Weldon Master Plan

St. Matthews Township,Town of Knightdale, Wake County

Master Plan Submittal

Fourth Submittal: 03/06/2023

ZMA-11-22

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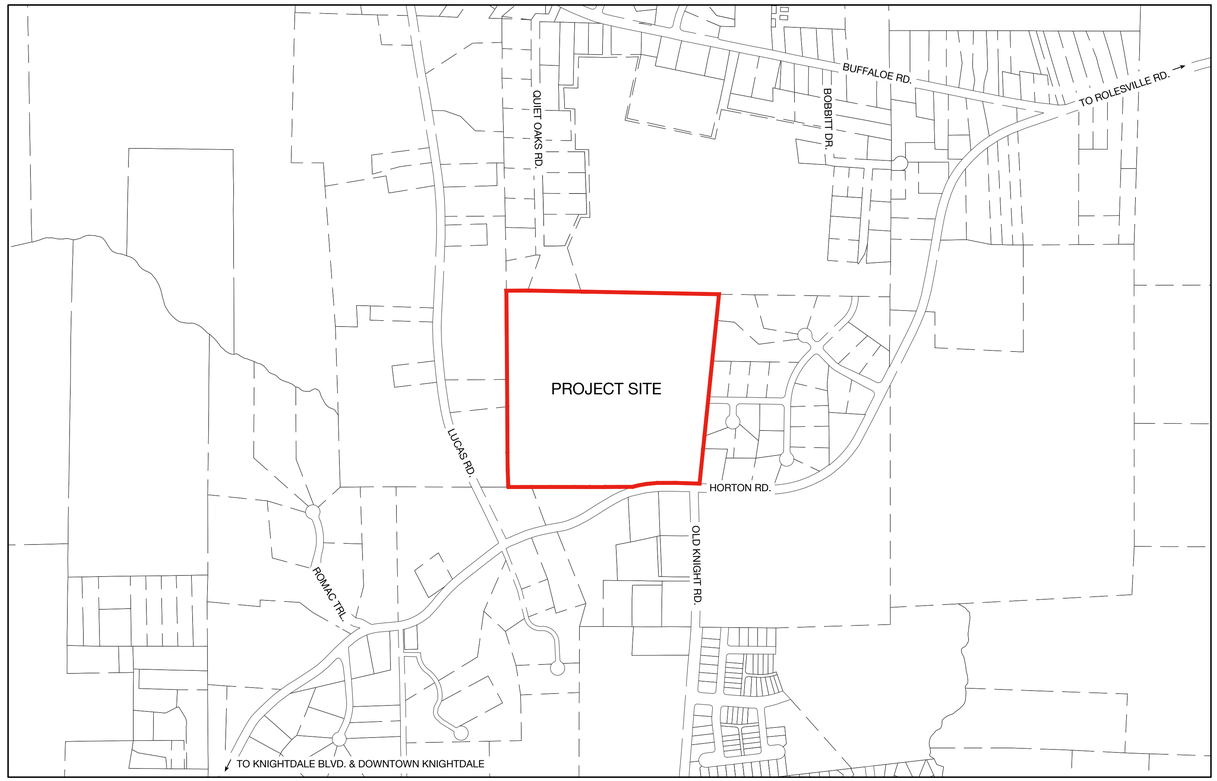


VICINITY MAP 1" = 500'

GENERAL NOTES:

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH TOWN OF KNIGHTDALE AND NCDOT STANDARDS AND SPECIFICATIONS IF APPLICABLE.
2. THE CONTRACTOR SHALL OBTAIN A RIGHT-OF-WAY PERMIT FOR ANY WORK WHICH REQUIRES THE CLOSURE OF A TRAVEL LANE(S), PARKING SPACE, OR SIDEWALK FROM RIGHT-OF-WAY SERVICES AT LEAST 48 HOURS IN ADVANCE.
3. NO WORK WILL BE ALLOWED WITHIN NCDOT ROW UNTIL ALL ENCROACHMENT AGREEMENTS ARE APPROVED BY NCDOT.
4. IF CONSTRUCTION PLANS FOR PUBLIC AND PRIVATE STREETS OR UTILITIES SHOWN ON THIS PLAN ARE REQUIRED, THEY MUST BE APPROVED BY THE PUBLIC WORKS DEPARTMENT AND PUBLIC UTILITIES DEPARTMENT PRIOR TO ISSUANCE OF PERMITS OR RECORDING OF ANY PLAT FOR THIS DEVELOPMENT.
5. FIELD ADJUSTMENTS TO THIS PLAN MAY BE REQUIRED BY TOWN OF KNIGHTDALE INSPECTOR AS NEEDED DURING CONSTRUCTION.
6. ALL PROPOSED CURB AND GUTTER WITHIN PUBLIC RIGHT OF WAY SHOWN ON PLANS TO BE 30" TOWN OF KNIGHTDALE STANDARD CONCRETE CURB AND GUTTER, AND ALL OTHER PROPOSED CURB AND GUTTER TO BE 24" CONCRETE CURB AND GUTTER UNLESS OTHERWISE STATED ON PLANS.
7. ALL DIMENSIONS SHOWN ARE TO BACK OF CURB, UNLESS OTHERWISE STATED ON PLANS.
8. WITHIN THE SIGHT TRIANGLES SHOWN ON THIS PLAN, NO OBSTRUCTION BETWEEN 2 FEET AND 8 FEET IN HEIGHT ABOVE THE CURB LINE ELEVATION SHALL BE LOCATED IN WHOLE OR PART. OBSTRUCTIONS INCLUDE BUT ARE NOT LIMITED TO ANY BERM, FOLIAGE, FENCE, WALL, SIGN, OR PARKED VEHICLE.
9. UNLESS NOTED, ACCESS ROUTE FOR EMERGENCY VEHICLES SHALL PROVIDE AN INSIDE TURNING RADIUS OF 28' MINIMUM.
10. TRASH AND CARDBOARD DUMPSTER(S) ENCLOSURE SHALL COMPATIBLE WITH MATERIAL AND/OR COLOR OF THE PRINCIPAL BUILDING.
11. ALL HVAC UNITS SHALL BE SCREENED FROM VIEW OF THE PUBLIC RIGHT OF WAY.
12. CONTRACTOR TO FIELD LOCATE AND VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO LANDSCAPE ARCHITECT PRIOR TO ANY CONSTRUCTION ACTIVITIES. CONTACT NC ONE AT 811 FOR FIELD LOCATION OF UNDERGROUND UTILITIES.
13. HANDICAP PARKING SPACE(S) AND HC ACCESS AISLE(S) SHALL BE NO GREATER THAN TWO PERCENT (2%) PITCH IN ANY DIRECTION(S) AS PER ADA STANDARDS.
14. PROVIDE SIGNAGE AND STRIPING OF HANDICAP SPACES AS PER ADA STANDARDS.
15. ALL RETAINING WALLS GREATER THAN 30" IN HEIGHT TO INCLUDE SAFETY RAIL OR FENCE. NO RETAINING WALLS ARE PERMITTED IN THE RIGHT-OF-WAY UNLESS APPROVED BY ENCROACHMENT.
16. THE MINIMUM CORNER CLEARANCE FROM THE CURB LINE OF INTERSECTING STREETS SHALL BE AT LEAST 20 FEET FROM THE POINT OF TANGENCY OF THE CURB FOR RESIDENTIAL DRIVEWAY. NO DRIVEWAYS SHALL ENCROACH ON THIS MINIMUM CORNER CLEARANCE.
17. WC ACCESS RAMPS WILL BE PROVIDED IN ACCORDANCE WITH TOWN OF KNIGHTDALE PUBLIC WORKS DEPARTMENT STANDARDS, PROWAG STANDARDS AND ADAAG SPECIFICATIONS
18. ALL RAMPS AND HANDRAILS SHALL BE CONFORM TO ANSI STANDARDS.
19. ALL ABOVE GROUND UTILITY DEVICES (TO INCLUDE BUT NOT LIMITED TO TELEPHONE AND CABLE PEDESTALS, ELECTRICAL TRANSFORMERS, BACKFLOW DEVICE HOTBOX, ETC) SHALL BE SCREENED FROM OFF-SITE VIEW BY EVERGREEN SHRUBS, FENCE, OR WALL.
20. ALL SIDEWALKS MUST BE ACCESSIBLE TO PERSONS WHO ARE BLIND, HAVE LOW VISION AND PEOPLE WITH MOBILITY DISABILITIES. PEDESTRIAN EXISTING ROUTES AND ALTERNATE PEDESTRIAN ROUTES DURING CONSTRUCTION WILL BE REQUIRED TO BE COMPLIANT WITH THE PUBLIC RIGHTS OF WAY ACCESSIBILITY GUIDELINES (PPOWAG), 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
21. IF UNFORESEEN CONDITIONS DEVELOP DURING CONSTRUCTION, REFER TO NCDOT SPECIFICATIONS AND DETAILS AND CONTACT CITY OF SANFORD PUBLIC WORKS DEPARTMENT FOR FURTHER GUIDANCE.
22. PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE TOWN OF KNIGHTDALE ENGINEERING DEPARTMENT TO REVIEW THE SPECIFIC COMPONENTS OF THE PLAN AND OPERATION OF THESE FACILITIES DURING CONSTRUCTION. CONTACT TOWN OF KNIGHTDALE INSPECTIONS OFFICE AT 919-217-2250 TO SET UP THE MEETING.
23. THE CONTRACTOR SHALL CONDUCT THE WORK IN A SAFE MANNER AND WITH A MINIMUM AMOUNT OF INCONVENIENCE TO TRAFFIC.
24. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL AND SHALL ADHERE TO THE PROVISIONS OF THE MUTCD (MOST CURRENT EDITION).
25. PRIOR TO CONSTRUCTION BEGINNING, ALL SIGNAGE AND TRAFFIC CONTROL SHALL BE IN PLACE
26. ANY FUTURE COMMENTS FROM NCDOT WILL BE INCORPORATED INTO THE CONCURRENT REVIEW FOR THE SITE PLAN (SR-47-17).

CONTACT INFORMATION

OWNER:
DEMENT FARMS LLC
ADDRESS: 717 N 1ST AVEUNUE
KNIGHTDALE, NC 27545

DEVELOPER:
DRB HOMES
CONTACT: JAY COLVIN
ADDRESS: 3000 RDU CENTER DRIVE, SUITE 202
MORRISVILLE, NC 27560
PHONE: 919-909-3677
EMAIL: JCOLVIN@DRBGROUP.COM

CIVIL ENGINEER & LANDSCAPE ARCHITECT:
URBAN DESIGN PARTNERS PLLC
CONTACT: BRIAN RICHARDS, PLA
ADDRESS: 150 FAYETTEVILLE ST.
SUITE 1310
RALEIGH, NC 27601
PHONE: 919-275-5002
EMAIL: BRICHARDS@URBANDESIGNPARTNERS.COM

SITE DATA

PIN:	1755757607
TOTAL ACRES:	± 41.0 ACRES
EXISTING ZONING:	RR1
PROPOSED ZONING:	RMX-PUD
EXISTING USE:	AGRICULTURAL
PROPOSED USE:	MIXED-USE RESIDENTIAL
DENSITY :	3.56 DU/ACRE

DEVELOPMENT SUMMARY

COMMERCIAL:

• LAND AREA:	± 1.4 AC OUTPARCEL
• BUILDINGS:	± 15,000 SF
- TOTAL BUILDINGS:	1 BUILDING
- BUILDING HEIGHTS:	1-2 STORIES
• REQUIRED OPEN SPACE:	NOT REQUIRED

RESIDENTIAL:

• LAND AREA:	± 39.5 AC
• PROPOSED UNITS:	
80' FRONT LOADED:	± 5 PARCELS
60' FRONT LOADED:	± 63 PARCELS
32' REAR LOADED:	± 41 PARCELS
TOWNHOMES:	± 37 DU
TOTAL	± 146 DU TOTAL

VEHICLE PARKING:

• TOWNHOME	
REQUIRED:	± 111 SPACES (1/BED)
PROPOSED:	± 111 SPACES
• SINGLE FAMILY	
REQUIRED:	± 327 SPACES (1/BED)
PROPOSED:	± 327 SPACES
TOTAL:	± 438 SPACES

RECREATIONAL OPEN SPACE DEDICATION*

PROXIMITY ZONE:	ALL OUTSIDE ½ MILE
TOTAL BEDS**:	
→ SINGLE FAM. DETACHED:	109 DU x 3.5 BEDS = 382 BEDS
→ SINGLE FAM. ATTACHED:	37 DU x 2.5 BEDS = 93 BEDS
DEDICATION RATE:	520 SF
→ SINGLE FAM. DETACHED:	382 BEDS x 520 SF = 198,640 SF
→ SINGLE FAM. ATTACHED:	93 BEDS x 520 SF = 48,360 SF
REQUIRED OPEN SPACE:	48,360 SF + 198,640 SF = 247,000
± 247,000 SF (5.67 AC)	
REQUIRED OPEN SPACE:	± 5.67 AC (247,000 SF) TOTAL
→ REQUIRED ACTIVE:	± 123,500 SF (2.84 AC) 50%
→ REQUIRED PASSIVE:	± 123,500 SF (2.84 AC) 50%
PROPOSED OPEN SPACE:	± 11.23 AC TOTAL (28.0 % OF SITE)
→ PROP. ACTIVE:	± 4.34 AC (1.50 AC OVER REQ.)
→ PROP. PASSIVE:	± 6.89 AC (4.05 AC OVER REQ.)

CONNECTIVITY INDEX:

LINKS:	12 LINKS
NODES:	8 NODES
INDEX SCORE:	1.5

TREE COVER AREA

REQUIRED:	5,555 LF X 20 = 111,102 SF
PROVIDED:	± 265,000 SF

DEVELOPMENT TOTALS:

• TOTAL LAND AREA	± 41.0 AC
• TOTAL RESIDENTIAL UNITS	± 146 DU TOTAL
• TOTAL COMMERCIAL:	± 15,000 SF
• TOTAL PROP. OPEN SPACE:	± 11.23 AC

URBAN DESIGN PARTNERS
150 fayetteville st. ste 1310
raleigh, nc 27601
p 919.275.5002
urbandesignpartners.com
nc firm no: P-2671 sc coa no: C-03044

PRELIMINARY DRAWING FOR REVIEW PURPOSES ONLY

03/02/2023

DRB Homes
3000 RDU Center Dr. Suite 202
Morrisville, NC 27560

Weldon
Master Plan

Cover Sheet
0 Lucas Rd., Knightdale, NC 27545

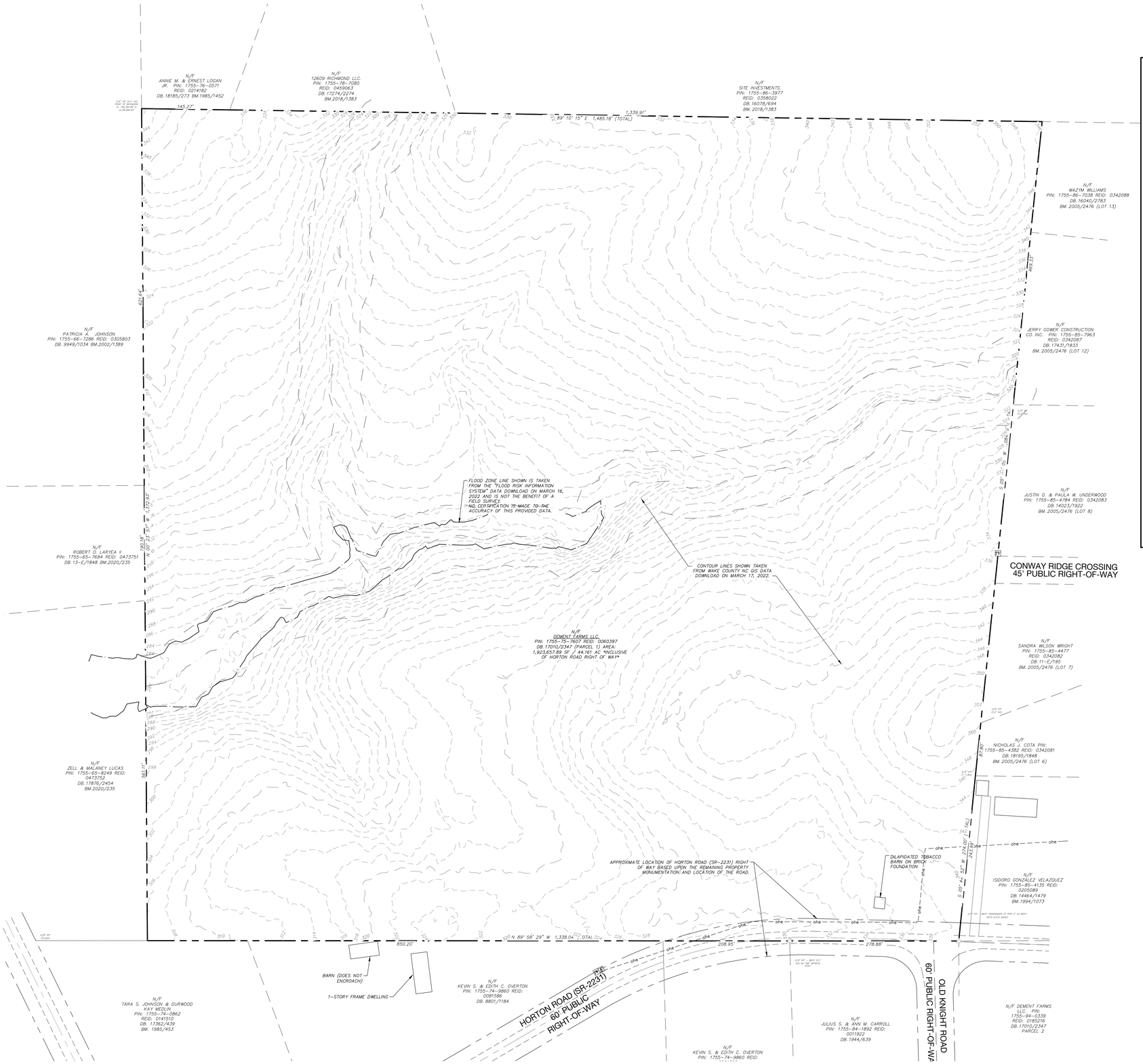
NO. DATE: BY: REVISIONS:

Project No: 22-RDU-030
Date: 02.03.2023
Designed By: UDP
Checked By: BAR
Sheet No:

C-1.0

EXISTING CONDITIONS NOTES:

EXISTING INFORMATION ON THIS PLAN WAS PROVIDED BY:
- WAKE COUNTY GIS
- MORRIS AND RITCHIE ASSOCIATES, PC
- SOIL & ENVIRONMENTAL CONSULTANTS, PA



MORRIS & RITCHIE ASSOCIATES OF NC, PC
AN AFFILIATE OF MORRIS & RITCHIE ASSOCIATES, INC. WHICH PROVIDES ENGINEERING, ARCHITECTURE, PLANNING, SURVEYING & LANDSCAPE ARCHITECTURE THROUGHOUT THE MID-ATLANTIC REGION AND LANDSCAPE ARCHITECTS

Legal Description - New Parcel
41.161 Acres
Portion of Lands of Dement Farms LLC.
St. Matthews Township – Wake County, North Carolina

All that certain tract or parcel of land laying and being situate in St. Matthews Township, Knightdale, Wake County, North Carolina and being more particularly described as follows:

Beginning at a ¾" iron pipe found 0.3' above the existing ground, and being a common corner with lot 68 as shown on book of maps 1985 page 1452 in the Wake County registry, bearing NC grid coordinates Northing: 756,364.98' and Easting 2,156,999.93', and being known as the point of beginning; thence, South 89°10'15" East a distance of 1,485.18 feet to a ¾" iron pipe, and being a common corner with lot 13 of Horton Mill subdivision recorded in book of maps 2005 page 2476; thence, South 05°49'05" West a distance of 1,084.93 feet to a ½" iron pipe, and being a common corner with lot 6 of the aforementioned Horton Mill subdivision and Isidoro Gonzalez Velazquez as shown in book of maps 1994 page 1073; thence, South 05°44'52" West a distance of 274.00 feet to a computed point in Horton Road (SR-2231) and lying 30.01 feet from a ¾" bent iron pipe; thence, North 89°58'29" West a distance of 1,338.04 feet to a 1" flat iron bar found 0.8' above the existing ground next to a 5/8" iron pipe covered by a PVC pipe, and being a common corner with tract 2 of book of maps 2020 page 235; thence, North 00°23'57" West a distance of 1,372.93 feet to the point of beginning. Containing **41.161 AC.±.**

PRELIMINARY NOT FOR RECORDATION, CONVEYANCES, OR SALES FOR REVIEW ONLY

5605 Chapel Hill Road, Suite 112, Raleigh, NC 27607 (984) 200-2103 www.mragta.com
Abingdon, MD (410) 515-9000 ✦ Baltimore, MD (443) 490-7201 ✦ Laurel, MD (410) 792-9792 ✦ Towson, MD (410) 821-1690 ✦ Georgetown, DE (302) 855-5734 ✦ New Castle, DE (302) 326-2200 ✦ Leesburg, VA (703) 994-4047 ✦ Raleigh, NC (984) 200-2103

BEFORE YOU DIG!
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GRAPHIC SCALE
0 40 80 160 320
(IN FEET)
1 inch = 80 ft.

URBAN DESIGN PARTNERS
150 fayetteville st. ste 1310
raleigh, nc 27601
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FOR REFERENCE ONLY

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NO.	DATE:	BY:	REVISIONS:

Project No: 22-RDU-030
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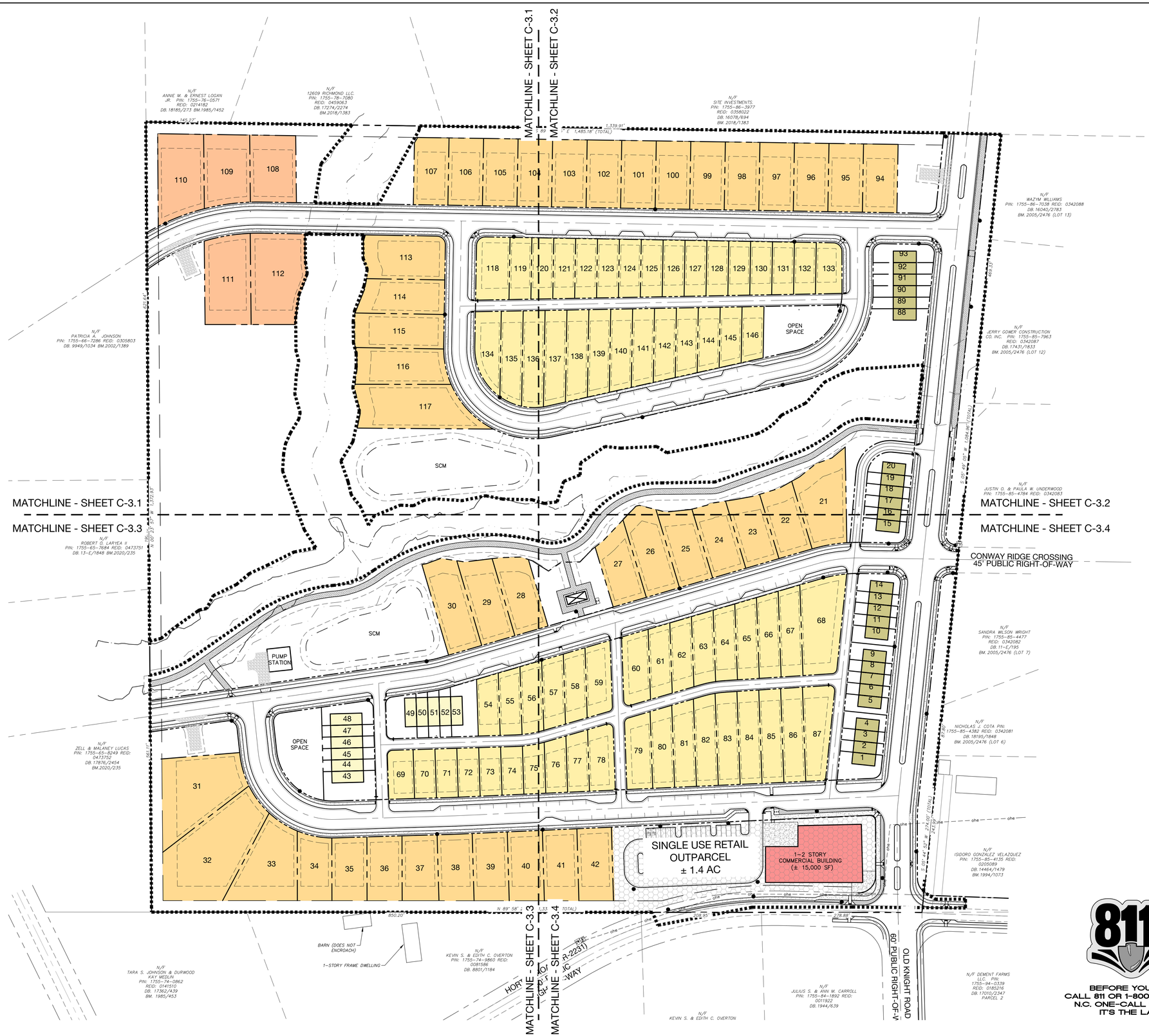

SITE DATA

PIN:	1755757607
TOTAL SITE AREA:	± 41.0 ACRES
EXISTING ZONING:	RR1
PROPOSED ZONING:	RMX-PDD
EXISTING USE:	AGRICULTURAL
PROPOSED USE:	MIXED-USE RESIDENTIAL
TOTAL MIXED USE:	±15,000 SF
TOTAL RESIDENTIAL UNITS:	±146 DU MAX
TOTAL OPEN SPACE:	±11.23 ACRES
DENSITY:	3.56 DU/AC

COMMERCIAL

TOTAL LAND AREA:	± 1.4 AC OUTPARCEL
BUILDINGS:	1 BLDG
PROPOSED COMMERCIAL:	± 15,000 SF
BUILDING HEIGHT:	1-2 STORIES
VEHICULAR PARKING:	
REQUIRED:	± 51 - 103 SPACES
PROVIDED:	± 51 SPACES
BICYCLE PARKING:	
REQUIRED:	±5 SPACES*
(* 1 SPACE PER 40 VEHICULAR PARKING)	
PROPOSED:	±6 SPACES

RESIDENTIAL

LAND AREA:	± 39.5 AC
PROPOSED UNITS:	
80' LOT (FRONT LOADED):	±5 PARCELS
60' LOT (FRONT LOADED):	±63 PARCELS
32' LOT (REAR LOADED):	±41 PARCELS
2 STORY TOWNHOMES:	±11 DU
3 STORY TOWNHOMES	±26 DU
TOTAL:	±146

VEHICLE PARKING

TOWNHOME	
REQUIRED:	±111 SPACES (1/BED)
PROPOSED:	±111 SPACES
SINGLE FAMILY	
REQUIRED:	±327 SPACES (1/BED)
PROPOSED:	±327 SPACES
TOTAL:	±438 SPACES

*ALL RESIDENTIAL UNITS WERE ASSUMED 3 BEDROOMS.

