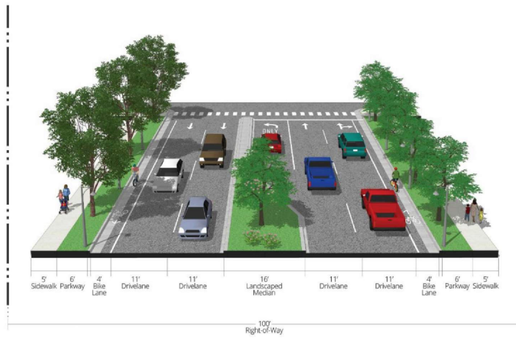


Figure 10.9: Boulevard Cross Section Standards



POOLE ROAD (N.C.S.R. 1007)
100' ULTIMATE ROW
(4-LANE DIVIDED BOULEVARD)

RECOMMENDED TRANSPORTATION IMPROVEMENTS

Recommended Improvements by Developer - Scenario 1

Poole Road and Smithfield Road

- Construct a channelized westbound right-turn lane that operates under yield control with a minimum of 100 feet of storage and appropriate deceleration and taper length Coordinate with NCDOT to develop a signal modification plan for the intersection.

Poole Road and Site Drive 1

- Construct southbound approach with one (1) ingress lane and one (1)egress lane striped as a shared left-right lane.
- Provide an exclusive eastbound left-turn lane with a minimum 75 feet of storage and appropriate taper.
- Provide stop-control for the southbound approach.

Poole Road and Site Drive 2

- Construct southbound approach with one (1) ingress lane and one (1) egress lane striped as a shared left-right lane.
- Provide an exclusive eastbound left-turn lane with a minimum of 75 feet of storage and appropriate deceleration and taper.
- Provide an exclusive westbound right-turn lane with a minimum of 50 feet of storage and appropriate deceleration and taper.
- Provide stop-control for southbound approach.

Recommended Improvements by Developer - Scenario 2

Poole Road and Smithfield Road

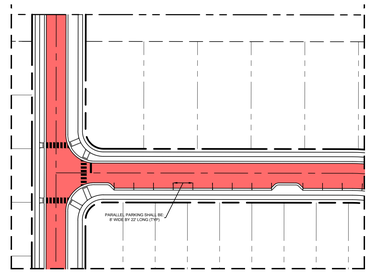
- Construct a channelized westbound right-turn lane that operates under yield control with a minimum of 100 feet of storage and appropriate deceleration and taper length.
- Coordinate with NCDOT to develop a signal modification plan for the intersection.

Poole Road and Site Drive 1

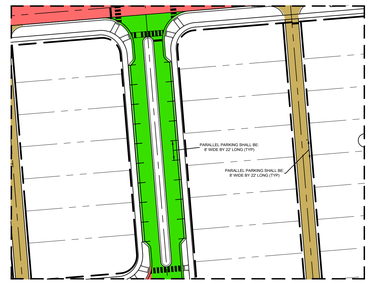
- Construct southbound approach with one (1) ingress lane and one (1) egress lane striped as a shared left-right lane.
- Provide an exclusive eastbound left-turn lane with a minimum 100 feet of storage and appropriate taper.
- Provide stop-control for southbound approach.

Poole Road and Site Drive 2

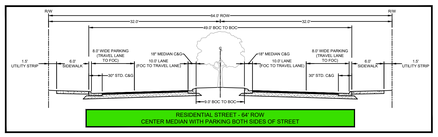
- Construct southbound approach as right-in/right-out intersection with one (1) ingress lane and one (1) egress lane.
- Provide westbound right-turn lane with a minimum of 50 feet of storage and appropriate deceleration and taper.
- Provide stop-control for southbound approach.

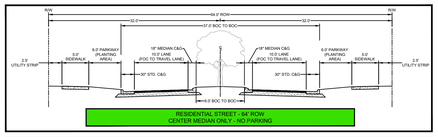


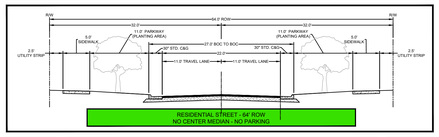
DETAIL 1 - ON-SITE PARKING PLAN VIEW
SCALE: 1" = 60'

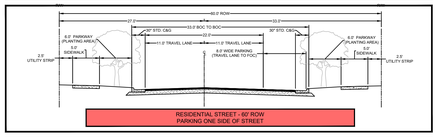


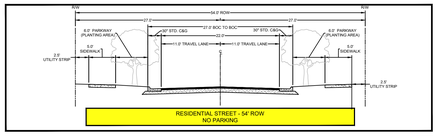
DETAIL 2 - ON-SITE PARKING PLAN VIEW
SCALE: 1" = 60'

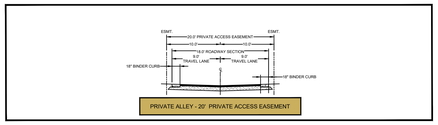


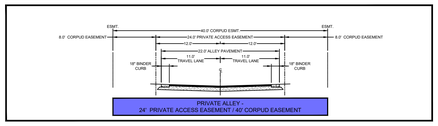


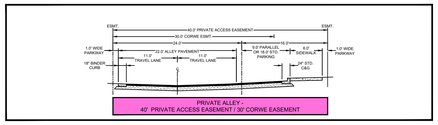












ILLUSTRATIVE STREET SECTIONS ARE PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL DESIGN.

POINTS OF ACCESS FOR RESIDENTIAL DEVELOPMENT

1. VEHICULAR ACCESS POINTS AND TURNING MOVEMENTS SHOWN ON THE MASTER PLAN ARE PRELIMINARY AND SUBJECT TO A TRAFFIC IMPACT ANALYSIS, FINAL DESIGN, AND TOWN OF KNIGHTDALE AND NCDOT REVIEW AND APPROVAL.
2. GENERAL STREET LAYOUT AND STREET CLASSIFICATION IS PRELIMINARY AND SUBJECT TO FINAL DESIGN AND REVIEW AND APPROVAL BY TOWN OF KNIGHTDALE.
3. ALL PUBLIC STREETS SHALL BE CONSTRUCTED TO TOWN OF KNIGHTDALE STANDARDS AND SPECIFICATIONS. POOLE ROAD (S.R. 1007) SHALL BE DESIGNED AND CONSTRUCTED TO NCDOT STANDARDS AND SPECIFICATIONS.
4. ALLEYS SHALL BE PRIVATE AND SITUATED IN A PRIVATE ACCESS EASEMENT.
5. ALL STUBBED STREETS (DEAD-END STREETS) SHALL EXTEND TO THE SUBDIVISION BOUNDARY AND INCLUDE DEDICATION OF PUBLIC RIGHT OF WAY. IF A STUBBED STREET EXCEEDS 150 FEET IN LENGTH, A TEMPORARY HAMMERHEAD, CULDESAC, OR OTHER SIMILAR FEATURE WILL BE DESIGNED WITH THE FINAL CONSTRUCTION PLANS FOR EMERGENCY VEHICLE ACCESS AND MANEUVERABILITY.

N

0 50' 100' 200'
SCALE: 1" = 100'

REV	DATE	DESCRIPTION
3	01/03/2023	MASTER PLAN REVISIONS PER TOK 2ND REVIEW COMMENTS
2	11/28/2022	MASTER PLAN REVISIONS PER TOK 1ST REVIEW COMMENTS
1		

DESIGNED BY: BZ
DRAWN BY: DJ
REVIEWED BY: BZ

BCE
5440 WADE PARK BLVD, SUITE 102
RALEIGH, NC 27607
WWW.BGENC.COM
NC LICENSE #C-4397

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7209 FALLS OF NEUSE ROAD
SUITE 201
RALEIGH, NC 27615
(919) 809 - 4207

SANCTUARY AT POOLE
9701 POOLE ROAD (S.R.1007)
TOWN OF KNIGHTDALE
WAKE COUNTY, NC

TRANSPORTATION PLAN

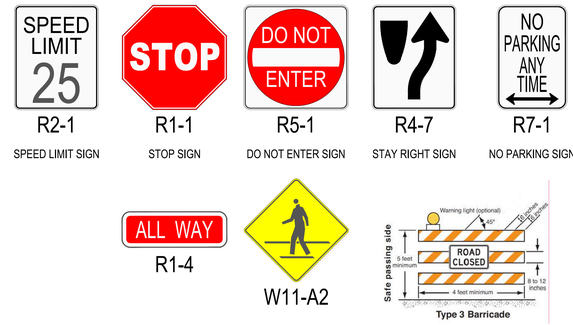
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 051656 JAVIER D. JARAMILLO

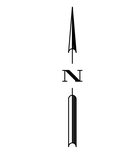
NOT FOR CONSTRUCTION

FILE NUMBER: 9318-01

DATE: 11/28/2022

C3.0





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SANCTUARY AT POOLE
9701 POOLE ROAD (S.R.1007)
TOWN OF KNIGHTDALE
WAKE COUNTY, NC

SIGNAGE & PAVEMENT MARKING PLAN

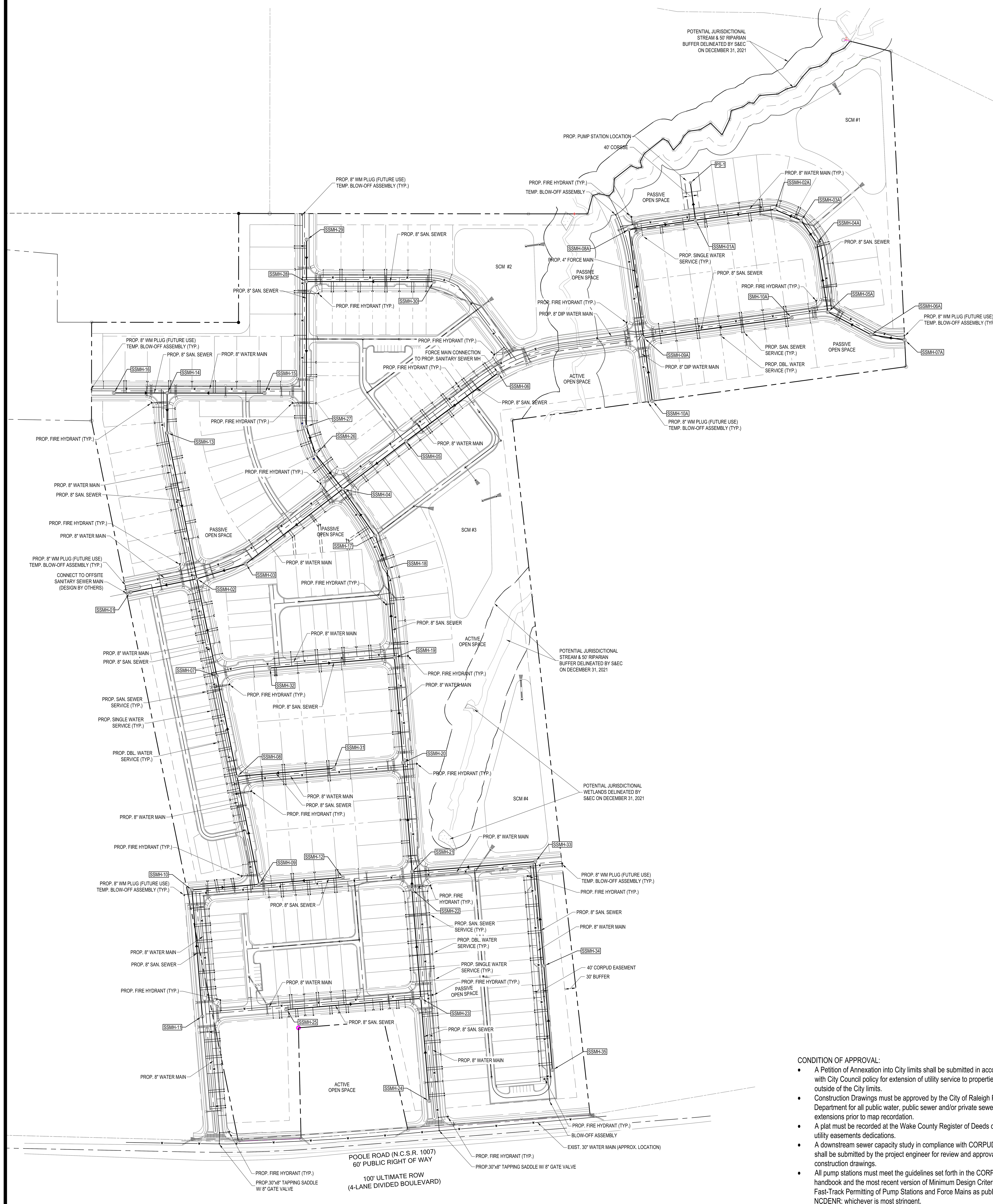
NORTH CAROLINA PROFESSIONAL SEAL 051656 ENGINEER JENNIFER D. JARAMILLO

NOT FOR CONSTRUCTION

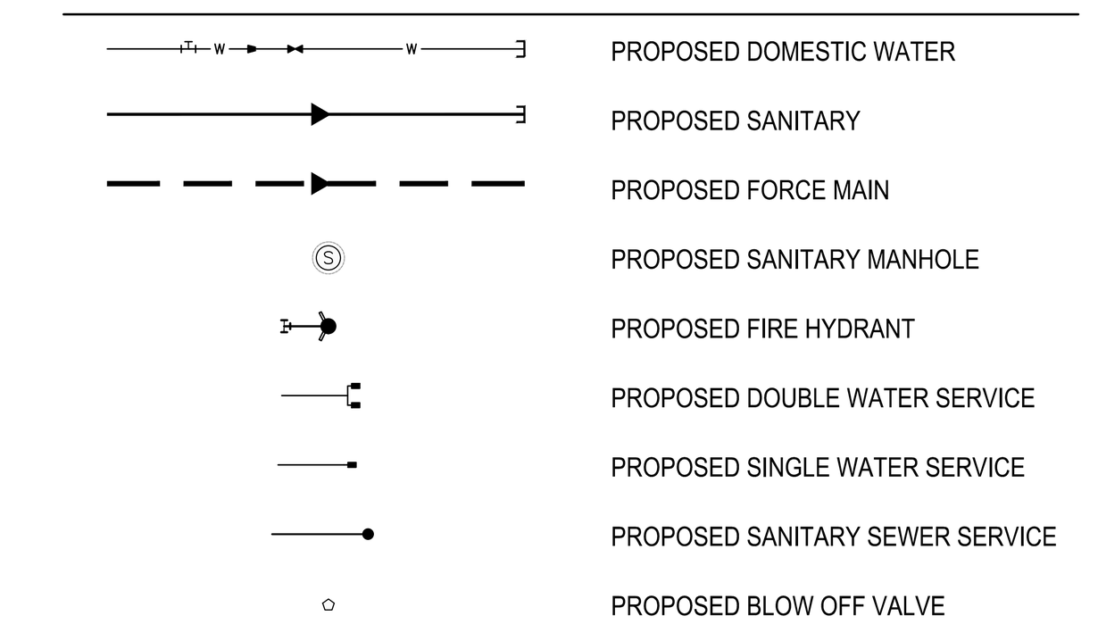
FILE NUMBER: 9318-01

DATE: 11/28/2022

C3.1



PROPOSED UTILITY LEGEND



NOTES:
1. WATER MAINS SHALL BE DIP PER CITY OF RALEIGH PUBLIC UTILITY HANDBOOK.

STANDARD UTILITY NOTES:

1. ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH DESIGN STANDARDS, DETAILS & SPECIFICATIONS (REFERENCE: CORPUD HANDBOOK, CURRENT EDITION)

2. UTILITY SEPARATION REQUIREMENTS:
   a) A DISTANCE OF 100' SHALL BE MAINTAINED BETWEEN SANITARY SEWER & ANY PRIVATE OR PUBLIC WATER SUPPLY SUCH AS AN IMPOUNDED RESERVOIR USED AS A SOURCE OF DRINKING WATER. IF ADEQUATE LATERAL SEPARATION CANNOT BE ACHIEVED, FERROUS SANITARY SEWER PIPE SHALL BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS. HOWEVER, THE MINIMUM SEPARATION SHALL NOT BE LESS THAN 25' FROM A PRIVATE WELL OR 50' FROM A PUBLIC WELL.
   b) WHEN INSTALLING WATER &/OR SEWER MAINS, THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE 10'. IF THIS SEPARATION CANNOT BE MAINTAINED DUE TO EXISTING CONDITIONS, THE VARIATION ALLOWED IS THE WATER MAIN IN A SEPARATE TRENCH WITH THE ELEVATION OF THE WATER MAIN AT LEAST 18" ABOVE THE TOP OF THE SEWER & MUST BE APPROVED BY THE PUBLIC UTILITIES DIRECTOR. ALL DISTANCES ARE MEASURED FROM OUTSIDE DIAMETER TO OUTSIDE DIAMETER.
   c) WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATERMAIN, DIP MATERIALS OR STEEL ENCASEMENT EXTENDED 10' ON EACH SIDE OF CROSSING MUST BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS.
   d) 5.0' MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER.
   e) MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL WATERMAIN & RCP STORM DRAIN CROSSINGS; MAINTAIN 24" MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6" MIN. CLEARANCE (PER CORPUD DETAILS W-41 & S-49)
   f) ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED.

3. ANY NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW & APPROVAL OF AN AMENDED PLAN &/OR PROFILE BY THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT PRIOR TO CONSTRUCTION.

4. CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER & SEWER SERVICE TO EXISTING RESIDENCES & BUSINESSES THROUGHOUT CONSTRUCTION OF PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24 HOUR ADVANCE NOTICE TO THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT.

5. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAIN & SEWER FORCEMAINS. 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS.

6. IT IS THE DEVELOPER'S RESPONSIBILITY TO ABANDON OR REMOVE EXISTING WATER & SEWER SERVICES NOT BEING USED IN REDEVELOPMENT OF A SITE UNLESS OTHERWISE DIRECTED BY THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT. THIS INCLUDES ABANDONING TAP AT MAIN & REMOVAL OF SERVICE FROM ROW OR EASEMENT PER CORPUD HANDBOOK PROCEDURE.

7. INSTALL 3/4" COPPER WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2'X2' WATERLINE EASEMENT IMMEDIATELY ADJACENT. NOTE: IT IS THE APPLICANT'S RESPONSIBILITY TO PROPERLY SIZE THE WATER SERVICE FOR EACH CONNECTION TO PROVIDE ADEQUATE FLOW & PRESSURE.

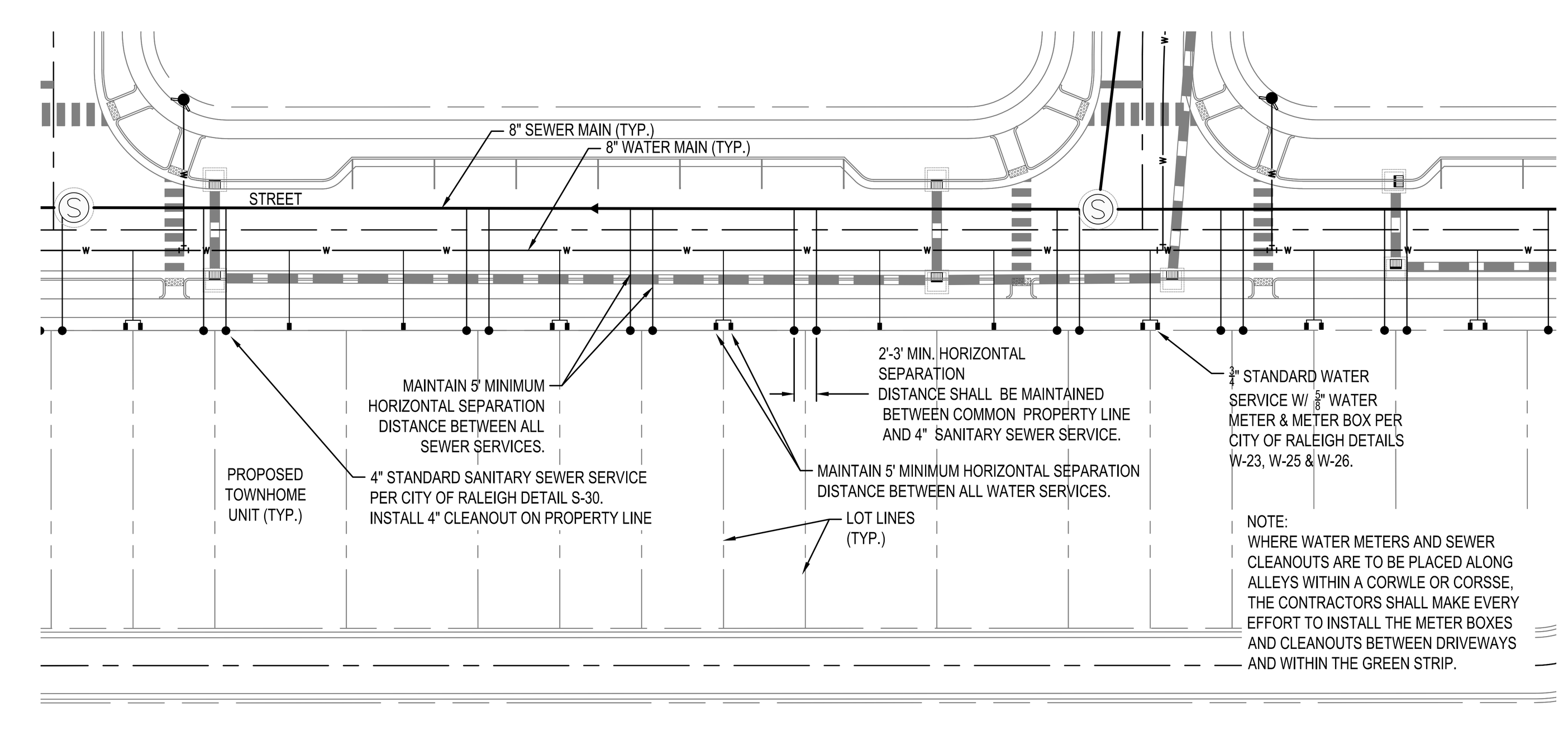
8. INSTALL 4" PVC SEWER SERVICES @ 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE & SPACED EVERY 75 LINEAR FEET MAXIMUM.

9. PRESSURE REDUCING VALVES ARE REQUIRED ON ALL WATER SERVICES EXCEEDING 80 PSI; BACKWATER VALVES ARE REQUIRED ON ALL SANITARY SEWER SERVICES HAVING BUILDING DRAINS LOWER THAN 1.0' ABOVE THE NEXT UPSTREAM MANHOLE.

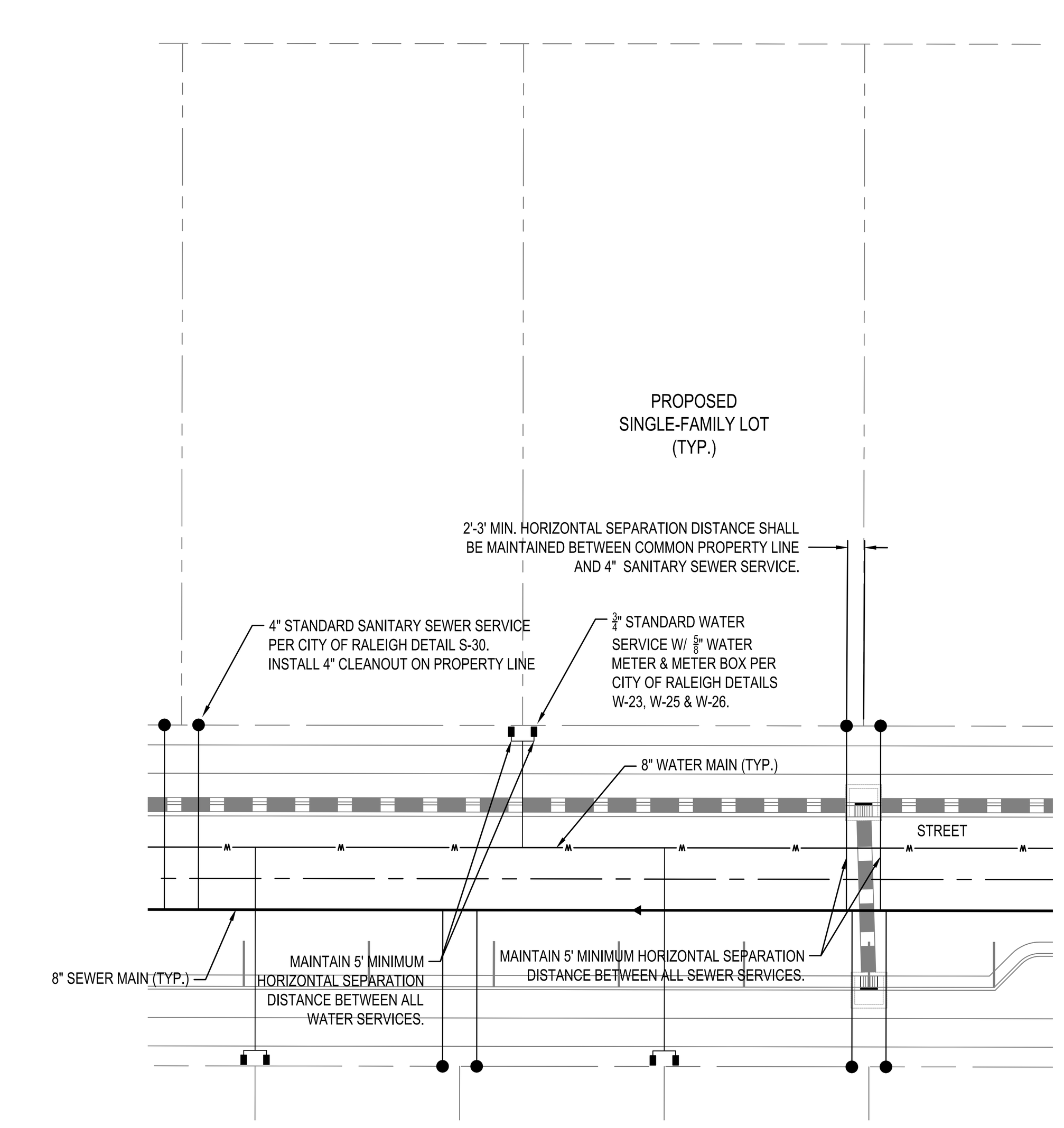
10. ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDWQ, USACE &/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND &/OR FLOODPLAIN IMPACTS (RESPECTIVELY) PRIOR TO CONSTRUCTION.

11. NCDOT / RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION.

12. CROSS-CONNECTION CONTROL PROTECTIONS DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX-B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA. THESE GUIDELINES ARE THE MINIMUM REQUIREMENTS. THE DEVICES SHALL MEET AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARDS OR BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST. THE DEVICES SHALL BE INSTALLED AND TESTED (BOTH INITIAL AND PERIODIC TESTING THEREAFTER) IN ACCORDNACE WITH THE MANUFACTURER'S RECOMMENDATIONS OR THE LOCAL CROSS- CONNECTION CONTROL PROGRAM, WHICHEVER IS MORE STRINGENT. CONTACT JOANIE HARTLEY AT (919) 996-5923 OR JOANIE.HARTLEY@RALEIGHNC.GOV FOR MORE INFORMATION.



TYPICAL TOWNHOME LOT WATER/SEWER SERVICE LAYOUT PLAN
1" = 20'



TYPICAL SINGLE-FAMILY LOT WATER/SEWER SERVICE LAYOUT PLAN
1" = 20'

CONDITION OF APPROVAL:

- A Petition of Annexation into City limits shall be submitted in accordance with City Council policy for extension of utility service to properties currently outside of the City limits.
- Construction Drawings must be approved by the City of Raleigh Public Utility Department for all public water, public sewer and/or private sewer extensions prior to map recordation.
- A plat must be recorded at the Wake County Register of Deeds office for all utility easements dedications.
- A downstream sewer capacity study in compliance with CORPUD Handbook shall be submitted by the project engineer for review and approval prior to construction drawings.
- All pump stations must meet the guidelines set forth in the CORPUD handbook and the most recent version of Minimum Design Criteria for the Fast-Track Permitting of Pump Stations and Force Mains as published by NCDENR; whichever is most stringent.

N

0 50' 100' 200'
SCALE: 1" = 100'

REV	DATE	DESCRIPTION
5		
4		
3		
2	01/03/2023	MASTER PLAN REVISIONS PER TOK 2ND REVIEW COMMENTS
1	11/28/2022	MASTER PLAN REVISIONS PER TOK 1ST REVIEW COMMENTS

DESIGNED BY: BZ
DRAWN BY: DJ
REVIEWED BY: BZ

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5440 WADE PARK BLVD, SUITE 102
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WWW.BGEINC.COM
NC LICENSE #C-4397

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(919) 809 - 4207

SANCTUARY AT POOLE
9701 POOLE ROAD (S.R.1007)
TOWN OF KNIGHTDALE
WAKE COUNTY, NC

UTILITY PLAN

NORTH CAROLINA PROFESSIONAL SEAL 051656 ENGINEER JAVIERD JARAMILLO

NOT FOR CONSTRUCTION

FILE NUMBER: 9318-01

DATE: 11/28/2022

C4.0

PROPOSED STORMWATER MANAGEMENT PLAN LEGEND

PROP. DRAINAGE BASIN BOUNDARY

PROP. STORM DRAINAGE PIPE

PROP. STORM INLET

EXIST. WETLANDS

NOTES

1. PROPOSED STORMWATER CONTROL MEASURES SHALL BE DESIGNED TO PROVIDE POST-CONSTRUCTION STORMWATER MANAGEMENT AND REDUCING THE RUNOFF TO PRE-DEVELOPED CONDITIONS FOR THE 10-YEAR, 24-HOUR STORM EVENT.
2. PROPOSED STORMWATER CONTROL MEASURES SHALL BE DESIGNED AND CONSTRUCTED TO NCDEQ'S STORMWATER BEST MANAGEMENT PRACTICES MANUAL.

N

0 50' 100' 200'
SCALE: 1" = 100'

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TOWN OF KNIGHTDALE
WAKE COUNTY, NC

STORMWATER MANAGEMENT

NORTH CAROLINA PROFESSIONAL SEAL 051656 ENGINEER JAVIER D. JARAMILLO

NOT FOR CONSTRUCTION

FILE NUMBER: 9318-01

DATE: 11/28/2022

C5.0

BEDROOM CALCULATION (OUSIDE 1.2 MILE)				
LOT TYPE	**UNITS**	**BEDS/UNIT**	**TOTAL BEDS**	
TOWNHOMES	37	4	148	
35' SINGLE-FAMILY LOTS (REAR-LOAD)	115	3	345	
60' SINGLE-FAMILY LOTS (FRONT LOAD)	85	4	340	
TOTAL BEDS OUTSIDE 1/2 MILE			833	
REQUIRED OPEN SPACE CALCULATION	**BEDS**	**OPEN SPACE/BED**	**SF**	**AC**
CALCULATION	833	520	433,160	9.94
25% REDUCTION FOR CLUBHOUSE/POOL			324,870	7.46
ACTIVE OPEN SPACE			162,435	3.73
PASSIVE OPEN SPACE			162,435	3.73
PROVIDED OPEN SPACE				**AC**
ACTIVE OPEN SPACE				6.76
PASSIVE OPEN SPACE				5.59
TOTAL OPEN SPACE				12.35

KEY OPEN SPACE NOTES:

1. THE ACTIVE OPEN SPACE AREAS MAY INCLUDE PROGRAM ELEMENTS SUCH AS PLAY AREA(S), PICNIC AREA(S), AND FLEX LAWN SPACE.
2. THE MAXIMUM AVERAGE GRADIENT WITHIN THE ACTIVE OPEN SPACE AREAS WILL NOT EXCEED 7.5%
3. OPEN SPACE CALCULATIONS AND PERCENTAGES WILL COMPLY WITH THE APPROVED MASTER PLAN

ENVIRONMENTAL FEATURES LEGEND

- PASSIVE OPEN SPACE
- PASSIVE OPEN SPACE - NON-DISTURBED (STREAM BUFFER / TREE SAVE)
- PASSIVE OPEN SPACE - SCM
- ACTIVE OPEN SPACE

OPEN SPACE KEY

1. MAIN RECREATION AREA
2. CONCEPTUAL MONUMENT SIGNAGE
3. LINEAR SWING PARK
4. LINEAR PARK
5. PAVILION PARK
6. LINEAR PARK
7. FIRE PLAZA PARK
8. POLLINATOR PARK
9. NATURAL PLAYGROUND PARK
10. ENHANCED LANDSCAPE SCREENING
11. PUBLIC ART

NOTES:

1) A PORTION OF THE SITE IS LOCATED WITHIN LOWER NEUSE RIVER WATERSHED AND NEUSE RIVER BASIN. A PORTION OF THE SITE IS LOCATED WITHIN THE MARKS CREEK WATERSHED AND NEUSE RIVER BASIN.
2) ALL SURVEY INFORMATION PROVIDED TO BGE, SPECIFICALLY THE ALTA/NSPS LAND TITLE SURVEY COMPLETED BY BATEMAN CIVIL SURVEY COMPANY ON FEBRUARY 25, 2022 UNDER THE SUPERVISION OF LICENSED LAND SURVEYOR STEVEN P CARSON, PLS. ANY SUPPLEMENTAL INFORMATION WAS OBTAINED FROM WAKE COUNTY GIS.
3) ALL PROPERTIES SHOWN AND INCLUDED WITH THE MASTER PLAN ARE SITUATED WITHIN ZONE "X" PER NATIONAL INSURANCE PROGRAM FLOOD INSURANCE RATE MAP #3720176200J, DATED 05/02/2006. IN ADDITION, THE PROPERTIES SHOWN HEREON ARE NOT SUBJECT TO ANY FEMA FLOOD HAZARD AREAS.
4) PIN #1762582868, PIN #1762572715, & PIN #1762483243 ARE SUBJECT TO FLOOD PRONE SOILS ACCORDING TO WAKE COUNTY GIS.
5) DELINEATION OF POTENTIAL JURISDICTIONAL STREAMS AND WETLANDS WAS COMPLETED BY S&EC ON DECEMBER 30, 2021.

SCALE: 1" = 100'

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(919) 889 - 4201

SANCTUARY AT POOLE
9701 POOLE ROAD (S.R.1007)
TOWN OF KNIGHTDALE
WAKE COUNTY, NC

OPEN SPACE PLAN

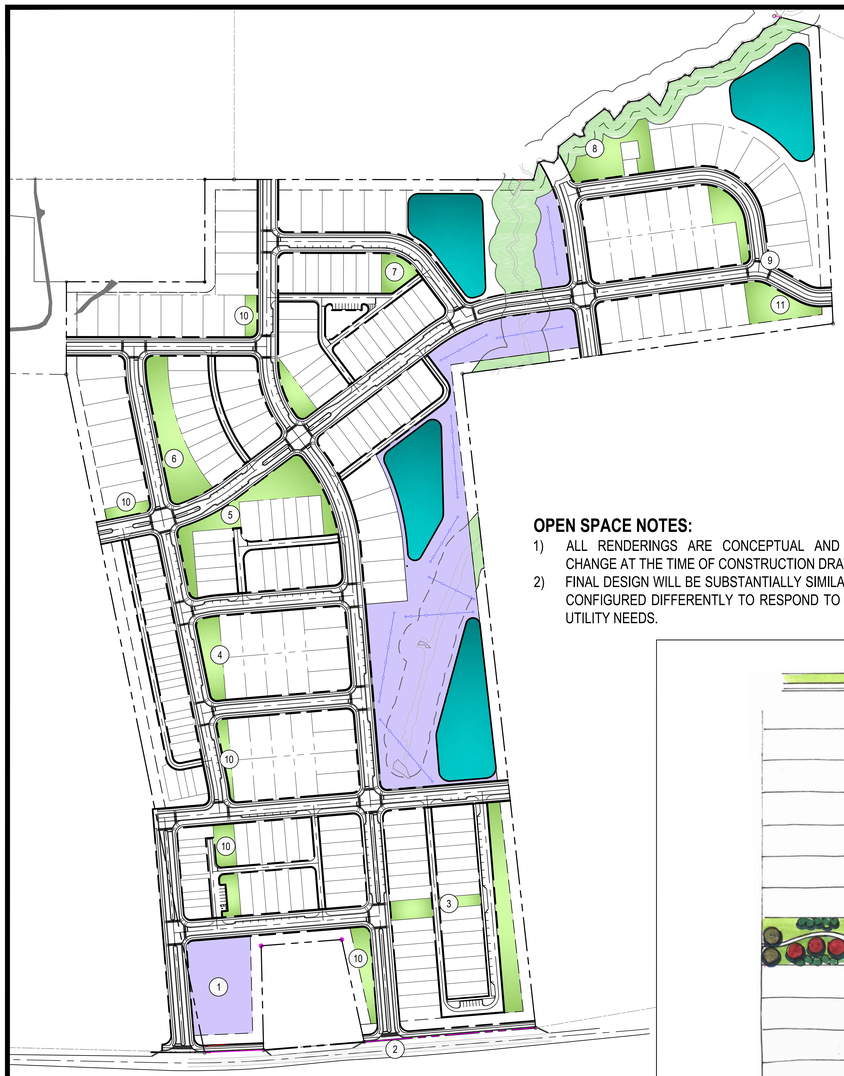
NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT No.2085 WILLIAM S. MOYER

NOT FOR CONSTRUCTION

FILE NUMBER: 9318-01

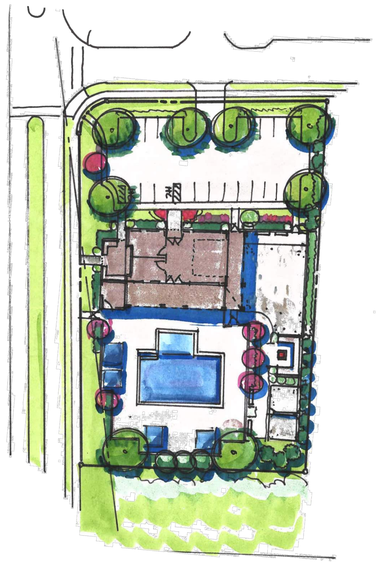
DATE: 11/28/2022

C6.0



OPEN SPACE NOTES:

1) ALL RENDERINGS ARE CONCEPTUAL AND SUBJECT TO CHANGE AT THE TIME OF CONSTRUCTION DRAWINGS.
2) FINAL DESIGN WILL BE SUBSTANTIALLY SIMILAR BUT MAY BE CONFIGURED DIFFERENTLY TO RESPOND TO GRADING AND UTILITY NEEDS.



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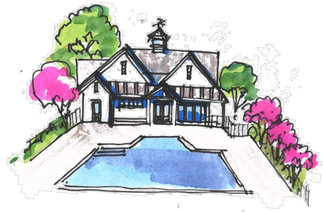
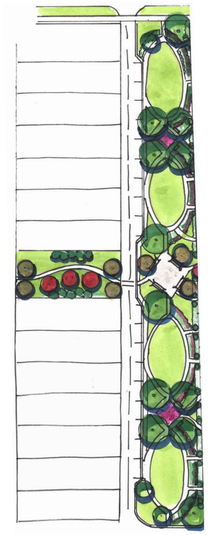


MAIN RECREATION AREA
- CLUBHOUSE (1,500 SF)
- POOL (2,500 SF)
- BIKE RACKS

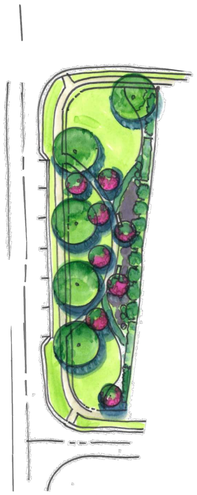
2

CONCEPTUAL MONUMENT SIGNAGE



3

LINEAR SWING PARK
- BENCH SWINGS
- PLAZA SPACE
- WALKING TRAILS
- ENHANCED LANDSCAPING

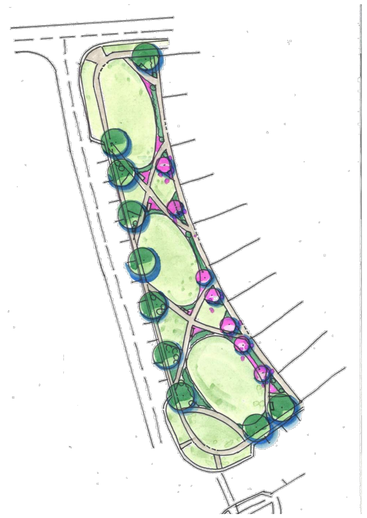


4

LINEAR PARK
- BENCHES
- WALKING TRAILS
- ENHANCED LANDSCAPING

5

PAVILION PARK
- PAVILION STRUCTURE
- BENCHES
- WALKING TRAILS
- ENHANCED LANDSCAPING

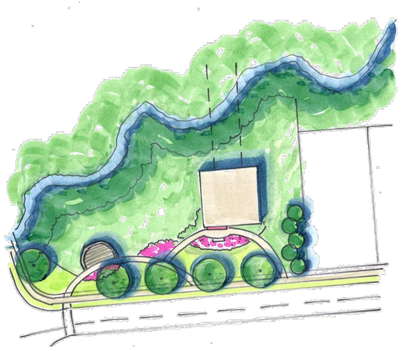


6

LINEAR PARK
- BENCHES
- WALKING TRAILS
- ENHANCED LANDSCAPING

7

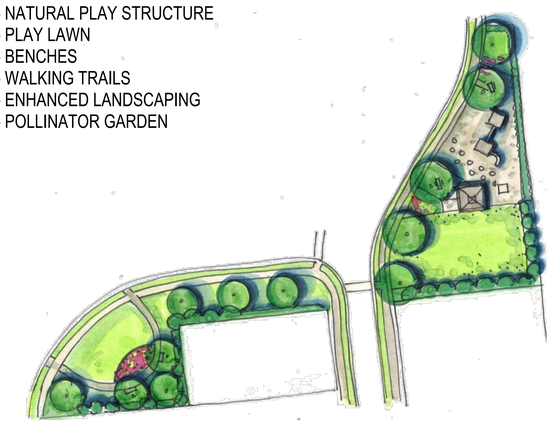
FIRE PLAZA PARK
- FIRE PIT
- ADIRONDACK CHAIRS / BENCHES
- WALKING TRAILS
- OPEN LAWN
- ENHANCED LANDSCAPING



8

POLLINATOR GARDEN
- BUTTERFLY / POLLINATOR GARDENS
- OBSERVATION AREA
- BENCH
- PLAZA SPACE
- WALKING TRAILS
- ENHANCED LANDSCAPING

NATURAL PLAYGROUND PARK
- NATURAL PLAY STRUCTURE
- PLAY LAWN
- BENCHES
- WALKING TRAILS
- ENHANCED LANDSCAPING
- POLLINATOR GARDEN



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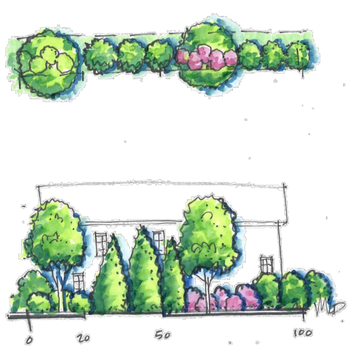
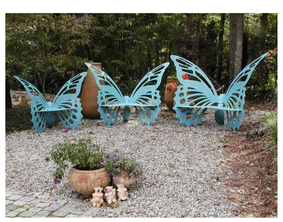


10

ENHANCED LANDSCAPE SCREENING



11

PUBLIC ART

REV	DATE	DESCRIPTION
2	01/03/2023	MASTER PLAN REVISIONS PER TOK 2ND REVIEW COMMENTS
1	11/28/2022	MASTER PLAN REVISIONS PER TOK 1ST REVIEW COMMENTS

DESIGNED BY: BZ
DRAWN BY: DJ
REVIEWED BY: BZ

Miramonte Studio

DR HORTON - TERRAMOR, LLC
7208 FALLS OF NEUSE ROAD
SUITE 201
RALEIGH, NC 27615
(919) 809 - 4207

SANCTUARY AT POOLE
9701 POOLE ROAD (S.R.1907)
TOWN OF KNIGHTDALE
WAKE COUNTY, NC

CONCEPTUAL OPEN SPACE RENDERINGS

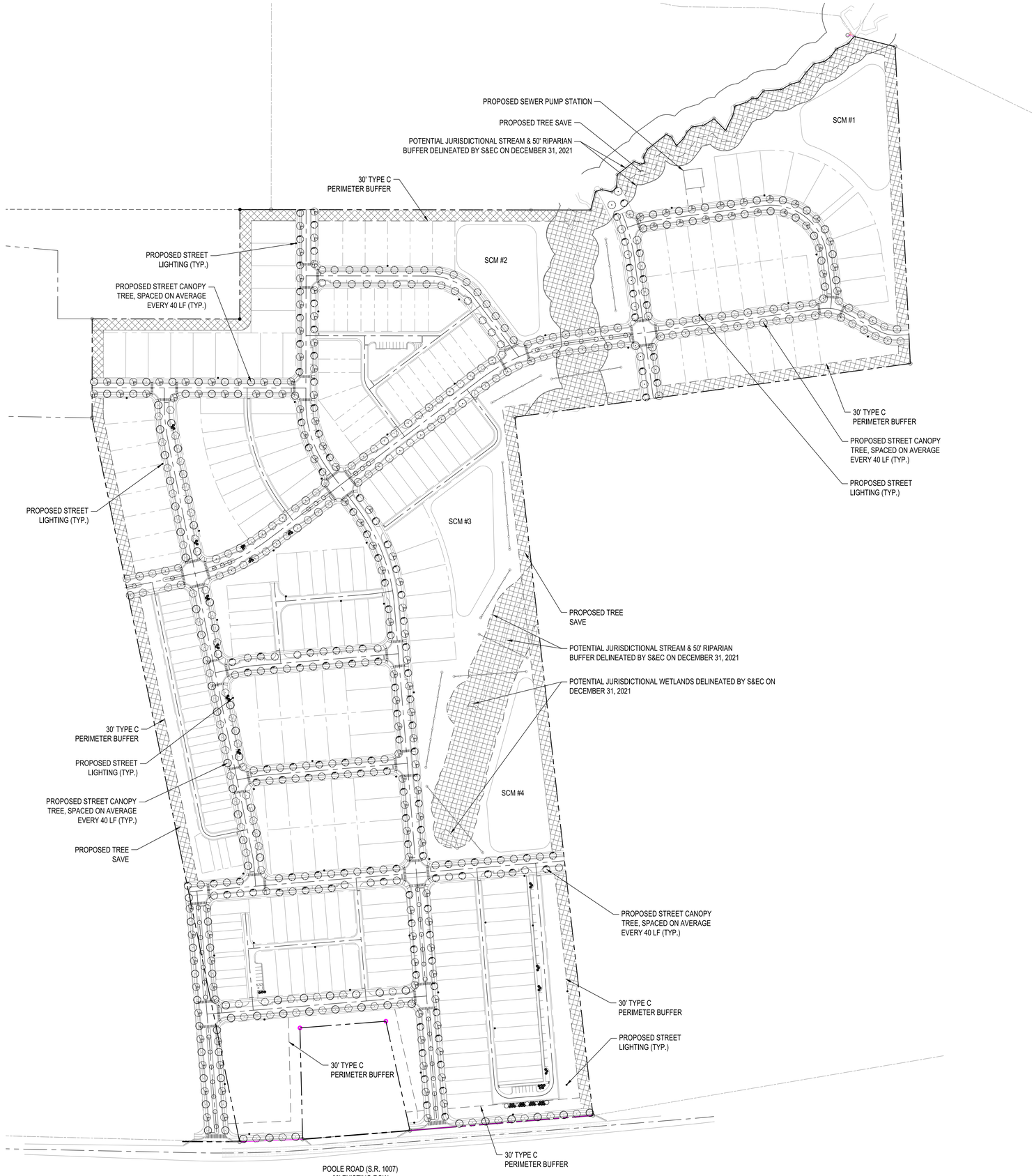
NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT No.2085 WILLIAM S. MONTS

NOT FOR CONSTRUCTION

FILE NUMBER: 9318-01

DATE: 11/28/2022

C7.0



PLANT SCHEDULE

LARGE SHADE TREES	CODE	QTY	COMMON NAME	BOTANICAL NAME	HEIGHT	CALIPER	NOTES
	AS	75	SUGAR MAPLE	ACER SACCHARUM	8' MIN.	2" CAL. MIN.	WELL MATCHED SPECIMENS / FULL CROWN
	QA	113	SAWTOOTH OAK	QUERCUS ACUTISSIMA	8' MIN.	2" CAL. MIN.	WELL MATCHED SPECIMENS / FULL CROWN
	PC	57	CHINESE PISTACHIO	PISTACIA CHINENSIS	8' MIN.	2" CAL. MIN.	WELL MATCHED SPECIMENS / FULL CROWN
	ZS	54	SAWLEAF ZELKOVA	ZLEKOVA SERRATA 'VILLAGE GREEN'	8' MIN.	2" CAL. MIN.	WELL MATCHED SPECIMENS / FULL CROWN
	UP	117	LACEBARK ELM	ULMUS PARVIFOLIA	8' MIN.	2" CAL. MIN.	WELL MATCHED SPECIMENS / FULL CROWN
	QR	122	RED OAK	QUERCUS RUBRA	8' MIN.	2" CAL. MIN.	WELL MATCHED SPECIMENS / FULL CROWN
	AB	80	TRIDENT MAPLE	ACER BUERGERANUM	8' MIN.	2" CAL. MIN.	WELL MATCHED SPECIMENS / FULL CROWN
UNDERSTORY TREES	CODE	QTY	COMMON NAME	BOTANICAL NAME	HEIGHT	CALIPER	NOTES
	AA	48	DOWNY SERVICEBERRY	AMELANCHIER ARBOREA	8' MIN.	1.5" CAL. MIN.	WELL MATCHED SPECIMENS / FULL CROWN
SHRUBS	CODE	QTY	COMMON NAME	BOTANICAL NAME	HEIGHT	CONTAINER	NOTES
	RC	45	CARPOLINA RHODODENDRON	RHODODENDRON CAROLINIANUM	4-6"	2 GAL	WELL MATCHED SPECIMENS / FULL CROWN
	LB	22	SPICEBUSH	LINDERA BENZOIN	4-6"	2 GAL	WELL MATCHED SPECIMENS / FULL CROWN

PLANTING SYMBOLS — (0) XX — QUANTITY / PLANT CODE

NOTE TO CONTRACTOR:
IF GRAPHIC REPRESENTATION OF PLANTINGS ON PLANS DOES NOT MATCH QUANTITIES IN PLANT LIST, GRAPHIC REPRESENTATION OF PLANTINGS ON PLANS WILL GOVERN.

ENVIRONMENTAL FEATURES LEGEND

TREE SAVE AREA

TREE SAVE AREA

TOTAL SITE AREA	3,178,946 SF / 73.01 AC
REQUIRED TREE SAVE AREA (10% OF SITE)	317,895 SF / 7.30 AC
TOTAL TREE COVERAGE PROVIDED:	322,344 SF / 7.40 AC

KNIGHTSDALE RESIDENTIAL LANDSCAPING AND PLAT NOTES (NOT SHOWN IN PLANS)

1. EACH SINGLE-FAMILY OR TOWNHOME LOT SHALL CONTAIN A MINIMUM OF ONE (1) CANOPY TREE FOR EVERY 2,000 SQUARE FEET OF LOT AREA OR FRACTION THERE OF UP TO 20,000 SQUARE FEET IN LOT AREA. ANY PORTION OF THE RESIDENTIAL LOT OCCUPIED BY A RECORDED UTILITY EASEMENT SHALL NOT BE INCLUDED AS PART OF THE TOTAL LOT AREA. THE LOCATION OF PLANTING TO ACCOUNT FOR PHYSICAL CONDITIONS MAY BE ADJUSTED BY THE ADMINISTRATOR.
2. THE USE OF EXISTING TREES MEETING THE FOLLOWING STANDARDS TO SATISFY THIS REQUIREMENT IS ENCOURAGED. EXISTING LARGE SHADE TREES MEASURING MORE THAN SIX (6) INCHES IN DBH MAY BE COUNTED TOWARDS FULFILLING THIS REQUIREMENT.
3. REQUIRED STREET TREES (SECTION 8.8) MAY NOT BE COUNTED TOWARDS THE FULFILLMENT OF THE RESIDENTIAL LANDSCAPING REQUIREMENT, APART FROM REQUIRED STREET TREES, ALL OTHER TREES REQUIRED UNDER THIS CHAPTER SHALL BE PLANTED WITHIN THE PRIVATE LOT.
4. FOUNDATION PLANTINGS CONSISTING OF EVERGREEN SHRUBS SHALL BE INSTALLED ALONG THE ENTIRE FOUNDATION WALL OF THE BUILDING. PLANT INSTALLATION SHALL BE A MINIMUM OF TWO FEET IN HEIGHT PLANTED AT FOUR-FOOT INTERVALS.