PROPOSED DENSITY: ± 3.56 DU/AC

SETBACKS

80' LOT (FRONT LOADED)
- FRONT: 10'
- REAR: 25'
- SIDE: 8' (20% AGGREGATE)

60' LOT (FRONT LOADED)
- FRONT: 10'
- REAR: 25'
- SIDE: 6' (20% AGGREGATE)

32' LOT (REAR LOADED)
- FRONT: 10'
- REAR: 20'
- SIDE: 3'

TOWNHOMES
- FRONT: 5'-25'
- SIDE: 10'
- REAR: 20'

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Overall Site Plan

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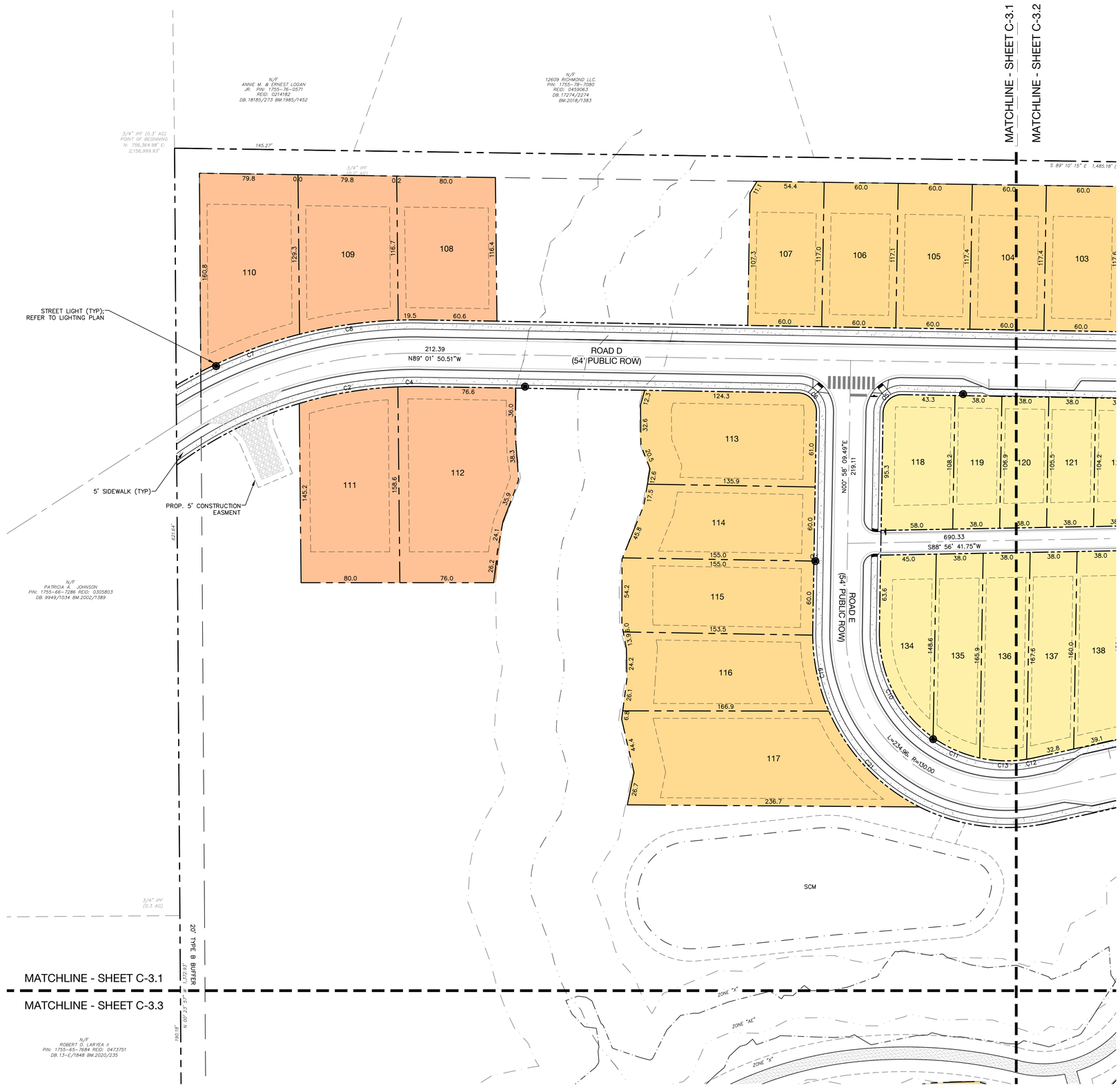
C-3.0

Curve Table			
Curve #	Length	Radius	Delta
C50	27.956	200.038	008.0072
C49	16.382	9.000	104.2896
C48	11.729	8.446	079.5666
C47	38.529	200.007	011.0374
C46	12.016	200.000	003.4423
C39	60.974	6961.342	000.5019
C38	61.654	162.000	021.8057
C37	58.064	162.000	020.5359
C34	59.125	162.000	020.9113
C32	56.664	162.000	020.0410
C66	23.327	15.000	089.1043
C65	21.339	15.000	081.5072
C67	22.256	15.000	085.0099
C68	61.147	39.916	087.7720
C31	61.366	274.733	012.7980
C40	18.454	98.000	010.7891
C19	63.330	157.000	023.1118
C21	109.059	156.906	039.8241
C4	18.784	323.000	003.3320
C2	81.209	323.000	014.4053

Curve Table			
Curve #	Length	Radius	Delta
C44	20.492	233.238	005.0339
C42	20.183	279.177	004.1422
C41	14.137	9.000	090.0000
C30	31.253	157.000	011.4054
C29	20.146	157.000	007.3521
C25	23.562	15.000	090.0000
C26	24.849	15.000	094.9165
C9	23.281	15.000	088.9250
C5	23.308	15.000	089.0307
C12	6.277	103.000	003.4917
C13	38.221	103.000	021.2611
C11	41.481	103.000	023.0744
C10	98.441	103.000	054.7598
C8	80.849	374.929	012.3552
C7	85.777	377.000	013.0363
C6	23.562	15.000	090.0000
C59	4.968	220.000	001.2938
C60	16.371	9.000	104.2217
C57	38.435	220.000	010.0098
C55	12.015	220.000	003.1290

Curve Table			
Curve #	Length	Radius	Delta
C54	13.857	9.000	088.2193
C61	11.893	9.000	075.7104
C62	21.313	180.000	006.7840
C63	18.260	180.000	005.8125
C64	15.643	9.000	099.5874
C52	44.836	223.000	011.5197
C53	12.631	9.000	080.4126
C51	16.014	200.000	004.5877



LEGEND

- 80' LOT (FRONT LOADED)
- 60' LOT (FRONT LOADED)
- 32' LOT (REAR LOADED)

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GRAPHIC SCALE

0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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C31	61.366	274.733	012.7980
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C19	63.330	157.000	023.1118
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C12	6.277	103.000	003.4917
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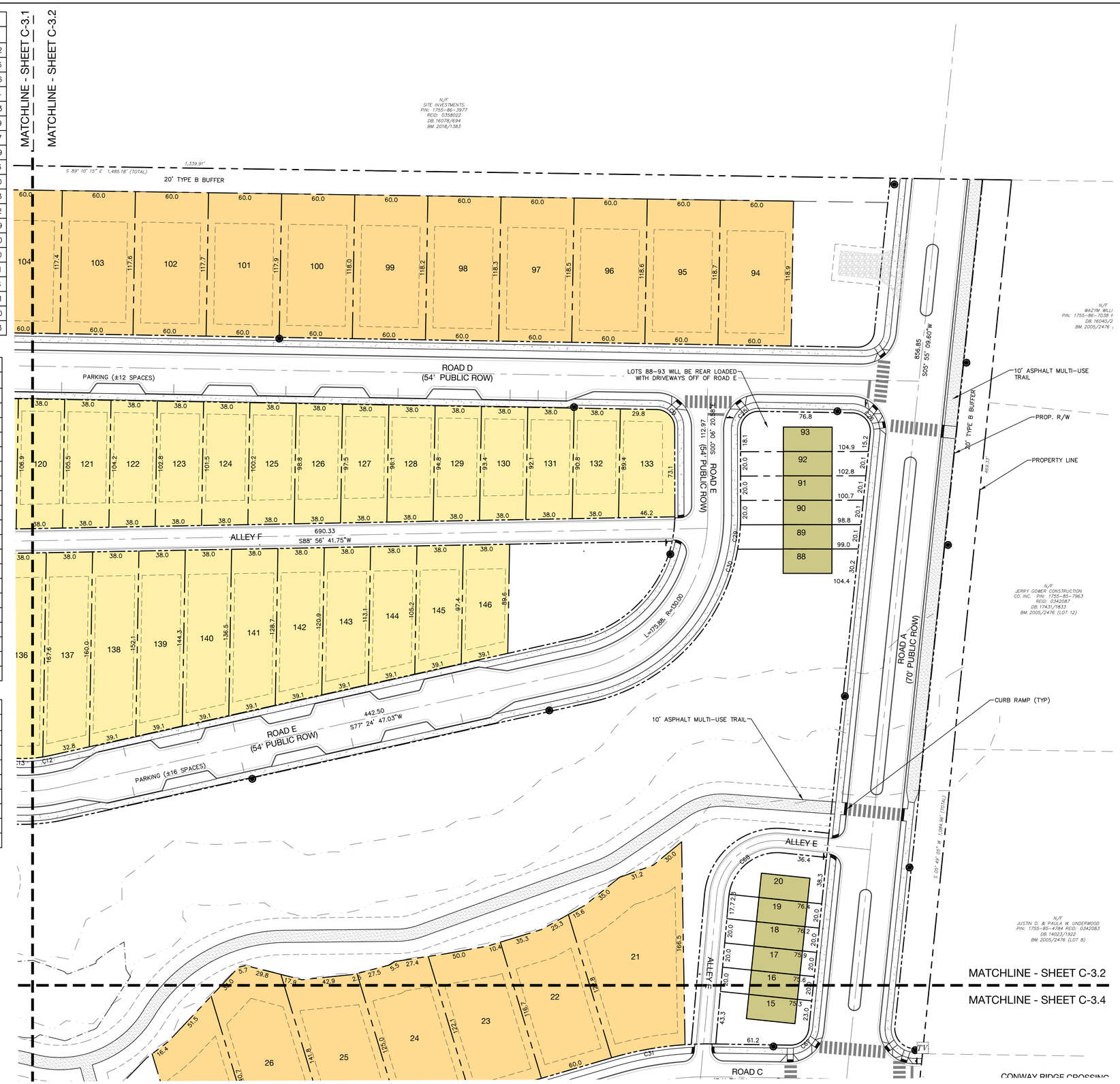
C62	21.313	180.000	006.7840
C63	18.260	180.000	005.8125
C64	15.643	9.000	099.5874
C52	44.836	223.000	011.5197
C53	12.631	9.000	080.4126
C51	16.014	200.000	004.5877



LEGEND

- 60' LOT (FRONT LOADED)
- 32' LOT (REAR LOADED)
- 2 STORY TOWNHOMES:
- 3 STORY TOWNHOMES

811

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nc firm no: P-2671 sc coa no: C-03044

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03/02/2023

DRB Homes
3000 RDU Center Dr. Suite 202
Morrisville, NC 27560

Weldon
Master Plan
Site Plan Enlargement
0 Lucas Rd., Knightdale, NC 27545

NO.	DATE:	BY:	REVISIONS:

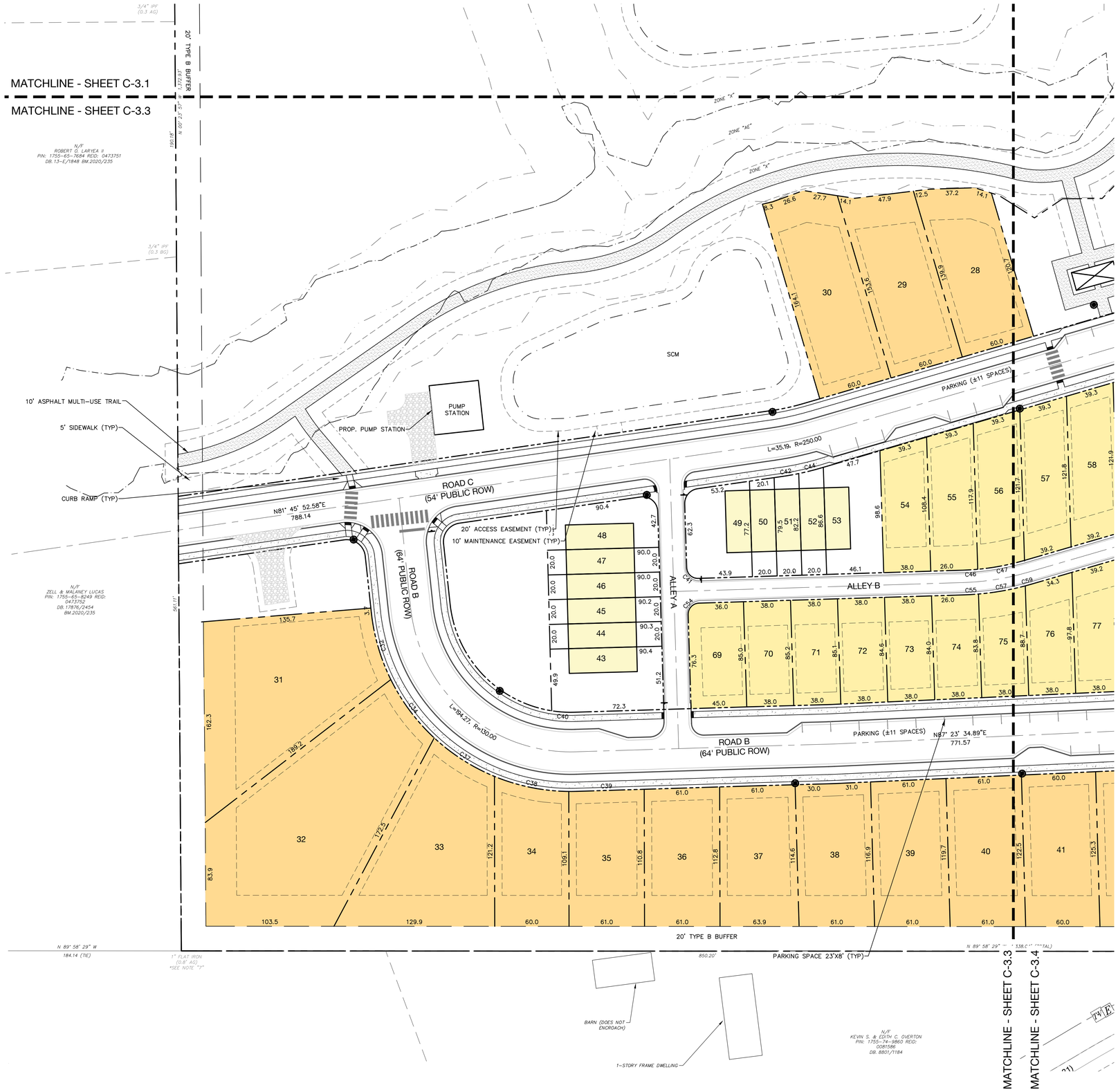
Project No: 22-RDU-030
Date: 02.03.2023
Designed By: UDP
Checked By: BAR
Sheet No:

C-3.2

Curve Table			
Curve #	Length	Radius	Delta
C50	27.956	200.038	008.0072
C49	16.382	9.000	104.2896
C48	11.729	8.446	079.5666
C47	38.529	200.007	011.0374
C46	12.016	200.000	003.4423
C39	60.974	6961.342	000.5019
C38	61.654	162.000	021.8057
C37	58.064	162.000	020.5359
C34	59.125	162.000	020.9113
C32	56.664	162.000	020.0410
C66	23.327	15.000	089.1043
C65	21.339	15.000	081.5072
C67	22.256	15.000	085.0099
C68	61.147	39.916	087.7720
C31	61.366	274.733	012.7980
C40	18.454	98.000	010.7891
C19	63.330	157.000	023.1118
C21	109.059	156.906	039.8241
C4	18.784	323.000	003.3320
C2	81.209	323.000	014.4053

Curve Table			
Curve #	Length	Radius	Delta
C44	20.492	233.238	005.0339
C42	20.183	279.177	004.1422
C41	14.137	9.000	090.0000
C30	31.253	157.000	011.4054
C29	20.146	157.000	007.3521
C25	23.562	15.000	090.0000
C26	24.849	15.000	094.9165
C9	23.281	15.000	088.9250
C5	23.308	15.000	089.0307
C12	6.277	103.000	003.4917
C13	38.221	103.000	021.2611
C11	41.481	103.000	023.0744
C10	98.441	103.000	054.7598
C8	80.849	374.929	012.3552
C7	85.777	377.000	013.0363
C6	23.562	15.000	090.0000
C59	4.968	220.000	001.2938
C60	16.371	9.000	104.2217
C57	38.435	220.000	010.0098
C55	12.015	220.000	003.1290

Curve Table			
Curve #	Length	Radius	Delta
C54	13.857	9.000	088.2193
C61	11.893	9.000	075.7104
C62	21.313	180.000	006.7840
C63	18.260	180.000	005.8125
C64	15.643	9.000	099.5874
C52	44.836	223.000	011.5197
C53	12.631	9.000	080.4126
C51	16.014	200.000	004.5877



LEGEND

- 60' LOT (FRONT LOADED)
- 32' LOT (REAR LOADED)
- 2 STORY TOW

BEFORE YOU DIG!
CALL 811 OR 1-800-632-4949
N.C. ONE-CALL CENTER
IT'S THE LAW!

GRAPHIC SCALE
0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

URBAN DESIGN PARTNERS
150 fayetteville st. ste 1310
raleigh, nc 27601
p 919.275.5002
urbandesignpartners.com
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Weldon
Master Plan
Site Plan Enlargement
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Curve Table			
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C46	12.016	200.000	003.4423
C39	60.974	6961.342	000.5019
C38	61.654	162.000	021.8057
C37	58.064	162.000	020.5359
C34	59.125	162.000	020.9113
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C65	21.339	15.000	081.5072
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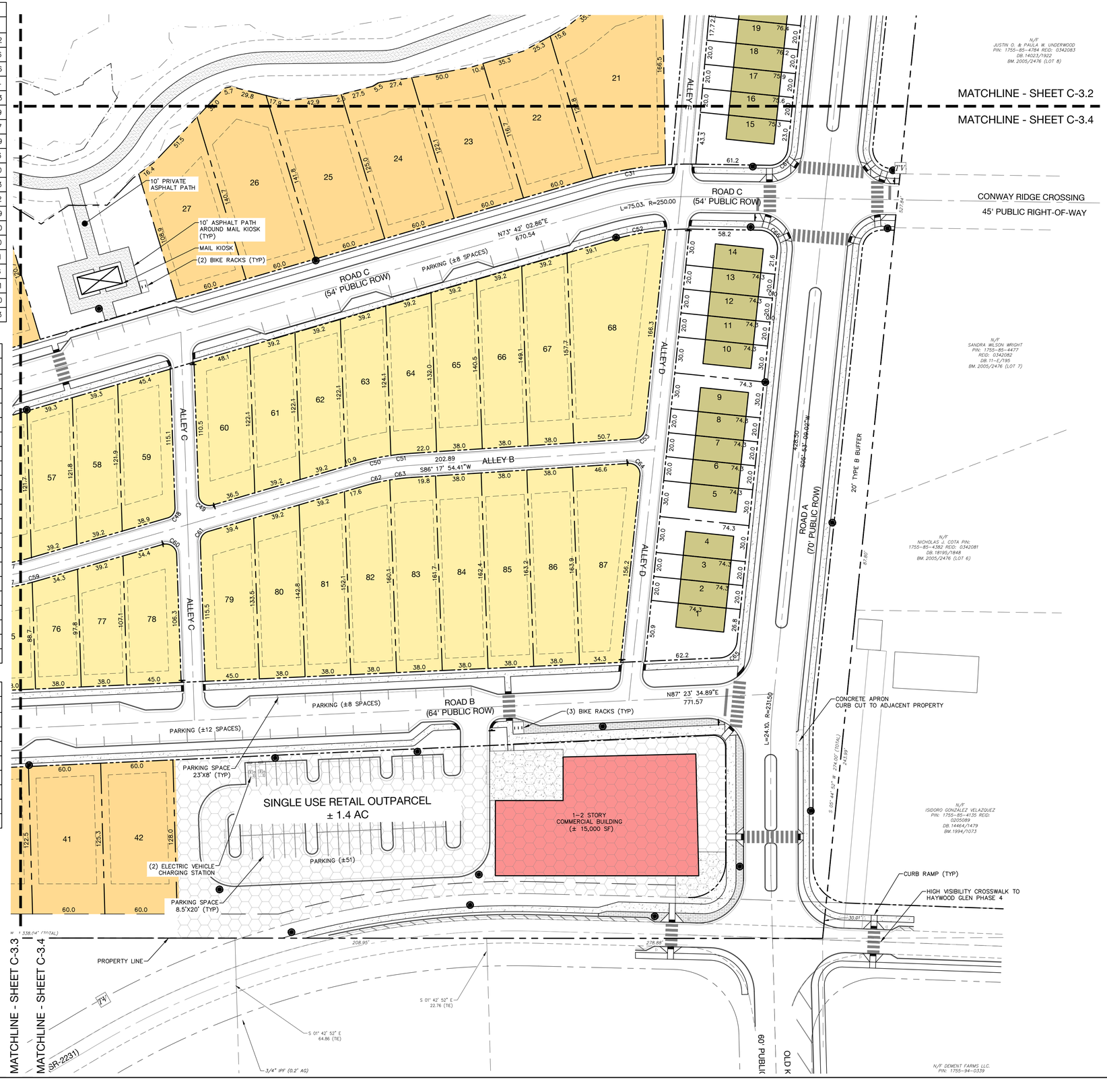

LEGEND

- PROPOSED COMMERCIAL
- 60' LOT (FRONT LOADED)
- 32' LOT (REAR LOADED)
- 3 STORY TOWNHOMES

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Morrisville, NC 27560

NO. DATE: BY: REVISIONS:

Weldon
Master Plan
Site Plan Enlargement
0 Lucas Rd., Knightdale, NC 27545

Project No: 22-RDU-030
Date: 02.03.2023
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Sheet No:

C-3.4

LEGEND

- ACTIVE OPEN SPACE
- PASSIVE OPEN SPACE

OPEN SPACE

TOTAL ACRES:	± 41.0 ACRES
PROPOSED DENSITY:	± 3.56 DU/AC
DWELLING UNITS:	± 146 DU TOTAL
→ SINGLE FAM. DETACHED:	± 109 DU
→ SINGLE FAM. ATTACHED:	± 37 DU

RECREATIONAL OPEN SPACE DEDICATION*

- PROXIMITY ZONE: ALL OUTSIDE ¼ MILE
- TOTAL BEDS**:
  - → SINGLE FAM. DETACHED: 109 DU x 3.5 BEDS = 382 BEDS
  - → SINGLE FAM. ATTACHED: 37 DU x 2.5 BEDS = 93 BEDS
- DEDICATION RATE: 520 SF
  - → SINGLE FAM. DETACHED: 382 BEDS x 520 SF = 198,640 SF
  - → SINGLE FAM. ATTACHED: 93 BEDS x 520 SF = 48,360 SF
- REQUIRED OPEN SPACE: 48,360 SF + 198,640 SF = 247,000 ± 247,000 SF (5.67 AC)
- REQUIRED OPEN SPACE: ± 5.67 AC (247,000 SF) TOTAL
  - → REQUIRED ACTIVE: ± 123,500 SF (2.84 AC) 50%
  - → REQUIRED PASSIVE: ± 123,500 SF (2.84 AC) 50%
- PROPOSED OPEN SPACE: ± 11.23 AC TOTAL (27.0 % OF SITE)
  - → PROP. ACTIVE: ± 4.34 AC (1.50 AC OVER REQ.)
  - → PROP. PASSIVE: ± 6.89 AC (4.05 AC OVER REQ.)

* PER TOWN OF KNIGHTDALE UDO SEC. 11.2.C. ALL DEVELOPMENTS WITH MORE THAN EIGHT (8) RESIDENTIAL UNITS SHALL BE REQUIRED TO DEDICATE RECREATIONAL OPEN SPACE.

**PER TOWN OF KNIGHTDALE UDO SEC. 11.2.C.3 ALL SINGLE FAMILY DEVELOPMENTS WILL DEDICATE OPEN SPACE AT A RATE OF THREE AND ONE-HALF BEDROOMS PER UNIT UNLESS OTHERWISE STIPULATED. IN ABSENCE OF KNOWN BUILDING SPECIFICATIONS, DUPLEXES, TOWNHOMES, AND MULTIFAMILY WILL DEDICATE OPEN SPACE AT A RATE OF TWO AND ONE HALF BEDROOMS PER UNIT.

Active Open Space Table

Active Open Space Number	Area (SF)	Area (AC)
Active Open Space #1	118,175	2.71
Active Open Space #2 - Multi-Use Field	10,775	0.25
Active Open Space #3 - IPEMA Playground	8,955	0.21
Active Open Space #4 - Public Greenway	50,975	1.17
Total Provided	188,880	4.34

Passive Open Space Table

Passive Open Space Number	Area (SF)	Area (AC)
Passive Open Space #1	196,750	4.52
Passive Open Space #2	2,462	0.06
Passive Open Space #3	38,103	0.87
Passive Open Space #4	607	0.01
Passive Open Space #5	41,869	0.96
Passive Open Space #6	3,744	0.09
Passive Open Space #7	16,589	0.38
Total Provided	300,124	6.89

811

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GRAPHIC SCALE

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DRB Homes
3000 RDU Center Dr. Suite 202
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Weldon
Master Plan
Open Space Plan
0 Lucas Rd., Knightdale, NC 27545

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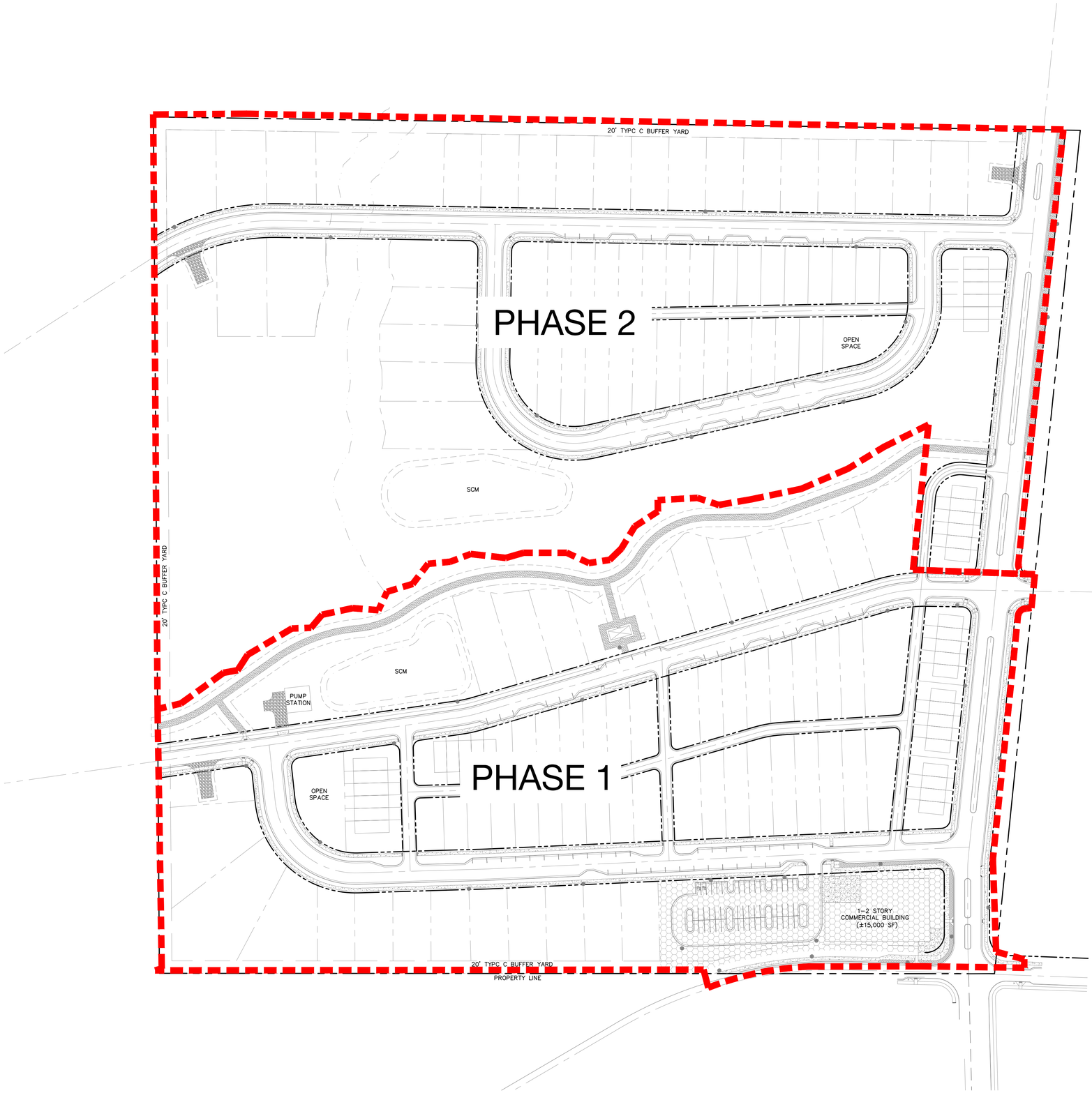
C-3.5



SITE DATA

PIN:	1755757607
TOTAL SITE AREA:	± 41.0 ACRES
EXISTING ZONING:	RR1
PROPOSED ZONING:	RMX-PUD
EXISTING USE:	AGRICULTURAL
PROPOSED USE:	MIXED-USE RESIDENTIAL
TOTAL MIXED USE:	±15,000 SF
TOTAL RESIDENTIAL UNITS:	±146 DU MAX
TOTAL OPEN SPACE:	±11.23 ACRES

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GRAPHIC SCALE
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(IN FEET)
1 inch = 80 ft.