STREET LIGHTING NOTES:

1. STREET LIGHTING SHALL FOLLOW CHAPTER 11 OF THE UNIFIED DEVELOPMENT ORDINANCE (UDO) FOR LIGHTING.
2. ALL EXTERIOR LIGHTING FIXTURES SHALL HAVE A FIXTURE CUTOFF CLASSIFICATION OF "FULL CUTOFF" OR BE FULLY SHIELDED (NO LIGHT AT OR ABOVE HORIZONTAL).
3. ALL STREET LIGHTING SHALL UTILIZE AN LED FIXTURE (50 WATT MINIMUM) WITH A COLOR RENDERING INDEX (CRI) VALUE OF 70 OR BETTER AND HAVE A "WHITE LIGHT" CORRELATED COLOR TEMPERATURE NOT EXCEEDING 4,000 KELVIN.
4. STREET LIGHT POLES SHALL BE FIBERGLASS (GRAY OR BLACK) WITH A MAXIMUM MOUNTING HEIGHT NOT EXCEEDING 37 FEET.
5. MAXIMUM AVERAGE SPACING BETWEEN STREET LIGHTS SHALL BE 250 FEET FOR LOCAL STREETS (SUBDIVISION), 150 FEET FOR FORESTVILLE ROAD/OLDKNIGHT ROAD.
6. STREET LIGHT POLES SHALL BE LOCATED OUTSIDE UTILITY EASEMENTS & DESIGNED IN COORDINATION WITH LANDSCAPE PLAN TO AVOID SHADE TREES.
7. MINIMUM INITIAL DELIVERED LUMEN LEVELS SHALL BE 4,800 LUMENS FOR LOCAL STREETS, 18,500 LUMENS FOR ARTERIAL STREETS.
8. ALL STREET LIGHTS SHALL BE FULLY-SHIELDED AND NOT EXCEED THE FOLLOWING BUG RATINGS:
   - LOCAL STREETS: B1, U1, G1
   - ARTERIAL STREETS: B3, U3, G3
9. STREET LIGHTING SHALL BE PLACED AT ALL STREET INTERSECTIONS, STREET CURVES, AND END OF ANY STREETS OR CUL-DE-SACS.
10. STREET LIGHTING INSTALLED BY DEVELOPER SHALL INCLUDE LOCAL STREETS AND ARTERIAL STREETS.
11. THE MINIMUM LIGHT LEVEL FOR PARKING LOTS SHALL BE 0.20 FOOT CANDLES.
12. POST-TOP PEDESTRIAN LIGHTING SHALL BE UTILIZED ALONG PEDESTRIAN FACILITIES, SUCH AS PEDESTRIAN WALKWAYS AND PUBLIC GATHERING SPACES AND SHALL MEET THE FOLLOWING:

    MAXIMUM MOUNTING HEIGHT: 18 FEET
    BUG RATING: LED LIGHT FIXTURES SHALL NOT EXCEED A RATING OF B3, U1, AND G1
    LUMENS: INITIAL DELIVERED LUMENS SHALL NOT EXCEED 7,250
13. THE LIGHTING PLAN SHALL BE SUBMITTED TO DUKE ENERGY FOR FINAL DESIGN AND APPROVAL.

0 50' 100' 200'
SCALE: 1" = 100'

N

REV	DATE	DESCRIPTION
3	01/03/2023	MASTER PLAN REVISIONS PER TOK 2ND REVIEW COMMENTS
2	11/28/2022	MASTER PLAN REVISIONS PER TOK 1ST REVIEW COMMENTS
1		

DESIGNED BY: BZ
DRAWN BY: DJ
REVIEWED BY: BZ

BCE
5440 WADE PARK BLVD, SUITE 102
RALEIGH, NC 27607
WWW.BCENC.COM
NC LICENSE #C-4397

DR HORTON - TERRAMOR, LLC
7208 FALLS OF NEUSE ROAD
SUITE 201
RALEIGH, NC 27615
(919) 609 - 4207

SANCTUARY AT POOLE
9701 POOLE ROAD (S.R.1007)
TOWN OF KNIGHTDALE
WAKE COUNTY, NC

LANDSCAPE & LIGHTING PLAN

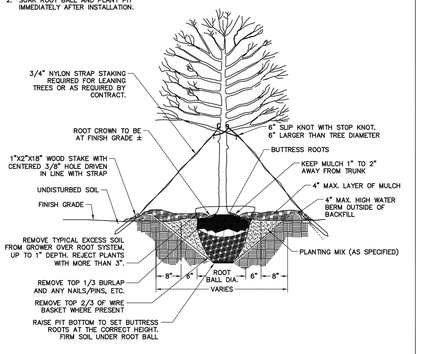
NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT No.2085 WILLIAM S. MCKEE

NOT FOR CONSTRUCTION

FILE NUMBER: 9318-01

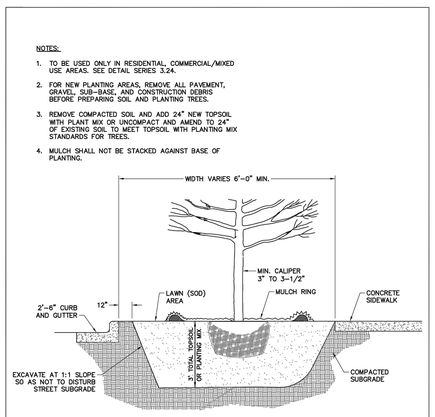
DATE: 11/28/2022

L1.1



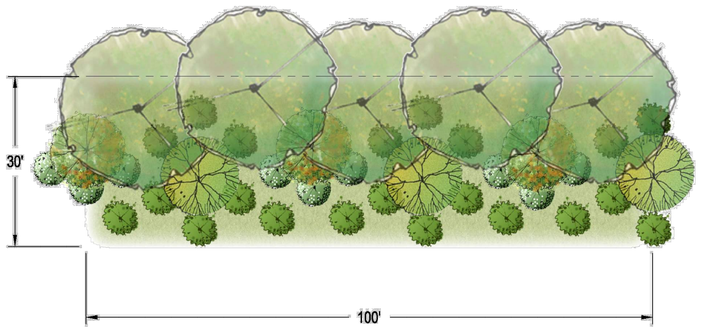
REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	TREE PLANTING (FOR SINGLE AND MULTI-STEM TREES)	STD. NO. 3.25



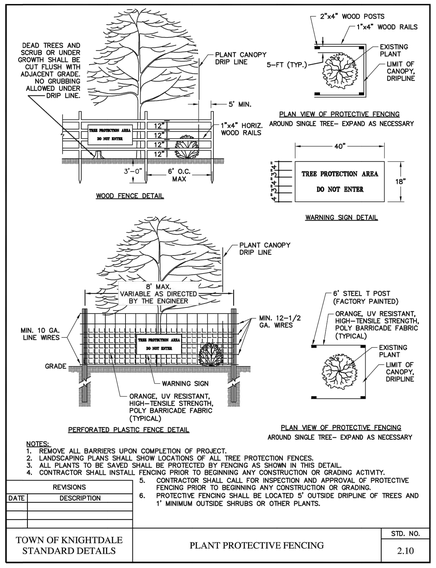
REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	6' TREE PLANTING MIXED USE AREAS	STD. NO. 3.26



30' TYPE C PERIMETER BUFFER

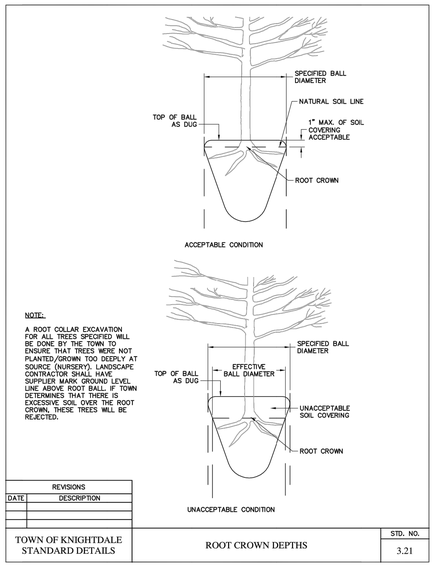
REQUIRED PLANTINGS PER 100 LF OF BUFFER
5 CANOPY SHADE TREES
5 UNDERSTORY TREES
25 EVERGREEN SHRUBS



NOTES:
1. REMOVE ALL BARRIERS UPON COMPLETION OF PROJECT.
2. LANDSCAPING PLANS SHALL SHOW LOCATIONS OF ALL TREE PROTECTION FENCES.
3. ALL PLANTS TO BE SAVED SHALL BE PROTECTED BY FENCING AS SHOWN IN THIS DETAIL.
4. CONTRACTOR SHALL INSTALL FENCING PRIOR TO BEGINNING ANY CONSTRUCTION OR GRADING ACTIVITY.
5. CONTRACTOR SHALL CALL FOR INSPECTION AND APPROVAL OF PROTECTIVE FENCING PRIOR TO BEGINNING ANY CONSTRUCTION OR GRADING.
6. PROTECTIVE FENCING SHALL BE LOCATED 5' OUTSIDE DRIPLINE OF TREES AND 1' MINIMUM OUTSIDE SHRUBS OR OTHER PLANTS.

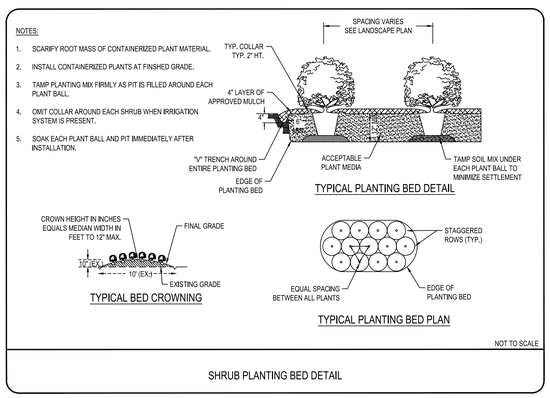
REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	PLANT PROTECTIVE FENCING	STD. NO. 2.10



REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	ROOT CROWN DEPTHS	STD. NO. 3.21



SHRUB PLANTING BED DETAIL

1	01/03/2023	MASTER PLAN REVISIONS PER TOK 2ND REVIEW COMMENTS
1	11/28/2022	MASTER PLAN REVISIONS PER TOK 1ST REVIEW COMMENTS
REV	DATE	DESCRIPTION

DESIGNED BY: BZ
DRAWN BY: DJ
REVIEWED BY: BZ

BCE
5440 WADE PARK BLVD, SUITE 102
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SANCTUARY AT POOLE
9701 POOLE ROAD (SR 1907)
TOWN OF KNIGHTDALE
WAKE COUNTY, NC

LANDSCAPE & LIGHTING DETAILS

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT No.2085 WILLIAM S. MOSS

NOT FOR CONSTRUCTION

FILE NUMBER: 9318-01
DATE: 11/28/2022

L1.2

Sanctuary at Poole

Planned Unit Development

Statement of Consistency and Design Guidelines

Case Number: ZMA-6-22

Date: October 24, 2022
November 28, 2022
January 3, 2023

TABLE OF CONTENTS

Community Vision	Pages 2-3
Statements of Consistency	Pages 4-9
Design Guidelines	Pages 10-11
Landscape/Community Gathering Standards	Pages 12-13
Architectural Standards	Pages 14-19

PROJECT TEAM

Developer:
D.R. Horton Inc.
7208 Falls of Neuse Rd.
Suite 201
Raleigh, NC 27615

Land use Counselors:
Smith Anderson
150 Fayetteville Street, Suite 2300
Raleigh, NC 27601

Planning/Engineering:
BGE Inc
5440 Wade Park Blvd, Suite 102
Raleigh, NC 27607

COMMUNITY VISION

COMMUNITY VISION

The Sanctuary at Poole Planned Unit Development is a new residential development with a variety of housing products ranging from townhomes to larger single-family homes. In recognition of the rural heritage of this part of the Town south of US 64/I-87, the new neighborhood will be integrated into the landscape with various types of usable green space, including small greens, pocket parks, and trails. The Sanctuary at Poole PUD will:

Provide exceptional design, character, and quality in a context-sensitive way

Sanctuary at Poole PUD is in a fast-changing part of eastern Wake County located less than a mile west of Wendell Falls and 1.5 miles south of the U.S.64/I-87 interchange with S. Smithfield Road. To help preserve the rural feel of the area, the neighborhood utilizes intersperses compact, pedestrian-friendly development to preserve open space and natural features that characterize areas designated as Rural Living in the Town's Growth & Conservation Map. A mix of townhomes and single-family homes at different sizes are provided within the interior of the neighborhood and adjacent to the property to the west, which is slated for multifamily development. Significant buffers and open amenity features buffer the other surrounding properties and Poole Road, helping to preserve the rural feel of the area.

Incorporate creative design in the layout of the neighborhood

Homes will be clustered into neighborhoods in a pedestrian-focused layout with significant open spaces that will encourage walking and create a cohesive development. The majority of homes shall be alley-loaded, de-emphasizing vehicles and placing a strong emphasis on front porches and covered entries.

Ensure compatibility with surrounding land uses and neighborhood character

Sanctuary at Poole PUD will create a neighborhood consistent in density with the surrounding residential subdivisions while thoughtfully preserving the open space so that residents can access and experience nature as part of their daily lives. To further preserve the rural characteristics of the area, there will be landscaped buffers along Poole Road and between the neighborhood and more rural properties. Denser development types will be located closer to the western property line, where multifamily development is proposed.

Improve and provide greater efficiency in the layout and provision of roads, utilities, and other infrastructure

The project will construct nearly a mile of "Main Street" road sections within the project, as well as make improvements to portions of Poole Road along the project frontage. The neighborhood's internal sidewalks and roads will allow residents to walk and bike throughout the community, and a stub to the planned greenway to the north of the neighborhood will connect the neighborhood to Lake Myra Park and the surrounding areas.

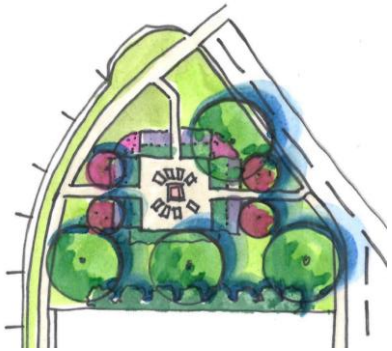
COMMUNITY VISION

Provide high quality community amenities

The community will provide a diverse range of spaces to support a variety of activities, including:

- Clubhouse and pool amenity
- 9-hole private disc golf course
- Public art
- Playground
- Pavilion/Pergola
- Monarch butterfly way station
- Swing Park
- Multiple pocket parks programmed with sidewalks, benches and enhanced landscaping
- Bike racks
- Native planting areas with educational signage
- Pedestrian connections to adjoining planned communities to east and west

In keeping with the rural heritage of the area, open space is at the forefront of the amenity plans.



STATEMENTS OF CONSISTENCY

KnightdaleNext 2035 COMPREHENSIVE PLAN CONSISTENCY

The Sanctuary at Poole PUD is located in the Rural Planning Area on the Growth Framework Map because it is not directly adjacent to municipal water and sewer utilities and would be expensive for the Town to extend the utilities to this area. According to the General Growth Framework, development proposals are appropriate for these areas when reviewed by Town Council with public input.

The proposal is inconsistent with the property's designation of Rural Living on the Growth and Conservation Map. Therefore, the enactment of this PUD would necessitate an amendment to the Growth and Conservation Map to change the property's designation.

It is appropriate to change the property's designation on the Growth and Conservation map to Single-Family or Mixed-Density Neighborhood. This will allow the Town's people and coffers to benefit from the growth that is already happening in this area. It will also provide the Town with the ability to guide development in a thoughtful and environmentally sensitive manner so that it can take advantage of the opportunities presented by this area in a practical way that does not overextend the Town's resources.

Although this area has not seen development within the Town's jurisdiction, it is already surrounded by a dense development that is equal to that seen in other parts of Knightdale. Most significantly, the Wendell Falls development is located one mile east, and features a mix of residential, retail and commercial uses. To the east, hundreds of homes have been built in Wake County jurisdiction on urban-sized lots (0.10 to 0.25 acres) served by neighborhood wells and sewer package plants.

In recognition of the growth occurring in this area, the Growth Framework map identifies the area as future Knightdale jurisdiction. According to the Comprehensive Plan, bringing this property into the Town would help accomplish multiple goals, including (1) limiting the use of neighborhood-operated sewer treatment package plants that may create larger environmental risks because they are not always maintained as well as municipal systems, and (2) enriching the location, type, pattern and density of future development in the area.

The Sanctuary at Poole PUD would help further both goals associated with expanding the Town's jurisdiction to the area. Rezoning the property for the Sanctuary at Poole PUD would allow the development to access nearby municipal water and sewer lines instead of relying on neighborhood-based wells and sewer package plants. The Sanctuary at Poole e PUD also utilizes cluster development concepts that would not be as feasible under county zoning, allowing for a more flexible and context-sensitive development.

The Sanctuary at Poole PUD is located near the intersection of two major state-maintained roads (S. Smithfield and Poole roads) that are designated as boulevards in the UDO. This intersection of major roads is the ideal location for a neighborhood node that would serve the daily needs of existing and future residents in the area while serving as a southeastern gateway into the Town. The proposed Sanctuary at Poole PUD would be built in close proximity to this node, and convenient pedestrian and bicycle access to future facilities consistent with Comprehensive Plan guidance.

STATEMENTS OF CONSISTENCY

KnightdaleNext 2035 COMPREHENSIVE PLAN CONSISTENCY CONTINUED

The Sanctuary at Poole PUD is consistent with the following Guiding Principles in the KnightdaleNext 2035 Comprehensive Plan:

1. Natural Environment: This principle aims to ensure that open spaces and amenity areas provided as part of the development to promote and expand opportunities for people to experience natural settings, increase their proximity to multiple recreational activities, and help them enjoy a healthy lifestyle. The Sanctuary at Poole PUD provides active and passive open space along with a mix of amenity areas that residents can enjoy. The stream buffers safeguard the Town's natural resources. The neighborhood will have trails connecting green spaces within the neighborhood and will have a stub to a future greenway trail that will link the neighborhood to Lake Myra Park.

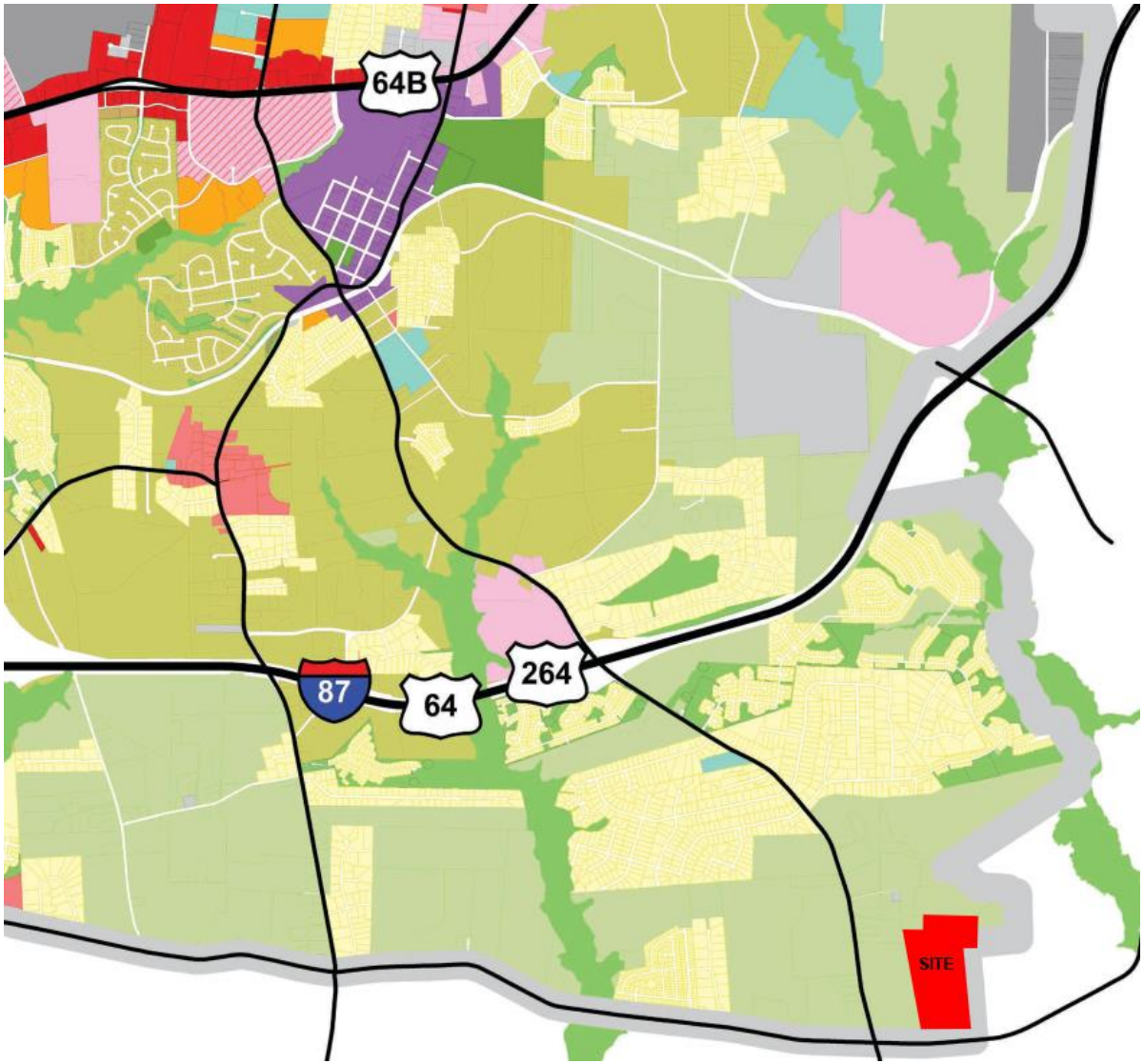
2. Parks and Recreation: This principle aims to promote and expand opportunities where people can be more involved in active lifestyle represented by the presence of high-quality parks locate near where people live. Sanctuary at Poole PUD's various pocket parks, playground, and disc-golf course achieves this principle in a variety of ways.

3. Community Design: This principle aims to encourage the creation of places that are unique to Knightdale. Sanctuary at Poole's unique balance of compact residential development patterns with open space that both honors the area's rural heritage while meeting the needs of modern-day residents helps enhance Knightdale's reputation as a place for pedestrians and active public spaces. The development will include investments in the public realm in the form of public art, leveraging greater investment and interaction with the public realm.

4. Great Neighborhoods and Expanded Home Choices: This principle aims to promote vibrant neighborhoods that provide greater access to a range of housing choices that people need at various stages of life. The Sanctuary at Poole PUD will provide a diversity of housing sizes and types that will achieve this principle.

STATEMENTS OF CONSISTENCY

KnightdaleNext 2035 COMPREHENSIVE PLAN



PLACETYPE CATEGORIES

- Preserved Open Space
- Rural Living
- Recreation Open Space
- Single Family Neighborhood
- Mixed-Density Neighborhood
- Multifamily Community
- Neighborhood Node
- Retail
- Business Office
- Light Industrial
- Heavy Industrial
- Civic & Institutional
- Old Town
- Mixed-Use Center
- Mixed-Use Center (Suburban Retrofit)
- Transit-Oriented Development (BRT)
- Regional Mixed-Use Center

STATEMENTS OF CONSISTENCY

UNIFIED DEVELOPMENT PLAN CONSISTENCY

The Sanctuary at Poole PUD is designed to meet the requirements of the UDO where practical and achievable.

The applicant is seeking five modifications to provisions of the UDO as part of this PUD. The requested modifications are listed below:

Modification to Permit "Dwelling—Townhome" Uses

Section 3.1.C.1 of the UDO provides that "Dwelling—Townhome" uses are not permitted in the GR8 zoning district. Therefore, "Dwelling—Townhome" uses are permitted in the Sanctuary at Poole PUD.

The proposed PUD would include a cluster of townhomes to preserve open space and achieve various other design goals identified in the UDO and the Comprehensive Plan.

Accordingly, "Dwelling--Townhome" uses shall be permitted by right in the Santuary at Poole PUD.

Modification to GR8 Lot Standards and Site Standards

Section 3.4 of the UDO establishes the following Minimum Lot Standards :

Lot Standards (Minimum)

- Lot Width/DU – Street Loaded: 80 feet
- Lot Width/DU – Alley Loaded: 30 feet

Site Standards (Minimum)

- Driveway Length – 35 feet

TOWN OF KNIGHTDALE, NC

UNIFIED DEVELOPMENT ORDINANCE

STATEMENTS OF CONSISTENCY

In order to preserve greater open space, reduce impervious surface area and achieve the design intent articulated in the UDO and the Comprehensive Plan, the PUD clusters residences on smaller lots to preserve open space.

Accordingly, the Minimum Lot and Site Standards shall be:

Lot Standards (Minimum)

- Lot Width/Home Building Type – Street Loaded: 60 feet
- Lot Width/Home Building Type – Alley Loaded: 35 feet
- Lot Width/Townhome Building Type: 20 feet

***Site* Standards**

Minimum Driveway Length

- Public Street Front Loaded: 20 feet from Public ROW
- Private Alley Loaded: 20 feet from Private Access Easement

Modification to Yard Setbacks for Home Building Type

Section 6.5 requires the Home Building type to have the following Yard Setbacks:

Yard Setbacks

- Front Minimum: 10 feet
- Corner Side Minimum: 10 feet
- Side Minimum: 20% lot width*
- Rear Minimum: 25 feet

*Side setback shall be calculated on an aggregate. Lots greater than or equal to 60 feet in width shall have minimum setback of 5 feet. Lots of less than 60 feet in width shall have a minimum setback of 3 feet. Side yards of corner lots shall be a minimum of 10 feet.

STATEMENTS OF CONSISTENCY

To permit a more compact development with larger open spaces, the Yard Setbacks for the Home Building type shall be:

Yard Setbacks for lots greater than or equal to 60 feet in width

- Front Minimum: 10 feet
- Corner Side Minimum: 10 feet
- Side Minimum: 5 feet
- Rear Minimum: 25 feet

Yard Setbacks for lots less than 60 feet in width

- Front Minimum: 10 feet
- Corner Side Minimum: 8 feet
- Side Minimum: 3 feet
- Rear Minimum: 20 feet

Modification to Rear Yard Setbacks for Townhome Building Type

Section 6.6 requires the Townhome Building type to have the following Yard Setbacks:

Yard Setbacks

- Front Minimum: 0 feet
- Front Maximum: 25 feet
- Side Minimum: 10 feet*
- Rear Minimum: 15 feet

*If firewall exists, 0-foot side yard minimum

To permit a more compact development with larger open spaces, the Yard Setbacks for the Home Building type shall be:

Yard Setbacks

- Front Minimum: 5 feet
- Front Maximum: 25 feet
- Corner Side Minimum: 15 feet
- Side Minimum: 5 feet
- Rear Minimum (alley loaded): 20 feet

Modification to Required Distribution of Uses

Section 11.B provides that no more than 60% of the net development area of the PUD may be used for single-family homes.

In order to develop a residential neighborhood of primarily single-family homes consistent with Comprehensive Plan guidance for the area, the maximum distribution of Single-Family Dwellings shall be increased to 94%.

DESIGN GUIDELINES

DESIGN GUIDELINES

The Sanctuary at Poole PUD is a neighborhood with +/- 250 homes spread over a 73.01-acre site. Sanctuary at Poole PUD will provide a variety of housing choices for current and future town residents as well as several amenities for residents in the neighborhood, including a pool, disc golf course, and multiple parks. The provision of a mix of housing types integrated with public and private open spaces will provide housing for a variety of residents, from young families to senior citizens looking to age in place.

All homes and townhomes within the community shall be built consistent with the Design Guidelines contained herein.

Proposed Uses and Maximum Densities

Maximum Density: 3.5 units per acre

Residential Uses:	**Maximum Density: 250 Units**
• Single Family Detached Homes (60' x 115' min. lots; garage front)	~90 Lots
• Single Family Detached Cottage Homes (35' x 115' min. lots; alley access only)	~120 Lots
• Townhomes (20'-22' x 80' interior lots) (22'-25' x 80' end lots)	~40 Units

Restricted Uses

The following uses, although allowed under the zoning district GR8 in the Town of Knightdale UDO, are hereby prohibited by condition of approval for the Sanctuary at Poole Planned Development District: PUD-GR8:

- Family Care Home (6 or Less residents)
- Housing Service for the Elderly
- Bed and Breakfast Inns
- Child/Adult Day Care Home (Fewer than 6 people)
- Government Services
- Public Safety Facility
- Religious Institutions

DESIGN GUIDELINES

DEVELOPMENT STANDARDS

Single Family Detached Homes:
(60' x 115' lots)

Minimum Lot Size:	60' x 115'
Access:	Lots may be front loaded
Mass Grading:	Permitted
Setbacks:	
Front Minimum:	10'
Interior Side Minimum:	5'
Street Side Minimum:	10'
Rear Minimum:	25'
Building Height:	3-Stories, Max. 45'
Front Driveway Length:	20' Min.

Single Family Detached Homes:
(35' x 115' lots)

Minimum Lot Size:	35' x 115'
Access:	Lots shall be alley loaded
Mass Grading:	Permitted
Setbacks:	
Front Minimum:	10'
Interior Side Minimum:	3'
Street Side Minimum:	8'
Rear Alley Minimum:	20' from centerline of alley
Building Height:	3-Stories, Max. 45'
Rear Driveway Length:	20' Min.

Townhomes:

Minimum Lot Size:	20' x 80'
Access:	Lots shall be alley loaded
Mass Grading:	Permitted
Setbacks:	
Front Minimum:	5'
Building Separation:	10'
Street Side:	15'
Rear Minimum:	15' from centerline of alley
Building Height:	3-Stories, Max. 42'
Rear Driveway Length:	20' Min.

Distribution of Uses:

Townhouse:	6% min – 10% max
Single-Family:	90% min – 94% max

Roadway Standards:
All streets within the Sanctuary at Poole PUD shall conform to the street sections as illustrated in the Masterplan. Where minimum standards deviate from Town of Knightdale Ordinance, streets shall accommodate turning movements for fire safety apparatus (Quantum 105). A truck turning template will be shown on the construction drawings to verify turning movements are adequate to accommodate fire and trash collection.

Minimum centerline radii shall be as follows:

- Main Street: 250'
- Local Street: 100'
- Alley: 25'

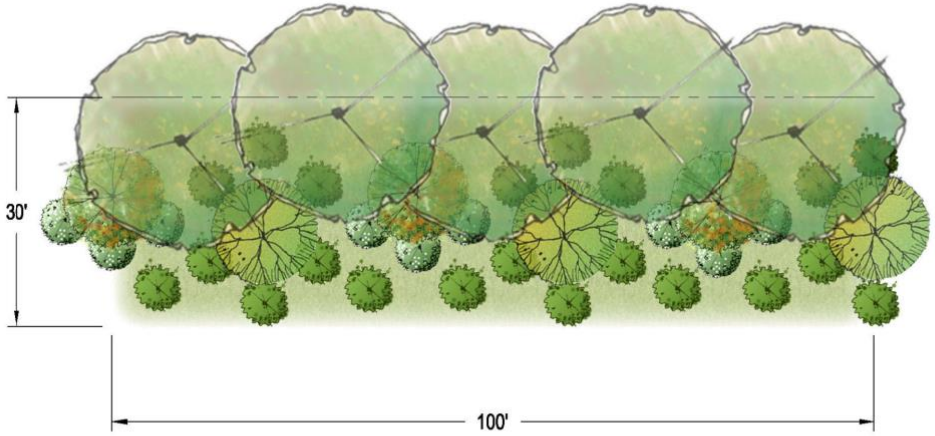
LANDSCAPE/COMMUNITY GATHERING STANDARDS

LANDSCAPE STANDARDS

The following Landscape Standards shall apply:

Perimeter Buffer:

- A thirty-foot (30) Type 'C' Buffer shall be provided around the entire perimeter of the site. The buffer may incorporate portions of existing wetlands and stream buffers and existing vegetation shall be counted toward the Type 'C' Buffer requirements.
- No buffer shall be required at utility crossings and cross-access pedestrian connections.
- The perimeter buffer may be averaged with a minimum depth of 15 feet in order to accommodate minor encroachments by the private disc golf course.
- Disturbed areas within the buffer shall be planted with a minimum of:
  - Five (5) canopy shade trees,
  - Five (5) understory trees and
  - Twenty (25) evergreen shrubs per 100 LF of buffer.



30' TYPE C PERIMETER BUFFER

REQUIRED PLANTINGS PER 100 LF OF BUFFER
5 CANOPY SHADE TREES
5 UNDERSTORY TREES
25 EVERGREEN SHRUBS

LANDSCAPE/COMMUNITY GATHERING STANDARDS

Enhanced Landscape Areas

Open Space areas throughout the Sanctuary at Poole Planned Unit Development shall be landscaped with a combination of hardscape materials and landscape plantings to enhance the visual and functional values of these areas. Areas include, but are not limited to:

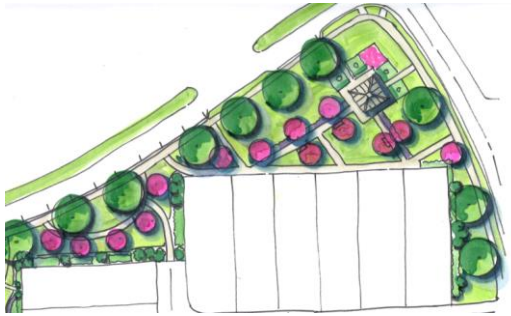
- Entrance drives at Poole Road.
- Disc Golf course
- Medians in roadways
- Amenity Center and Mail Kiosk
- Public gathering locations and pocket parks

See sheets C6.0 Open Space Plan and C7.0 Conceptual Open Space Renderings for conceptual design of the proposed landscape and hardscape elements. Final design at the time of construction drawings will be substantially similar to these renderings.

All Enhanced Landscape Areas shall be maintained by the homeowner's association.

Community Gathering Areas

The masterplan includes conceptual sketches that are intended to demonstrate the level and types of finishes proposed within the community. Design of these spaces will be finalized at the time of construction documents and will be substantially similar to the images depicted on the masterplan.



ARCHITECTURAL STANDARDS

ARCHITECTURAL

The streetscapes at Sanctuary at Poole are designed to promote a sense of community, security, and connectedness. The majority of homes shall be alley-loaded allowing structures to be placed closer to the fronting street with garages and driveways in the rear thereby de-emphasizing the vehicle. A strong emphasis on front porches and covered entries, each with a lead walk extending out to the public sidewalk, encouraging interaction amongst the residents of the community as well as providing walkways to the many open spaces within Sanctuary at Poole . Architectural controls for the homes will be an integral part of the vision for the community. Creating stimulating streetscapes that balance functionality with aesthetics is an important component of the lifestyle to be created at Sanctuary at Poole . While final elevations to be constructed will be available in the future, the plans shall include the following elements to ensure consistency and quality throughout the community and the following architectural conditions shall apply:

Architectural Conditions

1. Single-family 2-story homes on 60-feet wide lots will have a minimum heated area of 1,800 square feet.

2. Single-family 1 or 1.5-story homes on 60-feet wide lots will have a minimum heated area of 1,600 square feet.

3. Single-family homes built on lots less than 60-feet wide will have a minimum heated area of 1,600 square feet.

4. All Single-family homes on 35-feet wide lots will take access via alleys from the rear.

5. Townhomes will have a maximum height of 3-stories (45 feet).

6. All townhomes will take access via alleys from the rear.

7. Townhomes will have a minimum heated area of 1,400 square feet.

8. Ninety percent (90%) of the single-family homes built on lots at least 60-feet wide will have a minimum house width of 40-feet. Ten percent (10%) of the single-family homes built on lots at least 60- feet wide will have a minimum house width of 35-feet.

9. All single-family homes with crawl spaces will be wrapped in brick or stone on all sides.

10. All single-family homes with stem wall or slab foundations will contain a minimum of 2 stair risers (14 inches) up to the front porch and will be wrapped in either brick or stone on all sides.

ARCHITECTURAL STANDARDS

Architectural Conditions Continued

11. All single-family homes and townhomes will have a combination of two or more of the following materials on the front facade (not including foundation): stone, brick, lap siding, cementitious siding, shakes or board and batten unless the home is only stone or brick. The exterior siding material on the side and rear facades will be fiber cement. When two materials are used, the materials shall be different but complementary colors. Vinyl may be used only for soffits, fascia and corner boards.

13. All single-family homes and townhomes will have a front porch with a minimum depth of five feet. Front porch posts will be at least 6"x6".

14. Single Family main roof pitches (excluding porches) fronting the street for 2-story homes will be at least 8: 12.

15. Single family main roof pitches (excluding porches) fronting the street for 1-story and 1.5-story homes will be at least 6: 12 unless an alternate is approved by staff.

16. Townhome roof pitches will be at least 6:12.

17. Garages will not protrude more than 6 feet from the front porch or stoop, and all garage doors shall contain window inserts.

18. For single family homes, every 30 linear feet (or fraction) of continuous side elevation (calculated on a per floor basis), there shall be one window or door added to the side elevations. Any siding break on the side of the home such as a fireplace, side porch, wall offsets could be used as an alternate to windows.

19. Eaves, front and rear, shall project a minimum of 12”. Side eaves shall be a min of 4”. Eaves will be allowed to encroach setbacks.

20. All front facing garage doors will include decorative door hardware.

REPRESENTATIVE BUILDING ELEVATIONS

TOWNHOME BUILDING ELEVATIONS

Note: Building elevations are provided to demonstrate the intended character and quality of the homes. Final elevations may vary at the time of construction drawings but will remain substantially similar to those depicted. In addition, all final building elevations will comply with the Architectural Conditions provided within this guidebook.

REPRESENTATIVE BUILDING ELEVATIONS

35’ SINGLE-FAMILY DETACHED BUILDING ELEVATIONS (ALLEY LOAD)

Note: Building elevations are provided to demonstrate the intended character and quality of the homes. Final elevations may vary at the time of construction drawings but will remain substantially similar to those depicted. In addition, all final building elevations will comply with the Architectural Conditions provided within this guidebook.

REPRESENTATIVE BUILDING ELEVATIONS

60’ SINGLE-FAMILY DETACHED BUILDING ELEVATIONS (FRONT LOAD)

Note: Building elevations are provided to demonstrate the intended character and quality of the homes. Final elevations may vary at the time of construction drawings but will remain substantially similar to those depicted. In addition, all final building elevations will comply with the Architectural Conditions provided within this guidebook.

REPRESENTATIVE BUILDING ELEVATIONS

60’ SINGLE-FAMILY DETACHED BUILDING ELEVATIONS (FRONT LOAD)

Note: Building elevations are provided to demonstrate the intended character and quality of the homes. Final elevations may vary at the time of construction drawings but will remain substantially similar to those depicted. In addition, all final building elevations will comply with the Architectural Conditions provided within this guidebook.

KNIGHTDALE development services

Town of Knightdale | 950 Steeple Square Ct. | Knightdale, NC 27545
KnightdaleNC.gov | 919-217-2241

NOTICE MAILED: 9/16/22
MEETING DATE: 9/29/22

Summary of Discussions

Provide a summary of any questions or comments received from meeting attendees along with responses by the applicant. If the question or comment will result in a change to the proposal, please state how that change will be made and the resulting follow up with the applicant. Use duplicate sheets if needed.

Question/Concern #1:

How much green space will be allocated between the current residents and proposing housing project?

Applicant's Response:

There are three (3) residences currently adjacent to the property subject to the rezoning. Thirty foot (30') perimeter buffers will be installed inside of the rezoned tract adjacent to those residential parcels.

Question/Concern #2:

How and what is the plan for the property to be divided from current property owners?

Applicant's Response:

The applicant is in the process of submitting a recombination plat to Wake County that will result in the current owner retaining approximately nine acres of PIN 1762582868.

Question/Concern #3:

Applicant's Response:

Question/Concern #4:

Applicant's Response:

KNIGHTDALE development services

Town of Knightdale | 950 Steeple Square Ct. | Knightdale, NC 27545
KnightdaleNC.gov | 919-217-2241

NEIGHBORHOOD MEETING ATTENDANCE SHEET

Please list Neighborhood Meeting Attendees who provided their name and/or contact information either during the meeting or via phone/email before or after the meeting. Use duplicate sheets if needed.

	Name/Organization	Address	Phone Number	Email Address	Follow Up Requested?
1.	Earl Buffaloe	N/A		lefttrn@hotmail.com	No
2.	Debbie Cobb	6032 King Farm Lane		debbiecobb@bellsouth.net	No
3.	James Etchells	9709 Poole Road		turboetch@gmail.com	No
4.	Al Hines	3817 S. Smithfield Road		al.hines32@yahoo.com	Copy of Powerpoint
5.	Brittany Marshburn	N/A		bymarshburn@gmail.com	Copy of Powerpoint
6.	Mart Yeager	1004 Myra Falls Road		martyeager@aol.com	No
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					

RAMEY KEMP ASSOCIATES

TOGETHER WE ARE LIMITLESS

Poole Road Assemblage

Traffic Impact Analysis

Knightdale, North Carolina

rameykemp.com

TRAFFIC IMPACT ANALYSIS

FOR

POOLE ROAD ASSEMBLAGE

LOCATED

IN

KNIGHTDALE, NC

Prepared For:
Terramor Homes
7208 Falls of Neuse Road, Suite 201
Raleigh, NC 27615

Prepared By:
Infrastructure Consulting Services, Inc.
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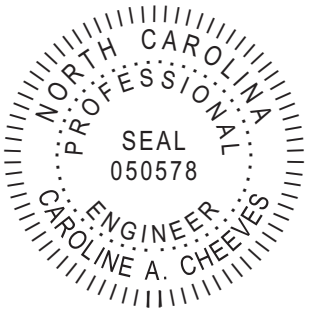

10/14/2022

Caroline Cheeves

OCTOBER 2022

RKA Project No. 22069

Prepared By: DT

Reviewed By: CC

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TRAFFIC IMPACT ANALYSIS
POOLE ROAD ASSEMBLAGE
KNIGHTDALE, NORTH CAROLINA

1. INTRODUCTION

The contents of this report present the findings of the Traffic Impact Analysis (TIA) conducted for the proposed Poole Road Assemblage development to be located in the northeast quadrant of the intersection of Poole Road at Smithfield Road in Knightdale, North Carolina. The purpose of this study is to determine the potential impacts to the surrounding transportation system created by traffic generated by the proposed development, as well as recommend improvements to mitigate the impacts.

The proposed development, anticipated to be completed by 2026, is assumed to consist of a maximum of 246 single-family homes. It should be noted that the site plan includes a mixture of single-family homes and townhomes; however, all units were studied as single-family homes for a conservative analysis.

Per the Town of Knightdale (Town) guidelines, a future analysis year of one year beyond build-out (2027) and ten years beyond build-out (2036) was considered. Additionally, this study analyzes two (2) build scenarios: Scenario 1 analyzes both Site Drive 1 and Site Drive 2 as full movement intersections and Scenario 2 analyzes Site Drive 1 as a full movement intersection and Site Drive 2 as a right-in/right-out intersection. The study analyzes traffic conditions during the weekday AM and PM peak hours for the following scenarios:

- 2022 Existing Traffic Conditions
- 2027 No-Build Traffic Conditions
- 2027 Build Traffic Conditions – Scenario 1
- 2027 Build Traffic Conditions – Scenario 2
- 2036 Future Traffic Conditions – Scenario 1 – Per Town UDO (with STIP I-6007 Improvements)
- 2036 Future Traffic Conditions – Scenario 2 – Per Town UDO (with STIP I-6007 Improvements)

1.1. Site Location and Study Area

The development is proposed to be located to be located in the northeast quadrant of the intersection of Poole Road at Smithfield Road in Knightdale, North Carolina. Refer to Figure 1 for the site location map.

The study area for the TIA was determined through coordination with the North Carolina Department of Transportation (NCDOT) and the Town of Knightdale (Town) and consists of the following existing intersections:

- Poole Road and Smithfield Road
- Smithfield Road and Sandy Run
- Smithfield Road and I-87 (US 64 / US 264) Eastbound Ramps
- Smithfield Road and I-87 (US 64 / US 264) Westbound Ramps
- Smithfield Road and Major Slade Road
- Poole Road and Major Slade Road

Refer to Appendix A for the approved scoping documentation.

1.2. Proposed Land Use and Site Access

The site is expected to be located in the northeast quadrant of the intersection of Poole Road at Smithfield Road. The proposed development, anticipated to be completed by 2026, is assumed to consist of a maximum of 246 single-family homes.

This study analyzes two (2) build scenarios: Scenario 1 analyzes both Site Drive 1 and Site Drive 2 as full movement intersections along Poole Road and Scenario 2 analyzes Site Drive 1 as a full movement intersection and Site Drive 2 as a right-in/right-out intersection, both along Poole Road. Refer to Figure 2 for a copy of the preliminary site plan.

1.3. Adjacent Land Uses

The proposed development is located in an area consisting primarily of undeveloped land and residential development.

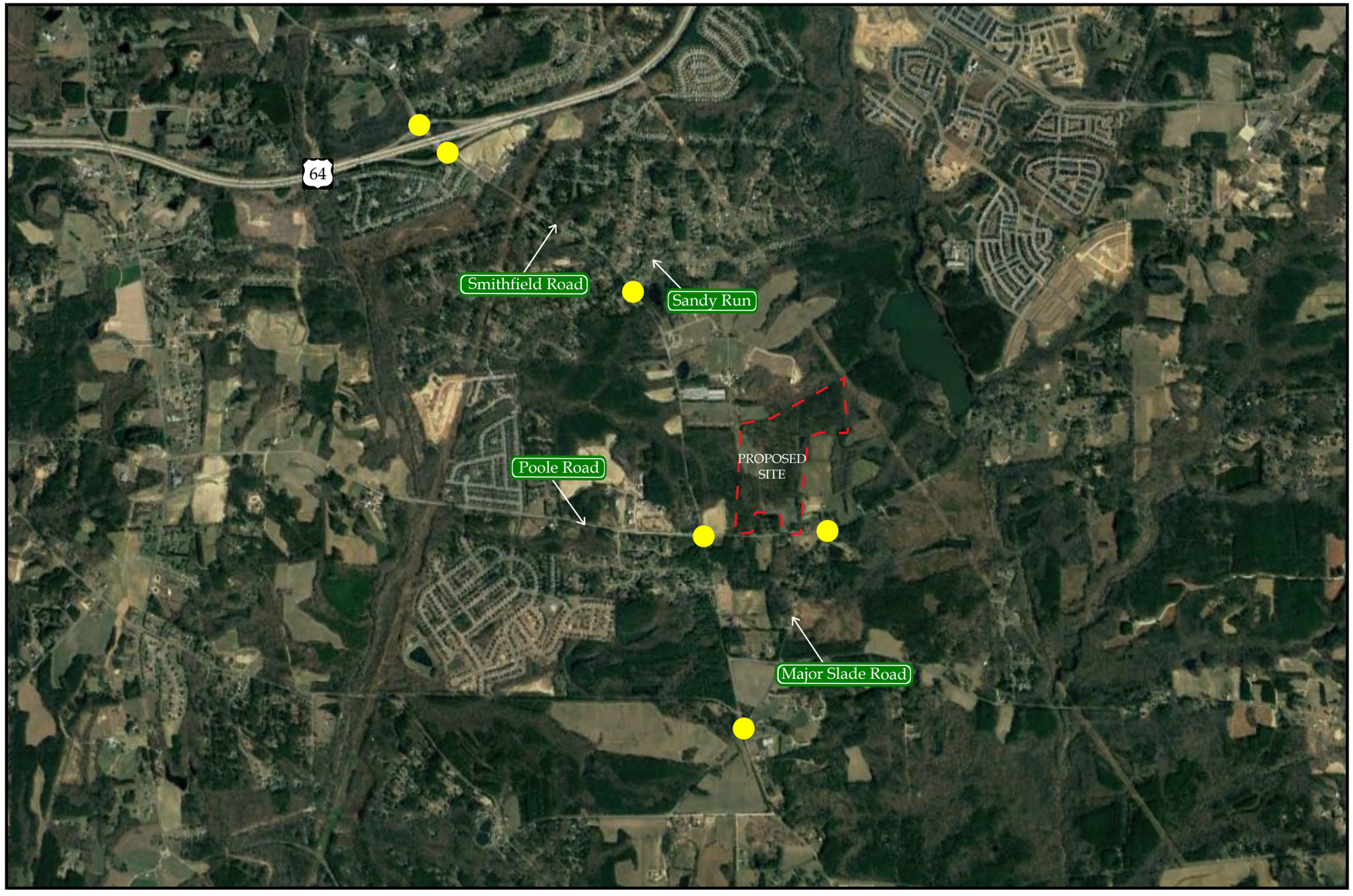
1.4. Existing Roadways

Existing lane configurations (number of traffic lanes on each intersection approach), lane widths, storage capacities, and other intersection and roadway information within the study area are shown in Figure 3. Table 1 provides a summary of this information, as well.

Table 1: Existing Roadway Inventory

Road Name	Route Number	Typical Cross Section	Speed Limit	2019 AADT (vpd)
Poole Road	SR 1007	2-lane undivided	55 mph	3,000
Smithfield Road	SR 2233	2-lane undivided	45 mph	14,000*
Sandy Run	SR 2685	2-lane undivided	25 mph	2,800**
I-87 (US 64 / US 264)		6-lane divided	70 mph	71,000
Major Slade Road	SR 2506	2-lane undivided	55 mph (assumed)	4,620**

*ADT from 2017
**ADT based on the traffic counts from 2022 and assuming the weekday PM peak hour volume is 10% of the average daily traffic.