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3000 RDU Center Dr. Suite 202
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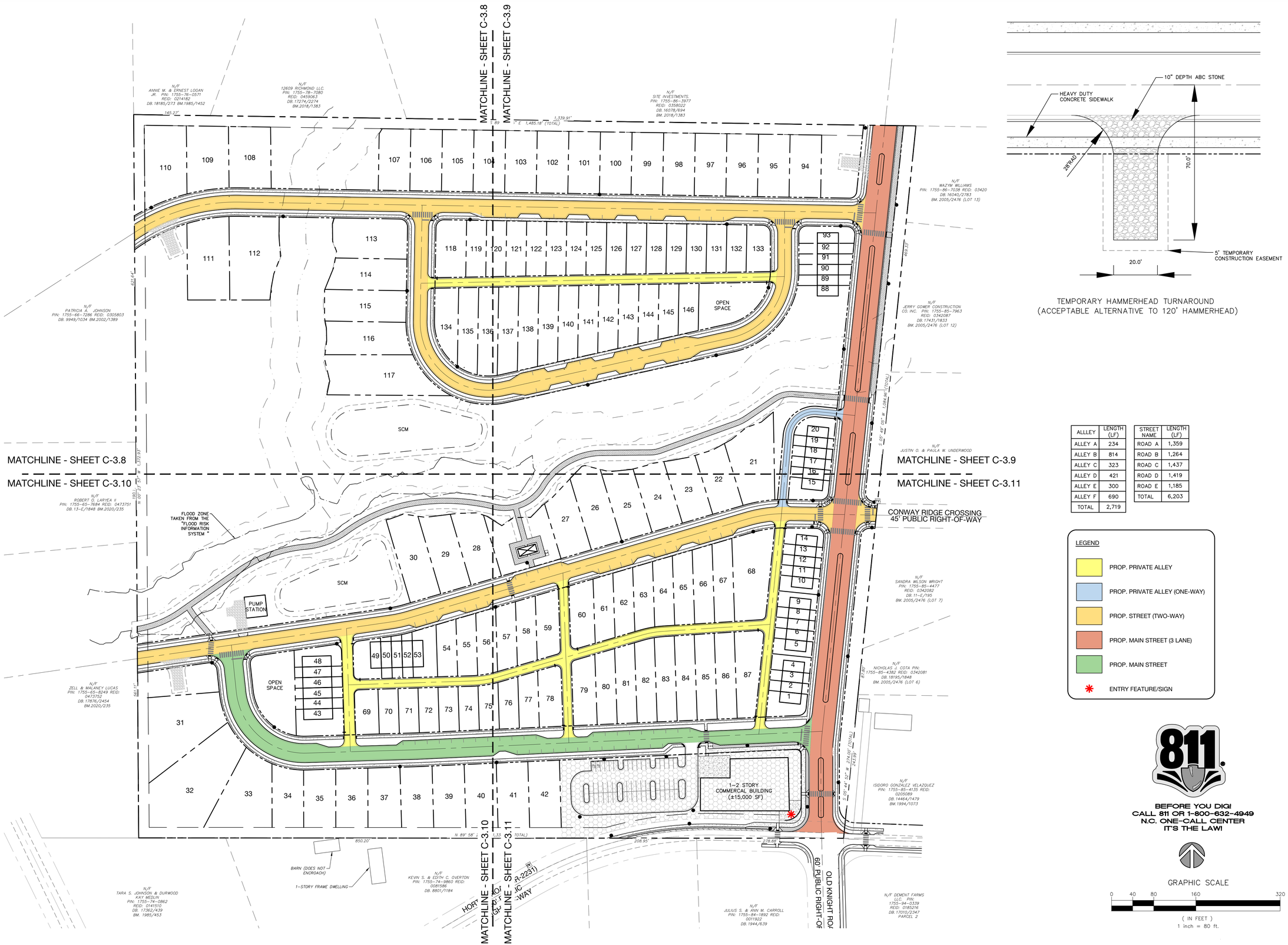
C-3.6



TEMPORARY HAMMERHEAD TURNAROUND
(ACCEPTABLE ALTERNATIVE TO 120' HAMMERHEAD)

ALLLEY	LENGTH (LF)
ALLEY A	234
ALLEY B	814
ALLEY C	323
ALLEY D	421
ALLEY E	300
ALLEY F	690
TOTAL	2,719

STREET NAME	LENGTH (LF)
ROAD A	1,359
ROAD B	1,264
ROAD C	1,437
ROAD D	1,419
ROAD E	1,185
TOTAL	6,203

LEGEND

- PROP. PRIVATE ALLEY
- PROP. PRIVATE ALLEY (ONE-WAY)
- PROP. STREET (TWO-WAY)
- PROP. MAIN STREET (3 LANE)
- PROP. MAIN STREET
- ENTRY FEATURE/SIGN

811

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Weldon
Master Plan
Overall Signage & Marking Plan
0 Lucas Rd., Knightdale, NC 27545

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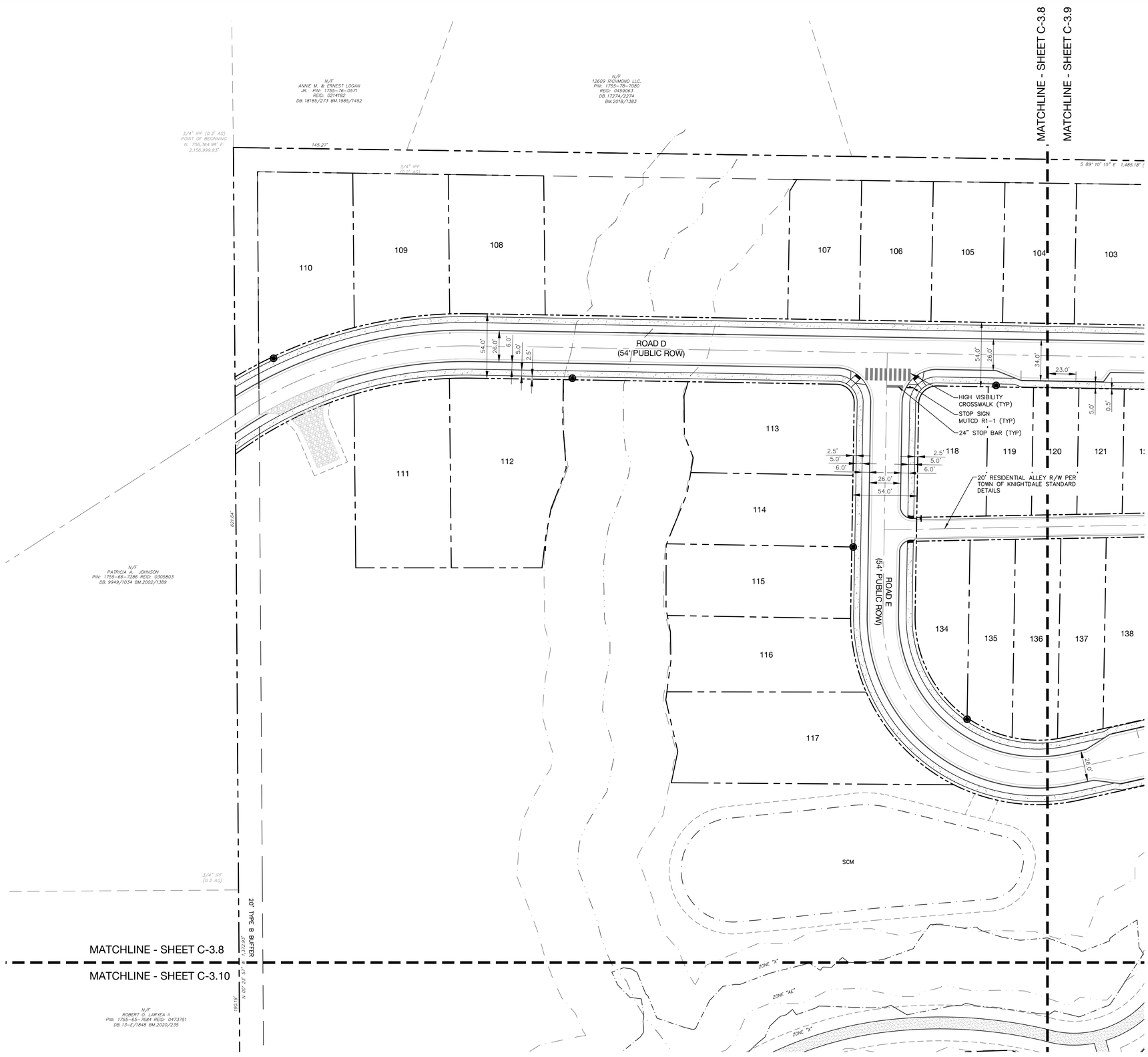
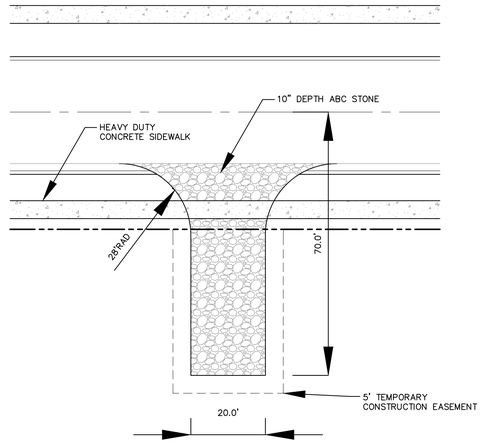
C-3.7





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(ACCEPTABLE ALTERNATIVE TO 120' HAMMERHEAD)

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(IN FEET)
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Signage & Marking Plan Enlargement
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C-3.8

MATCHLINE - SHEET C-3.8

MATCHLINE - SHEET C-3.9

N/F
SITE INVESTMENTS
PIN: 1755-86-3977
REID: 0358022
DB. 16078/694
BM. 2018/1383

1,339.91'
S 89° 10' 15" E 1,485.18' (TOTAL)

20' TYPE B BUFFER

05 104 103 102 101 100 99 98 97 96 95

HIGH VISIBILITY CROSSWALK (TYP)

24" STOP BAR (TYP)

STOP SIGN MUTCD R1-1 (TYP)

ROAD D
(54' PUBLIC ROW)

54.0' 26.0' 34.0' 23.0' 5.0' 0.5'

119 120 121 122 123 124 125 126 127 128 129 130 131 132 133

ROAD E
(54' PUBLIC ROW)

93 92 91 90 89 88

16.0' 20.0'

ALLEY F

135 136 137 138 139 140 141 142 143 144 145 146

OPEN SPACE

STOP SIGN MUTCD R1-1 (TYP)

20' RESIDENTIAL ALLEY R/W PER TOWN OF KNIGHTDALE STANDARD DETAILS

ROAD E
(54' PUBLIC ROW)

8.0' 26.0' 54.0' 42.0' 26.0' 8.0' 5.0' 0.5'

4" WHITE LINE FOR PARALLEL PARKING (TYP)

N/F
WAZYM WILL
PIN: 1755-86-7038
DB. 16040/
BM. 2005/2476

HIGH VISIBILITY CROSSWALK (TYP)

24" STOP BAR (TYP)

STOP SIGN MUTCD R1-1 (TYP)

20' TYPE B BUFFER

10' ASPHALT GREENWAY

70.0' 45.0' 4.0' 5.0' 3.0' 10.0' 1.5' 0.5'

ROAD A
(70' PUBLIC ROW)

N/F
JERRY GOWER CONSTRUCTION CO. INC.
PIN: 1755-85-7963
REID: 0342087
DB.17431/1833
BM. 2005/2476 (LOT 12)

HIGH VISIBILITY CROSSWALK (TYP)

STOP SIGN MUTCD R1-1 (TYP)

ALLEY E

S 05° 49' 05" W 1,084.40' (TOTAL)

20 19 18 17 16 15

20.0' 12.0'

ALLEY D

21 22 23 24 25 26

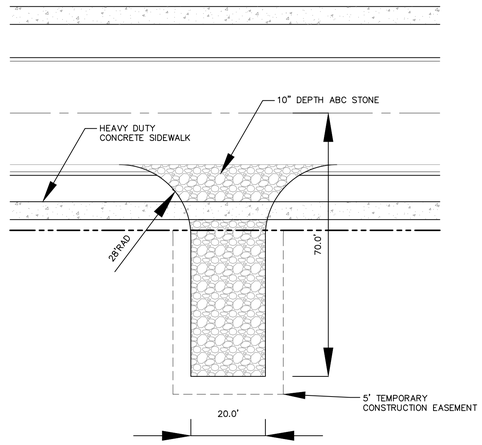
N/F
JUSTIN O. & PAULA W. UNDERWOOD
PIN: 1755-85-4784 REID: 0342083
DB.14023/1922
BM. 2005/2476 (LOT 8)

MATCHLINE - SHEET C-3.9

MATCHLINE - SHEET C-3.11

ROAD C

CONWAY RIDGE CROSSING



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(ACCEPTABLE ALTERNATIVE TO 120' HAMMERHEAD)

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ROAD E	1,185
TOTAL	6,203

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GRAPHIC SCALE

0 20 40 80 160

(IN FEET)
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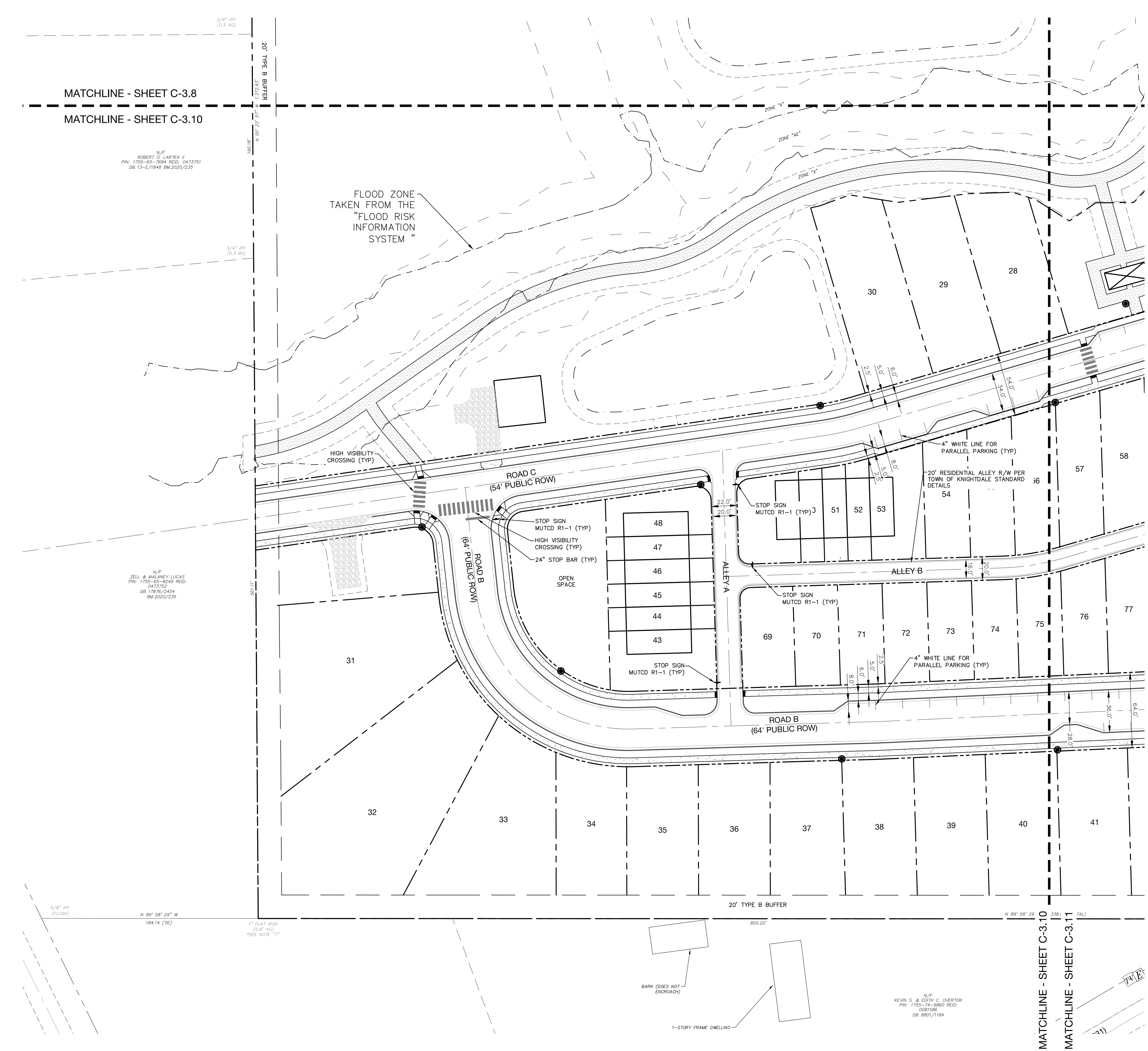
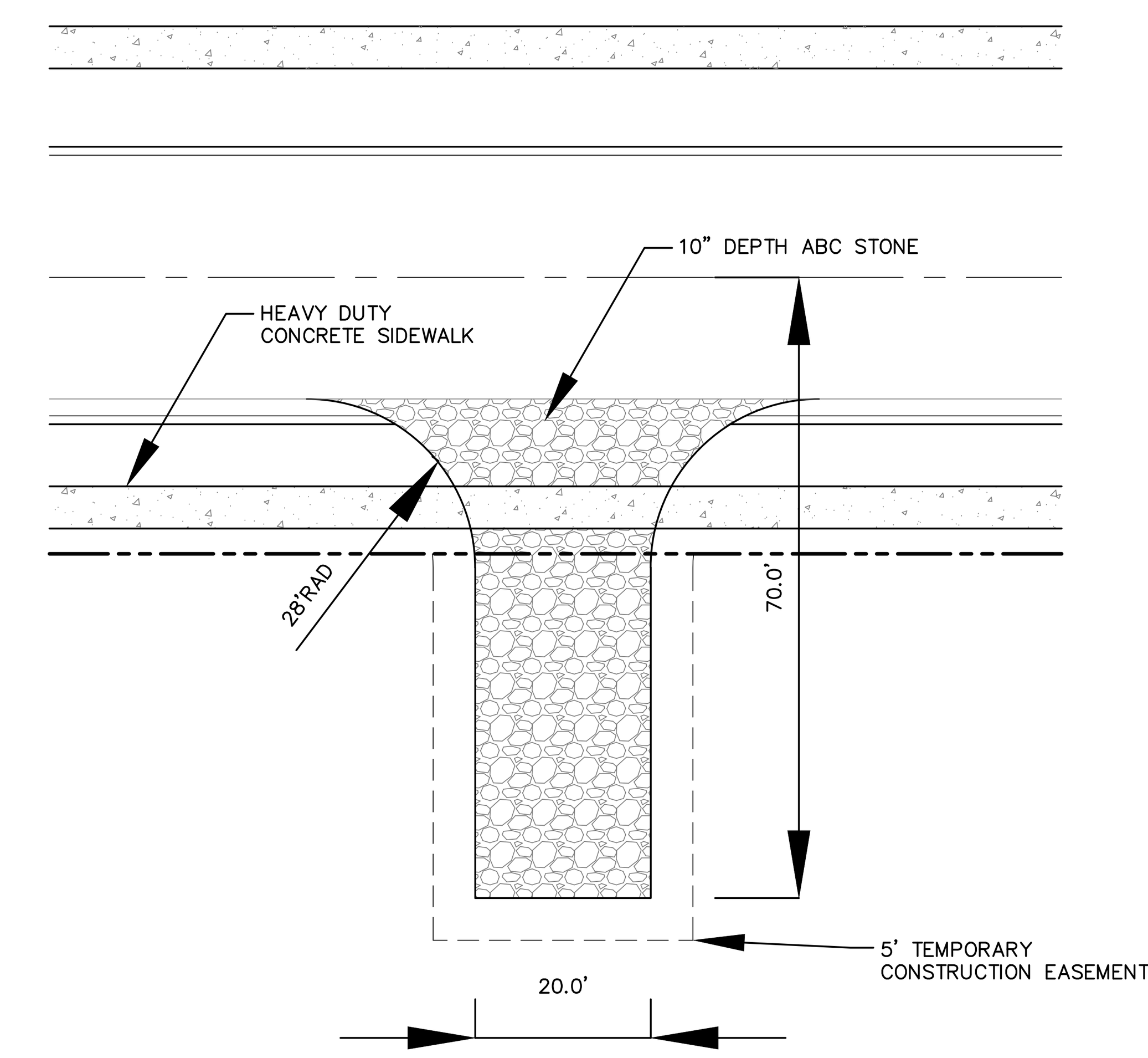


MATCHLINE - SHEET C-3.8
MATCHLINE - SHEET C-3.10
20' TYPE B BUFFER
N/F
ROBERT D. LARYEA II
FLOOD ZONE TAKEN FROM THE "FLOOD RISK INFORMATION SYSTEM "
ZONE "X"
ZONE "AE"
HIGH VISIBILITY CROSSING (TYP)
ROAD C
(54' PUBLIC ROW)
ROAD B
(64' PUBLIC ROW)
STOP SIGN MUTCD R1-1 (TYP)
HIGH VISIBILITY CROSSING (TYP)
24" STOP BAR (TYP)
OPEN SPACE
ALLEY A
ALLEY B
4" WHITE LINE FOR PARALLEL PARKING (TYP)
20' RESIDENTIAL ALLEY R/W PER TOWN OF KNIGHTDALE STANDARD DETAILS
N/F
ZELL & MALANEY LUCAS
30
29
28
57
58
54
51
52
53
48
47
46
45
44
43
69
70
71
72
73
74
75
76
77
31
32
33
34
35
36
37
38
39
40
41
22.0'
20.0'
54.0'
34.0'
36.0'
64.0'
28.0'
16.0'
20.0'
8.0'
6.0'
5.0'
2.5'
20' TYPE B BUFFER
N 89° 58' 29" W
184.14 (TIE)
850.20'
BARN (DOES NOT ENCROACH)
1-STORY FRAME DWELLING
N/F
KEVIN S. & EDITH C. OVERTON
MATCHLINE - SHEET C-3.10
MATCHLINE - SHEET C-3.11



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p 919.275.5002
urbandesignpartners.com
nc firm no: P-2671 sc coa no: C-03044

PRELIMINARY DRAWING
FOR REVIEW PURPOSES ONLY

03/02/2023

DRB Homes
3000 RDU Center Dr. Suite 202
Morrisville, NC 27560

Weldon
Master Plan
Signage & Marking Plan Enlargement
0 Lucas Rd., Knightdale, NC 27545

NO.	DATE:	BY:	REVISIONS:

Project No: 22-RDU-030
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Checked By: BAR
Sheet No:
C-3.10

MATCHLINE - SHEET C-3.12

MATCHLINE - SHEET C-3.14

MATCHLINE - SHEET C-3.13

MATCHLINE - SHEET C-3.14

ROAD C
(54' PUBLIC ROW)

ROAD B
(64' PUBLIC ROW)

ROAD A
(70' PUBLIC ROW)

CONWAY RIDGE CROSSING
45' PUBLIC RIGHT-OF-WAY

ALLEY A

ALLEY B

ALLEY C

ALLEY D

ALLEY E

ALLEY F

SINGLE USE RETAIL OUTPARCEL
± 1.4 AC

1-2 STORY
COMMERCIAL BUILDING
(±15,000 SF)

20' TYPE B BUFFER

N/F
JUSTIN O. & PAULA W. UNDERWOOD
PIN: 1755-85-4784 REID: 0342083
DB.14023/1922
BM. 2005/2476 (LOT 8)

N/F
SANDRA WILSON WRIGHT
PIN: 1755-85-4477
REID: 0342082
DB.11-E/7195
BM. 2005/2476 (LOT 7)

N/F
NICHOLAS J. COTA PIN:
1755-85-4382 REID: 0342081
DB.18195/1848
BM. 2005/2476 (LOT 6)

N/F
ISIDORO GONZALEZ VELAZQUEZ
PIN: 1755-85-4135 REID:
0205089
DB.14464/1479
BM.1994/1073

HIGH VISIBILITY CROSSWALK (TYP)

STOP SIGN MUTCD R1-1 (TYP)

24" STOP BAR (TYP)

4" WHITE LINE FOR PARALLEL PARKING (TYP)

20' RESIDENTIAL ALLEY R/W PER TOWN OF KNIGHTDALE STANDARD DETAILS

ENTRY FEATURE/SIGN

ALLLEY	LENGTH (LF)
ALLEY A	234
ALLEY B	814
ALLEY C	323
ALLEY D	421
ALLEY E	300
ALLEY F	690
TOTAL	2,719

STREET NAME	LENGTH (LF)
ROAD A	1,359
ROAD B	1,264
ROAD C	1,437
ROAD D	1,419
ROAD E	1,185
TOTAL	6,203

LEGEND

* ENTRY FEATURE/SIGN

BEFORE YOU DIG!
CALL 811 OR 1-800-632-4949
N.C. ONE-CALL CENTER
IT'S THE LAW!

GRAPHIC SCALE

0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

URBAN DESIGN PARTNERS
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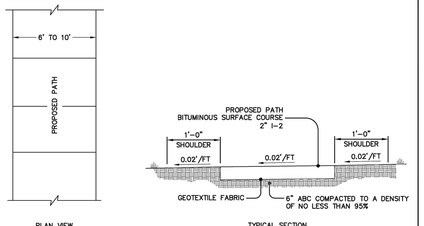


PLAN VIEW

TYPICAL SECTION

NOTES:

1. CROSS SLOPE DIRECTION VARIES. SEE LAYOUT PLANS FOR DIRECTION OF SLOPE.
2. CONTRACTOR IS RESPONSIBLE FOR REESTABLISHING ALL SLOPES DISTURBED BY CONSTRUCTION.

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	STANDARD MULTI-USE PATH GREENWAY	STD. NO. 4.09

TOWN OF KNIGHTDALE STANDARD DETAILS

MAIN STREET SECTION

STD. NO. 3.03

REVISIONS: DATE | DESCRIPTION

STREET FEATURES:

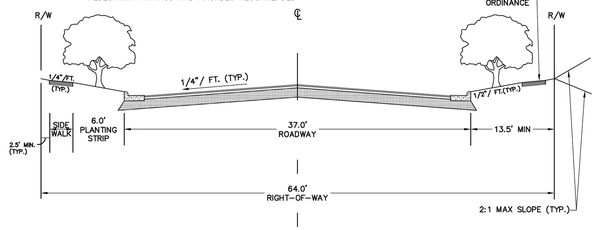
TRAVEL LANES OF 10 FT. MINIMUM
CURB & GUTTER
STRIPED PARKING IN MIXED USE AND COMMERCIAL AREAS
PLANTING STRIPS – 6 FT. ON EACH SIDE
SIDEWALKS – 5 TO 6 FT. ON EACH SIDE
(FOR SIDEWALKS >5 FT. EXTEND TO ℄ OF STREET)
REQUIRES 64 FT. OF RIGHT-OF-WAY
UTILITY LOCATION UNDERGROUND OR ALLEY
AVERAGE SPEED 20-25 MPH
INCLUDES BULBOUTS AT INTERSECTIONS AND MIDBLOCK

BUILDINGS & LAND USE:

COMMERCIAL AND MIXED USE
MAJOR ROADWAY IN NEIGHBORHOODS
CONSISTENT BUILDING LINE RECOMMENDED
BUILDINGS NEXT TO SIDEWALK
PEDESTRIAN AWNINGS AND ARCADES RECOMMENDED

MINIMUM PAVEMENT DESIGN:

BITUMINOUS SURFACE COURSE: 1 1/2" S 9.5B
INTERMEDIATE COURSE: 2 1/2" I 19.0B
BASE COURSE: 8" ABC



NO SCALE

NOTE: ON-STREET PARKING UTILIZIED. SEE STREET FEATURES LISTED IN DETAIL ABOVE.

TOWN OF KNIGHTDALE STANDARD DETAILS

ALLEY SECTION

STD. NO. 3.01

REVISIONS: DATE | DESCRIPTION

STREET FEATURES:

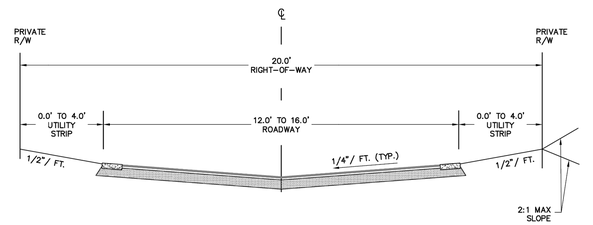
STREET WIDTH OF 12 FT. MINIMUM, 16 FT. DESIRABLE
REQUIRES 20 FT. OF RIGHT-OF-WAY
UTILITY LOCATION UNDERGROUND
TWO TO SIX BLOCKS LONG
AVERAGE SPEED OF 10 MPH

BUILDINGS & LAND USE:

RESIDENTIAL – PRIMARILY SINGLE FAMILY
COMMERCIAL

MINIMUM PAVEMENT DESIGN:

BITUMINOUS SURFACE COURSE: 2-½" S 9.5A
BASE COURSE: 8" ABC



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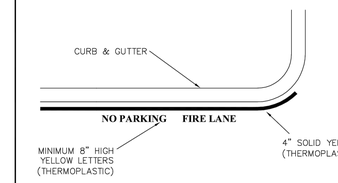
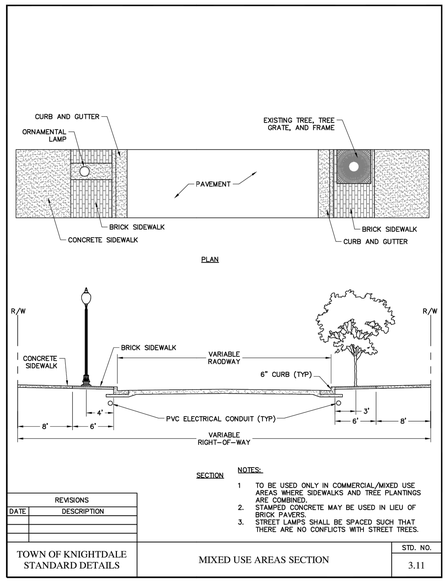


TYPICAL FIRE LANE PAVEMENT MARKING DETAIL

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	FIRE LANE PAVEMENT MARKING	STD. NO. 3.31



PLAN

SECTION

NOTES:

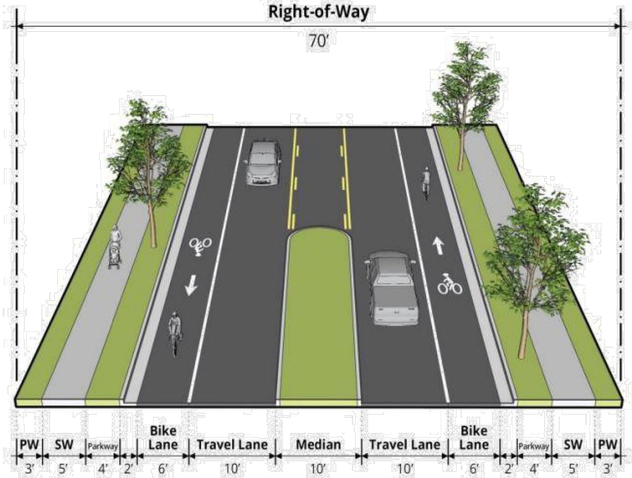
1. TO BE USED ONLY IN COMMERCIAL/MIXED USE AREAS WHERE SIDEWALKS AND TREE PLANTINGS ARE COMBINED.
2. STAMPED CONCRETE MAY BE USED IN LIEU OF BRICK PAVERS.
3. STREET LAMPS SHALL BE SPACED SUCH THAT THERE ARE NO CONFLICTS WITH STREET TREES.

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	MIXED USE AREAS SECTION	STD. NO. 3.11

Main Street – 3-lanes

Bike Lanes



70' ROW

TOWN OF KNIGHTDALE STANDARD DETAILS

LOCAL STREET SECTION (TWO WAY)

STD. NO. 3.02

2 OF 2

REVISIONS: DATE | DESCRIPTION

STREET FEATURES:

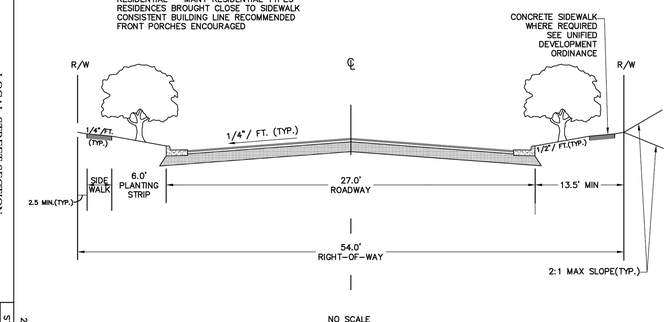
FLEXIBLE STREET DESIGN
COORDINATE STREET DESIGN ELEMENTS WITH TOWN STAFF
STREET WIDTH OF 27 FT. FOR TWO-WAY
CURB & GUTTER
INFORMAL PARKING
PLANTING STRIPS – 6 FT. ON EACH SIDE
SIDEWALKS – 5 FT. ON EACH SIDE
REQUIRES 54 FT. OF RIGHT-OF-WAY – TWO WAY
UTILITY LOCATION UNDERGROUND OR ALLEY
TWO TO SIX BLOCKS LONG
AVERAGE SPEED 20-25 MPH

BUILDINGS & LAND USE:

RESIDENTIAL – MANY RESIDENTIAL TYPES
RESIDENCES BROUGHT CLOSE TO SIDEWALK
CONSISTENT BUILDING LINE RECOMMENDED
FRONT PORCHES ENCOURAGED

MINIMUM PAVEMENT DESIGN:

BITUMINOUS SURFACE COURSE: 2-½" S 9.5A
BASE COURSE: 8" ABC



NO SCALE

URBAN DESIGN PARTNERS
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03/02/2023

DRB Homes
3000 RDU Center Dr. Suite 202
Morrisville, NC 27560

Weldon Master Plan

Street Sections

0 Lucas Rd., Knightdale, NC 27545

NO. DATE: BY: REVISIONS:

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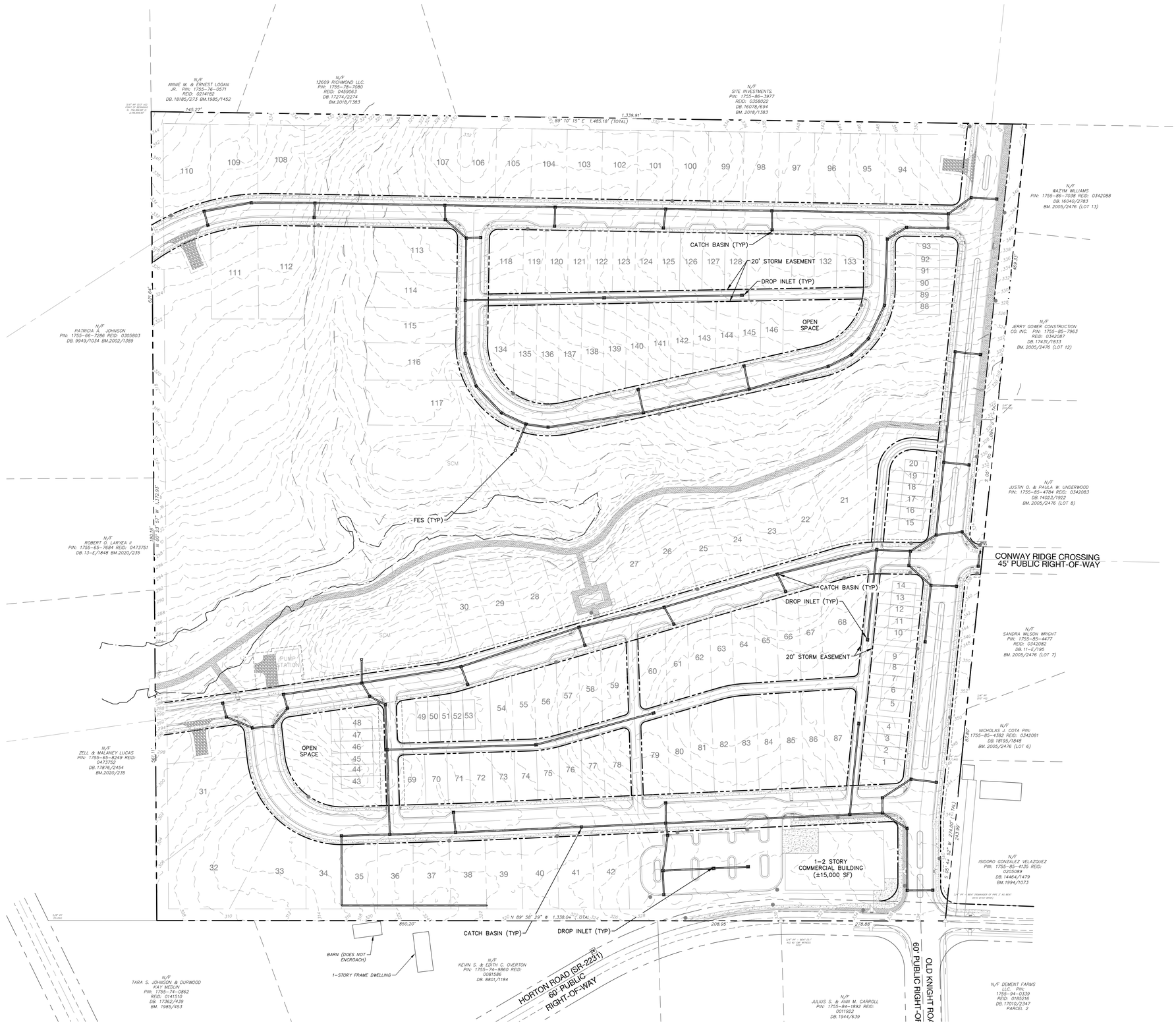

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GRAPHIC SCALE

0 40 80 160 320

(IN FEET)
1 inch = 80 ft.

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DRB Homes
3000 RDU Center Dr. Suite 202
Morrisville, NC 27560

Weldon
Master Plan
Overall Storm Drainage Plan
0 Lucas Rd., Knightdale, NC 27545

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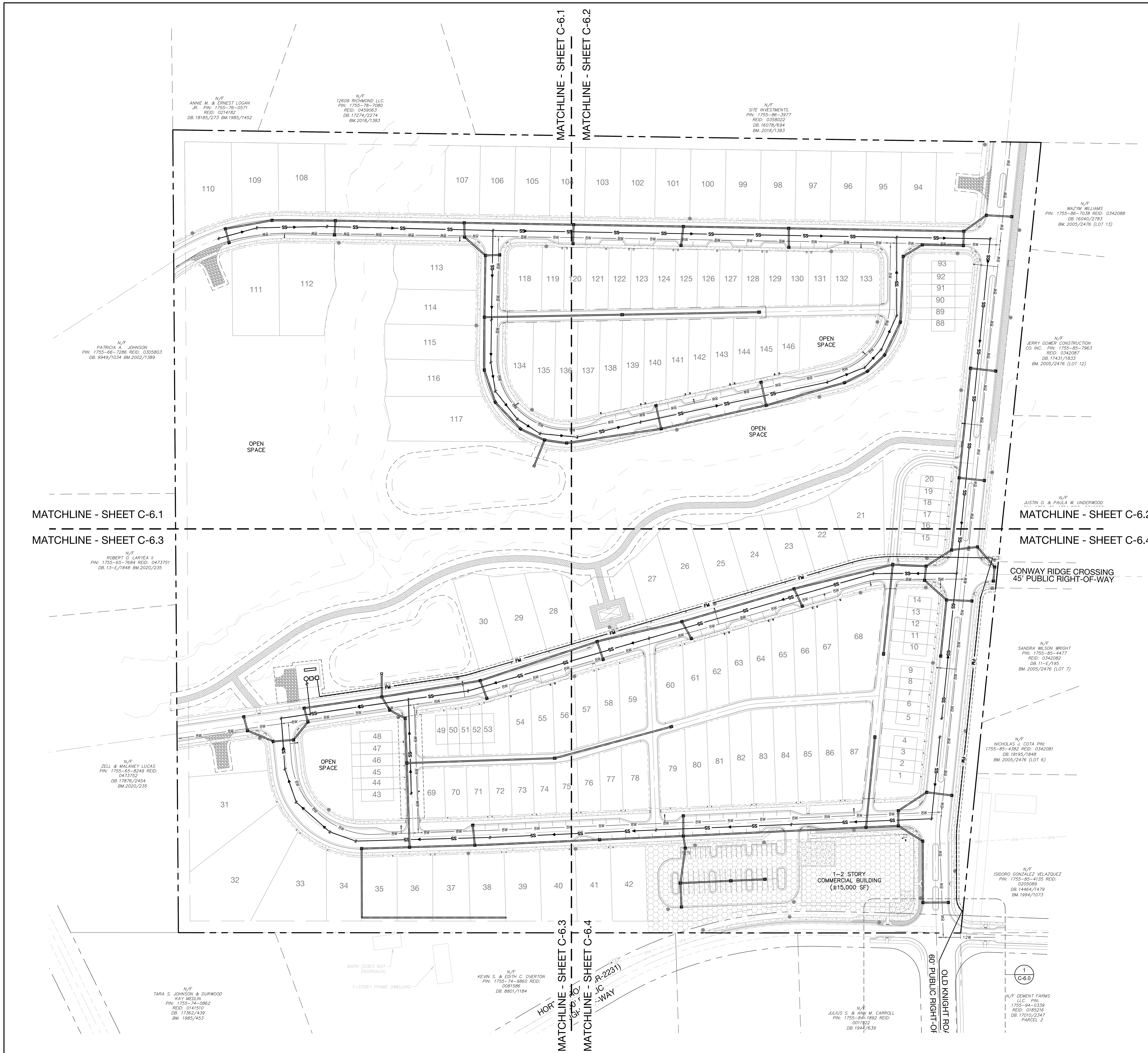
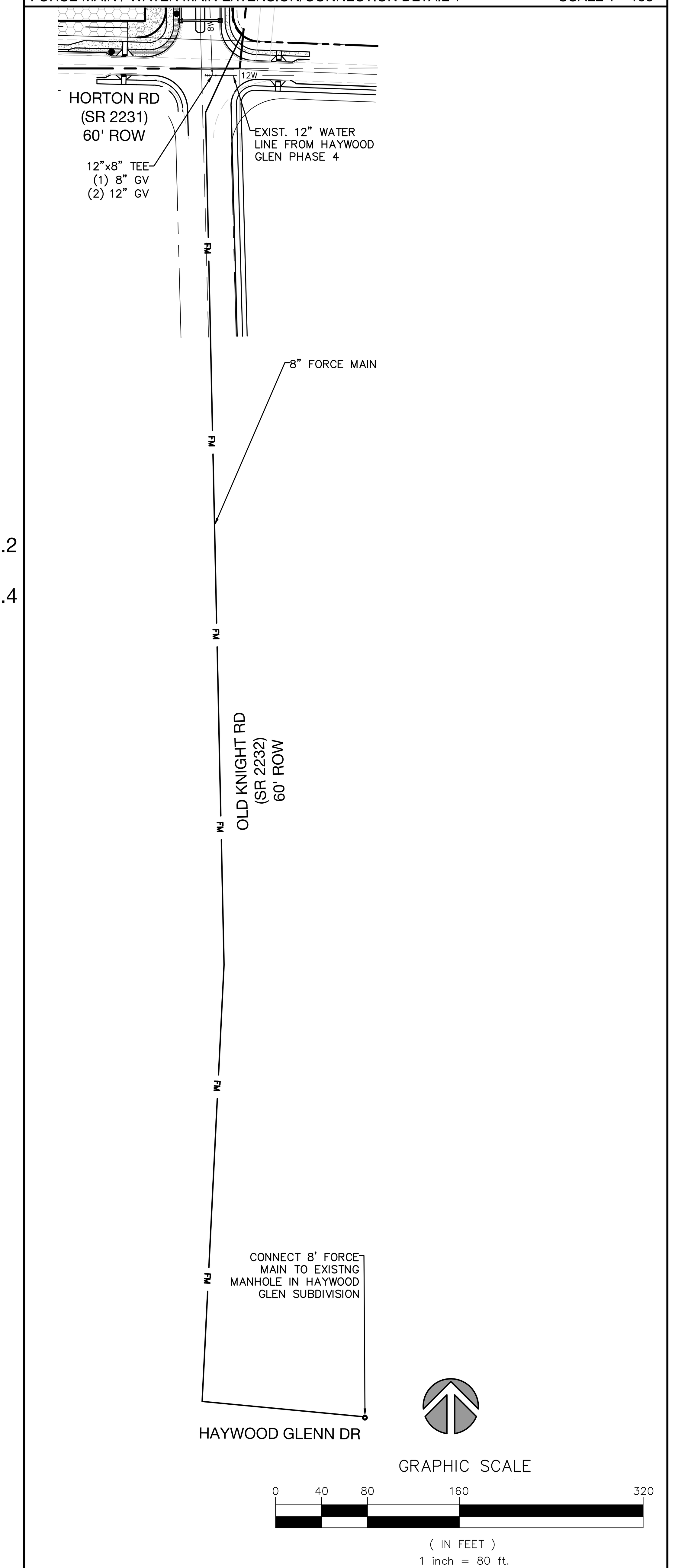


WATER ALLOCATION POLICY

MAJOR SUBDIVISION	
Major Subdivision base points	15 pts.
Residential architectural standards	15 pts.
Construct a fountain within the BMP	4 pts.
Deck/Patio (3,000 sf)	3 pts.
Provision of on-street public parking	4 pts.
IPEMA certified playground equipment	4 pts.
Outdoor display of public art	4 pts.
Conservation of Natural Habitat ± 2 acres	2 pts.
TOTAL	**51 pts.**

SINGLE USE RETAIL	
Single use retail base points	41 pts.
Outdoor display of public art	4 pts.
Deck/patio (3,000 sf)	3 pts.
Provision of on-street public parking	4 pts.
TOTAL	**52 pts.**

FORCE MAIN / WATER MAIN EXTENSION/CONNECTION DETAIL 1 SCALE 1"=100'



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DRB Homes
3000 RDU Center Dr. Suite 202
Morrisville, NC 27560

Weldon
Master Plan
Overall Utility Plan
0 Lucas Rd., Knightdale, NC 27545

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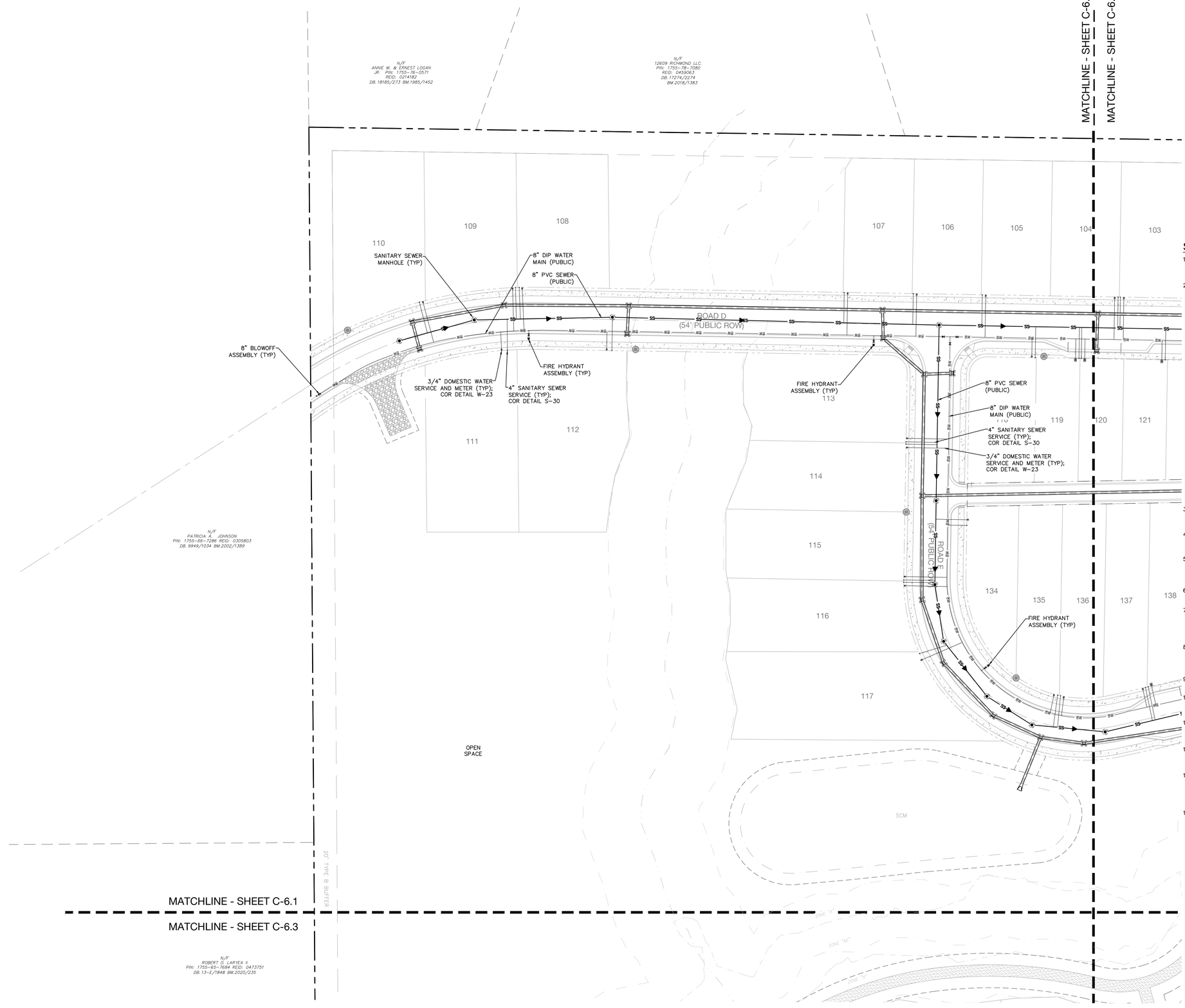

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STANDARD UTILITY NOTES (AS APPLICABLE):

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 SOURCE 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 AND 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 18"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. DEVELOPER SHALL PROVIDE 30 DAYS ADVANCE WRITTEN NOTICE TO OWNER FOR ANY WORK REQUIRED WITH AN EXISTING CITY OF RALEIGH UTILITY EASEMENT TRAVERSING PRIVATE PROPERTY.
5. 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
6. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCEMAINS. 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS
7. 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.
8. INSTALL 1"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.
9. INSTALL 4" PVC SEWER SERVICES @ 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE & SPACED EVERY 75 LINEAR FEET MAXIMUM
10. 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
11. 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.
12. NCDOT / RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION
13. GREASE INTERCEPTOR / OIL WATER SEPARATOR SIZING CALCULATIONS & INSTALLATION SPECIFICATIONS SHALL BE APPROVED BY THE CORPUD FOG PROGRAM COORDINATOR PRIOR TO ISSUANCE OF A BUILDING PERMIT. CONTACT STEPHEN CALVERLEY AT (919) 996-2334 OR STEPHEN.CALVERLEY@RALEIGHNC.GOV FOR MORE INFORMATION
14. CROSS-CONNECTION CONTROL PROTECTION 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 ACCORDANCE 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.

GRAPHIC SCALE
0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

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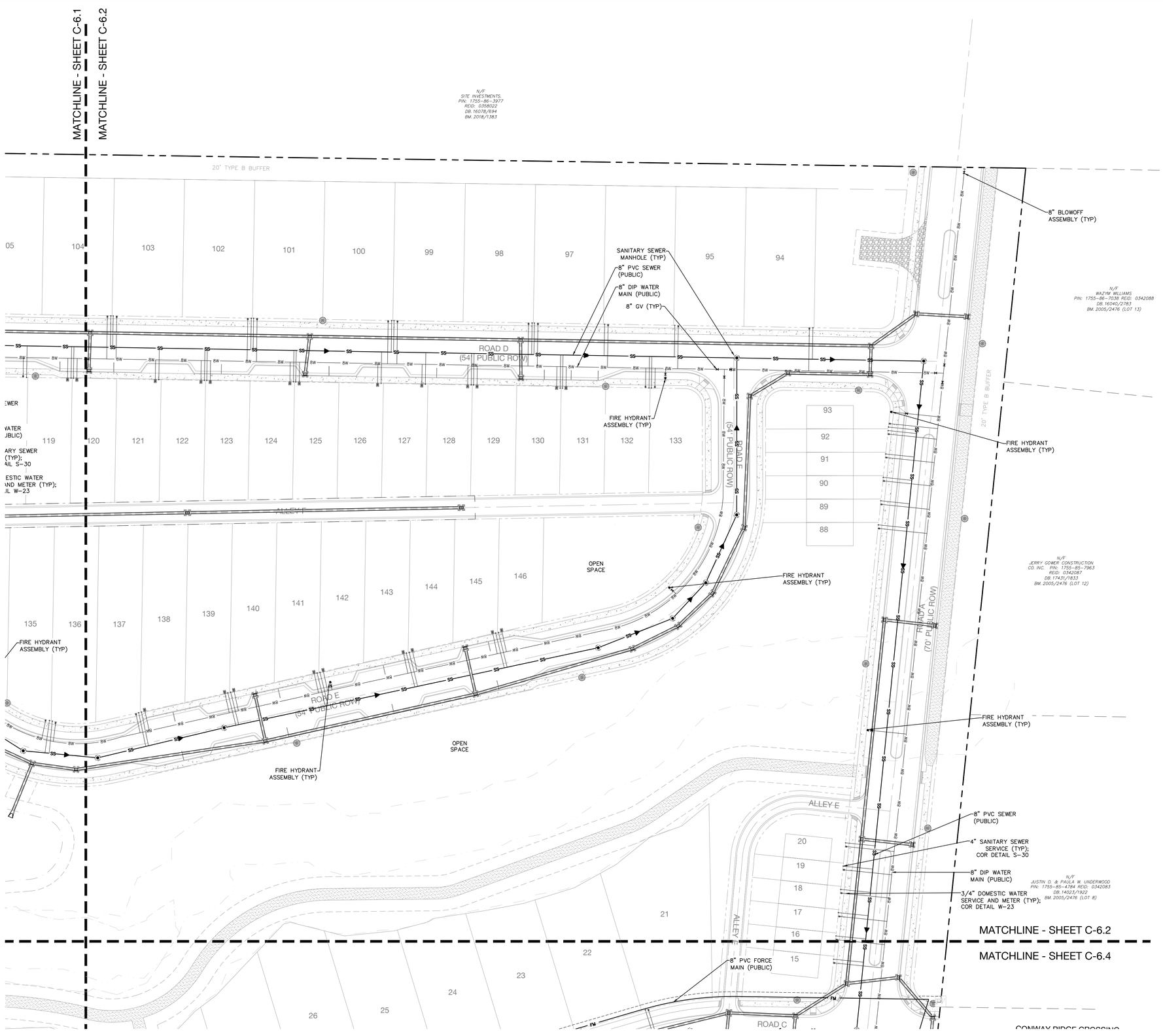

WATER ALLOCATION POLICY

MAJOR SUBDIVISION	
Major Subdivision base points	15 pts.
Residential architectural standards	15 pts.
Construct a fountain within the BMP	4 pts.
Deck/Patio (3,000 sf)	3 pts.
Provision of on-street public parking	4 pts.
IPEMA certified playground equipment	4 pts.
Outdoor display of public art	4 pts.
Conservation of Natural Habitat ± 2 acres	2 pts.
TOTAL	**51 pts.**

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TOTAL	**52 pts.**

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2. UTILITY SEPARATION REQUIREMENTS:
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   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 AND 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 18"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. DEVELOPER SHALL PROVIDE 30 DAYS ADVANCE WRITTEN NOTICE TO OWNER FOR ANY WORK REQUIRED WITH AN EXISTING CITY OF RALEIGH UTILITY EASEMENT TRAVERSING PRIVATE PROPERTY.