LEGEND

- Proposed Site Location
- Study Intersection
- Study Area

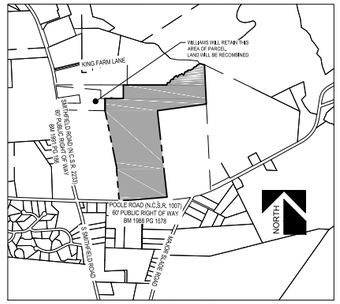
N

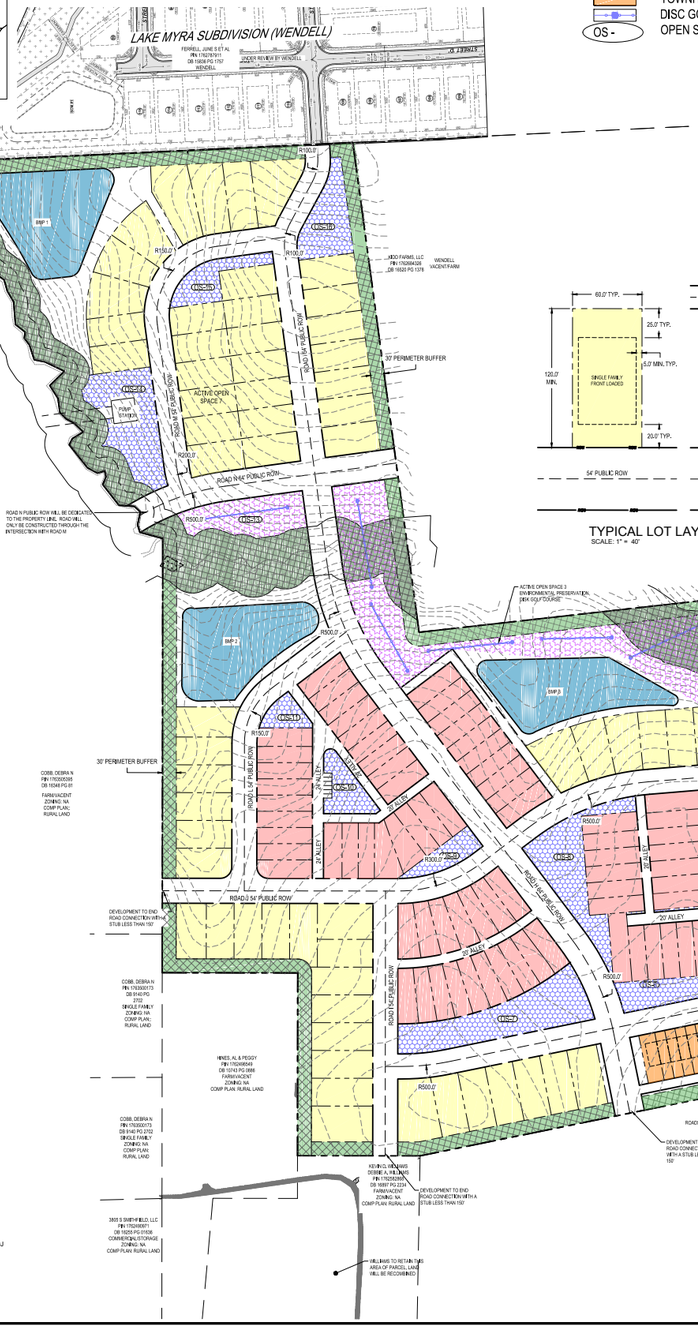
RAMEY KEMP ASSOCIATES

Poole Road Assemblage
Knightdale, NC

Site Location Map

Scale: Not to Scale | Figure 1





VICINITY MAP

SCALE: 1" = 1000'

LEGEND

- ▬ ON STREET PARKING-STRIPED
- ▬ TYPICAL MEDIANS
- 🟩 STREAM BUFFER
- 🟩 PERIMETER BUFFER
- ▨ TREE SAVE
- 🟦 POND
- ▨ ACTIVE OPEN SPACE (AOS)
- ▨ PASSIVE OPEN SPACE (POS)
- ☐ PUBLIC GREENWAY
- 🟥 35' SINGLE FAMILY
- 🟨 60' SINGLE FAMILY
- 🟧 TOWNHOUSE
- ● DISC GOLF COURSE
- OS - OPEN SPACE LABEL

OPEN SPACE

#	ACTIVE (SF)	PASSIVE (SF)	DISCRIPTION
OS-1		9,119	ENHANCED LANDSCAPING, SIDEWALK, BENCHES
OS-2		10,120	GATEWAY LANDSCAPING, PUBLIC ART
OS-3	47,698		CLUBHOUSE (MIN. 1,500 SF), RESORT STYLE POOL,PLAYGROUND, BIKE RACKS, PAVILION
OS-4		4,950	ENHANCED LANDSCAPING, ENHANCED MEANDERING SIDEWALK, BENCHES, PUBLIC ART
OS-5		10,297	ENHANCED LANDSCAPING, ENHANCED MEANDERING SIDEWALK, BENCHES, PUBLIC ART
OS-6		11,487	ENHANCED LANDSCAPING, ENHANCED MEANDERING SIDEWALK, BENCHES, PUBLIC ART, SWING PARK, PAVILION
OS-7		33,514	ENHANCED LANDSCAPING, ENHANCED MEANDERING SIDEWALK NETWORK, BENCHES
OS-8		26,246	ENHANCED LANDSCAPING, ENHANCED MEANDERING SIDEWALK, BENCHES, PUBLIC ART, SWING PARK, PAVILION
OS-9		7,564	ENHANCED LANDSCAPING, ENHANCED SIDEWALK NETWORK, BENCHES, SWING PARK
OS-10		9,471	ENHANCED LANDSCAPING
OS-11		5,450	ENHANCED ROADSIDE LANDSCAPING
OS-12	174,351		9-HOLE DISC GOLF COURSE, MONARCH BUTTERFLY WAY STATION, NATIVE PLANTINGS AND EDUCATIONAL SIGNAGE, BIKE RACKS
OS-13	19,344		DISC GOLF COURSE
OS-14		23,390	ENHANCED ROADSIDE LANDSCAPING
OS-15		11,004	SWING PARK, PAVILION
OS-16		15,896	PLAYGROUND, BIKE RACKS, PAVILION
TOTAL	241,393		ACTIVE (SF)
	5.54		ACTIVE (AC)
TOTAL		178,508	PASSIVE (SF)
		4.10	PASSIVE (AC)

NOTES:

1. IN ORDER TO PROVIDE FLEXIBILITY DURING FINAL DESIGN, PUBLIC ART, PAVILION, PLAYGROUND AND SWING PARK ARE LISTED IN MULTIPLE LOCATIONS.
2. THE OVERALL PROJECT WILL PROVIDE A MINIMUM OF ONE(1) EACH OF THESE THREE ELEMENTS. ALL OTHER ITEMS WILL BE PROVIDED AS LISTED IN THE TABLE ABOVE EVEN IF SHOWN IN MULTIPLE LOCATIONS.
3. ENHANCED SIDEWALKS - IN ORDER TO PROVIDE A UNIQUE PEDESTRIAN STREETSCAPE, PUBLIC SIDEWALKS WITHIN THE RIGHT-OF-WAY WILL BE REPLACED BY ENHANCED MEANDERING SIDEWALKS WITHIN OPEN SPACE AREA 3-8 THESE SIDEWALKS WILL BE MAINTAINED BY THE HOMES OWNER'S ASSOCIATION AND WILL BE LOCATED WITHIN A PUBLIC SIDEWALK EASEMENT.

POOLE ROAD WIDENING
TYPICAL SECTION
(NTS)

MAIN STREET SECTION
SIDE PARKING W/MEDIAN
(TWO WAY)
ROAD A & B

TYPICAL LOT LAYOUTS

SCALE: 1" = 40'

TYPICAL LOT LAYOUTS

SCALE: 1" = 40'

LOCAL STREET SECTION (TWO WAY)
ROAD H

LOCAL STREET SECTION (TWO WAY)
ROADS G, I, J, K, L, M
ROADS C, D, E, F (WITHOUT PARKING)

ALLEY SECTION

ALLEY SECTION

LOCAL RESIDENTIAL STREET
W/PARALLEL PARKING
(TWO WAY)
ROAD C, D, E, F
(NTS)

SITE DATA TABLE

OWNER: Kevin D Williams and Debbie A. Williams
Smithfield-Poole Holdings LLC

DEVELOPER: D.R. Horton

PIN#	AREA (AC)	AREA (SF)
1762595569	6.06	263,952
1762582868	58.19	2,534,845
1762572715	8.23	358,710
1762483243	0.76	33,519
GROSS AREA	73.25	3,191,026
ROW DEDICATION (POOLE ROAD)	0.46	19,919
NET AREA	72.80	3,171,107
EXISTING ZONING		
EXISTING USE	VACANT/AG	
PROPOSED ZONING	PUD-GRE8	
PROPOSED USE	SF RESIDENTIAL	
FRONT LOAD 60' SINGLE FAMILY	85	
ALLEY LOAD 35' SINGLE FAMILY	124	
ALLY LOAD TOWNHOMES	37	
TOTAL	246	
DENSITY DU/AC	3.4	
MAXIMUM DENSITY DU/AC		

CONNECTIVITY INDEX	1.7

TREE SAVE AREA	
REQUIRED @10% (AC)	7.28
PROVIDED (AC)	7.30

NATURAL RESOURCES INVENTORY		
STREAM BUFFER	4.7	AC
WETLANDS	0.052	AC
FOREST COVER	57	AC

OPEN SPACE				
	UNITS	FACTOR	BEDS	
TOTAL BEDS OUTSIDE 1/2 MILE	246	3.5	861	
	(SF)	TOTAL SF	TOTAL AC	
OPEN SPACE CALC.	520	447,720	10.28	
REDUCTION	25%	335,790	7.71	
REQUIRED ACTIVE OPEN SPACE		167,895	3.85	
REQUIRED PASSIVE OPEN SPACE		167,895	3.85	
PROVIDED OPEN SPACE				
ACTIVE OPEN SPACE	240,892	SF	5.53	AC
PASSIVE OPEN SPACE	174,561	SF	4.01	AC
TOTAL	415,453	SF	9.54	AC
ADDITIONAL OPEN SPACE		SF	0.00	AC
ENVIRONMENTAL OPEN SPACE	211,652	SF	4.86	AC
TOTAL OPEN SPACE	1,042,558	SF	23.93	AC
% TOTAL OPEN SPACE	32.9%			

SETBACKS	
FRONT LOAD SINGLE FAMILY	
FRONT (FT)	20
SIDE (FT)	5
CORNER SIDE (FT)	5
REAR (FT)	25
MIN FRONT LOT WIDTH (FT)	60
MIN AREA (SF)	3500
ALLEY LOAD 35' SINGLE FAMILY	
FRONT (FT)	10
SIDE (FT)	5
CORNER SIDE (FT)	5
REAR (FT)	20
MIN FRONT LOT WIDTH (FT)	35
MIN AREA (SF)	1750

ALLEY LOAD TOWNHOMES	
FRONT (FT)	10
SIDE (FT)	10
CORNER SIDE (FT)	10
REAR (FT)	20
MIN FRONT LOT WIDTH (FT)	20

NOTE: DEVELOPER IS PROPOSING 5' SIDE AND CORNER SETBACKS AND 25' REAR SETBACKS WITH PUD

WATER ALLOCATION	**PTS**
MAJOR SUBDIVISION	15
ARCHITECTUAL	15
PUBLIC ART	4
FOUNTAIN IN BMP/SCM	4
ON-STREET PARKING	4
ENHANCED ROADSIDE LANDSCAPE	2
DECK/PATIO GREATER THAN 3000 SF	3
TOT LOT W/ IPEMA PLAYGROUND EQUIPMENT	4
9 HOLE DISC GOLF COURSE	4
TOTAL	55

NOTES:

1. STREETS TREES TO BE PROVIDED EVERY 40 FT
2. A PORTION OF THE SITE IS LOCATED WITHIN THE POPLAR CREEK WATERSHED WITHIN THE NEUSE RIVER BASIN. A PORTION OF THE SITE IS LOCATED WITHIN LAKE MYRA BASIN, NSW, WITHIN THE NEUSE RIVER BASIN.
3. SITE IS NOT WITHIN FEMA FLOOD PLAIN PER MAPS 3720176200J (5/2/2006) AND 3720176300J (5/2/2006).

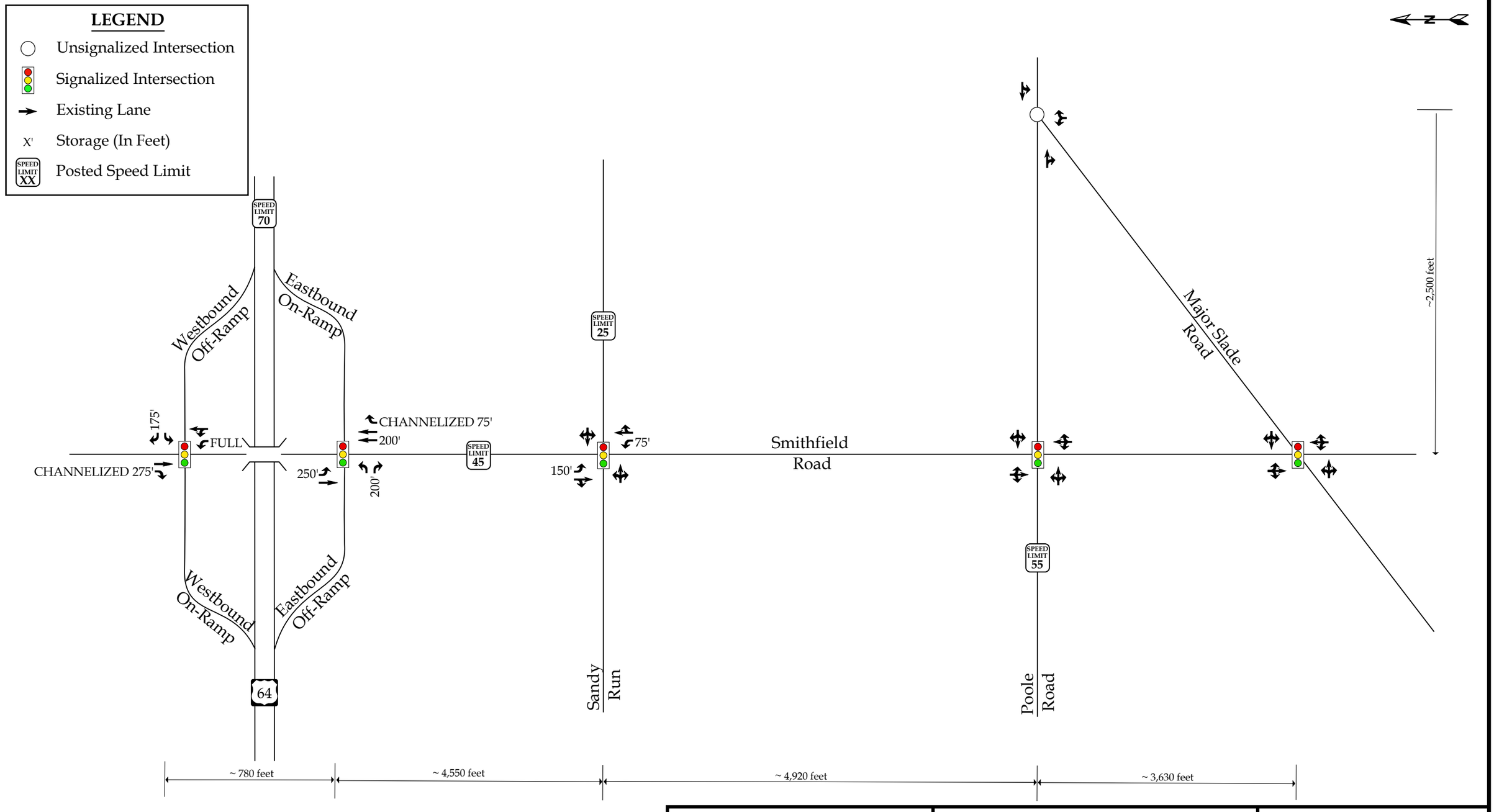
G:\NCA\Projects\Terramor\9318-01 - Knightdale Assemblage\03 - DWG\Exhibit\2022-0225 TOK - Sketch Plan\DWG\2022-0601 TOK Sketch Plan.dwg

BGE
5440 WADE PARK BLVD, SUITE 102
RALEIGH NC 27607
www.bgeinc.com
NC LICENSE #C-4397

KNIGHTDALE ASSEMBLAGE

DATE: 08/23/2022

0 100 200 300
SCALE: 1" = 100



RAMEY KEMP ASSOCIATES

Poole Road Assemblage
Knightdale, NC

2022 Existing
Lane Configurations

Scale: Not to Scale | Figure 3

2. 2022 EXISTING PEAK HOUR CONDITIONS

2.1. 2022 Existing Peak Hour Traffic Volumes

Existing peak hour traffic volumes were determined based on traffic counts conducted at the study intersections listed below, in January and March of 2022 during a typical weekday AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak periods while schools were in session for in-person learning:

- Poole Road and Smithfield Road
- Smithfield Road and Sandy Run
- Smithfield Road and I-87 (US 64 / US 264) Eastbound Ramps
- Smithfield Road and I-87 (US 64 / US 264) Westbound Ramps
- Smithfield Road and Major Slade Road
- Poole Road and Major Slade Road

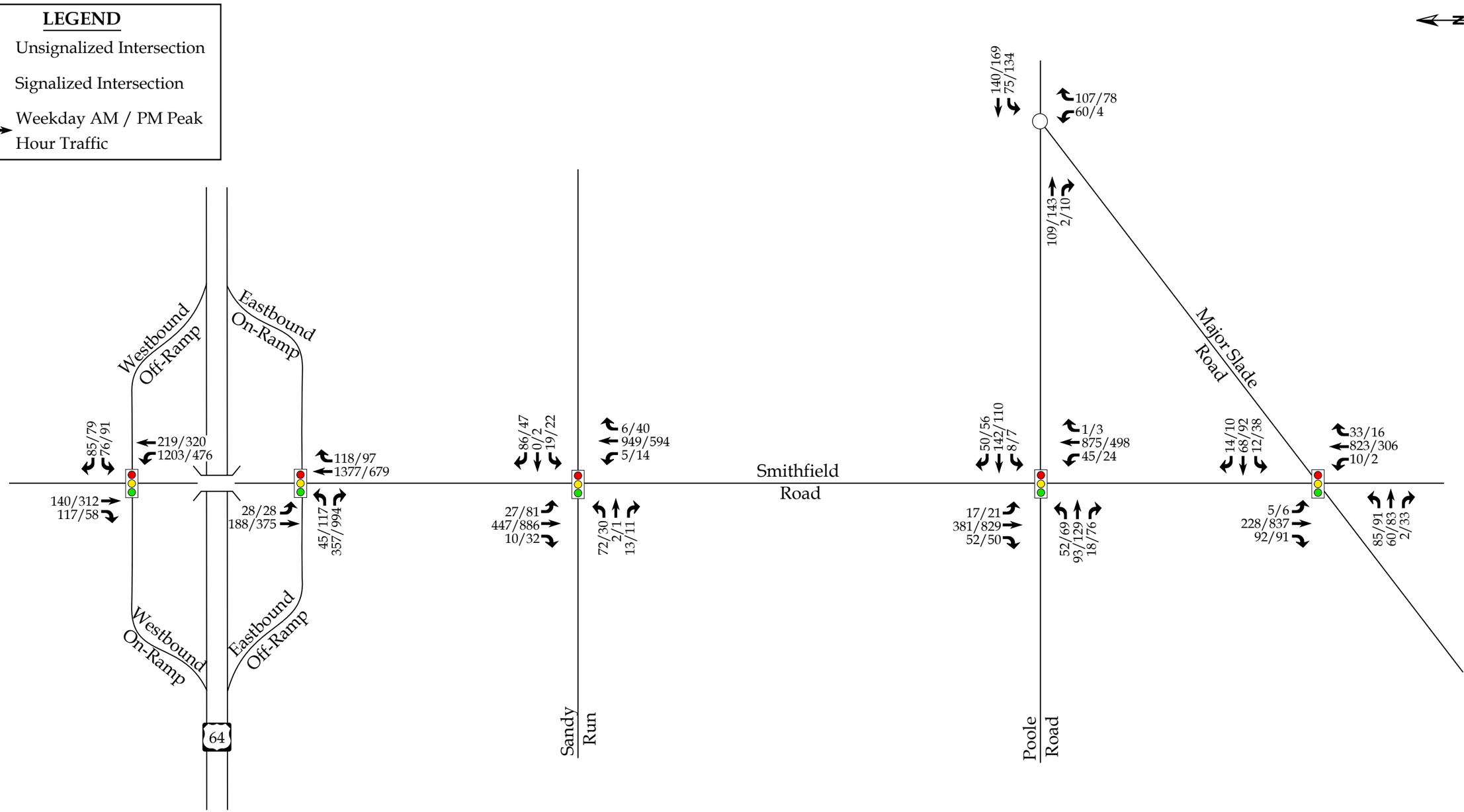
Weekday AM and PM traffic volumes were balanced between study intersections, where appropriate. Refer to Figure 4 for 2022 existing weekday AM and PM peak hour traffic volumes. A copy of the count data is located in Appendix B of this report.

2.2. Analysis of 2022 Existing Peak Hour Traffic Conditions

The 2022 existing weekday AM and PM peak hour traffic volumes were analyzed to determine the current levels of service at the study intersections under existing roadway conditions. Signal information was obtained from NCDOT and is included in Appendix C. The results of the analysis are presented in Section 8 of this report.

LEGEND

- Unsignalized Intersection
- Signalized Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic



Note: Based on NCDOT Congestion Management guidelines, a volume of 4 vehicles per hour (vph) was analyzed for any movement with less than 4 vph.

RAMEY KEMP ASSOCIATES

Poole Road Assemblage
Knightdale, NC

2022 Existing
Peak Hour Traffic

Scale: Not to Scale | Figure 4

3. 2027 NO-BUILD PEAK HOUR CONDITIONS

In order to account for growth of traffic and subsequent traffic conditions at a future year, no-build traffic projections are needed. No-build traffic is the component of traffic due to the growth of the community and surrounding area that is anticipated to occur regardless of whether or not the proposed development is constructed. No-build traffic is comprised of existing traffic growth within the study area and additional traffic created as a result of adjacent approved developments.

3.1. Ambient Traffic Growth

Through coordination with the Town and NCDOT, it was determined that an annual growth rate of 3% would be used to generate 2027 projected weekday AM and PM peak hour traffic volumes. Refer to Figure 5 for 2027 projected peak hour traffic.

3.2. Adjacent Development Traffic

Through coordination with the Town and NCDOT, the following adjacent developments were identified to be included as an approved adjacent development in this study:

- Lake Myra
- Baker Roofing
- Poole Road Marin
- Poole at Smithfield

Table 2, on the following page, provides a summary of the adjacent developments.

Table 2: Adjacent Development Information

Development Name	Location	Build-Out Year	Land Use / Intensity	TIA Performed
Lake Myra	North of Poole Road, west of Lake Myra Road	2025	177 townhomes 225 single-family homes	May 2021 by RKA
Baker Roofing	Northwest quadrant of the US 64-264 at Smithfield Road interchange	2026	220,000 Warehouse 145,000 Specialty Trade 16 f.p. gas station 22,000 general retail 20,000 general office 4,000 s.f. FF w/ DT 200-rrom hotel	March 2022 by KHA
Poole Road Martin	Along Poole Road	2025	185 single-family homes	**N/A** *Trips generated and applied to roadway network*
Poole at Smithfield – Phase 1	North of Poole Road, along both sides of Smithfield Road	2025	187 townhomes 47 single family homes	**N/A** *Trips generated and applied to roadway network*

It should be noted that the adjacent developments were approved, during scoping, by the Town and NCDOT. Adjacent development trips are shown in Figure 6. Adjacent development information can be found in Appendix D.

3.3. Future Roadway Improvements

Based on coordination with the NCDOT and the Town, it was determined that the roadway improvements associated with the State Transportation Improvement Program (STIP) projects I-6007 and HL-0031 are to be considered in this study. STIP I-6007 is expected to convert the US 264 interchange at Smithfield Road to a diverging diamond interchange, while STIP HL-0031 is expected to improve the intersection of Poole Road and Smithfield Road by adding exclusive left-turn lanes at the intersection. Future roadway improvements associated

with this STIP project will be analyzed under 2036 future traffic conditions, as the project is not currently funded for construction. Additionally, future roadway improvements associated with the adjacent developments will be analyzed under future conditions.

The STIP I-6007 plans can be found in Appendix E.

3.4. 2027 No-Build Peak Hour Traffic Volumes

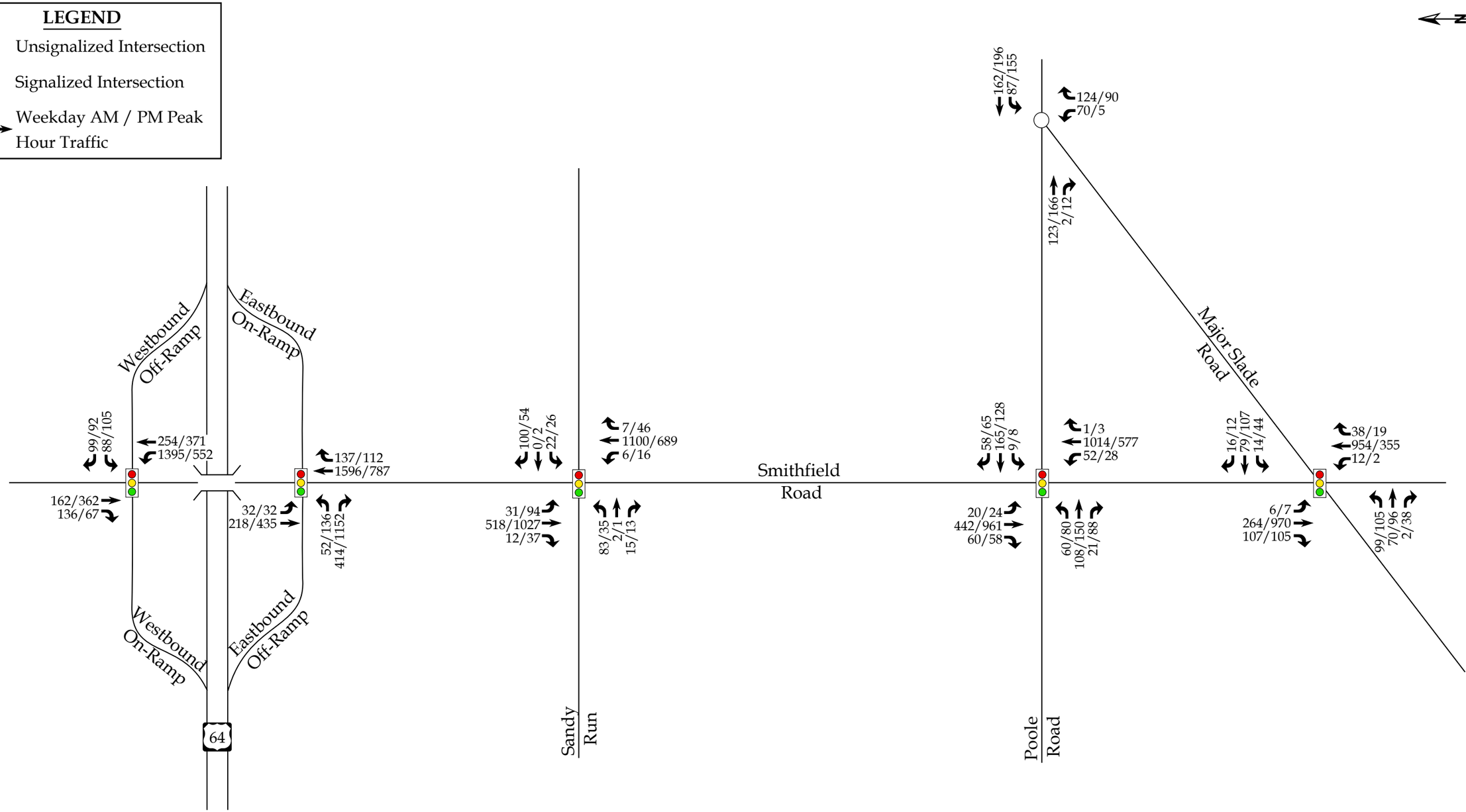
The 2027 no-build traffic volumes were determined by projecting the 2022 existing peak hour traffic to the year 2027, and adding the adjacent development trips. Refer to Figure 7 for an illustration of the 2027 no-build peak hour traffic volumes at the study intersections.

3.5. Analysis of 2027 No-Build Peak Hour Traffic Conditions

The 2027 no-build AM and PM peak hour traffic volumes at the study intersections were analyzed with future geometric roadway conditions and traffic control. The analysis results are presented in Section 8 of this report.