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6. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCEMAINS. 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS

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8. INSTALL 1"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.

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

10. 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

11. 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.

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13. GREASE INTERCEPTOR / OIL WATER SEPARATOR SIZING CALCULATIONS & INSTALLATION SPECIFICATIONS SHALL BE APPROVED BY THE CORPUD FOG PROGRAM COORDINATOR PRIOR TO ISSUANCE OF A BUILDING PERMIT. CONTACT STEPHEN CALVERLEY AT (919) 996-2334 OR STEPHEN.CALVERLEY@RALEIGHNC.GOV FOR MORE INFORMATION

14. CROSS-CONNECTION CONTROL PROTECTION 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 ACCORDANCE 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.

GRAPHIC SCALE

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(IN FEET)
1 inch = 40 ft.

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03/02/2023

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Weldon Master Plan

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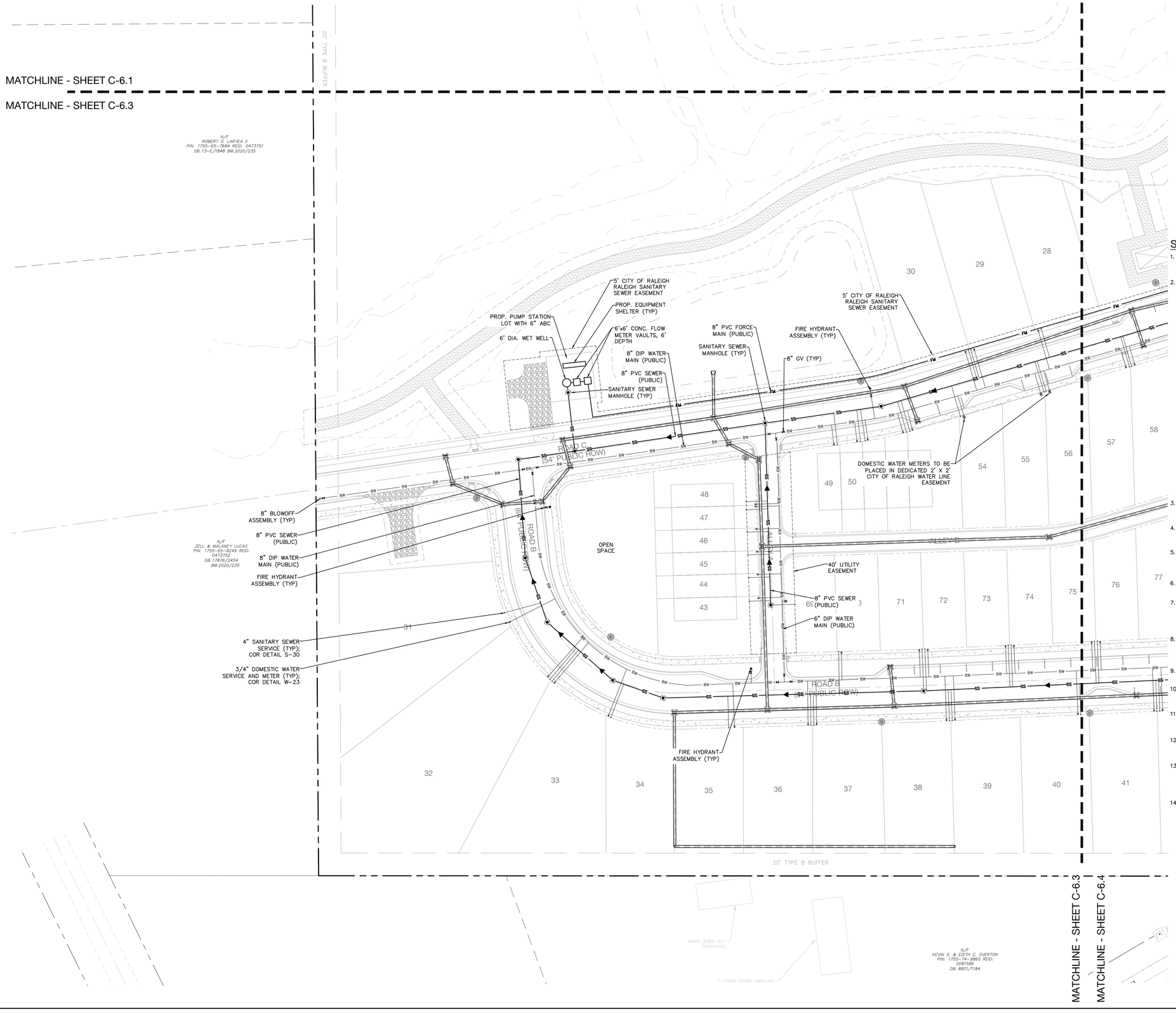
MATCHLINE - SHEET C-6.1

MATCHLINE - SHEET C-6.3



WATER ALLOCATION POLICY

MAJOR SUBDIVISION	
Major Subdivision base points	15 pts.
Residential architectural standards	15 pts.
Construct a fountain within the BMP	4 pts.
Deck/Patio (3,000 sf)	3 pts.
Provision of on-street public parking	4 pts.
IPEMA certified playground equipment	4 pts.
Outdoor display of public art	4 pts.
Conservation of Natural Habitat ± 2 acres	2 pts.
TOTAL	**51 pts.**

SINGLE USE RETAIL	
Single use retail base points	41 pts.
Outdoor display of public art	4 pts.
Deck/patio (3,000 sf)	3 pts.
Provision of on-street public parking	4 pts.
TOTAL	**52 pts.**

STANDARD UTILITY NOTES (AS APPLICABLE):

1. ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH DESIGN STANDARDS, DETAILS & SPECIFICATIONS (REFERENCE: CORPUD HANDBOOK, CURRENT EDITION)
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   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 AND MUST BE APPROVED BY THE PUBLIC UTILITIES DIRECTOR. ALL DISTANCES ARE MEASURED FROM OUTSIDE DIAMETER TO OUTSIDE DIAMETER

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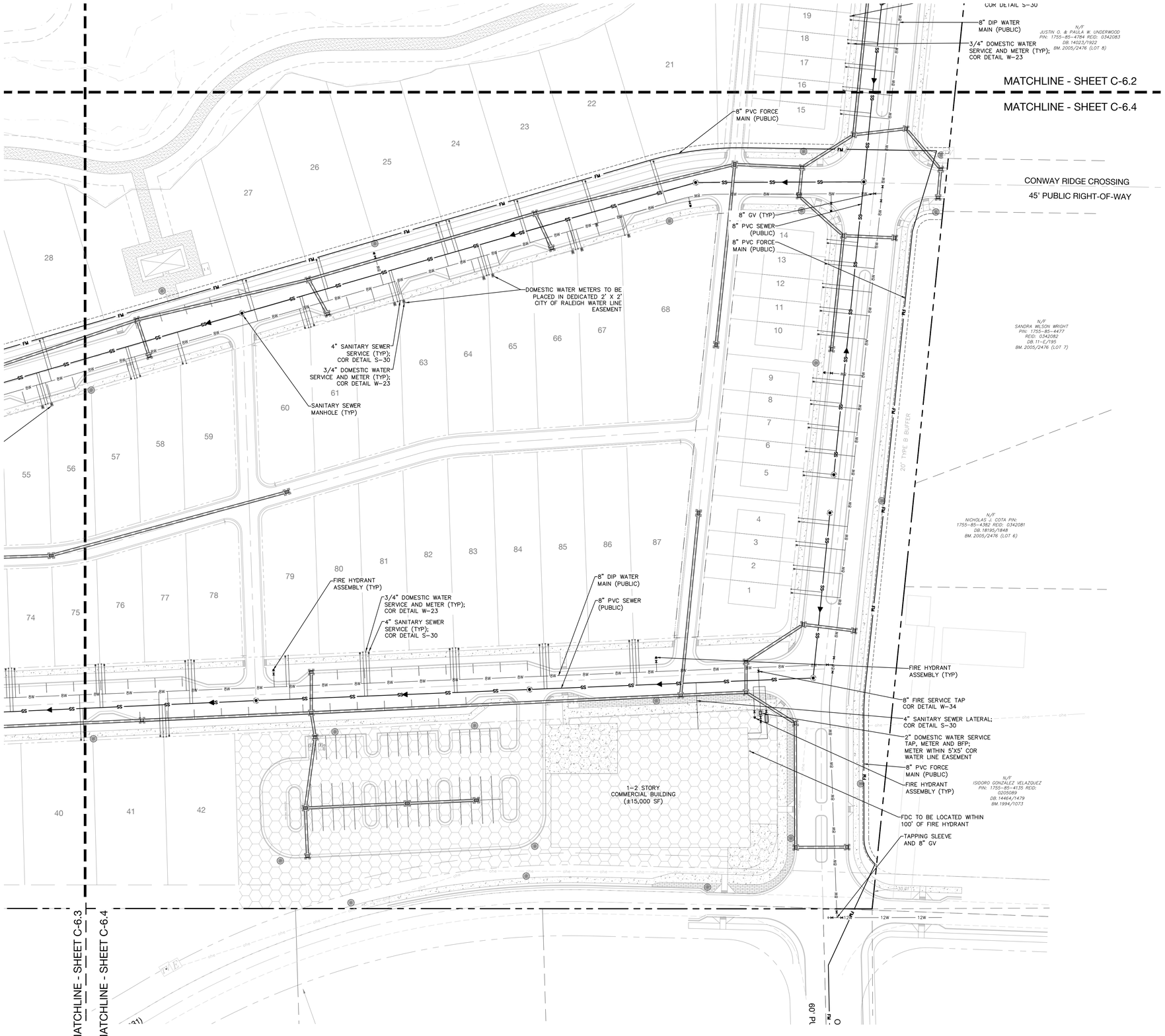

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PLANT SCHEDULE SITE PLANTINGS

TREES	CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL	SIZE
	AS	9	ACER BUERGERIANUM 'STREETWISE' / STREETWISE® TRIDENT MAPLE	B & B	1.25"CAL	6' MIN.
	AL	88	ACER SACCHARUM 'LEGACY' / LEGACY SUGAR MAPLE	B & B	2"CAL	8'-10' HT
	CB	6	CEDRUS ATLANTICA 'GLAUCA' / BLUE ATLAS CEDAR	B & B	2"CAL	8'-10' HT
	MB	9	MAGNOLIA GRANDIFLORA 'BRACKENS BROWN BEAUTY' / BRACKEN'S BEAUTY SOUTHERN MAGNOLIA	B & B	1.25"CAL	6' MIN.
	QA	106	QUERCUS ACUTISSIMA / SAWTOOTH OAK	B & B	2"CAL	8'-10' HT
	ZG	52	ZELKOVA SERRATA 'GREEN VASE' / GREEN VASE SAWLEAF ZELKOVA	B & B	2"CAL	8'-10' HT

SHRUBS	CODE	QTY	BOTANICAL / COMMON NAME	CONT	MIN HEIGHT	MIN WIDTH
	IC	43	ILEX CORNUTA 'CARISSA' / CARISSA CHINESE HOLLY	3 GAL	12" MIN.	18"
	MP	22	MYRICA PENSYLVANICA / NORTHERN BAYBERRY	3 GAL	12" MIN.	18"
	SJ	2	SPIRAEA JAPONICA / JAPANESE SPIREA	3 GAL	12" MIN.	18"

PLANT SCHEDULE BUFFER PLANTINGS

TREES	CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL	SIZE
	CB	10	CEDRUS ATLANTICA 'GLAUCA' / BLUE ATLAS CEDAR	B & B	2"CAL	8'-10' HT
	CC	43	CERCIS CANADENSIS / EASTERN REDBUD	B & B	1.25"CAL	6' MIN.
	GK	87	GYMNOCLADUS DIOICA / KENTUCKY COFFEETREE	B & B	2"CAL	8' MIN
	MB	178	MAGNOLIA GRANDIFLORA 'BRACKENS BROWN BEAUTY' / BRACKEN'S BEAUTY SOUTHERN MAGNOLIA	B & B	1.25"CAL	6' MIN.
	QH	36	QUERCUS HEMISPHAERICA / LAUREL OAK	B & B	2"CAL	8'-10' HT

SHRUBS	CODE	QTY	BOTANICAL / COMMON NAME	CONT	MIN HEIGHT	MIN WIDTH
	IC	575	ILEX CORNUTA 'CARISSA' / CARISSA CHINESE HOLLY	3 GAL	12" MIN.	18"
	MP	45	MYRICA PENSYLVANICA / NORTHERN BAYBERRY	3 GAL	12" MIN.	18"
	SJ	286	SPIRAEA JAPONICA / JAPANESE SPIREA	3 GAL	12" MIN.	18"

XXX — PLANT CODE
XX — PLANT QUANTITY

NOTES:

1. PLANT SPECIES AND QUANTITIES SUBJECT TO CHANGE BASED ON MARKET AVAILABILITY AT TIME OF INSTALLATION.
2. IF GRAPHIC REPRESENTATION OF PLANTINGS ON PLANS DO NOT MATCH QUANTITIES IN PLANT SCHEDULE, GRAPHIC REPRESENTATION OF PLANTINGS WILL GOVERN.
3. TREES NOT IN A LANDSCAPE BED SHALL RECEIVE A 4' DIAMETER MULCH RING.
4. LIMITS OF IRRIGATION INCLUDE DENOTED LANDSCAPE BEDS, ALL SOD/SEED AREAS, AND TREES NOT LOCATED IN A LANDSCAPE BED.
5. SEE SHEET C-3.5 FOR OPEN SPACE PLANS.

LANDSCAPE REQUIREMENTS:

SCREENING:

1. ALL PARKING LOTS, TRASH FACILITIES, AND ABOVE GROUND UTILITIES MUST BE SCREENED FROM PUBLIC RIGHTS OF WAY AND ADJACENT PROPERTIES ACCORDING TO KNIGHTDALE UDO SEC. 7.5.
2. ANY REQUIRED SCREENING AREAS THAT OVERLAP WITH SIGHT DISTANCE TRIANGLES WILL WAIVE PLANTING REQUIREMENTS AND USE GROUNDCOVER PLANTINGS.
3. ALL SIDES OF PARKING LOTS FRONTING RIGHTS-OF-WAYS SHALL BE SCREENED WITH A TYPE A BUFFER YARD.
4. ABOVE GROUND UTILITIES AND TRASH FACILITIES SHALL BE SCREENED BY THE ELEMENTS OF A TYPE B BUFFER YARD THAT PERTAIN TO THE SEMI-OPAQUE SCREENS UP TO SIX FEET IN HEIGHT, OR THE HEIGHT OF THE UTILITY (WHICHEVER IS LESS).

20' TYPE B BUFFER YARD (TOWN OF KNIGHTDALE UDO SEC. 7.4.I.)

WIDTH:	20'
LINEAR FEET OF BUFFER:	± 4,415 LF
REQ'D CANOPY TREES:	3 TREES/100 LF
REQ'D UNDERSTORY TREES:	5 TREES/100 LF
REQ'D SHRUBS:	20 SHRUBS/100 LF
(4,415 LF/ 100 LF)(3) =	133 CANOPY TREES REQ'D
(4,415 LF/ 100 LF)(5) =	221 UNDERSTORY TREES REQ'D
(4,415 LF/100 LF)(20) =	883 SHRUBS REQ'D
PROVIDED PLANTING*:	133 CANOPY TREES PROP.
	221 UNDERSTORY TREES PROP.
	906 SHRUBS PROP.

*EXISTING VEGETATION WITHIN RIPARIAN BUFFER AND TREE SAVE AREA TO MEET BUFFER REQUIREMENT. PROPOSED LANDSCAPE SHALL BE SUPPLEMENTED PER THE DIRECTION OF THE URBAN FORESTER TO MEET INTENT OF BUFFER. FINAL LOCATION OF LANDSCAPE MATERIAL WITHIN TREE SAVE SHALL BE DETERMINED BY URBAN FORESTER.

STREET TREE PLANTINGS (TOWN OF KNIGHTDALE UDO SEC. 7.4.L.)

1. ALL STREET TREES SHALL BE PLANTED WITH A MINIMUM AVERAGE OF 40' ON CENTER UNLESS OTHERWISE SPECIFIED IN THE UDO.
2. THE SPECIES OF EVERY OTHER TREE ALONG A STREET FRONTAGE SHALL ALTERNATE IN ORDER TO MAXIMIZE SPECIES DIVERSITY.
3. STREET TREES SHALL BE PLACED AT LEAST TEN FEET FROM LIGHT POLES, AND TWELVE FEET FROM ELECTRICAL TRANSFORMERS IN ORDER FOR THESE UTILITIES TO BE SAFELY SERVICED.

INTERIOR PARKING LOT PLANTINGS (TOWN OF KNIGHTDALE UDO SEC. 7.4.J.)

1. ALL PARKING LOTS WITH MORE THAN SIXTEEN PARKING SPACES SHALL BE LANDSCAPED.
2. NO PARKING SPACE SHALL BE MORE THAN SIXTY FEET FROM THE BASE OF A DECIDUOUS CANOPY TREE.

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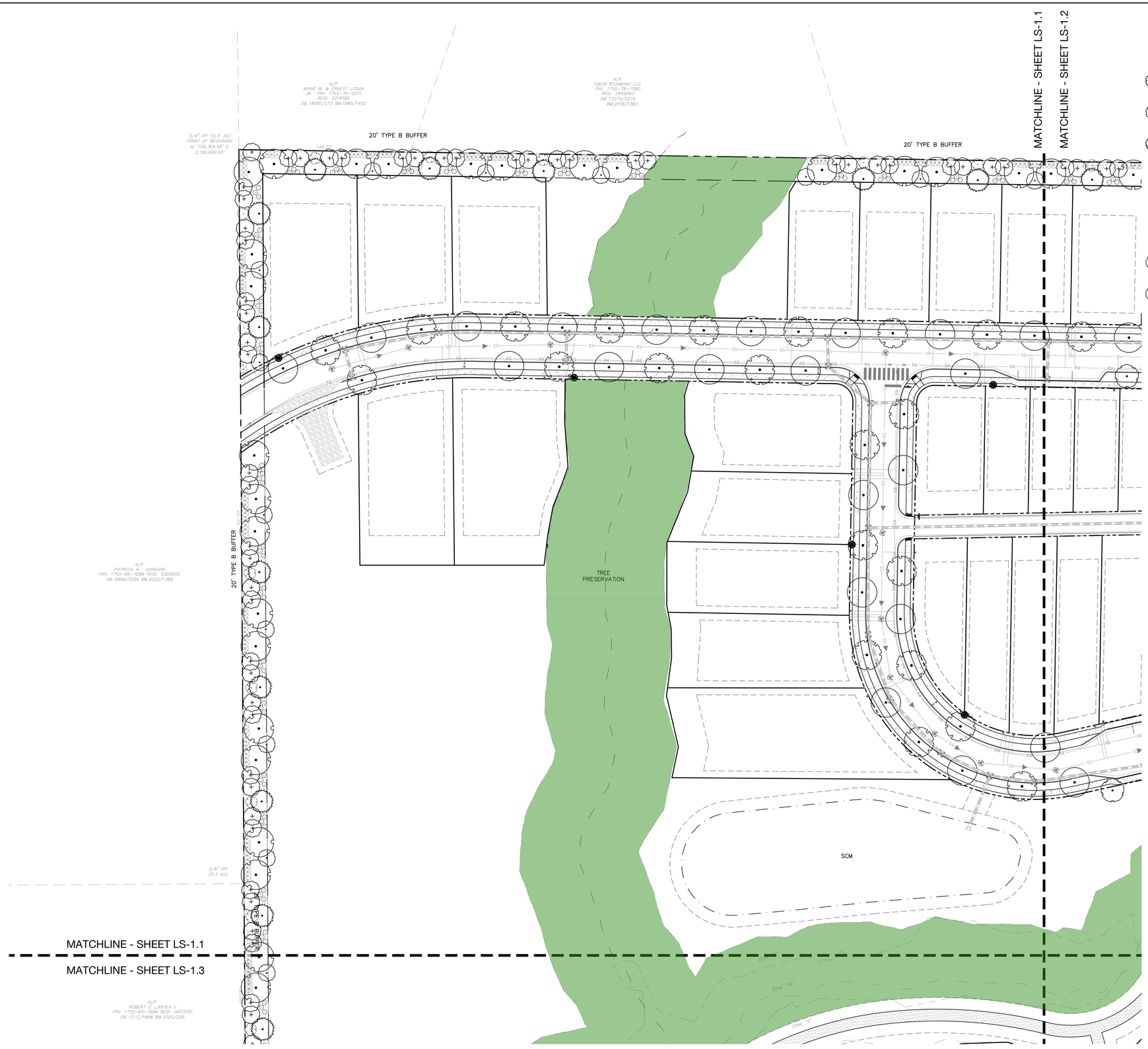

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TREES	CODE	QTY	BOTANICAL / COMMON NAME
	AS	9	ACER BUERGERIANUM 'STREETWISE' / STREETWISE® TRIDENT MAPLE
	AL	88	ACER SACCHARUM 'LEGACY' / LEGACY SUGAR MAPLE
	CB	6	CEDRUS ATLANTICA 'GLAUCA' / BLUE ATLAS CEDAR
	MB	9	MAGNOLIA GRANDIFLORA 'BRACKENS BROWN BEAUTY' / BRACKEN'S BEAUTY SOUTHERN MAGNOLIA
	QA	106	QUERCUS ACUTISSIMA / SAWTOOTH OAK
	ZG	52	ZELKOVA SERRATA 'GREEN VASE' / GREEN VASE SAWLEAF ZELKOVA

SHRUBS	CODE	QTY	BOTANICAL / COMMON NAME
	IC	43	ILEX CORNUTA 'CARISSA' / CARISSA CHINESE HOLLY
	MP	22	MYRICA PENSYLVANICA / NORTHERN BAYBERRY
	SJ	2	SPIRAEA JAPONICA / JAPANESE SPIREA

PLANT SCHEDULE BUFFER PLANTINGS

TREES	CODE	QTY	BOTANICAL / COMMON NAME
	CB	10	CEDRUS ATLANTICA 'GLAUCA' / BLUE ATLAS CEDAR
	CC	43	CERCIS CANADENSIS / EASTERN REDBUD
	GK	87	GYMNOCLADUS DIOICA / KENTUCKY COFFEETREE
	MB	178	MAGNOLIA GRANDIFLORA 'BRACKENS BROWN BEAUTY' / BRACKEN'S BEAUTY SOUTHERN MAGNOLIA
	QH	36	QUERCUS HEMISPHAERICA / LAUREL OAK

SHRUBS	CODE	QTY	BOTANICAL / COMMON NAME
	IC	575	ILEX CORNUTA 'CARISSA' / CARISSA CHINESE HOLLY
	MP	45	MYRICA PENSYLVANICA / NORTHERN BAYBERRY
	SJ	286	SPIRAEA JAPONICA / JAPANESE SPIREA

GRAPHIC SCALE

0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

URBAN DESIGN PARTNERS
150 fayetteville st. ste 1310
raleigh, nc 27601
p 919.275.5002
urbandesignpartners.com
nc firm no: P-2671 sc coa no: C-03044

PRELIMINARY DRAWING FOR REVIEW PURPOSES ONLY

03/02/2023

DRB Homes
3000 RDU Center Dr. Suite 202
Morrisville, NC 27560

Weldon
Master Plan
Landscape Plan Enlargement
0 Lucas Rd., Knightdale, NC 27545

NO. DATE: BY: REVISIONS:

Project No: 22-RDU-030
Date: 02.03.2023
Designed By: UDP
Checked By: BAR
Sheet No:

LS-1.1

MATCHLINE - SHEET LS-1.1

MATCHLINE - SHEET LS-1.2

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PLANT SCHEDULE SITE PLANTINGS

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Checked By: BAR
Sheet No:

LS-1.4

URBAN
DESIGN
PARTNERS

LANDSCAPE ARCHITECTURE + CIVIL ENGINEERING

WELDON

PLANNED UNIT DEVELOPMENT

The Town of Knightdale
Case Number: ZMA-11-22
April 3, 2023

WELDON

PLANNED UNIT DEVELOPMENT

PREPARED FOR
The Town of Knightdale

DEVELOPER

DRB HOMES
3000 RDU Center Drive
Suite 202
Morrisville, NC 27560

PROJECT TEAM

Urban Design Partners
Landscape Architecture | Civil Engineering
150 Fayetteville Street
Suite 1310
Raleigh, NC 27601

Ramey Kemp & Associates
Traffic Engineers

Morris & Ritchie Associates, Inc.
Surveyors

Soil & Environmental Consultants, PA (S&EC)
Environmental Consultant

SUBMITTAL DATE
April 3, 2023

URBAN DESIGN PARTNERS

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VISION + INTENT

01

Community Vision

Weldon is envisioned as a place of community. The development team believes that through **quality placemaking**, a **mix of uses**, and a **variety of housing options**, will arise a place of creativity and diversity that will reveal a vibrant and active community. Weldon will be a community that both embraces and engages nature by providing a network of trails and open space that encourages social interactions and physical activity.

Community Intent

Section 2.4.C. of the Town of Knightdale Unified Development Ordinance states that, "the Planned Unit Development Overlay District process **encourages creativity and innovation** in the design of developments through a master planning process that allows for flexibility from underlying zoning as approved by the Town Council."

Section 12.2.G.3.g.ii states that "approval of a development through a Planned Unit Development Overlay District rezoning, including modifications to the requirements of this UDO, is a privilege and will be considered by the Town only in direct response to the accrual of **tangible benefits** from the planned unit development to the Town of the neighborhood in which it would be located."

The tangible benefits as mentioned above are as following:

» **Exceptional amenities**
» **Outstanding environmental, landscape, architectural, or site design**
» **Conservation of special man-made or natural features of the site**

Weldon meets the intent of the Planned Unit Development Overlay District requirements per Town of Knightdale UDO Section 12.2.G.3.g.ii.a. through the following findings:

» Comprehensive Plan

- Weldon corresponds to the growth framework, greenway trails, and vision & intent laid out in the KnightdaleNext2035 comprehensive plan. The comprehensive plan calls for this location to have a neighborhood node that is a neighborhood-serving commercial use.

» Public Welfare

- Weldon is maintaining the riparian buffer that bisects the site to allow for maximized preservation of natural features. The supply of air to adjacent properties will not be negatively impacted due to the tree preservation and buffer plantings around the perimeter of the site.

» Impact on Other Property

- Weldon is a mixed-use residential community. The adjacent land uses consist of existing single family residences and vacant wooded lots. Weldon consists of like uses and helps to provide increased connectivity and access to amenities like the greenway trail and neighborhood serving commercial node.