LEGEND

- Unsignalized Intersection
- Signalized Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic



RAMEY KEMP ASSOCIATES

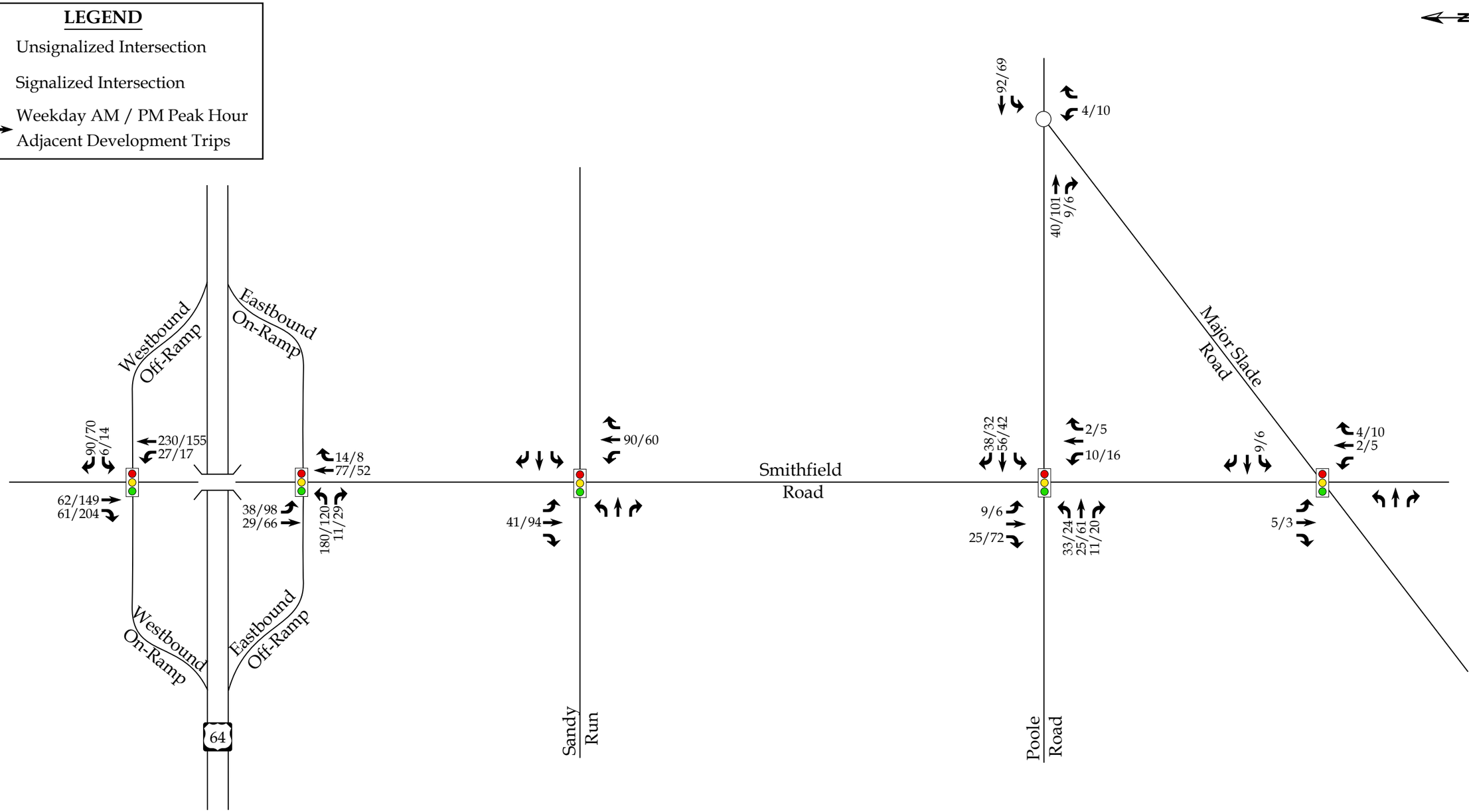
Poole Road Assemblage
Knightdale, NC

2027 Projected
Peak Hour Traffic

Scale: Not to Scale | Figure 5

LEGEND

- Unsignalized Intersection
- Signalized Intersection
- X / Y → Weekday AM / PM Peak Hour Adjacent Development Trips



RAMEY KEMP ASSOCIATES

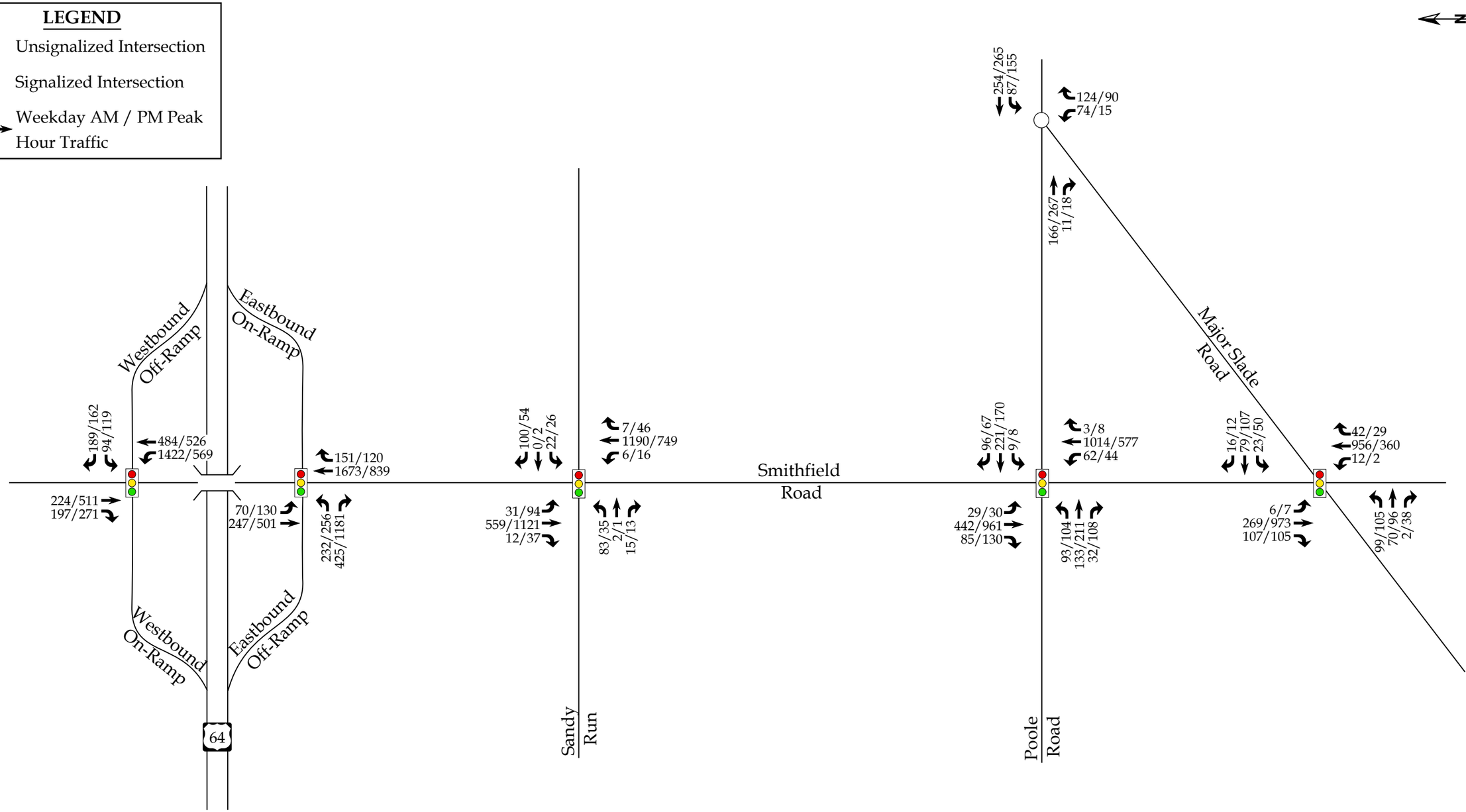
Poole Road Assemblage
Knightdale, NC

Peak Hour Adjacent Development Trips

Scale: Not to Scale | Figure 6

LEGEND

- Unsignalized Intersection
- Signalized Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic



RAMEY KEMP ASSOCIATES

Poole Road Assemblage
Knightdale, NC

2027 No-Build
Peak Hour Traffic

Scale: Not to Scale | Figure 7

4. SITE TRIP GENERATION AND DISTRIBUTION

4.1. Trip Generation

The proposed development is assumed to consist of a maximum of 246 single family homes. It should be noted that the site plan includes a mixture of single family homes and townhomes; however, all units were studied as single family homes for a conservative analysis. Average weekday daily, AM peak hour, and PM peak hour trips for the proposed development were estimated using methodology contained within the ITE *Trip Generation Manual*, 11th Edition. Table 3 provides a summary of the trip generation potential for the site.

Table 3: Trip Generation Summary

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph)		Weekday PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Single-Family Homes (210)	246 Units	2,310	44	125	146	86

It is estimated that the proposed development will generate approximately 2,310 total site trips on the roadway network during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that 169 trips (44 entering and 125 exiting) will occur during the weekday AM peak hour and 232 (146 entering and 86 exiting) will occur during the weekday PM peak hour.

4.2. Site Trip Distribution and Assignment

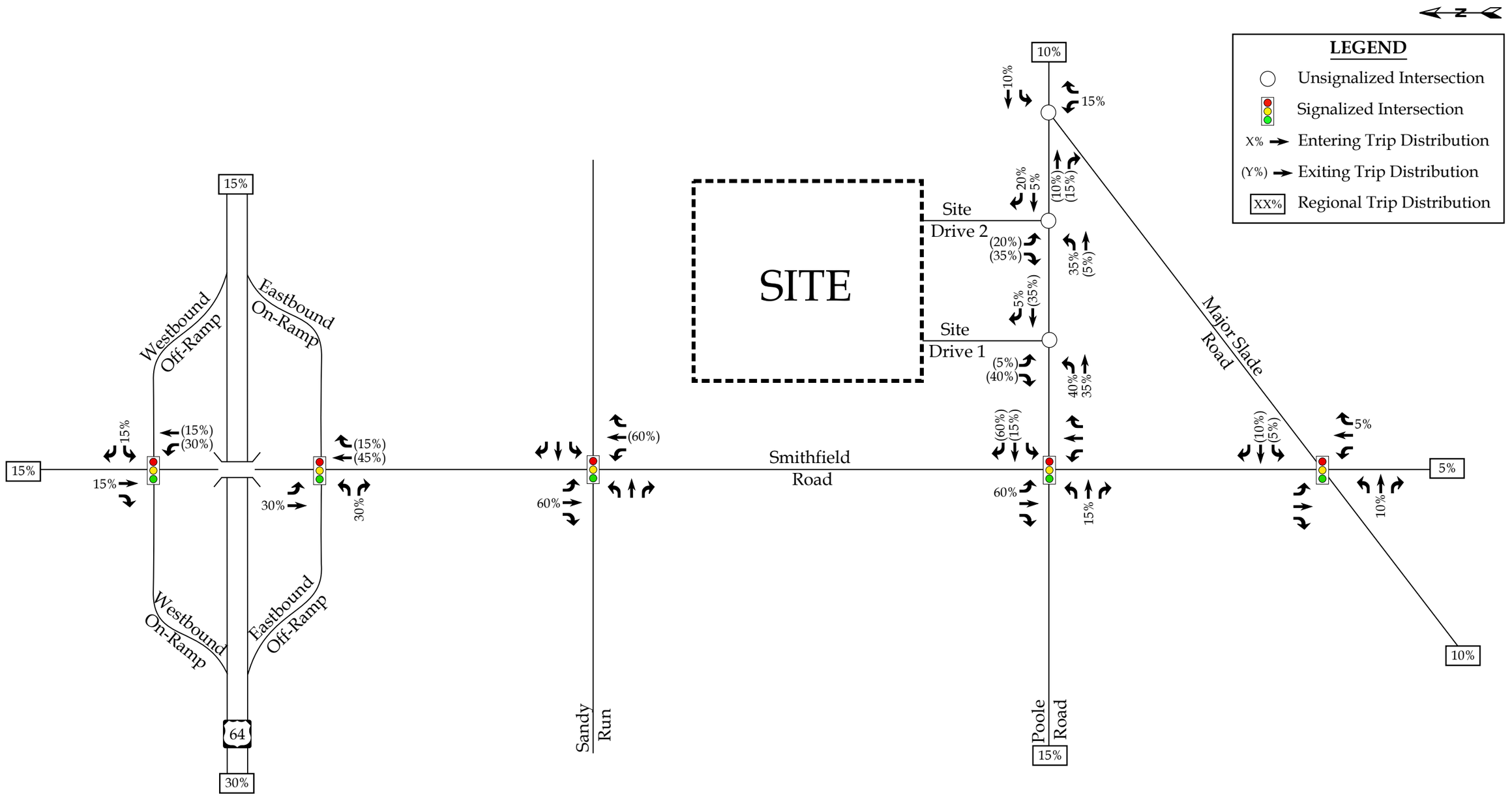
Trip distribution percentages used in assigning site traffic for this development were estimated based on a combination of existing traffic patterns, population centers adjacent to the study area, and engineering judgment.

It is estimated that the site trips will be regionally distributed as follows:

- 15% to/from the east via I-87 (US 64 / US 264)
- 30% to/from the west via I-87 (US 64 / US 264)
- 15% to/from the north via Smithfield Road
- 5% to/from the south via Smithfield Road
- 15% to/from the west via Poole Road

- 10% to/from the east via Poole Road

The site trip distribution for Scenarios 1 and 2 are shown in Figures 8a and 8b, respectively. Refer to Figure 9a and 9b for the site trip assignment for Scenarios 1 and 2.

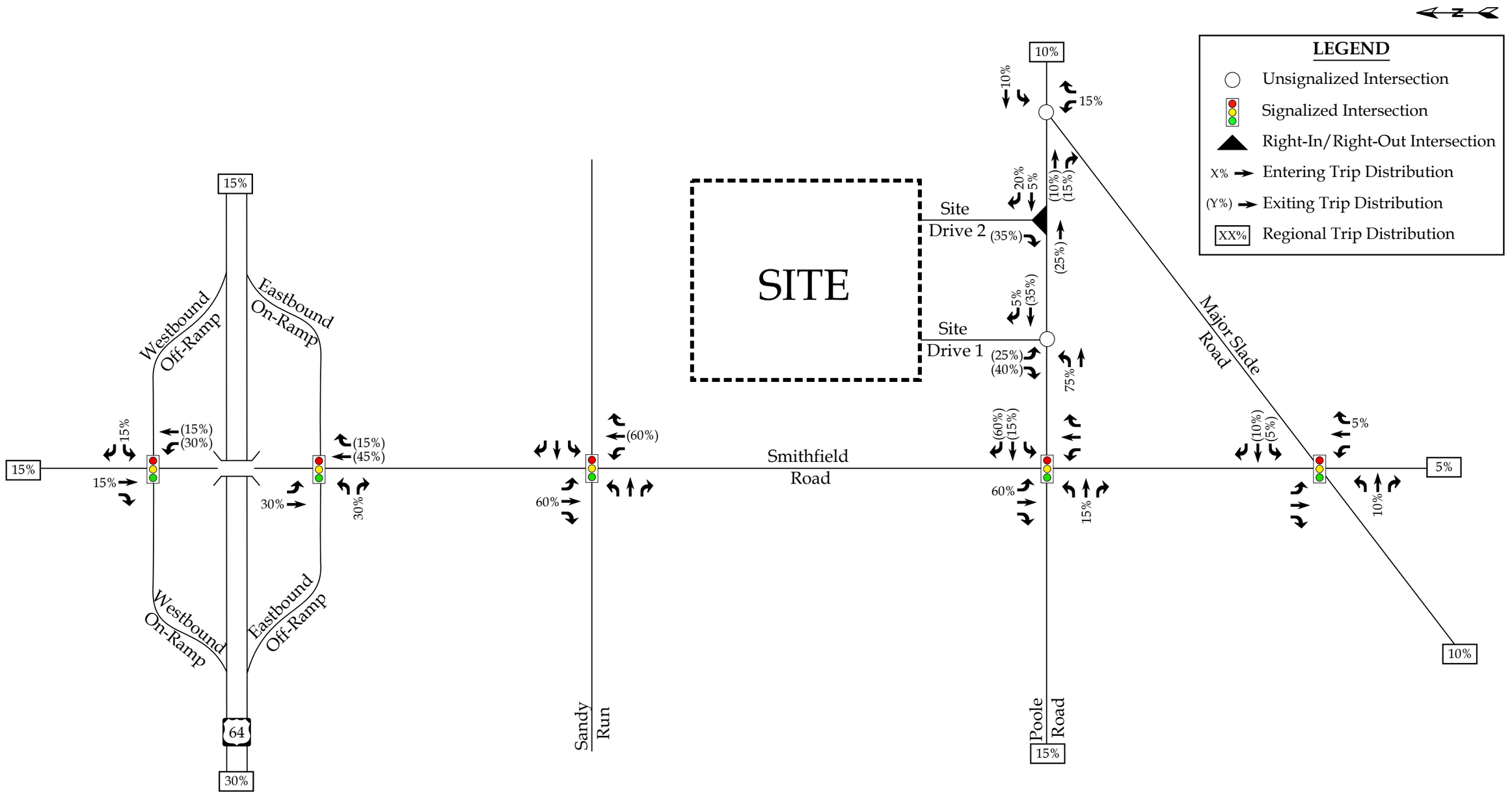


RAMEY KEMP ASSOCIATES

Poole Road Assemblage
Knightdale, NC

Site Trip Distribution
- Scenario 1

Scale: Not to Scale | Figure 8a

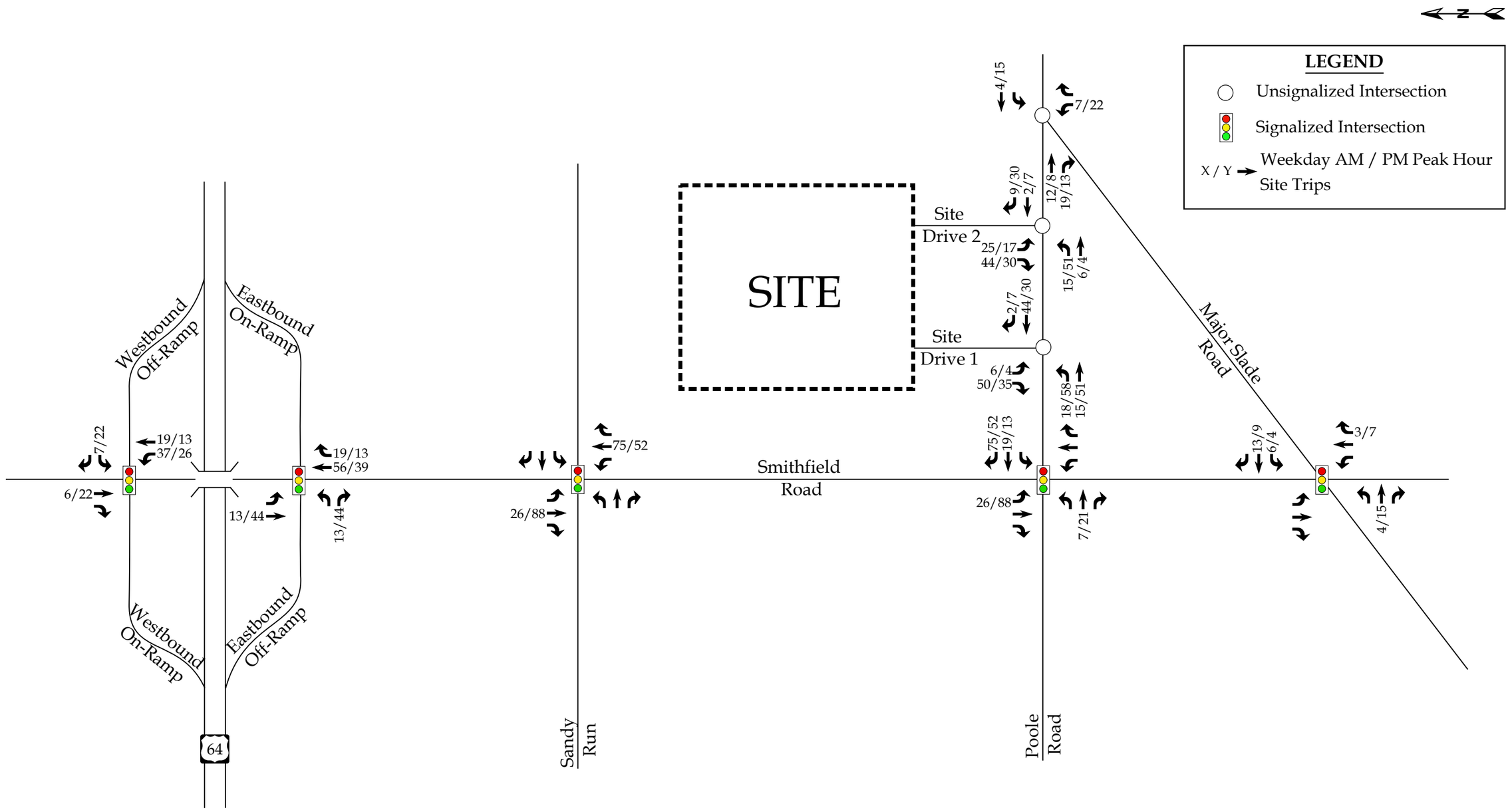


RAMEY KEMP ASSOCIATES

Poole Road Assemblage
Knightdale, NC

Site Trip Distribution
- Scenario 2

Scale: Not to Scale | Figure 8b

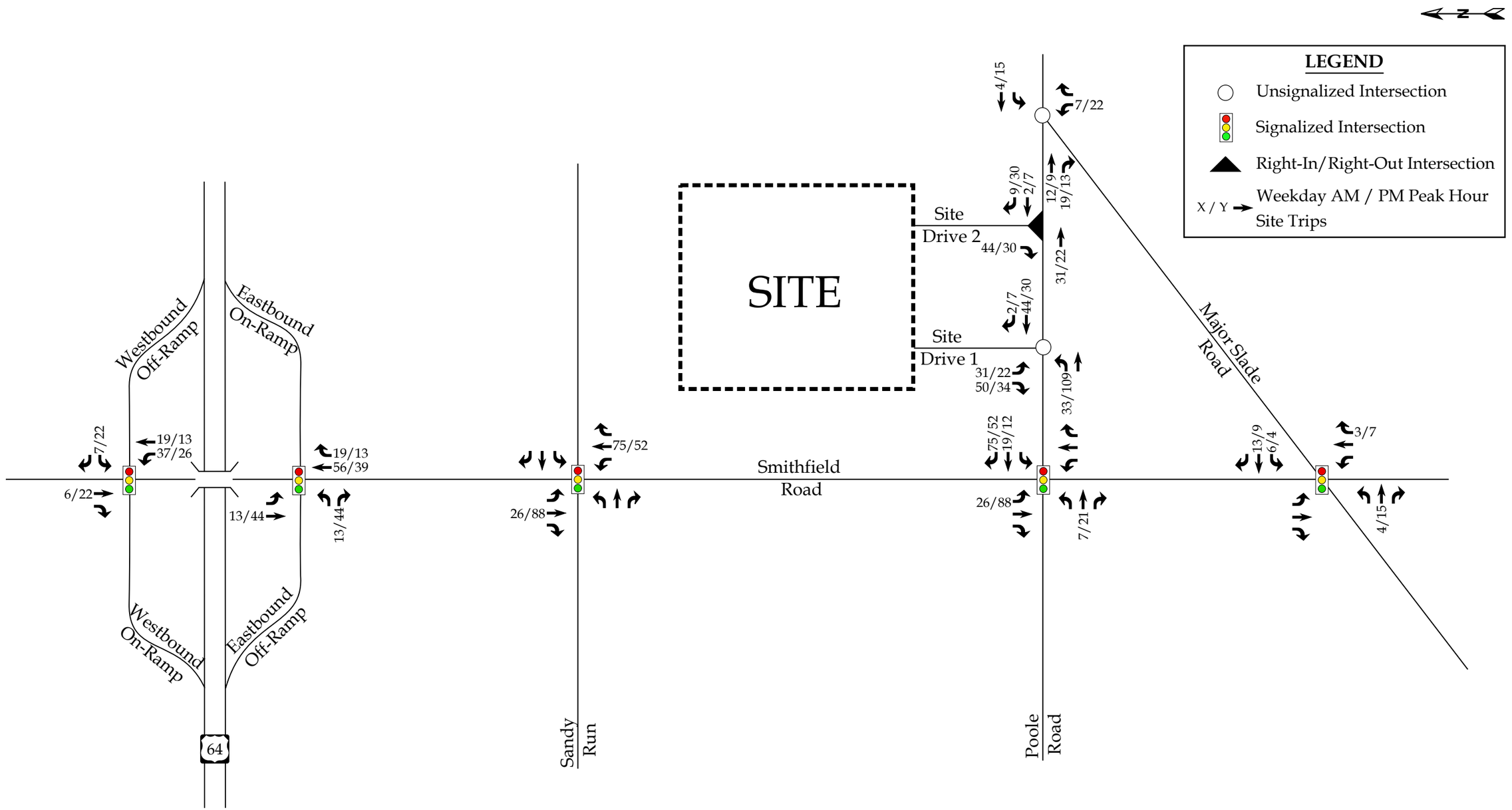


RAMEY KEMP ASSOCIATES

Poole Road Assemblage
Knightdale, NC

Site Trip Assignment
- Scenario 1

Scale: Not to Scale | Figure 9a



RAMEY KEMP ASSOCIATES

Poole Road Assemblage
Knightdale, NC

Site Trip Assignment
- Scenario 2

Scale: Not to Scale | Figure 9b

5. 2027 BUILD TRAFFIC CONDITIONS

5.1. 2027 Build Peak Hour Traffic Volumes

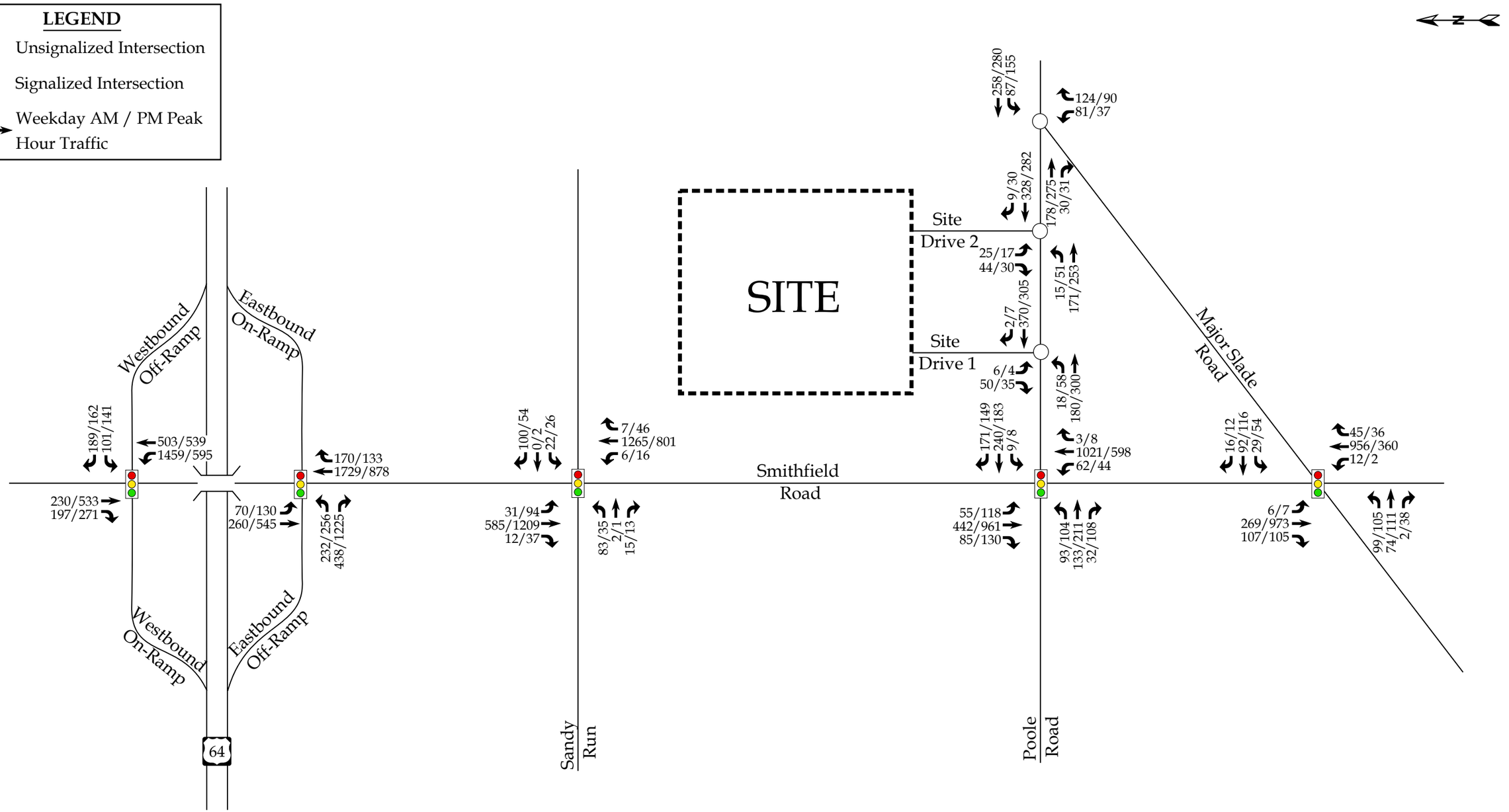
To estimate traffic conditions with the site fully built-out, the total site trips were added to the 2027 no-build traffic volumes to determine the 2027 build traffic volumes. Refer to Figures 10a and 10b for an illustration of the 2027 build peak hour traffic volumes with the proposed site fully developed for the respective scenarios.