» Impact on Public Facilities & Resources

- Weldon will provide adequate utilities, road access, drainage, and other necessary facilities to properly serve residents of the site. Weldon will connect to water and sewer along Horton Road and Old Knight Road respectively. A pump station will be constructed on site, and a force main will be constructed along Old Knight Road and will connect to an existing manhole in the Haywood Glen subdivision.

» Archaeological, Historical, or Cultural Impact

- Weldon is maintaining the riparian buffer that bisects the site to allow for preservation of natural features on the property. No archaeological, historical, or cultural resources will be adversely impacted in the development. Weldon will preserve and enhance existing natural resources on site for the benefit of the community.

» Parking & Traffic

- Weldon is a pedestrian friendly community. The mix of housing types and rear-loaded units minimizes pedestrian-vehicular conflicts and creates a safer, more appealing streetscape. Proper sight distance triangles are also used at intersections to prevent conflicts when turning a vehicle. All street radii are adequate for emergency vehicle access. The greenway trail also provides a safe pedestrian connection throughout Weldon.

» Appropriate Buffering

- A 20' Type B Buffer yard is proposed along the perimeter of Weldon to provide visual and acoustical privacy between Weldon and the surrounding neighbors. The required 20' buffer is provided. The maintained riparian buffer in the center of the site will also create a buffer within the community itself to allow for a greater sense of privacy between houses.

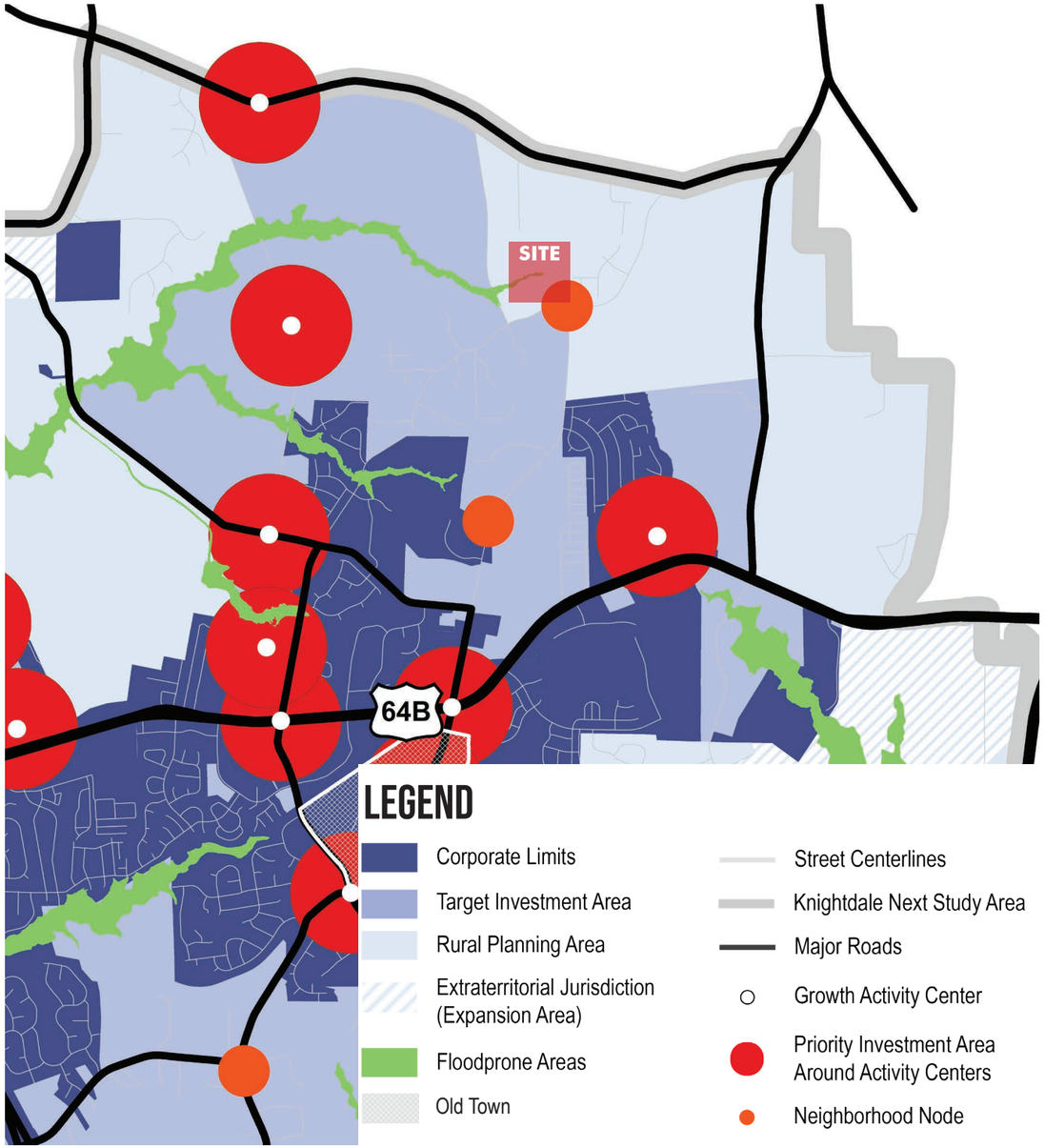


Figure 1: Growth Framework Map from KnightdaleNext2035 Comprehensive Plan

Growth Framework

This PUD document is proposing a **rezoning from RR1 to RMX-PUD** to better meet the desired outcome laid out in the KnightdaleNext2035 Comprehensive Plan. Weldon is located near a Neighborhood Node and within the Rural Planning area as identified in the Growth Framework Plan. Changing the future land use from Rural Living to a more dense walkable neighborhood will align with the creation of a neighborhood node in the southeast corner of the site. A higher density will create a more walkable, pedestrian friendly neighborhood.

The KnightdaleNext2035 Comprehensive Plan uses a 'playbook approach' to guiding future growth and development. Weldon aligns with the Playbook approach to guiding principles, community vision, and Growth Framework Map.

As described throughout this document, Weldon corresponds to Knightdale's Guiding Principles of unique activity centers, natural environment, infill development, parks and recreation, transportation, compact development patterns, community design, economic vitality, community facilities and services, and great neighborhoods and expanded home choices.

Weldon aligns with Knightdale's Vision of neighborhoods throughout the Town feeling a sense of connection. A public greenway trail will be added in the existing riparian buffer. This aligns with the Trails and Greenways plan found in the comprehensive plan. Weldon's sidewalks and greenway trail promote pedestrian walkability and connection for the community.

The Growth Framework plan says that all development proposals within Rural Planning areas should include public input. Weldon was presented to neighbors at a neighborhood meeting that took place on September 27, 2022 and the team received positive feedback. See section 10 of this document for more detail on the neighborhood meeting.

Neighborhood nodes identify recommended retail locations for neighborhoods. The comprehensive plan identifies that, "each node should be neighborhood-serving and meet several daily needs for nearby residents." The plan for Weldon has a commercial outparcel that is easily accessible to the surrounding neighborhoods, and is small enough to meet the intended scale proposed by KnightdaleNext2035.

The proposed plan for Weldon provides a mix of housing types to promote a diverse and walkable community. The mixed-use community will act as a transition for residential neighborhoods while providing community serving commercial amenities.

Trails & Greenways

The proposed plan for Weldon creates a connected network of open space and recreational amenities while maintaining existing natural features. The plan also provides safe and convenient pedestrian and bicycle access for nearby residents through the use of sidewalks, and a greenway trail that aligns with the KnightdaleNext2035 Comprehensive Plan.

The proposed greenway trail in Weldon is located in the riparian buffer that runs east-west across the site. Having the greenway trail surrounded by tree preservation allows for a nature immersive experience for users of the trail.

LEGEND

- Proposed Greenway
- Proposed Neighborhood Trail
- Proposed Cross Town Bicycle Routes
- Parks & Recreation Sites
- Open Space Property
- 100-Year Flood Areas
- Study Area Boundary

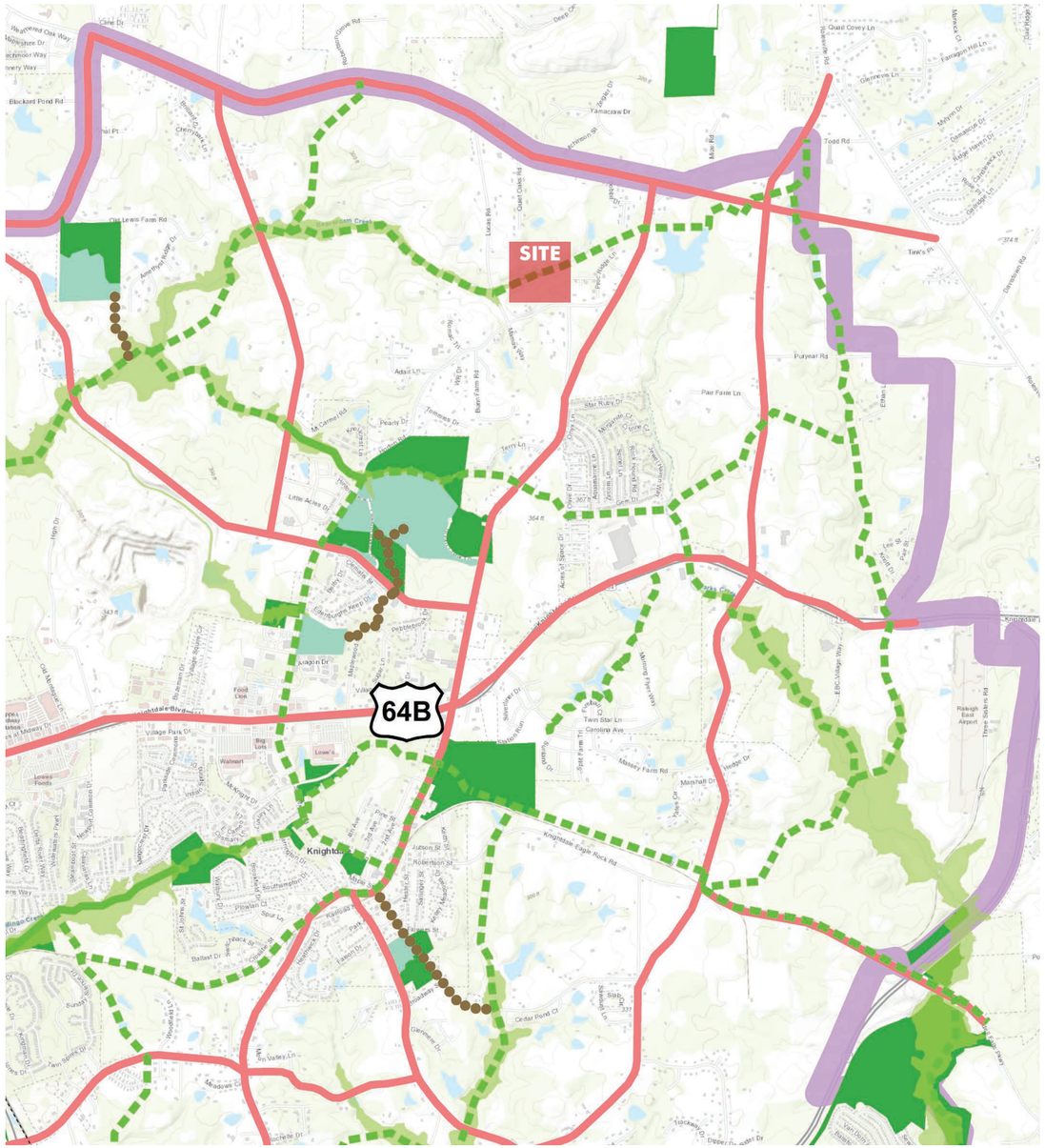


Figure 2: Trails and Greenways Plan from KnightdaleNext2035 Comprehensive Plan

EXISTING CONDITIONS

03

Existing Conditions Summary & Vicinity Map

Legal description per ALTA survey

Parcel 1: All that certain tract or parcel of land lying and being situate in St. Matthews Township, Knightdale, Wake County, North Carolina and being more particularly described as follows:

Beginning at a 3/4" iron pipe found 0.3' above the existing ground, and being a common corner with Lot 68 as shown on book of maps 1985 page 1452 in the Wake County Registry, bearing NC grid coordinates northing 756,364.98' & easting 2,156,999.93', and being known as the point of beginning, thence S 89° 10' 15" E a distance of 1,485.18' to a 3/4" iron pipe, and being a common corner with Lot 13 of Horton Mill Subdivision recorded in book of maps 2005 page 2476;
Thence S 05° 49' 05" W a distance of 1,084.93' to a 3/4" iron pipe, and being a common corner with Lot 6 of the aforementioned Horton Mill Subdivision and Isidoro Gonzales Valazquez as shown in the book of maps 1994 Page 1,073;
Thence S 05° 44' 52" W a distance of 274.00' to a computed point in Horton Road (SR-2231) and lying 30.01' from a 3/4" bent iron pipe;
Thence N 89° 58' 29" W a distance of 1,338.04' to a 1" flat iron bar found 0.8' above the existing ground next to a 5/8" iron pipe covered by a pvc pipe, and being a common corner with tract 2 of book of maps 2020 page 235;
Thence N 00° 23' 57" W a distance of 1,372.93' to the point of beginning, having an area of 1,923,657.89 square feet, 41.61 acres.

Figure 3: Vicinity Map

Current Zoning Map

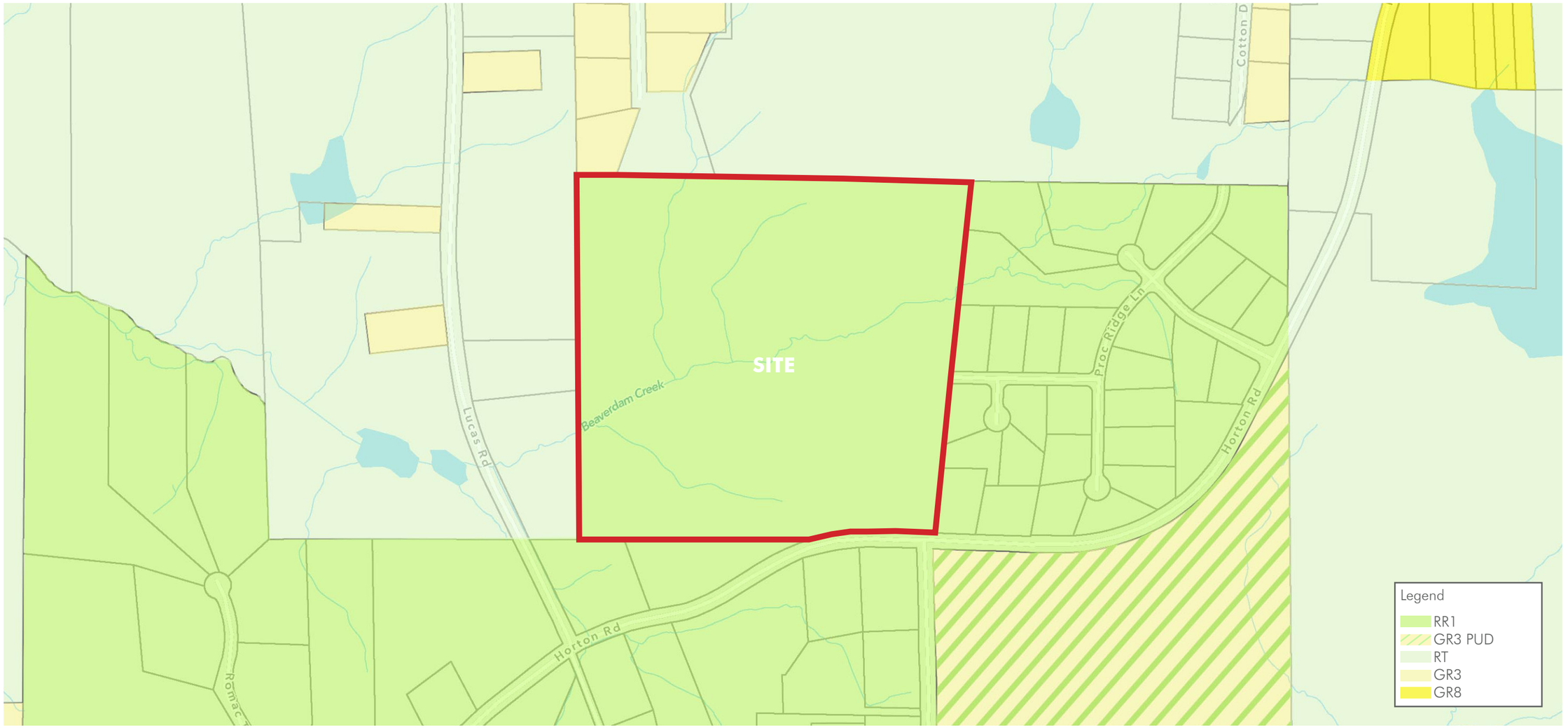


Figure 4: Current Zoning Map

Topography & Boundary Map

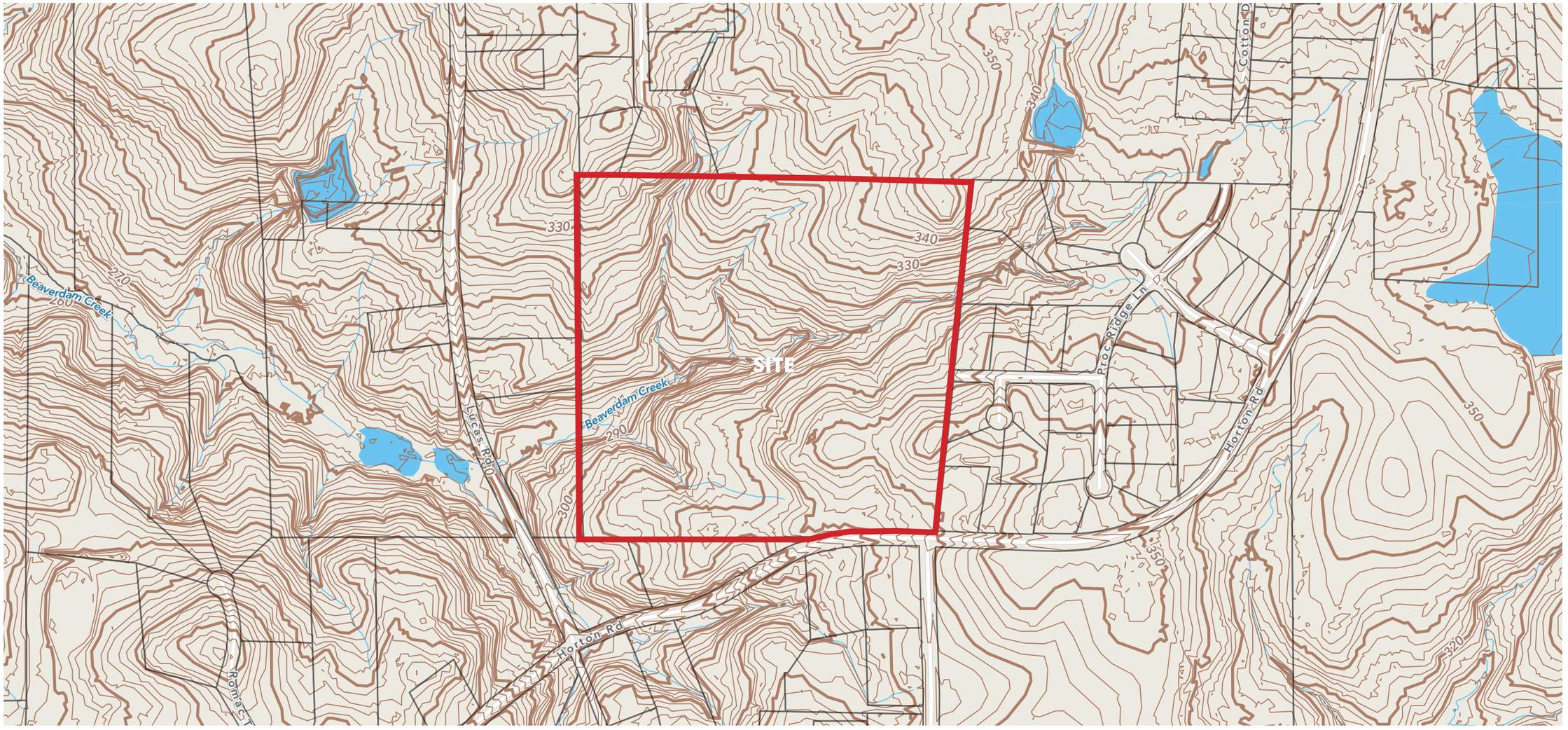


Figure 5: Topography Map

Soils Map

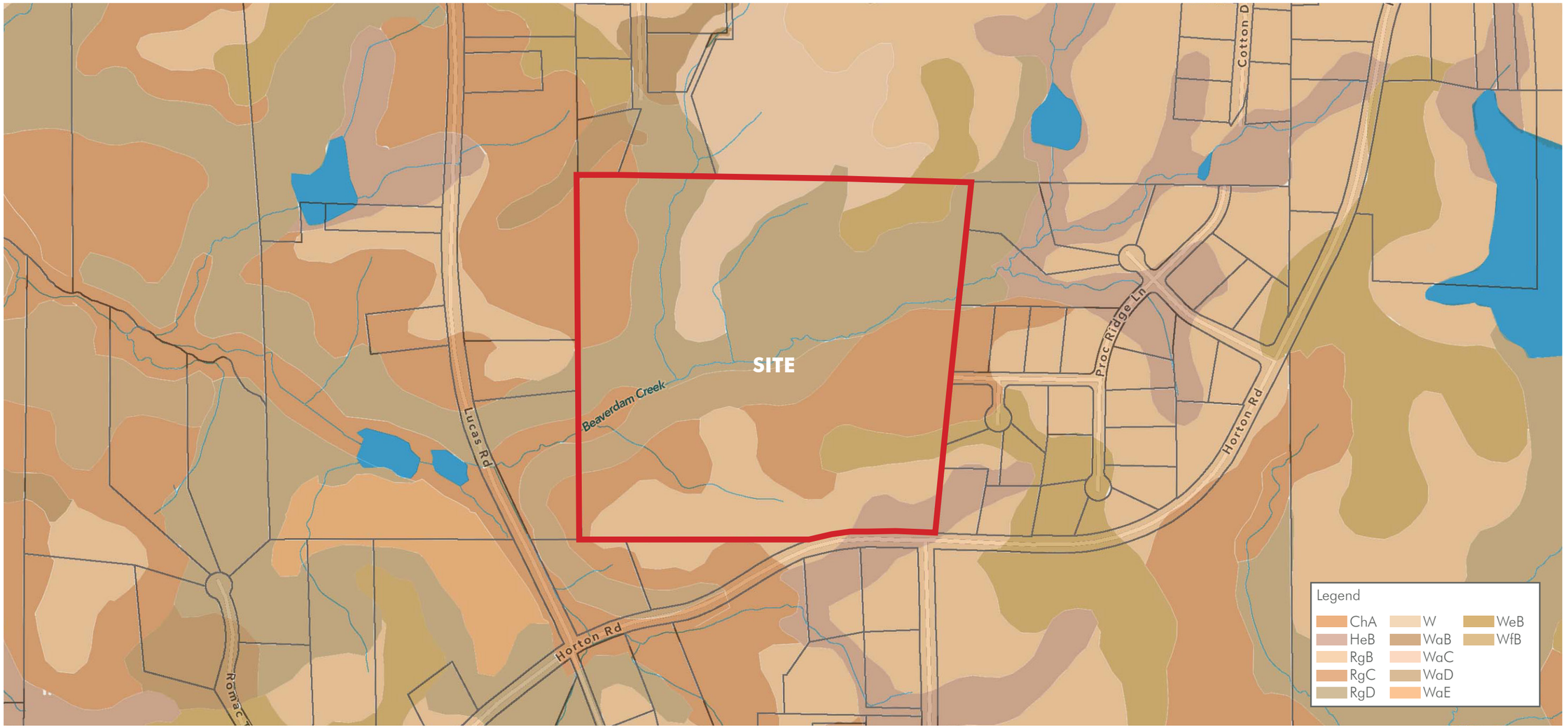


Figure 6: Soils Map

Vegetation Map

Figure 7: Vegetation Map

0 200′ 400′ 800′

Preliminary Wetland & Stream Map

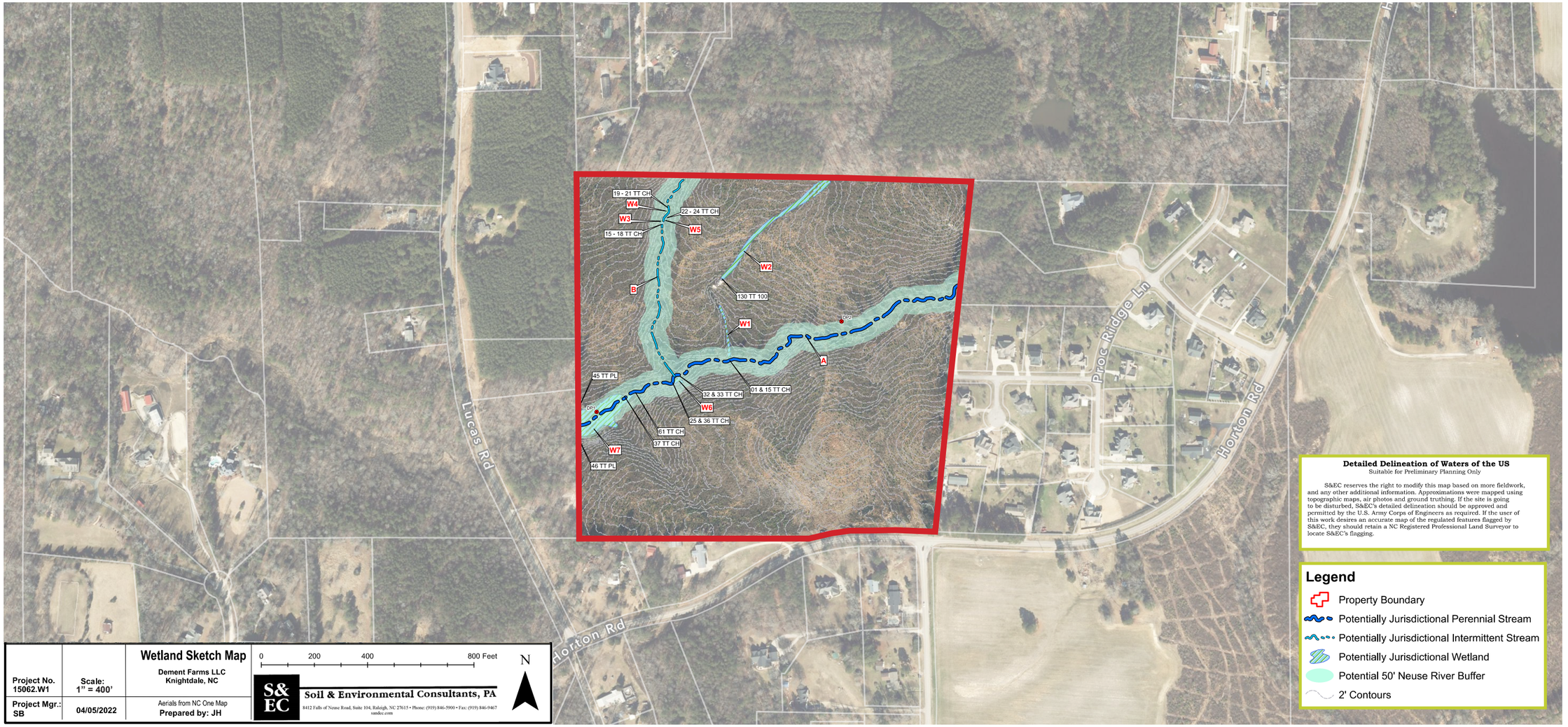


Figure 8: Wetland Delineation Map from S&EC

MASTER PLAN

04

Weldon Master Plan

Figure 9: Weldon Master Plan

SITE DATA

ACRES: ± 41 AC

PIN: 1755757607

EXISTING ZONING:	RR1
PROPOSED ZONING:	RMX-PUD

DEVELOPMENT SUMMARY

RESIDENTIAL	**± 146 DU TOTAL**
LAND AREA:	± 39.5 AC
PROPOSED DENSITY:	± 3.56 DU/AC
80' LOT (FRONT LOADED)	± 5 PARCELS
60' LOT (FRONT LOADED)	± 41 PARCELS
32' LOT (REAR LOADED)	± 63 PARCELS
2 STORY TOWNHOMES	± 11 DU
3 STORY TOWNHOMES	± 26 DU
SINGLE FAMILY PARKING	
REQUIRED:	± 327 SPACES
PROPOSED:	± 327 SPACES
TOWNHOME PARKING	
REQUIRED:	± 111 SPACES
PROPOSED:	± 111 SPACES
COMMERCIAL OUTPARCEL	**± 1.5 AC**
BUILDINGS:	1 BLDG
BLDG HEIGHT:	1- 2 STORIES
PROPOSED COMMERCIAL:	± 15,000 SF
REQUIRED PARKING:	± 51-103 SPACES
PROPOSED PARKING:	± 51 SPACES

NOTES

1. THIS PLAN IS CONCEPTUAL IN NATURE AND IS SUBJECT TO CHANGE.
2. THIS EXHIBIT WAS PREPARED USING AVAILABLE RECORD INFORMATION, GIS MAPS, RECORD PLANS, AERIAL IMAGERY, AND LAND RECORDS.
3. THIS PLAN WILL BE SUBJECT TO REVIEW AND APPROVAL BY LOCAL AND STATE PLANNING AND ENGINEERING REVIEW AGENCIES.
4. THE WORK OF THIS PRODUCT IS THE PROPERTY OF URBAN DESIGN PARTNERS, PLLC. NO USE OR REPRODUCTION OF THIS PLAN IS PERMITTED WITHOUT WRITTEN AUTHORIZATION FROM URBAN DESIGN PARTNERS, PLLC.