5.2. Analysis of 2027 Build Peak Hour Traffic Conditions

Study intersections were analyzed with the 2027 build traffic volumes using the same methodology previously discussed for existing and no-build traffic conditions. Intersections were analyzed with improvements necessary to accommodate future traffic volumes. The results of the capacity analysis for each intersection are presented in Section 8 of this report.

LEGEND

- Unsignalized Intersection
- Signalized Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic



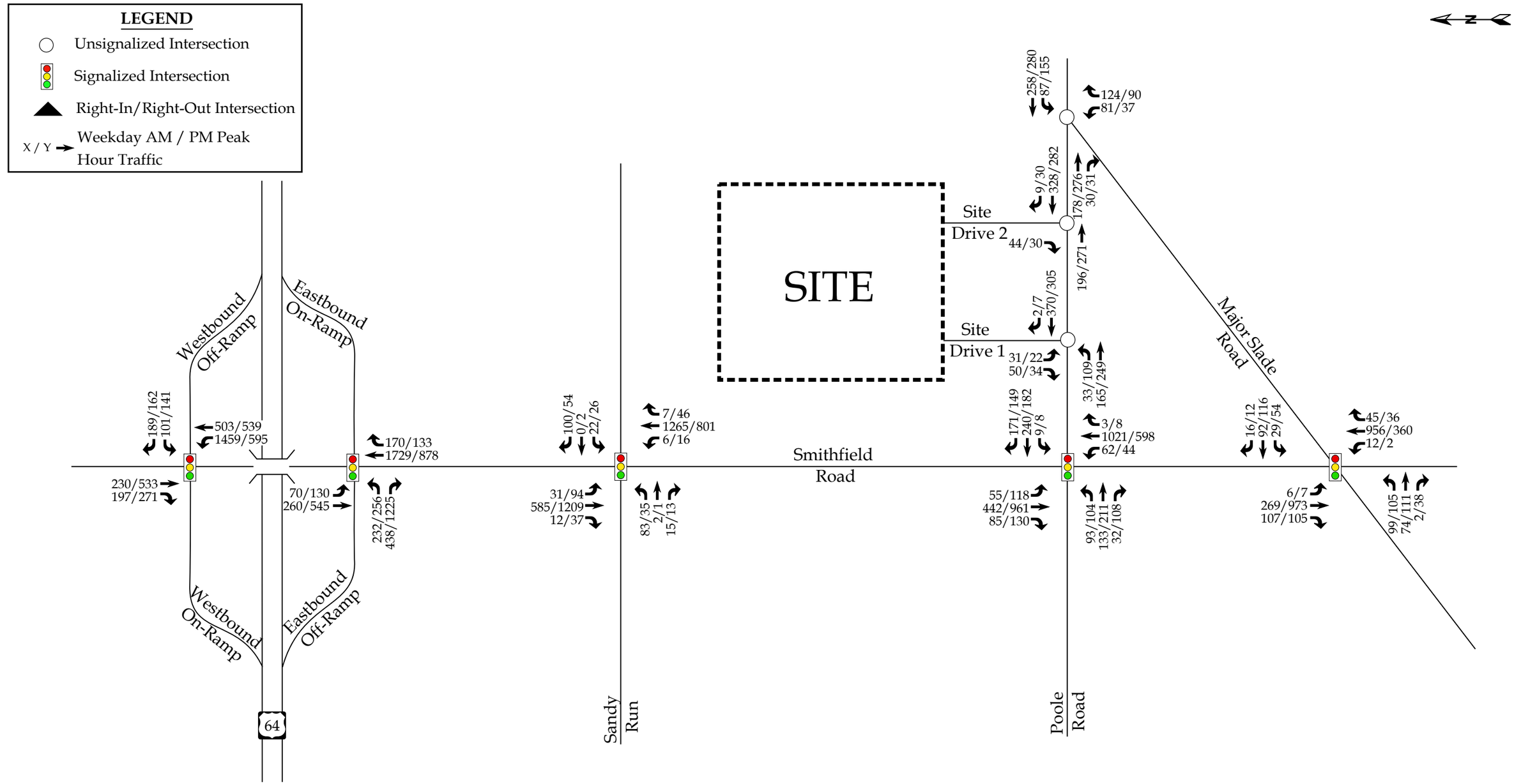
Note: Based on NCDOT Congestion Management guidelines, a volume of 4 vehicles per hour (vph) was analyzed for any movement with less than 4 vph.

RAMEY KEMP ASSOCIATES

Poole Road Assemblage
Knightdale, NC

2027 Build
Peak Hour Traffic - Scenario 1

Scale: Not to Scale | Figure 10a



Note: Based on NCDOT Congestion Management guidelines, a volume of 4 vehicles per hour (vph) was analyzed for any movement with less than 4 vph.

RAMEY KEMP ASSOCIATES

Poole Road Assemblage
Knightdale, NC

2027 Build
Peak Hour Traffic - Scenario 2

Scale: Not to Scale | Figure 10b

6. 2036 FUTURE TRAFFIC CONDITIONS

6.1. 2036 Future Peak Hour Traffic Volumes

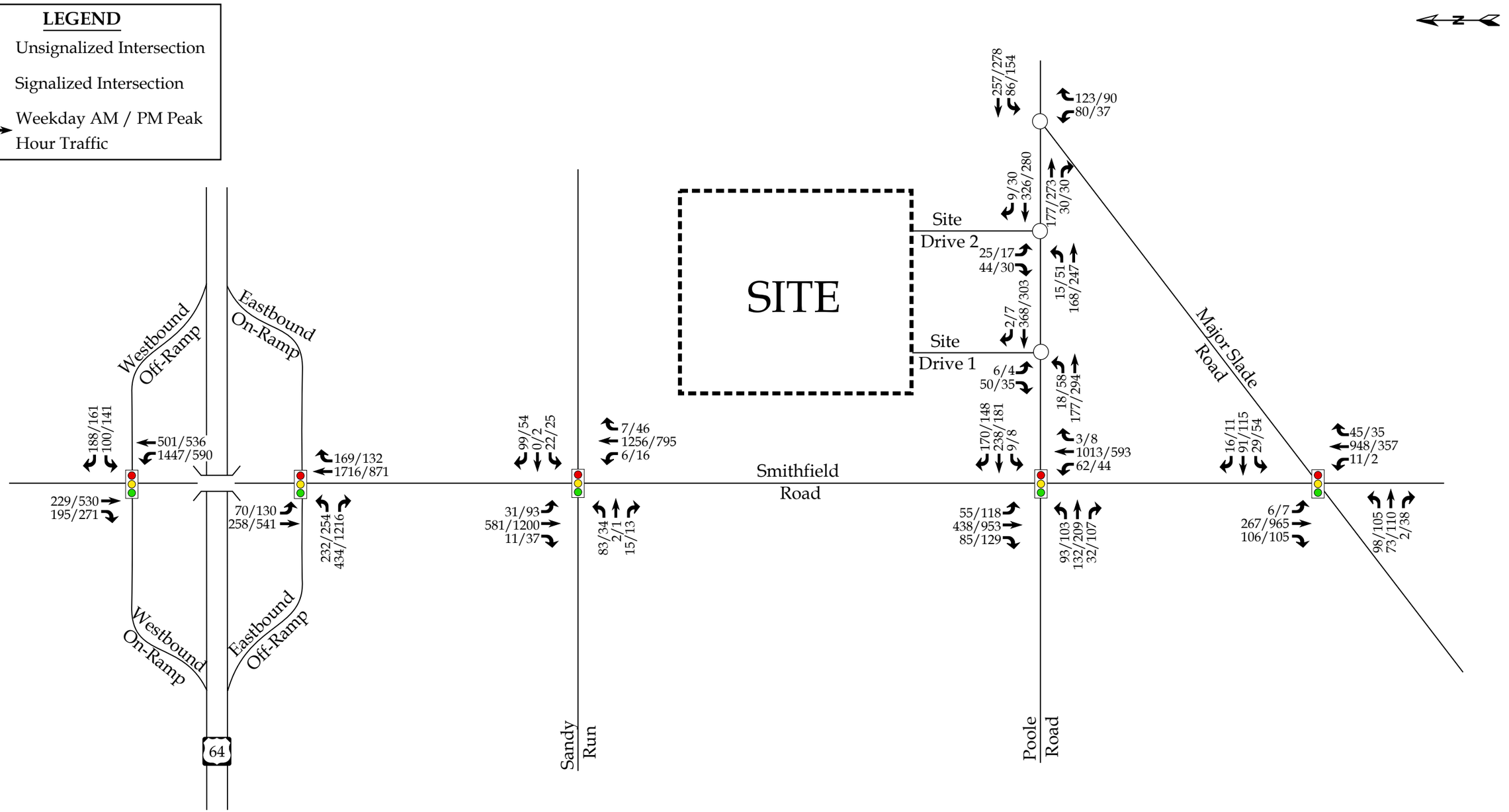
Per the Town of Knightdale TIA guidelines, an analysis of the proposed development ten (10) years after build-out is required. In order to estimate traffic conditions ten years beyond build-out of the proposed development, 2022 existing volumes were grown to the future year 2036 using the NCDOT and Town approved 1% annual growth rate. Proposed development site trips [Figure 9a & Figure 9b] and adjacent development trips [Figure 6] were added to the projected traffic volumes to determine 2036 future traffic volumes. Refer to Figure 11a and Figure 11b for an illustration of the 2036 future traffic volumes under scenario 1 and scenario 2, respectively.

6.2. Analysis of 2036 Future Peak Hour Traffic

Study intersections were analyzed with the 2036 future traffic volumes using the same methodology previously discussed for existing, no-build, and build traffic conditions. The results of the capacity analysis for each intersection are presented in Section 8 of this report.

LEGEND

- Unsignalized Intersection
- Signalized Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic



Note: Based on NCDOT Congestion Management guidelines, a volume of 4 vehicles per hour (vph) was analyzed for any movement with less than 4 vph.

RAMEY KEMP ASSOCIATES

Poole Road Assemblage
Knightdale, NC

2036 Future
Peak Hour Traffic -
Scenario 1

Scale: Not to Scale | Figure 11a

LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic

N

SITE

Site Drive 2

Site Drive 1

Smithfield Road

Major Slade Road

Poole Road

Sandy Run

Westbound Off-Ramp

Eastbound On-Ramp

Westbound On-Ramp

Eastbound Off-Ramp

64

188/161
100/141
501/536
1447/590
229/530
195/271
70/130
258/541
169/132
1716/871
232/254
434/1216
99/54
0/2
22/25
31/93
581/1200
11/37
7/46
1256/795
6/16
83/34
2/1
15/13
257/278
86/154
123/90
80/37
9/30
326/280
44/30
177/274
30/30
193/265
2/7
368/303
31/22
50/34
33/109
162/243
170/148
238/180
9/8
3/8
1013/593
62/44
55/118
438/953
85/129
93/103
132/209
32/107
16/11
91/115
29/54
6/7
267/965
106/105
45/35
948/357
11/2
98/105
73/110
2/38

Note: Based on NCDOT Congestion Management guidelines, a volume of 4 vehicles per hour (vph) was analyzed for any movement with less than 4 vph.

RAMEY KEMP ASSOCIATES

Poole Road Assemblage
Knightdale, NC

2036 Future
Peak Hour Traffic -
Scenario 2

Scale: Not to Scale | Figure 11b

7. TRAFFIC ANALYSIS PROCEDURE

Study intersections were analyzed using the methodology outlined in the *Highway Capacity Manual* (HCM), 6th Edition published by the Transportation Research Board. Capacity and level of service are the design criteria for this traffic study. A computer software package, Synchro (Version 10.3), was used to complete the analyses for the study area intersections. Please note that the unsignalized capacity analysis does not provide an overall level of service for an intersection; only delay for an approach with a conflicting movement.

The HCM defines capacity as "the maximum hourly rate at which persons or vehicles can reasonably be expected to traverse a point or uniform section of a lane or roadway during a given time period under prevailing roadway, traffic, and control conditions." Level of service (LOS) is a term used to represent different driving conditions, and is defined as a "qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers." Level of service varies from Level "A" representing free flow, to Level "F" where breakdown conditions are evident. Refer to Table 4 for HCM levels of service and related average control delay per vehicle for both signalized and unsignalized intersections. Control delay as defined by the HCM includes "initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay". An average control delay of 50 seconds at a signalized intersection results in LOS "D" operation at the intersection.

Table 4: Highway Capacity Manual – Levels-of-Service and Delay

UNSIGNALIZED INTERSECTION		SIGNALIZED INTERSECTION	
LEVEL OF SERVICE	AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)	LEVEL OF SERVICE	AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)
A	0-10	A	0-10
B	10-15	B	10-20
C	15-25	C	20-35
D	25-35	D	35-55
E	35-50	E	55-80
F	>50	F	>80

7.1. Adjustments to Analysis Guidelines

Capacity analysis at all study intersections was completed according to the NCDOT Congestion Management Guidelines.

8. CAPACITY ANALYSIS

8.1. Poole Road [EB-WB] and Smithfield Road [NB-SB]

The existing signalized intersection of Poole Road and Smithfield Road was analyzed under 2022 existing, 2027 no-build, 2027 build (scenarios 1 & 2), and 2036 future (scenarios 1 & 2) traffic conditions with lane configurations and traffic control shown in Table 5. It should be noted that under future conditions, STIP HL-0031 is expected to improve the intersection by addition exclusive left-turn lanes on all approaches. Refer to Table 5 for a summary of the analysis results. Refer to Appendix F for the Synchro capacity analysis reports. SimTraffic queuing reports can be found in Appendix N.

Table 5: Analysis Summary of Poole Road and Smithfield Road

ANALYSIS SCENARIO	APPROACH	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
			Approach	Overall (seconds)	Approach	Overall (seconds)
2022 Existing	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT	D D C A	C (24)	E D B C	C (29)
2027 No-Build	EB WB NB SB	1 LT, 1 TH-RT 1 LT, 1 TH-RT 1 LT, 1 TH-RT 1 LT, 1 TH-RT	D F F C	F (82)	E F C F	F (100)
2027 Build **Scenarios 1 & 2**	EB WB NB SB	1 LT, 1 TH-RT 1 LT, 1 TH-RT 1 LT, 1 TH-RT 1 LT, 1 TH-RT	D F F C	F (122)	E F D F	F (112)
2027 Build *Scenarios 1 & 2* – **with Improvements**	EB WB NB SB	1 LT, 1 TH-RT 1 LT, 1 TH, **1 RT** 1 LT, 1 TH-RT 1 LT, 1 TH-RT	E E D B	D (48)	E D C D	D (45)
2036 Future *Scenarios 1 & 2*	EB WB NB SB	1 LT, 1 TH-RT 1 LT, 1 TH, **1 RT** 1 LT, 1 TH-RT 1 LT, 1 TH-RT	D E D B	D (47)	E D C D	D (45)

Improvements to lane configurations by STIP HL-0031 shown underlined.
Improvements by Developer shown in bold.

Capacity analysis of 2022 existing traffic conditions indicates that the intersection of Poole Road and Smithfield Road is expected to operate at an overall LOS C during the weekday AM and PM peak hours. Under 2027 no-build and 2027 build traffic conditions, the intersection is expected to operate at LOS F during the weekday AM and PM peak hours.

To mitigate poor levels of service experienced at the intersection during the weekday AM and PM peak hours under 2027 build conditions, the intersection was analyzed with an exclusive right-turn lane on the westbound approach. It should be noted that the exclusive westbound right-turn lane was modeled as a channelized lane under yield control. With this exclusive turn lane and signal timing adjustments to accommodate the new lane configuration, the intersection is expected to operate at an overall LOS D during the weekday AM and PM peak hours. Capacity analysis of 2036 future conditions with these improvements indicates that the intersection is expected to operate at an overall LOS D during the weekday AM and PM peak hours.

A channelized westbound right-turn lane under yield control is recommended at this intersection by the proposed development.

8.2. Smithfield Road [NB-SB] and Sandy Run [EB-WB]

The existing signalized intersection of Smithfield Road and Sandy Run was analyzed under 2022 existing, 2027 no-build, 2027 build (scenarios 1 & 2), and 2036 future (scenarios 1 & 2) traffic conditions with existing lane configurations and traffic control. Refer to Table 6 for a summary of the analysis results. Refer to Appendix G for the Synchro capacity analysis reports. SimTraffic queuing reports can be found in Appendix N.

Table 6: Analysis Summary of Smithfield Road and Sandy Run

ANALYSIS SCENARIO	APPROACH	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
			Approach	Overall (seconds)	Approach	Overall (seconds)
2027 Existing	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT, 1 TH-RT 1 LT, 1 TH-RT	E D C A	C (21)	D D B A	B (12)
2027 No-Build	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT, 1 TH-RT 1 LT, 1 TH-RT	F E D A	D (36)	D E C B	C (21)
2027 Build *Scenarios 1 & 2*	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT, 1 TH-RT 1 LT, 1 TH-RT	F E E A	D (46)	E E D C	C (29)
2036 Future *Scenarios 1 & 2*	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT, 1 TH-RT 1 LT, 1 TH-RT	F E E A	D (45)	E E D C	C (28)

Capacity analysis of 2022 existing, 2027 no-build, 2027 build, and 2036 future traffic conditions indicates that the intersection of Smithfield Road and Sandy Run is expected to operate at an overall LOS D or better during the weekday AM and PM peak hours.

Due to acceptable intersection operations, no improvements are recommended at this intersection by the proposed development.

8.3. Smithfield Road [NB-SB] and I-87 (US 64/264) Eastbound Ramps [EB]

The existing signalized intersection of Smithfield Road and I-87 (US 64/264) Eastbound Ramps were analyzed under 2022 existing, 2027 no-build, and 2027 build (scenarios 1 & 2), traffic conditions with the lane configurations and traffic control shown in Table 7. Under 2036 future (scenarios 1 & 2), the intersection was analyzed as half of a diverding diamond interchange, per future roadway improvements associated with STIP I-6007. Refer to Table 7 for a summary of the analysis results. Refer to Appendix H for the Synchro capacity analysis reports. SimTraffic queuing reports can be found in Appendix N.

Table 7: Analysis Summary of Smithfield Road and I-87 (US 64/264) Eastbound Ramps

ANALYSIS SCENARIO	NODE	APPROACH	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
				Approach	Overall (seconds)	Approach	Overall (seconds)
2022 Existing	3	EB NB SB	1 LT, 1 RT 2 TH, 1 RT 1 LT, 1 TH	D A B	B (14)	F A D	D (51)
2027 No-Build	3	EB NB SB	1 LT, 1 RT 2 TH, 1 RT 1 LT, 1 TH	C B D	C (24)	F A D	F (122)
2027 Build *Scenarios 1 & 2*	3	EB NB SB	1 LT, 1 RT 2 TH, 1 RT 1 LT, 1 TH	C B D	C (25)	F A D	F (140)
2036 Future *Scenarios 1 & 2*	33	EB SB	<u>2 RT</u> <u>1 TH</u>	C A	B (19)	D B	C (30)
	35	WB SB	<u>2 TH</u> <u>1 LT</u>	B D	B (19)	B B	B (19)
	38	EB NB	<u>1 LT</u> <u>2 TH</u>	D A	A (6)	C A	A (6)

Improvements to lane configurations by STIP I-6007 shown <u>underlined</u>.

Capacity analysis of 2022 existing traffic conditions indicates that the intersection of Smithfield Road and I-87 (US 64/264) Eastbound Ramps is expected to operate at an overall LOS D or better during the weekday AM and PM peak hours. Under 2027 no-build and 2027

build conditions, the intersection is expected to operate at an overall LOS C during the weekday AM peak hour and LOS F during the weekday PM peak hour. This intersection was analyzed as half of a diverging diamond interchange under 2036 future conditions per future roadway improvements associated with STIP I-6007. Capacity analysis of 2036 future conditions indicates that the intersection is expected to operate at an overall LOS C or better during the weekday AM and PM peak hours.

The proposed development is only expected to account for approximately 3% of the overall traffic at the intersection during the weekday AM peak hour and approximately 4% of the overall traffic at the intersection during the weekday PM peak hour. Additionally, this signal is currently operating in free run conditions, which means that there is not time of day signal timings that adjust the signal timings throughout the day to account for traffic pattern changes. Coordinated timings during the weekday peak hours would be beneficial by dedicating the appropriate green time to the heaver movements. Due to these reasons and the expectation that improvements to I-540 will further improve traffic patterns along Smithfield Road, no further improvements are recommended by the proposed development.

8.4. Smithfield Road [NB-SB] and I-87 (US 64/264) Westbound Ramps [WB]

The existing signalized intersections of Smithfield Road and I-87 (US 64 / 264) WB Ramps were analyzed under 2022 existing, 2027 no-build, 2027 build (scenarios 1 & 2), and 2036 future (scenarios 1 & 2) traffic conditions with the lane configurations and traffic control shown in Table 8. Refer to Table 8 for a summary of the analysis results. Refer to Appendix I for the Synchro capacity analysis reports. SimTraffic queuing reports can be found in Appendix N.

Table 8: Analysis Summary of Smithfield Road and I-87 (US 64 / 264) Westbound Ramps

ANALYSIS SCENARIO	NODE	APPROACH	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
				Approach	Overall (seconds)	Approach	Overall (seconds)
2022 Existing	4	WB NB SB	1 LT, 1 RT 1 LT, 1 LT-TH 1 TH, 1 RT	D B B	B (16)	D A B	B (13)
2027 No-Build	4	WB NB SB	1 LT, 1 RT 2 LT, 1 TH 1 TH, 1 RT	E C C	C (30)	D C B	C (26)
2027 Build *Scenarios 1 & 2*	4	WB NB SB	1 LT, 1 RT 2 LT, 1 TH 1 TH, 1 RT	E C C	C (31)	D C B	C (28)
2036 Future *Scenarios 1 & 2*	43	WB NB	1 RT 1 TH	C A	B (11)	C A	A (7)
	45	EB SB	1 TH 1 TH	B B	B (16)	C B	C (21)
	48	WB SB	1 LT 1 TH	C A	B (10)	C A	A (5)

Improvements to lane configurations by STIP I-6007 shown underlined.

Capacity analysis of 2022 existing, 2027 no-build, 2027 build traffic conditions indicates that the intersection of Smithfield Road and I-87 (US 64/264) Westbound Ramps is expected to operate at an overall LOS C or better during the weekday AM and PM peak hours. This intersection was analyzed as half of a diverging diamond interchange under 2036 future conditions per future roadway improvements associated with STIP I-6007. Capacity analysis

of 2036 future conditions indicates that the intersection is expected to operate at an overall LOS C or better during the weekday AM and PM peak hours.

Due to acceptable intersection operations, no further improvements are recommended by the proposed development.

8.5. Smithfield Road [NB-SB] and Major Slade Road [EB-WB]

The existing signalized intersection of Smithfield Road and Major Slade Road was analyzed under 2022 existing, 2027 no-build, 2027 build (scenarios 1 & 2), and 2036 future (scenarios 1 & 2) traffic conditions with existing lane configurations and traffic control. Refer to Table 9 for a summary of the analysis results. Refer to Appendix J for the Synchro capacity analysis reports. SimTraffic queuing reports can be found in Appendix N.

Table 9: Analysis Summary of Smithfield Road and Major Slade Road

ANALYSIS SCENARIO	APPROACH	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
			Approach	Overall (seconds)	Approach	Overall (seconds)
2022 Existing	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT	D D B A	B (18)	E D A C	C (26)
2027 No-Build	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT	E D C A	C (25)	E D B D	D (42)
2027 Build **Scenarios 1 & 2**	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT	E D C A	C (26)	E D B D	D (45)
2036 Build **Scenarios 1 & 2**	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT	E D C A	C (26)	E D B D	D (43)

Capacity analysis of 2022 existing, 2027 no-build, 2027 build, and 2036 future traffic conditions indicates that the intersection of Smithfield Road and Major Slade Road is expected to operate at an overall LOS D or better during the weekday AM and PM peak hours.

Due to acceptable intersection operations, no improvements are recommended at this intersection by the proposed development.

8.6. Poole Road [EB-WB] and Major Slade Road [NB]

The existing unsignalized intersection of Poole Road and Major Slade Road was analyzed 2022 existing, 2027 no-build, 2027 build (scenarios 1 & 2), and 2036 future (scenarios 1 & 2) traffic conditions with the lane configurations and traffic control shown in Table 10. Refer to Table 10 for a summary of the analysis results. Refer to Appendix K for the Synchro capacity analysis reports. SimTraffic queuing reports can be found in Appendix N.

Table 10: Analysis Summary of Poole Road and Major Slade Road

ANALYSIS SCENARIO	APPROACH	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
			Approach	Overall (seconds)	Approach	Overall (seconds)
2022 Existing	EB WB NB	1 TH-RT 1 LT-TH 1 LT-RT	-- A[1] B[2]	N/A	-- A[1] A[2]	N/A
2027 No-Build	EB WB NB	1 TH-RT 1 LT-TH 1 LT-RT	-- A[1] B[2]	N/A	-- A[1] B[2]	N/A
2027 Build *Scenarios 1 & 2*	EB WB NB	1 TH-RT 1 LT-TH 1 LT-RT	-- A[1] C[2]	N/A	-- A[1] C[2]	N/A
2036 Build *Scenarios 1 & 2*	EB WB NB	1 TH-RT 1 LT-TH 1 LT-RT	-- A[1] C[2]	N/A	-- A[1] C[2]	N/A

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

Capacity analysis of 2022 existing, 2027 no-build, 2027 build, and 2036 future traffic conditions indicates that the major-street left-turn movement and the minor-street approach at the intersection of Poole Road and Major Slade Road is expected to operate at LOS C or better during the weekday AM and PM peak hours.

Due to acceptable intersection operations, no improvements are recommended at this intersection by the proposed development.

8.7. Poole Road [EB-WB] and Site Drive 1 [SB]

The proposed unsignalized intersection of Poole Road and Site Drive 1 was analyzed under 2027 build – scenario 1, 2027 build – scenario 2, 2036 future – scenario 1, and 2036 future – scenario 2 traffic conditions with lane configurations and traffic control shown in Table 11. Refer to Table 11 for a summary of the analysis results. Refer to Appendix L for the Synchro capacity analysis reports. SimTraffic queuing reports can be found in Appendix N.

Table 11: Analysis Summary of Poole Road and Site Drive 1

ANALYSIS SCENARIO	APPROACH	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
			Approach	Overall (seconds)	Approach	Overall (seconds)
2027 Build *Scenario 1*	EB WB **SB**	**1 LT,** 1 TH 1 TH-**RT** **1 LT-RT**	A[1] -- B[2]	N/A	A[1] -- B[2]	N/A
2027 Build *Scenario 2*	EB WB **SB**	**1 LT,** 1 TH 1 TH-**RT** **1 LT-RT**	A[1] -- B[2]	N/A	A[1] -- B[2]	N/A
2036 Future *Scenario 1*	EB WB **SB**	**1 LT,** 1 TH 1 TH-**RT** **1 LT-RT**	A[1] -- B[2]	N/A	A[1] -- B[2]	N/A
2036 Future *Scenario 2*	EB WB **SB**	**1 LT,** 1 TH 1 TH-**RT** **1 LT-RT**	A[1] -- B[2]	N/A	A[1] -- B[2]	N/A

Improvements to lane configurations are shown in bold.
1. Level of service for major-street left-turn movement.
2. Level of service for minor-street approach.

Capacity analysis of 2027 build (scenario 1 & 2) and 2036 future (scenario 1 & 2) traffic conditions indicates that the major-street left-turn movement and the minor-street approach at the intersection of Poole Road and Site Drive 1 are expected to operate at LOS B or better during the weekday AM and PM peak hours.

Turn lanes were considered based on the NCDOT *Policy on Street and Driveway Access to North Carolina Highways* (Driveway Manual). Based on the Driveway Manual, an exclusive eastbound left-turn lane with a minimum of 75' of storage is warranted and recommended

under access scenario 1 and a minimum of 100′ of storage is warranted and recommended under access scenario 2, both with appropriate deceleration length and taper.

8.8. Poole Road [EB-WB] and Site Drive 2 [SB]

The proposed unsignalized intersection of Poole Road and Site Drive 2 was analyzed under 2027 build – scenario 1, 2027 build – scenario 2, 2036 future – scenario 1, and 2036 future – scenario 2 with lane configurations and traffic control shown in Table 12. Refer to Table 12 for a summary of the analysis results. Refer to Appendix M for the Synchro capacity analysis reports. SimTraffic queuing reports can be found in Appendix N.

Table 12: Analysis Summary of Poole Road and Site Drive 2

ANALYSIS SCENARIO	APPROACH	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
			Approach	Overall (seconds)	Approach	Overall (seconds)
2027 Build **Scenario 1** *Full Movement*	EB WB **SB**	**1 LT,** 1 TH 1 TH, **1 RT** **1 LT-RT**	A[1] -- B[2]	N/A	A[1] -- B[2]	N/A
2027 Build **Scenario 2** *Right-in/Right-out*	EB WB **SB**	1 TH 1 TH, **1 RT** **1 RT**	-- -- B[2]	N/A	-- -- B[2]	N/A
2036 Future **Scenario 1** *Full Movement*	EB WB **SB**	**1 LT,** 1 TH 1 TH, **1 RT** **1 LT-RT**	A[1] -- B[2]	N/A	A[1] -- B[2]	N/A
2036 Future **Scenario 2** *Right-in/Right-out*	EB WB **SB**	1 TH 1 TH, **1 RT** **1 RT**	-- -- B[2]	N/A	-- -- B[2]	N/A

Improvements to lane configurations are shown in bold.

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

Capacity analysis of 2027 build (scenario 1 & 2) and 2036 future (scenario 1 & 2) traffic conditions indicates that the major-street left-turn movement and the minor-street approach at the intersection of Poole Road and Site Drive 2 are expected to operate at LOS B or better during the weekday AM and PM peak hours.

Turn lanes were considered based on the NCDOT *Policy on Street and Driveway Access to North Carolina Highways* (Driveway Manual). Based on the Driveway Manual, an exclusive eastbound left-turn lane with a minimum of 75' of storage and a westbound right-turn lane

with a minimum of 50' of storage, both with appropriate deceleration and taper length, are warranted and recommended under access scenario 1. Under access scenario 2, only an exclusive eastbound left-turn lane with a minimum of 75' of storage and appropriate deceleration and taper length is warranted and recommended as the intersection was analyzed as a right-in/right-out.

9. CONCLUSIONS

This Traffic Impact Analysis was conducted to determine the potential traffic impacts of the proposed residential development, the northeast quadrant of the intersection of Poole Road at Smithfield Road in Knightdale, North Carolina. The proposed development, anticipated to be completed by 2026, is assumed to consist of a maximum of 246 single-family homes. This study analyzes two (2) build scenarios: Scenario 1 analyzes both Site Drive 1 and Site Drive 2 as full movement intersections and Scenario 2 analyzes Site Drive 1 as a full movement intersection and Site Drive 2 as a right-in/right-out intersection.

The study analyzes traffic conditions during the weekday AM and PM peak hours for the following scenarios:

- 2022 Existing Traffic Conditions
- 2027 No-Build Traffic Conditions
- 2027 Build Traffic Conditions – Scenario 1
- 2027 Build Traffic Conditions – Scenario 2
- 2036 Future Traffic Conditions – Scenario 1 – Per Town UDO (with STIP I-6007 Improvements)
- 2036 Future Traffic Conditions – Scenario 2 – Per Town UDO (with STIP I-6007 Improvements)

Trip Generation

It should be noted that the site plan includes a mixture of single family homes and townhomes; however, all units were studied as single family homes for a conservative analysis. It is estimated that the proposed development will generate approximately 2,310 total site trips on the roadway network during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that 169 trips (44 entering and 125 exiting) will occur during the weekday AM peak hour and 232 (146 entering and 86 exiting) will occur during the weekday PM peak hour.

Adjustments to Analysis Guidelines

Capacity analysis at all study intersections was completed according to NCDOT Congestion Management Guidelines. Refer to section 7.1 of this report for a detailed description of any adjustments to these guidelines made throughout the analysis.

Intersection Capacity Analysis Summary

Refer to section 8 of this report for a detailed description of the study area intersections (including the proposed site driveways) that are expected to operate at acceptable levels-of-service under existing and future year conditions and the study intersections that are expected to need improvements.

10. RECOMMENDATIONS

Based on the findings of this study, specific geometric improvements have been identified and are recommended to accommodate future traffic conditions. See a more detailed description of the recommended improvements below. Refer to Figures 12 & 13 for illustrations of the recommended lane configuration for the proposed development under scenarios 1 & 2.

Improvements by Baker Roofing HQ

Smithfield Road and I-87 (US 64 / 264) Westbound Ramps

- Extend the exclusive southbound right-turn lane to have full storage.
- Restripe the northbound left-through lane to provide an additional left-turn lane.
- Construct a northbound through lane with a minimum of 250 feet of storage and appropriate deceleration and taper length.

Improvements by NCDOT STIP I-6007

STIP I-6007 is expected to convert the I-87 (US 64 / 264) interchange at Smithfield Road to a diverging diamond interchange.

Improvements by NCDOT STIP HL-0031

STIP HL-0031 is expected to improve the intersection of Poole Road and Smithfield Road by adding exclusive turn lanes on every approach.

Recommended Improvements by Developer – Scenario 1

Poole Road and Smithfield Road

- Construct a channelized westbound right-turn lane that operates under yield control with a minimum of 100 feet of storage and appropriate deceleration and taper length.
- Coordinate with NCDOT to develop a signal modification plan for the intersection.

Poole Road and Site Drive 1

- Construct southbound approach with one (1) ingress lane and one (1) egress lane striped as a shared left-right lane.
- Provide an exclusive eastbound left-turn lane with a minimum 75 feet of storage and appropriate taper.
- Provide stop-control for the southbound approach.

Poole Road and Site Drive 2

- Construct southbound approach with one (1) ingress lane and one (1) egress lane striped as a shared left-right lane.
- Provide an exclusive eastbound left-turn lane with a minimum of 75 feet of storage and appropriate deceleration and taper.
- Provide an exclusive westbound right-turn lane with a minimum of 50 feet of storage and appropriate deceleration and taper.
- Provide stop-control for southbound approach.

Recommended Improvements by Developer – Scenario 2

Poole Road and Smithfield Road

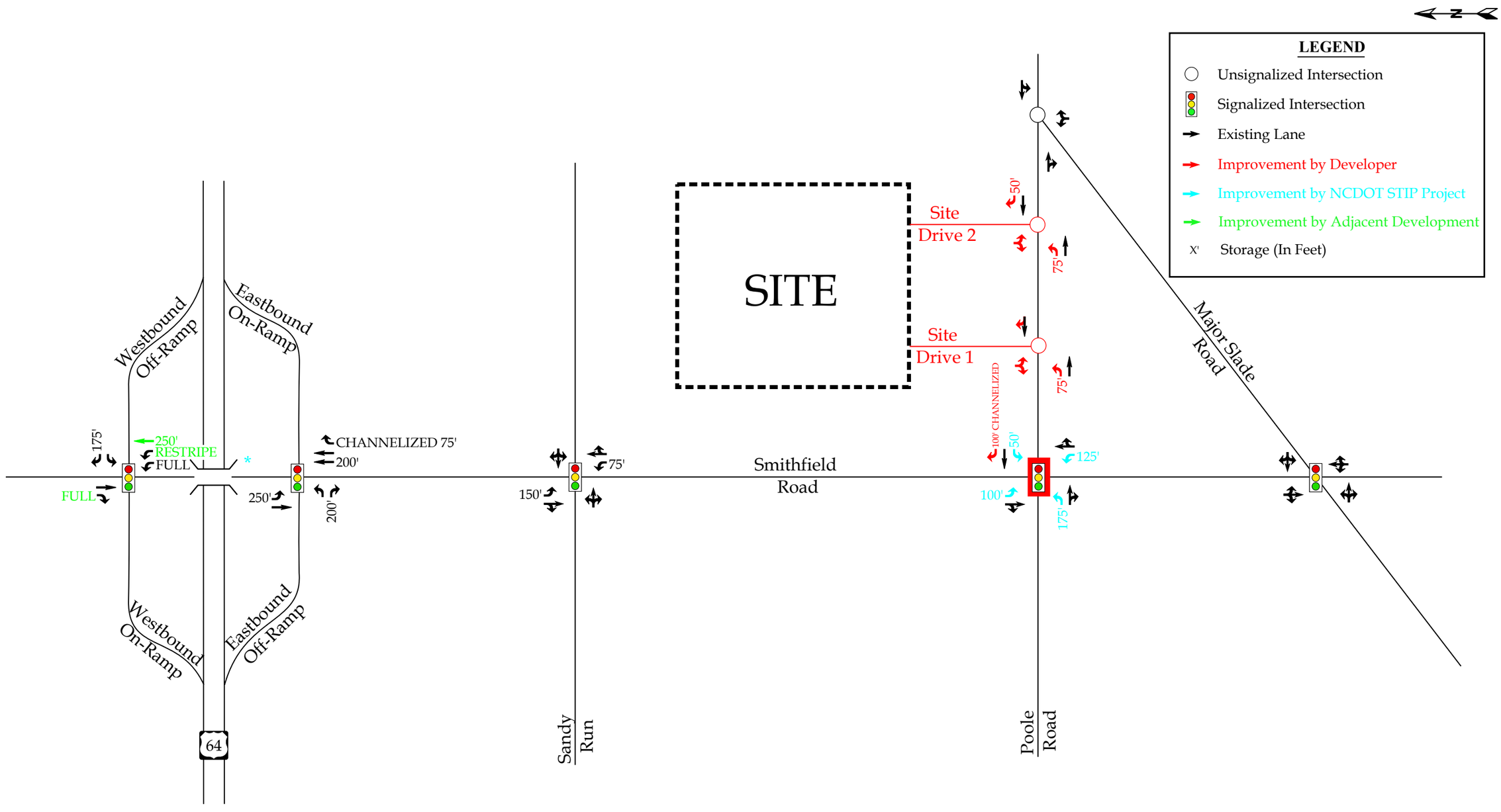
- Construct a channelized westbound right-turn lane that operates under yield control with a minimum of 100 feet of storage and appropriate deceleration and taper length.
- Coordinate with NCDOT to develop a signal modification plan for the intersection.

Poole Road and Site Drive 1

- Construct southbound approach with one (1) ingress lane and one (1) egress lane striped as a shared left-right lane.
- Provide an exclusive eastbound left-turn lane with a minimum 100 feet of storage and appropriate taper.
- Provide stop-control for southbound approach.

Poole Road and Site Drive 2

- Construct southbound approach as right-in/right-out intersection with one (1) ingress lane and one (1) egress lane.
- Provide westbound right-turn lane with a minimum of 50 feet of storage and appropriate deceleration and taper.
- Provide stop-control for southbound approach.



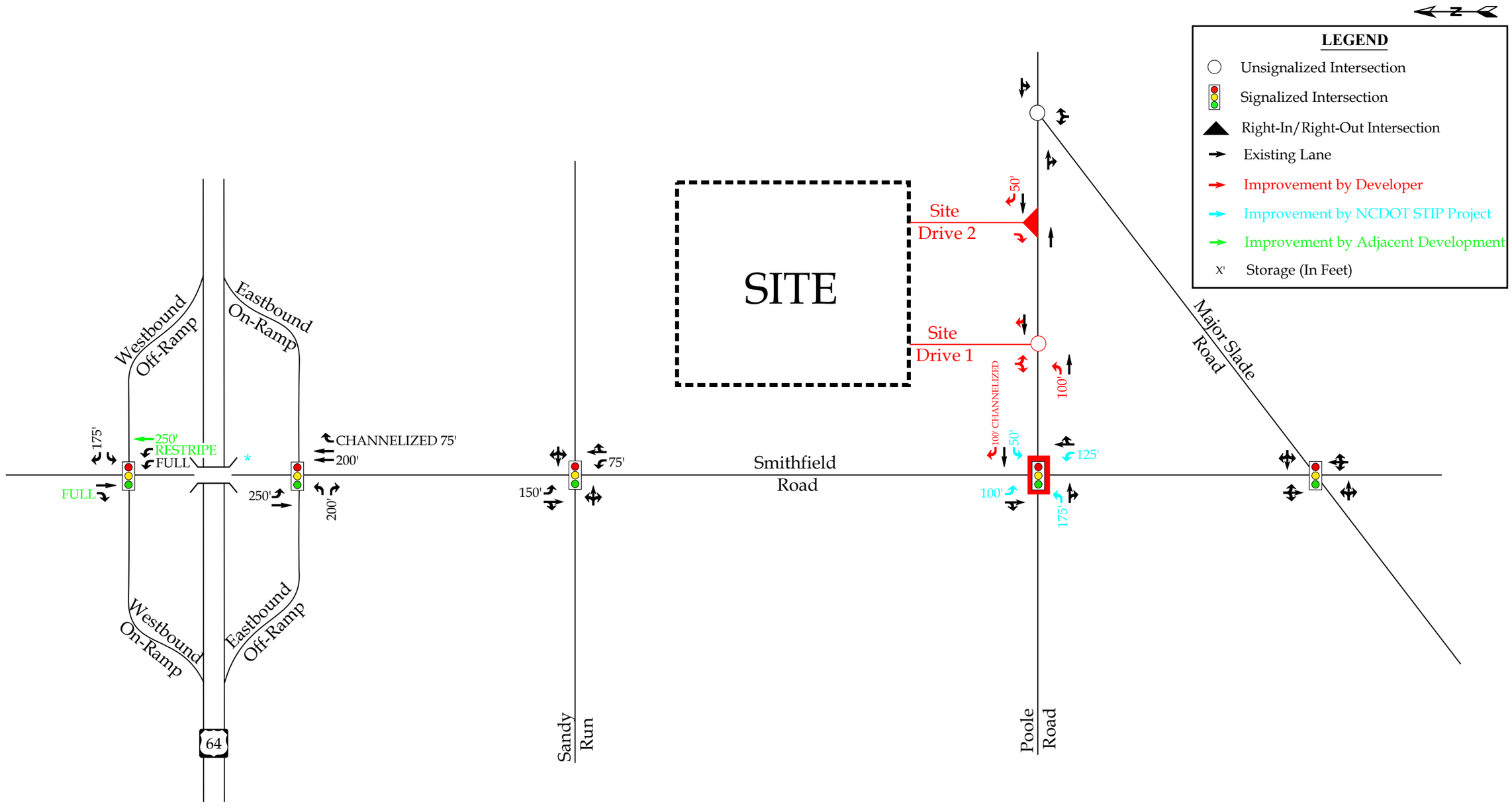
*Note: NCDOT STIP project I-6007 is expected to convert the I-87 (US 64/264) at Smithfield Road interchnage to a diverging diamond interchange.

RAMEY KEMP ASSOCIATES

Poole Road Assemblage
Knightdale, NC

Recommended Lane Configurations - Scenario 1

Scale: Not to Scale | Figure 12a



*Note: NCDOT STIP project I-6007 is expected to convert the I-87 (US 64/264) at Smithfield Road interchnage to a diverging diamond interchange.

RKA
RAMEY KEMP ASSOCIATES

Poole Road Assemblage
Knightdale, NC

Recommended Lane Configurations - Scenario 2

Scale: Not to Scale | Figure 12b

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

November 14, 2022

Poole Road Assemblage

Traffic Impact Analysis Review Report

Congestion Management Section

TIA Project: SC-2022-327
Division: 5
County: Wake

Nicholas C. Lineberger, P.E. Project Engineer
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Website: www.ncdot.gov

Location:
750 N. GREENFIELD PARKWAY
GARNER, NC 27529

Poole Road Assemblage

SC-2022-327	Knightdale	Wake County

Per your request, the Congestion Management Section (CMS) of the Transportation Mobility and Safety Division has completed a review of the subject site. The comments and recommendations contained in this review are based on data for background conditions presented in the sealed Traffic Impact Analysis (TIA) and are subject to the approval of the local District Engineer's Office and appropriate local authorities.

Date Initially Received by CMS	10/17/22	Date of Site Plan	08/23/22
Date of Complete Information	10/17/22	Date of Sealed TIA	10/14/22

Proposed Development

The TIA assumes the development is to be constructed by 2026 and is to consist of the following:

Land Use	Land Use Code	Size
Single-Family Homes	210	246 units

Trip Generation - Unadjusted Volumes During a Typical Weekday

	IN	OUT	TOTAL
AM Peak Hour	44	125	169
PM Peak Hour	146	86	232
Daily Trips			2,310

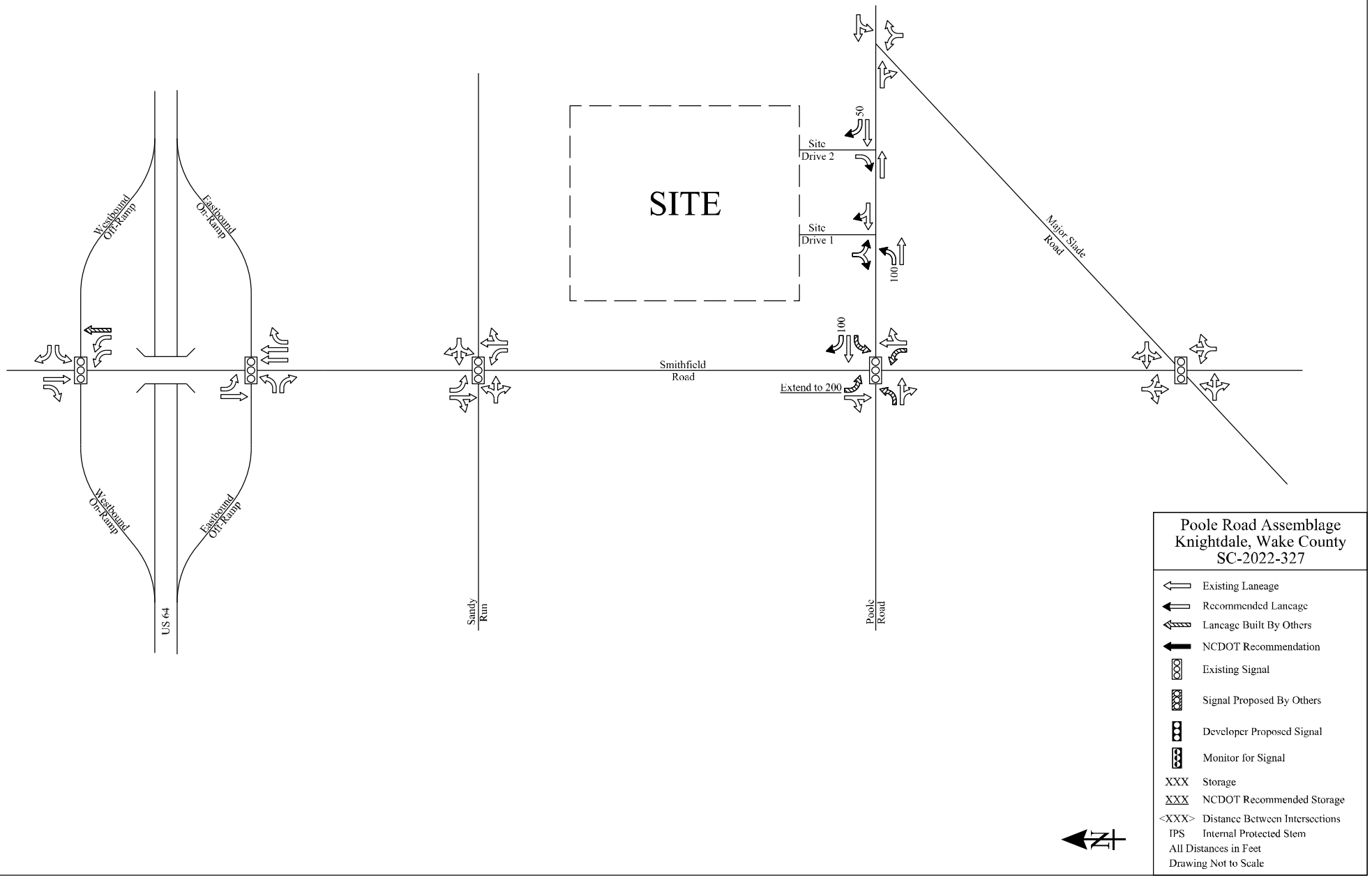
General Reference

For reference to various documents applicable to this review please reference the following link: *http://www.ncdot.org/doh/preconstruct/traffic/teppl/Topics/C-37/C-37.html*

Once the driveway permit has been approved and issued, a copy of the final driveway permit requirements should be forwarded to this office. If we can provide further assistance, please contact the Congestion Management Section.

Improvements By Others

The analysis includes background improvements by others. If these improvements are not in place at the time of construction, the site should provide these improvements or analysis demonstrating mitigation is not necessary.



Poole Road Assemblage
Knightdale, Wake County
SC-2022-327

- Existing Laneage
- Recommended Laneage
- Laneage Built By Others
- NCDOT Recommendation
- Existing Signal
- Signal Proposed By Others
- Developer Proposed Signal
- Monitor for Signal
- XXX Storage
- XXX NCDOT Recommended Storage
- <XXX> Distance Between Intersections
- IPS Internal Protected Stem
- All Distances in Feet
- Drawing Not to Scale