0 100' 200' 400'

INFRASTRUCTURE

05

Street Plan

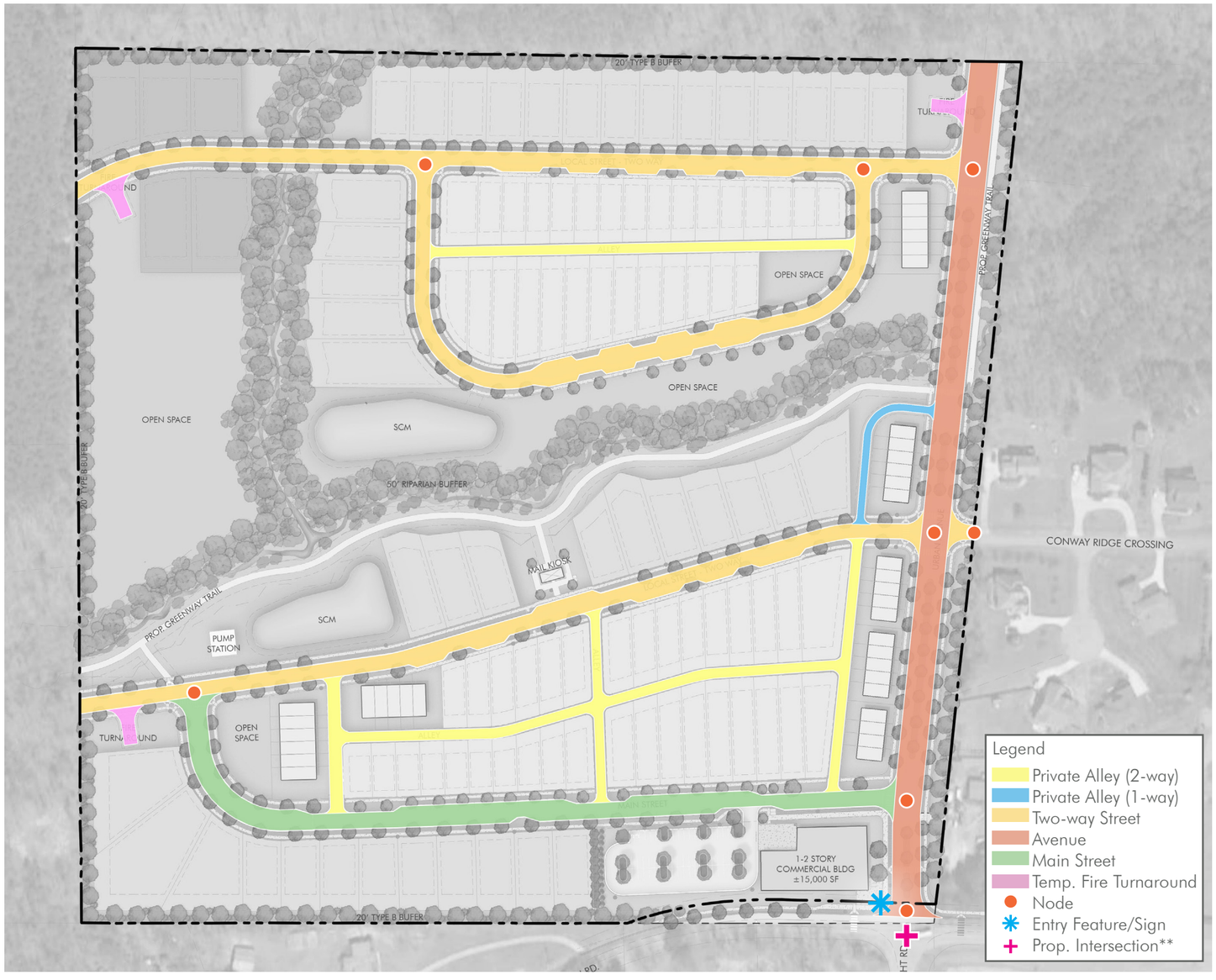


Figure 10: Weldon Street Plan

TOWN OF KNIGHTDALE STREET TYPES

PRIVATE ALLEY

- » RIGHT OF WAY: 20'
- » STREET WIDTH: 12' MIN. - 16' MAX.
- » DESIGN SPEED: 10 MPH

TWO WAY STREET

- » RIGHT OF WAY: 54'
- » STREET WIDTH: 27'
- » DESIGN SPEED: 20 - 25 MPH

AVENUE

- » RIGHT OF WAY: 90'
- » STREET WIDTH: 23.5' ON EITHER SIDE OF 16' MEDIAN
- » DESIGN SPEED: 35 - 45 MPH

MAIN STREET

- » RIGHT OF WAY: 64'
- » STREET WIDTH: 37'
- » DESIGN SPEED: 20 - 25 MPH

TOWN OF KNIGHTDALE CONNECTIVITY INDEX*

REQUIRED SCORE: 1.40 MIN.

PROVIDED SCORE: ± 1.50

- » LINKS: 12 LINKS
- » NODES: 8 NODES

$$\frac{12 \text{ LINKS}}{8 \text{ NODES}} = 1.50 \text{ CONNECTIVITY INDEX SCORE}$$

*Connectivity index is calculated according to Town of Knightdale UDO Sec. 11.3.E.7

**For proposed intersection improvements, see enlargement on page 22.

Pedestrian Circulation Plan

Figure 11: Weldon Pedestrian Circulation Plan

Weldon is proposing a connected network of amenity spaces and dwelling units through the use of sidewalks, and greenway trails to create a walkable, pedestrian-friendly community as seen in Figure 11.

» The plan shown is preliminary and subject to change at the time of site plan.

PEDESTRIAN CIRCULATION

SIDEWALK NETWORK

» WIDTH: 5'
» PROVIDED LENGTH: ± 12,000 LF

GREENWAY TRAIL

» WIDTH: 10'
» PROVIDED LENGTH: ± 2,000 LF

PLAZA

» PROVIDED SIZE: ± 3,000 SF

AMENITY SPACES

» SEE OPEN SPACE PLAN

Proposed Intersection Improvements - Old Knight Rd. & Horton Rd.

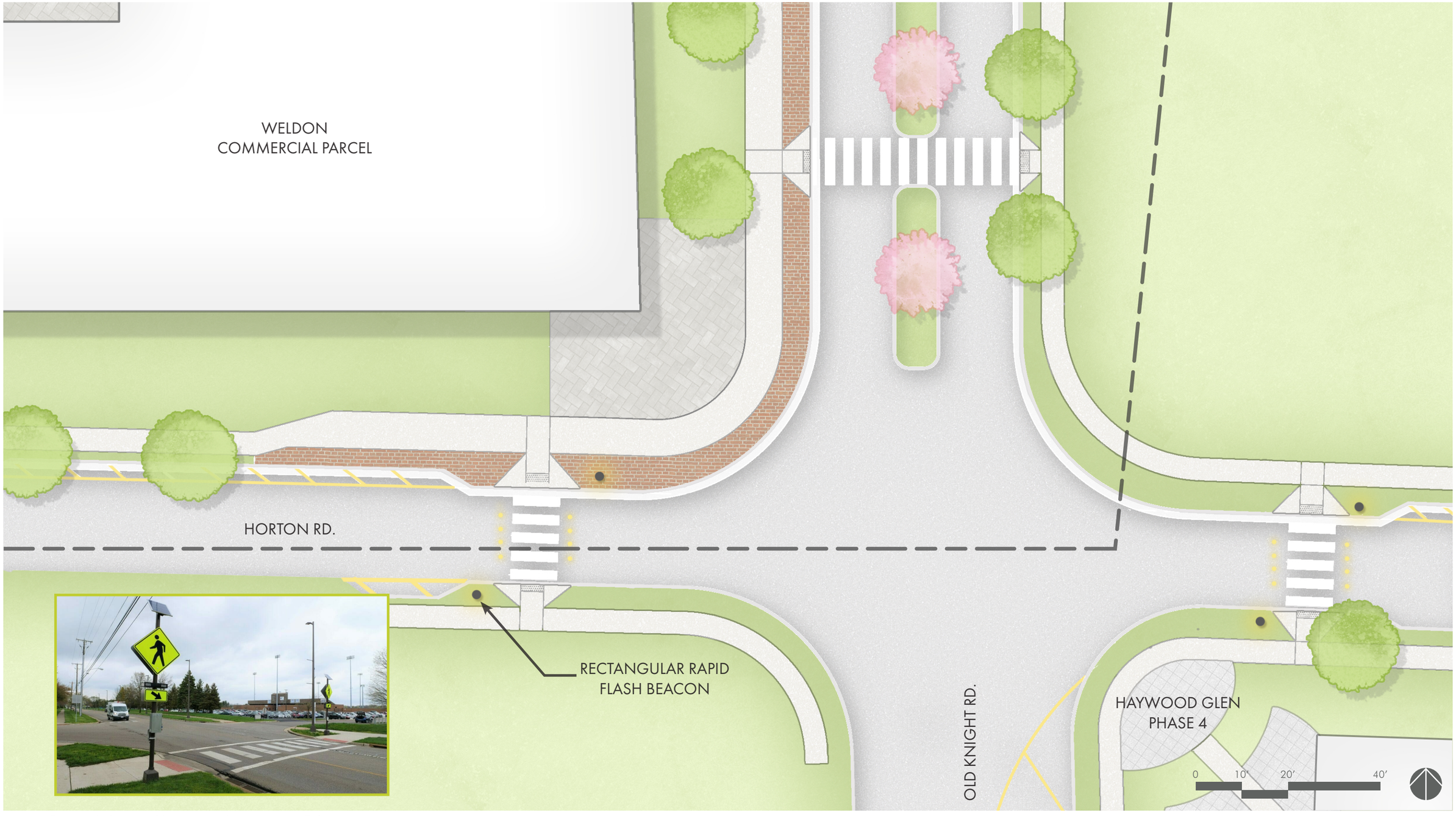
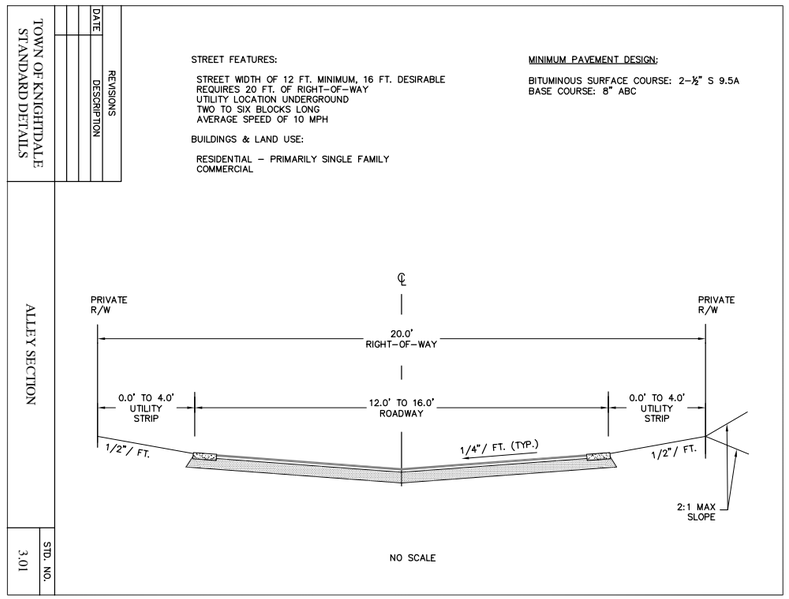
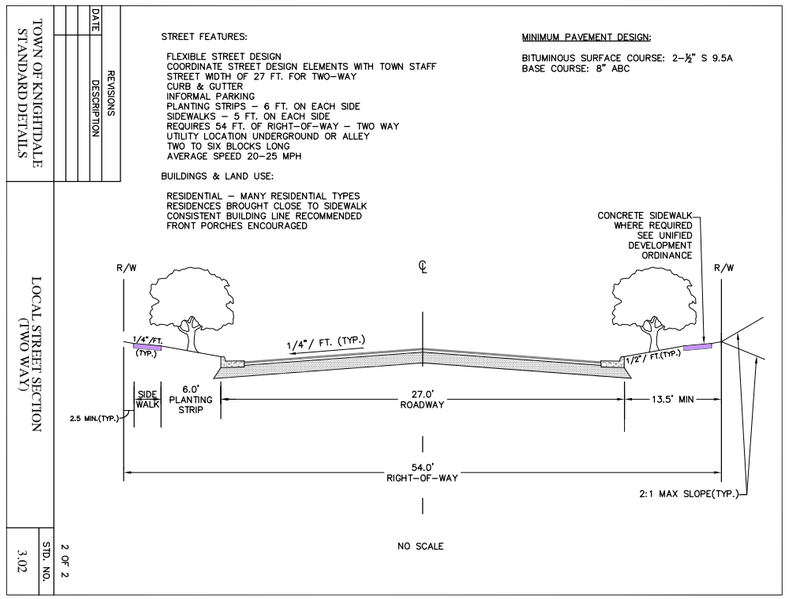


Figure 12: Proposed Intersection Improvements Enlargements

Street Sections

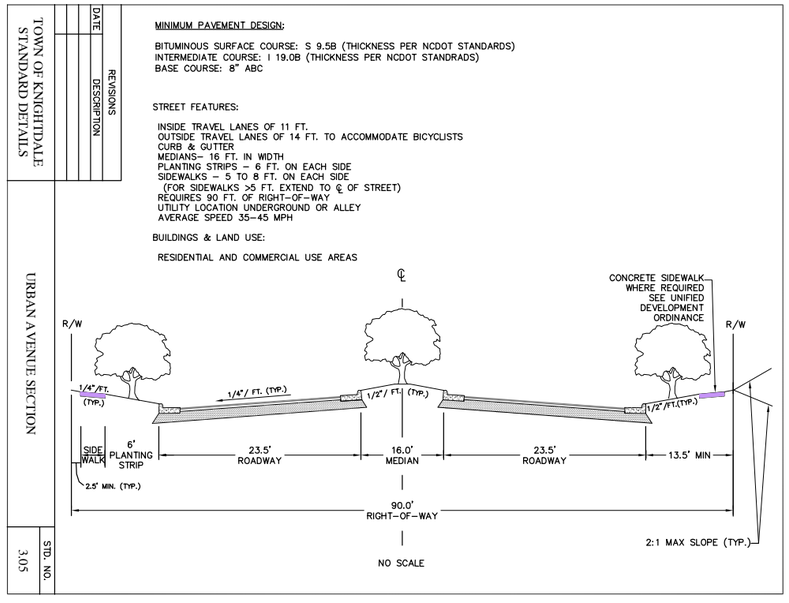


Private Alley

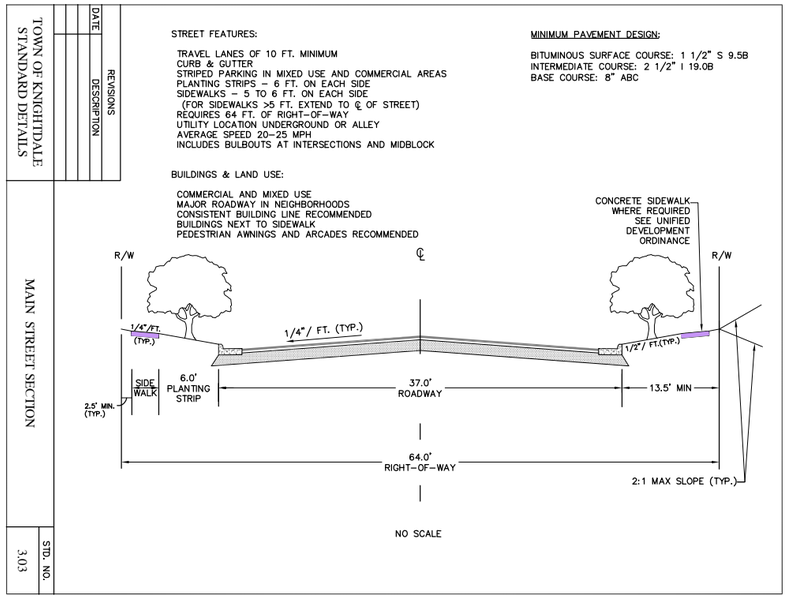


Two-way Street* Sidewalk

*Note: On-street parking utilized. See Site Development Allowances.

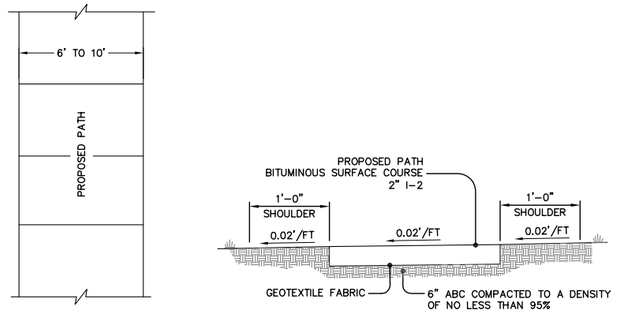


Avenue Sidewalk



Main Street* Sidewalk

*Note: On-street parking utilized. See Street Features listed in detail above.



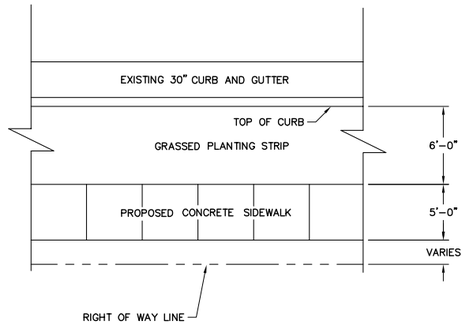
NOTES:

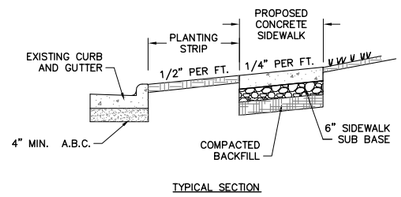
1. CROSS SLOPE DIRECTION VARIES. SEE LAYOUT PLANS FOR DIRECTION OF SLOPE.
2. CONTRACTOR IS RESPONSIBLE FOR REESTABLISHING ALL SLOPES DISTURBED BY CONSTRUCTION.

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	STANDARD MULTI-USE PATH GREENWAY	STD. NO. 4.09

Greenway





NOTES:

1. TRANSVERSE EXPANSION JOINTS TO BE A MAXIMUM OF 50 FEET APART.
2. CONTROL JOINTS TO BE AT 5 FEET O.C.
3. ALL CONCRETE TO BE FINISHED WITH CURING COMPOUND.
4. SIDEWALK SUB BASE TO BE A MIXTURE OF 70 PERCENT #57 STONE AND ASTM C33 SAND OR EQUAL.

1 of 2

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	CONCRETE SIDEWALKS	STD. NO. 4.04

Sidewalk

Preliminary Stormwater Plan

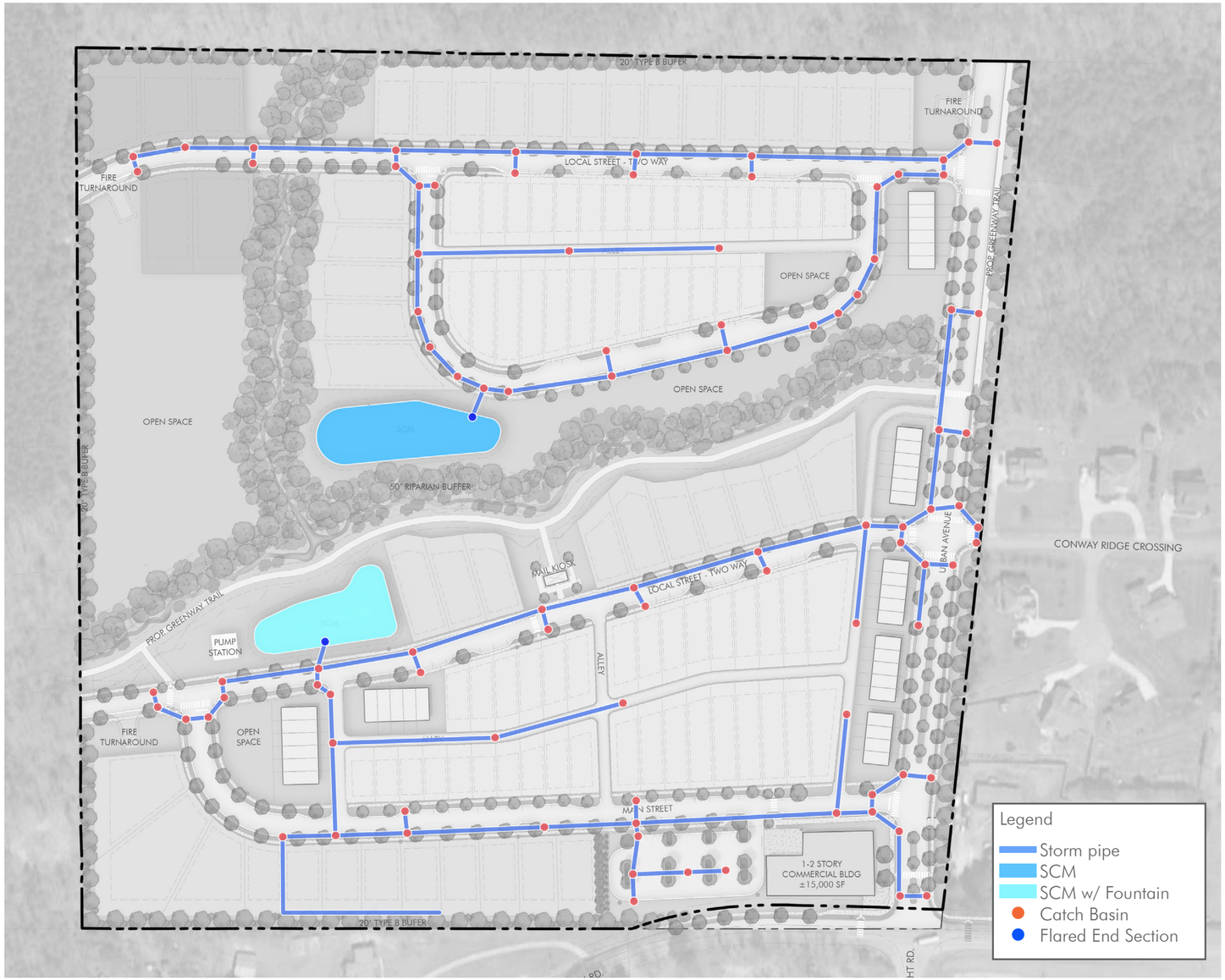


Figure 13: Weldon Preliminary Stormwater Plan

STORMWATER

Weldon proposes two stormwater control measure (SCM) devices throughout the site as seen in Figure 13. All stormwater shall be subject to the stormwater management requirements set forth in Chapter 9 of The Town of Knightdale Unified Development Ordinance. The stormwater treatment shall adhere to guidelines established in the NCDEQ Stormwater Design Manual.

The SCM on the west side of the mail kiosk will have a fountain installed to create a water amenity. See Figure 14 for an example of a pond fountain.

» The plan shown is preliminary and subject to change per direction from Knightdale staff.

Figure 14: SCM fountain example

Preliminary Utility Plan

Figure 15: Weldon Preliminary Utility Plan

WATER & SEWER

Weldon will design all water and sewer to meet the standards of the City of Raleigh. The force main will connect south along Old Knight Road (± 1,665 LF) at the existing manhole in Haywood Glen Subdivision.

» The plan shown is preliminary and subject to change per direction from City of Raleigh staff.

MAJOR SUBDIVISION	
Major Subdivision base points	15 pts.
Residential architectural standards	15 pts.
Construct a fountain within the BMP	4 pts.
Deck/Patio (3,000 sf)	3 pts.
Provision of on-street public parking	4 pts.
IPEMA certified playground equipment	4 pts.
Outdoor display of public art	4 pts.
Conservation of Natural Habitat ±2 acres	2 pts.
TOTAL MIN. REQUIRED	51 pts.

Note: Any combination of features listed above can be used to meet the 50 point minimum requirement.

SINGLE USE RETAIL	
Single use retail base points	41 pts.
Outdoor display of public art	4 pts.
Deck/patio (3,000 sf)	3 pts.
Provision of on-street public parking	4 pts.
TOTAL MIN. REQUIRED	52 pts.

Note: Any combination of features listed above can be used to meet the 50 point minimum requirement.

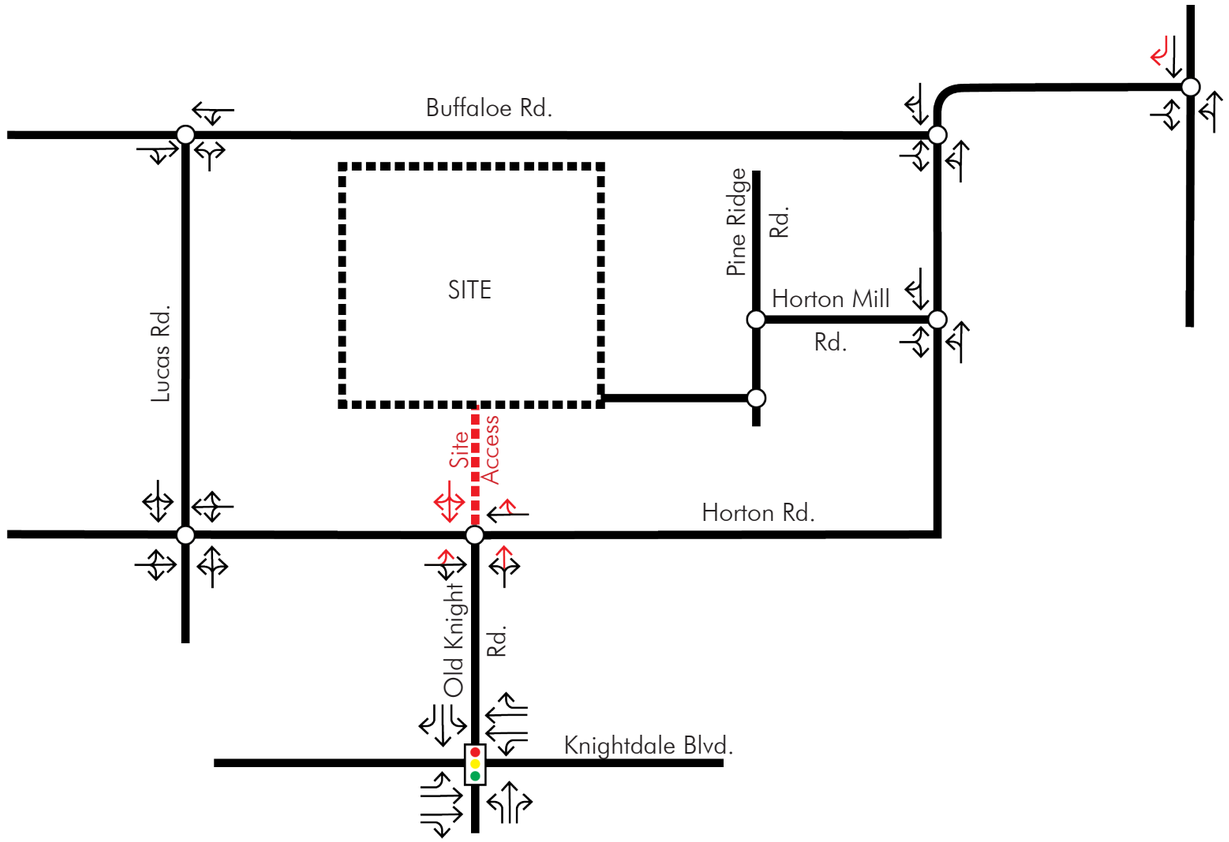


Figure 16: Weldon Village Recommended Lane Configurations from TIA prepared by Ramey Kemp & Associates

TIA Summary

The Weldon development is expected to generate approximately 2,091 total site trips on the roadway network during a typical 24-hour weekday period. Impacts caused by the proposed site were analyzed 1 year after build out and 10 years after build out. The existing infrastructure is expected to accommodate site trips at the majority of the intersections and a majority of the growth over the next 10 years. Improvements have been identified to be completed by the developer to mitigate the site traffic.*

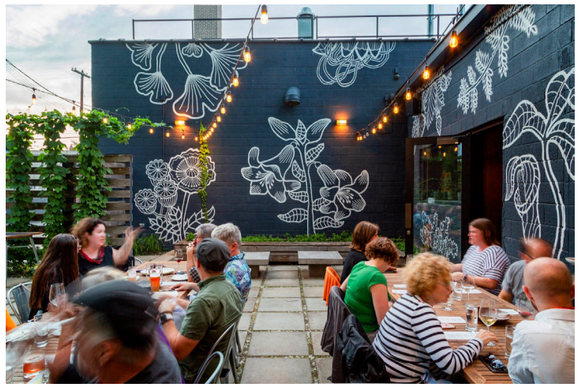
See TIA prepared by Ramey Kemp & Associates for more information.

*Note: The off-site road improvement recommended in the TIA was not recommended by Knightdale staff and therefore will not be constructed.

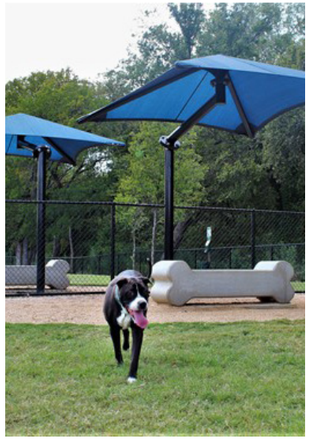
AMENITIES

06

Site Programming



Weldon will provide a variety of amenities to promote a healthy lifestyle, opportunities to enjoy the outdoors, and foster a sense of community. The site is proposing a connected network of ± 10 acres of open space and recreational amenities.

The proposed amenities are as follows:

- **10' Greenway Trail (± 2,000 LF)**
  - » The Greenway Trail aligns with The Town of Knightdale 2035 Comprehensive Plan (KnightdaleNext) that proposes a greenway running through the site.

- **Village Green**
  - » The Village Green will be a large open green space that can be used for a variety of activities by the community.

- **Playground**
  - » The playground will be located in one of the active open space areas and will be centrally located in the community.

- **Dog Park**
  - » The playground will be located in one of the active open space areas and will provide a place for residents to let their dogs run.

- **Pond Fountain**
  - » The pond fountain will amenitize the stormwater pond located in the center of the site.

- **Neighborhood Serving Commercial**
  - » The commercial outparcel will be low-intensity, and will meet the needs of nearby residents.

Open Space Plan

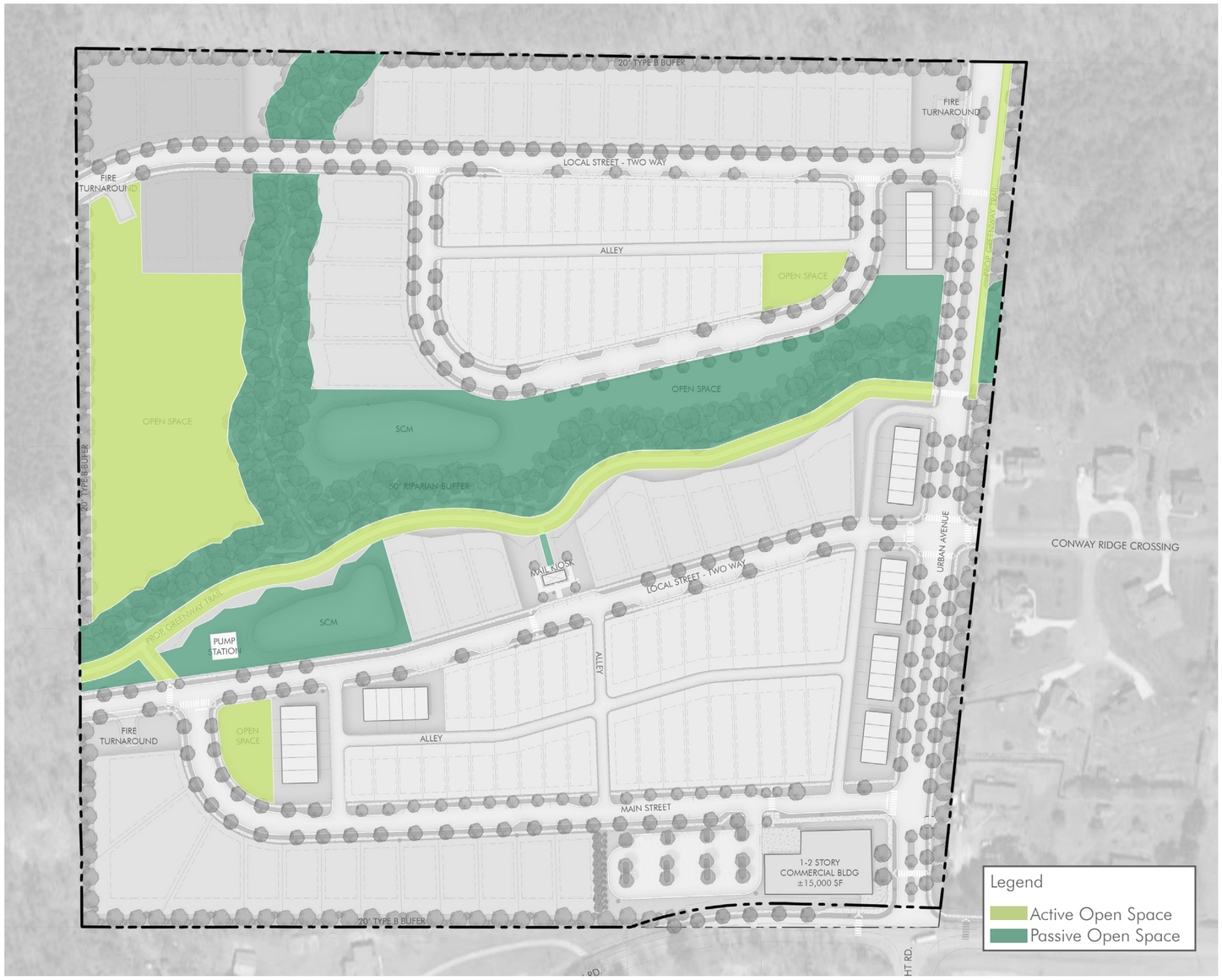


Figure 17: Weldon Open Space Plan

Weldon provides both active and passive recreation areas throughout the development. All recreation spaces are located in places that are accessible to all residents of the community. The addition of approximately 2,000 linear feet of greenway trail creates additional connection opportunities between all of the provided open spaces.

RECREATIONAL OPEN SPACE STANDARDS*

PROXIMITY ZONE:	All outside 1/2 mile distance
TOTAL BEDS :	475 beds
» SINGLE FAM. DETACHED:	(109 DU) x (3.5 beds) = 382 beds
» SINGLE FAM. ATTACHED:	(37 DU) x (2.5 beds) = 93 beds
DEDICATION RATE:	520 sf
» SINGLE FAM. DETACHED:	(382 beds) x (520 sf) = 198,640 sf
» SINGLE FAM. ATTACHED:	(93 beds) x (520 sf) = 48,360 sf
REQ. OPEN SPACE:	± 247,000 sf (5.67 ac)
» REQ. ACTIVE SPACE (50%):	± 123,500 sf (2.84 ac) MIN.
» REQ. PASSIVE SPACE (50%):	± 123,500 sf (2.84 ac) MIN.
PROP. OPEN SPACE:	± 11.23 ac total (27%)
» PROP. ACTIVE SPACE:	± 4.34 ac (1.50 ac over req.)
» PROP. PASSIVE SPACE:	± 6.89 ac (4.05 ac over req.)

* Open space is calculated according to Town of Knightdale UDO Sec. 11.2.c.

LANDSCAPE

07

Preliminary Landscape Plan

Figure 18: Weldon Preliminary Landscape Plan

Weldon will design all landscape areas according to the Knightdale Unified Development Ordinance. The site is surrounded by a 20' Type B Buffer yard as required in Section 7.4.I.1. of the UDO. The preliminary plan only shows typical buffer plantings and street tree plantings as seen in Figure 18. The riparian buffer will consist of tree preservation to maintain the natural qualities of the site. The greenway trail will be added in the stream buffer per the table in Section 7.4.H.1. of the UDO.

- The plan shown is preliminary and subject to change per direction from Town of Knightdale staff.
- More detailed landscape plans with planting details and species list will be provided at the time of site plan and are subject to review from Town of Knightdale Staff.
- Location and amounts of trees are conceptual in nature and subject to change.

Landscape Buffer

The perimeter of Weldon consists of a Type B Buffer Yard per Town of Knightdale Unified Development Ordinance Chapter 7. Figure 19 shows a typical 100′ section of the Type B buffer for Weldon.

TYPE B BUFFER YARD STANDARDS (UDO Sec. 7.4.I.3)

Minimum width: 20′

Minimum landscape height/opacity:
- » Ground to 6′ Semi-opaque screen
- » 6′ - 30′ Intermittent visual obstruction

Maximum landscape horizontal openings:
- » 5′ Semi-opaque screen
- » 20′ Intermittent visual obstruction

Required plantings:
- » Canopy Trees 3 per 100 linear feet
- » Understory Trees 5 per 100 linear feet
- » Shrubs 20 per 100 linear feet
- » Evergreen vs. deciduous
  - Canopy trees: A minimum of 40% / maximum 60% must be evergreen
  - Understory trees: A minimum of 40% / maximum 60% must be evergreen
  - Shrubs: At least 80% must be evergreen

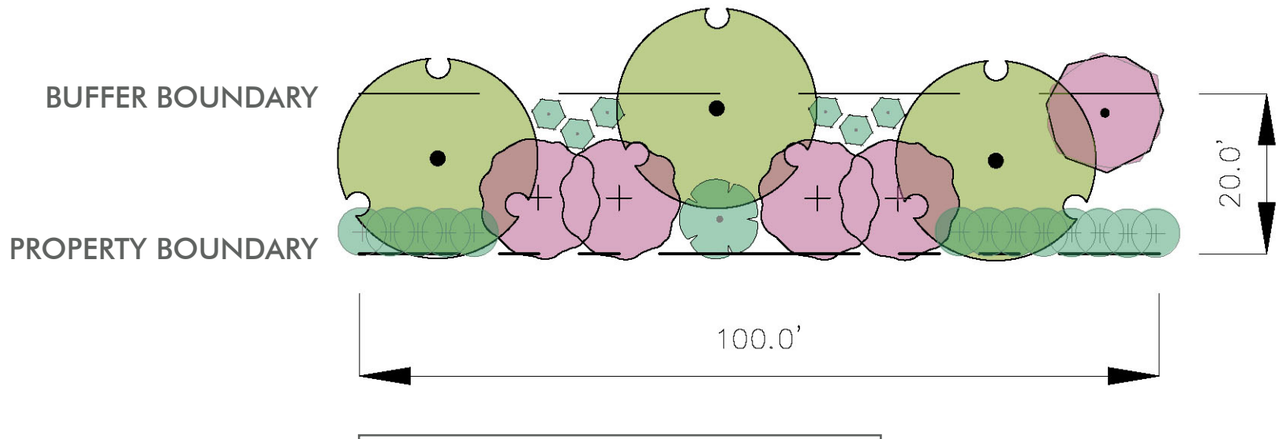


Figure 19: Landscape Buffer

ARCHITECTURAL DESIGN STANDARDS

Architectural Elevations - Single Family Detached

Note: Elevations shown are conceptual in nature and subject to change. See page 36 for list of architectural standards.

Architectural Elevations - Single Family Attached (Townhomes)

Note: Elevations shown are conceptual in nature and subject to change. See page 36 for list of architectural standards.

Architectural Design Standards

1. Single-family 2 story homes built on lots at least 60-feet wide will have a minimum heated area of 2,000 square feet.
2. Single-family 1 or 1.5 story homes built on lots at least 60-feet wide will have a minimum heated area of 1,600 square feet.
3. Single-family detached 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 with crawl spaces will be wrapped in brick or stone on all sides.
5. All single-family homes with stem wall, crawl or slab foundations will provide a minimum of 2 stair risers, and the finished floor elevation is to be a minimum of 18" above finished grade on the front-facing street elevation of the homes. Finished grade elevation shall be defined as the average height at the back of curb along unit frontage facing public streets. Foundations will be wrapped in either brick or stone.
6. All single-family homes and townhomes will have a combination of two or more of the following materials on the front façade (not counting foundation): stone, brick, lap siding, fiber cement siding, shakes or board and batten. The exterior siding material on the side and rear facades, except for interior townhome units, will be fiber cement. When two materials are used, the materials shall be different but complementary colors. Vinyl may be used only for window trim, shutters, soffits, fascia, and/or corner boards.
7. All single-family homes will be limited to two stories and will provide for a variety of elevations. Units of the same elevation shall not be side by side. Exterior color schemes will not be repeated side by side.
8. All single-family homes will have a front porch with a minimum depth of 5 feet, which may encroach up to 6-feet into the front setback. Front porch posts will be at least 6"x6" in size.
9. Main roof pitches (excluding porches) fronting the street for single-family homes and townhomes will be at least 6:12.
10. Garages will not protrude more than 6 feet from the front porch or stoop, and all garage doors shall contain decorative hardware and window inserts.
11. For every 30 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 fireplace, side porch, wall offsets, etc. may be used as an alternate to windows.
12. There shall be a minimum 12" overhang on every gable end for single-family homes and townhomes.
13. All homes will include architectural style shingles.
14. Townhomes shall be two or three stories in height with a minimum width of 20 feet wide, and a minimum heated area of 1,500 square feet.
15. All townhomes shall have a covered porch element.
16. Single-family detached homes shall have two-car garages, and single-family attached (townhomes) shall have one-car garages.
17. All single family home on lots 32 feet in width shall have a rear-garage and accessed via a private rear-loaded alley.
18. All homes shall have front door glass inserts, transoms, or glazing.

Development Conditions - Commercial Outparcel

1. Use Standards: The proposed use standards will restrict certain uses otherwise permitted in the RMX zoning district. This will encourage more neighborhood oriented and small businesses to better serve residents.

    » Businesses with operating hours of 24 hours per day are not permitted.

    » Businesses that cell cigarettes, cigars, tobacco products, or electronic cigarettes are not permitted.

    » The following principal uses shall be the only allowable uses, and shall be permitted by-right:
        - Child/Adult Day Care Center (6 or more people)
        - Personal Services
        - Professional Services
        - Medical Services
        - Neighborhood Retail/Restaurant (2,000 sf or less)
        - Allowed RMX district accessory uses
        - Bar/Tavern/Microbrewery
        - Studio (Arts, dance, martial arts, music)

2. Developer shall stub potable water, sanitary sewer, and storm drainage to commercial outparcel prior to plat recordation, or provide a surety for completion thereof.

3. Developer shall construct curb, gutter, and sidewalk improvements along commercial outparcel prior to plat recordation, or provide a surety for completion thereof.

4. Developer shall size stormwater infrastructure to accommodate future development of commercial outparcel.

5. The commercial outparcel shall not be owned by Weldon Homeowners Association.

6. Developer is responsible for maintaining the commercial outparcel in a manner consistent with Weldon Homeowners Association properties.

7. A 10' landscape buffer shall be planted adjacent to residential lots prior to plat recordation, or provide a surety for completion thereof.

8. Parking lots shall contain vegetative screening in accordance with Knightdale's UDO.

SITE DEVELOPMENT ALLOWANCES

09

Weldon Village - Site Development Allowances

The proposed zoning for Weldon is RMX-PUD. Weldon meets all standards set forth in the Town of Knightdale's Unified Development Ordinance with the exception of a few conditions. Due to site constraints, the applicant is requesting the following site development allowances:

Bulk and Dimensional Standards (UDO Sec. 3.4)

» Lot width (street loaded)
- In the RMX base district, the minimum required lot width for a street loaded lot is 80'.
- In order to create a variety of housing types and a more walkable community, we are proposing single family detached street loaded lots with lot widths of 60' and 80'.

» Lot width (alley loaded)
- In the RMX base district, the minimum required lot width for an alley loaded lot is 30'.
- In order to provide a variety of housing types and a more walkable community, we are proposing alley loaded single family detached lots with a width of 32', and townhome lots with widths of either 20' or 25'. The end townhomes will have a 25' lots, and the interior townhomes will have 20' lots. The alley loaded single family detached and attached options create a pedestrian friendly streetscape for the community.

» Driveway length
- In the RMX base district, the minimum required driveway length is 35' for a residential lot.
- For townhome and rear loaded single family lots, we are proposing a 20' minimum driveway length.
- For single family front loaded lots, we are proposing a 25' minimum driveway length.

» Lot setback
- In Sec. 6.5 of Knightdales' UDO, the minimum rear setback for a house building type is 25'
- For all rear loaded single family lots, we are proposing a minimum setback of 20'

Standard Street Sections (Town of Knightdale Standard Details)

» Local Street Section - Two Way
- The standard detail calls for a 54.0' right-of-way, and allows for informal parking.
- Weldon Village is proposing on-street parking along sections of road where there are no residential driveways. On street parking will allow for guest parking near units. We are not providing on-street parking on streets with front-loaded units to avoid any potential site triangle conflicts as residents exit their driveways.

Proposed Distribution (UDO Sec. 11.1.B)

» Weldon will require a site development allowance to achieve the required distribution of uses listed in Knightdale's UDO Sec. 11.1.B. We are seeking a maximum single-family distribution of 83%. The proposed use distribution is as follows:
- Dwelling - Single Family 83%
- Dwelling - Townhouse 10%
- Retail/Restaurant/Entertainment/Office/Service 7%

Residential Clearing & Grading (UDO Sec. 9.3.B)

» Weldon will require a site development allowance pertaining to Residential Clearing and Grading as specified in Section 9.3.B of the UDO.
- Currently, mass grading is prohibited on lots 60' in width or greater.
- Weldon requests to mass grade all single-family and townhome lots less than 80' wide. Any lot 80' in width or greater shall not be mass graded.

Pump Station Fence

» Knightdale's UDO does not allow for chain link fences to be used for screening methods
- We are proposing an opaque fence to surround the proposed pump station.
- If the City of Raleigh Public Utilities Department requires a chain-link fence to surround the pump station, it will supersede the Town of Knightdale's UDO requirements.

NEIGHBORHOOD MEETING

Meeting Information

Figure 20: Knightdale Recreation Center Vicinity Map (Not to scale)

A neighborhood meeting was held on September 27, 2022 at 6:00 pm at the Knightdale Recreation Center in Knightdale. See Figure 20 for a map of the meeting location. There were ten neighbors in attendance, along with a member of the development team, three members of the design team, and one Senior Planner from the Town of Knightdale.

Date of meeting:	Tuesday Sept. 27, 2022
Time of meeting:	6:00 pm EST
Meeting address:	Knightdale Recreation Center 102 Lawson Ridge Rd. Knightdale, NC 27545
Developer:	
» DRB Group:	Jay Colvin, Director of Land Acquisition
Design consultants:	
» Urban Design Partners:	Brian Richards, PLA Lexi Chacalos
» Ramey Kemp Associates:	Caroline Cheeves, PE
Town of Knightdale:	Kevin Lewis, Senior Planner, AICP, CZO

Neighborhood Meeting Questions

At the neighborhood meeting for Weldon, the neighbors had questions about streets, traffic, proposed amenities, the site buffer, proposed utilities, the proposed commercial outparcel, and architectural standards. Their questions are as follows:

Streets/Traffic

» One neighbor asked if there were any proposed improvements to Horton Rd because they are concerned about existing traffic in area.
  - Traffic engineer said there are no current plans to update Horton Rd. They are in the middle of conducting the TIA for the proposed development.

» Neighbor directly adjacent to proposed street connection at Conway Ridge Crossing is concerned that the proposed connection is too close to their existing driveway.
  - Applicant & Traffic Engineer noted that they are required to make the connection at that stub, and that there would be site distance triangles in place at the proposed intersection for safety as they exit their driveway.

» The neighbors in the Horton Mill subdivision raised a concern that their roads are crumbling and in need of maintenance/repair. Their roads are owned by a private HOA, and they are unable to get the owner to make repairs.
  - Applicant & Traffic Engineer stated that the residents would need to contact a Land Use Attorney and annex into the Town of Knightdale to turn their roads into public roads. The developer gave them contact information for a land use attorney.

» A neighbor asked where the construction entrance would be for Weldon. They did not want the construction entrance to be through the Horton Mill neighborhood.
  - The developer said that the construction entrance would be off Horton Rd. They will put a barricade at the Conway Ridge Crossing connection during construction. The barricade would be removed once dwelling units are being occupied in Weldon.

» A neighbor asked if there will be a traffic light at the intersection of Horton Road and Old Knight Road.
  - The Traffic Engineer said that previous TIA documents have not recommended a signalized intersection at that location. They are currently in the middle of their TIA report and if they determine that the proposed traffic will be bad, they will recommend a traffic light.

» A neighbor asked if Knightdale will be maintaining the roads in Weldon.
  - The Senior Planner confirmed that Knightdale maintains the roads that are annexed into Knightdale. Because Weldon is annexed into Knightdale, they would be maintaining the proposed public roads. The alleys would be maintained by the HOA.

Amenities

» A neighbor asked if the proposed community amenities would be for Weldon residents only.
  - Developer stated that the Greenway trail is public, and they will not be installing key fob entry at the proposed playground.

» The neighbor who lives adjacent to Weldon on the west asked if the Greenway Trail would be extending onto their property. They do not want to see any people on their property.
  - The Senior Planner & Applicant said that the proposed Greenway Trail location is dictated in the Knightdale Comprehensive Plan. The proposed trail would dead end at the Weldon property line and would not extend into the adjacent property.

Site Buffer

» Two neighbors asked if we would be putting a fence or wall around Weldon.
  - Applicant stated that there would not be a fence, but there would be a 20' landscaped buffer around the property.

» A neighbor asked about the types and heights of plants that would be installed in the buffer. They do not want anything that will negatively affect their existing tree cover.
  - Applicant explained that the plants would be of varying species an size to create an opaque buffer for adjacent properties. The selected plants would not be invasive species, and that the buffer would be maintained by the HOA.

Proposed Utilities

» A neighbor asked if Weldon would be on well & septic.
  - The applicant said that Weldon would be on City of Raleigh sewer and water.

» In a follow up question, the neighbor asked if the site will be pumping sewer to Horton Rd.
  - Applicant stated that site will have pump station & lift station to get sewer to the gravity line that exists on Horton Rd.

Commercial Outparcel

» A neighbor asked what type of business would be occupying the commercial out parcel in the SE corner of Weldon.
  - The developer stated that they aren't commercial developers, but that the Town of Knightdale's Comprehensive Plan calls for a neighborhood use. It would not be a high traffic use, and would be mainly for the benefit of the surrounding neighborhood.

Neighborhood Meeting Questions (Continued)

Architectural Standards

» A neighbor asked who the builder will be for Weldon.
  - Developer answered that DRB is the builder and developer for the site.

» One neighbor asked about the spacing between the single family detached houses and if they would be comparable to the Wendell Falls development.
  - The developer answered that the spacing will be greater than the spacing that exists in the Wendell Falls development.

» The same neighbor also asked if there was a reason that the proposed townhomes were along the side of the development that they live beside.
  - The developer answered that the townhomes front along the proposed Avenue street type. Having townhomes that front the avenue creates better street appeal and a more walkable neighborhood. The location of the town homes also creates a transition into the neighborhood from the commercial out parcel.

» A neighbor who could not attend, but submitted questions via email asked about the type of homes that will be provided in Weldon.
  - The applicant replied that it will consist of single family detached houses of multiple sizes, and townhomes.

Miscellaneous

» A neighbor asked if Weldon will be a much higher density than its current zoning of RR1.
  - The applicant responded that the RMX base zoning can allow up to 18 dwelling units per acre, but the proposed Weldon layout is only ± 3.8 dwelling units per acre. RMX also allows for a variety of housing options. The plan is providing a variety of housing types that allows for more community open space.

» A neighbor asked for the size of Weldon.
  - Applicant responded that Weldon is ± 41 acres total.

Neighborhood Meeting Attendance Sheet	
Project Name:	Weldon
Date of Meeting:	9/27/2022
Time:	6:00 PM
Location:	Knightdale Recreation Center (Room name: Cabin)

Additional Information
Existing zoning: RR1 Proposed zoning: RMX-PUD

Attendee Information

Name (Printed)	Address	Email Address
PAULA Underwood Sigmagirl76	9001 Conway Ridge Xing	Sigmagirl76@yahoo.com
Jim Wells	9005 Conway Ridge xing	jwells2004@mindspring.com
Donna Wells	"	dwells07@mindspring.com
Warner	1704 Proc Ridge Ln	mawarner5752@gmail.com
Annie Logan	1628 Quiet Oak Rd.	annie-Logan@att.Net
Kevin Lewis	950 Steeple Square Ct	Kevin.lewis@knightdalenc.gov
Patricia L. Johnson	1532 Lucas Rd	hppj101850@aol.com
Robert Lanyia	1513 Lucas Rd	kpanilaryea@yahoo.com
ERNEST LOGAN JR	1628 Quiet Oaks Rd	bigelj@AOL.com
*Tara Johnson	1404 Lucas Rd.	

*Note: Tara Johnson called the development team ahead of the meeting with her questions and comments because she was unable to attend the neighborhood meeting. Her comments/questions have been added to the previous pages.

URBAN
DESIGN
PARTNERS

LANDSCAPE ARCHITECTURE + CIVIL ENGINEERING

WELDON
COMMERCIAL PARCEL

HORTON RD.

RECTANGULAR RAPID
FLASH BEACON

OLD KNIGHT RD.

HAYWOOD GLEN
PHASE 4

URBAN DESIGN PARTNERS

WELDON | PROPOSED INTERSECTION IMPROVEMENTS

KNIGHDALE, NC

0 10 20

MARCH 31, 2023
22-RDU-030

150 Fayetteville St. Suite 1310 Raleigh, NC 27601 | urbandesignpartners.com | 919.275.5002

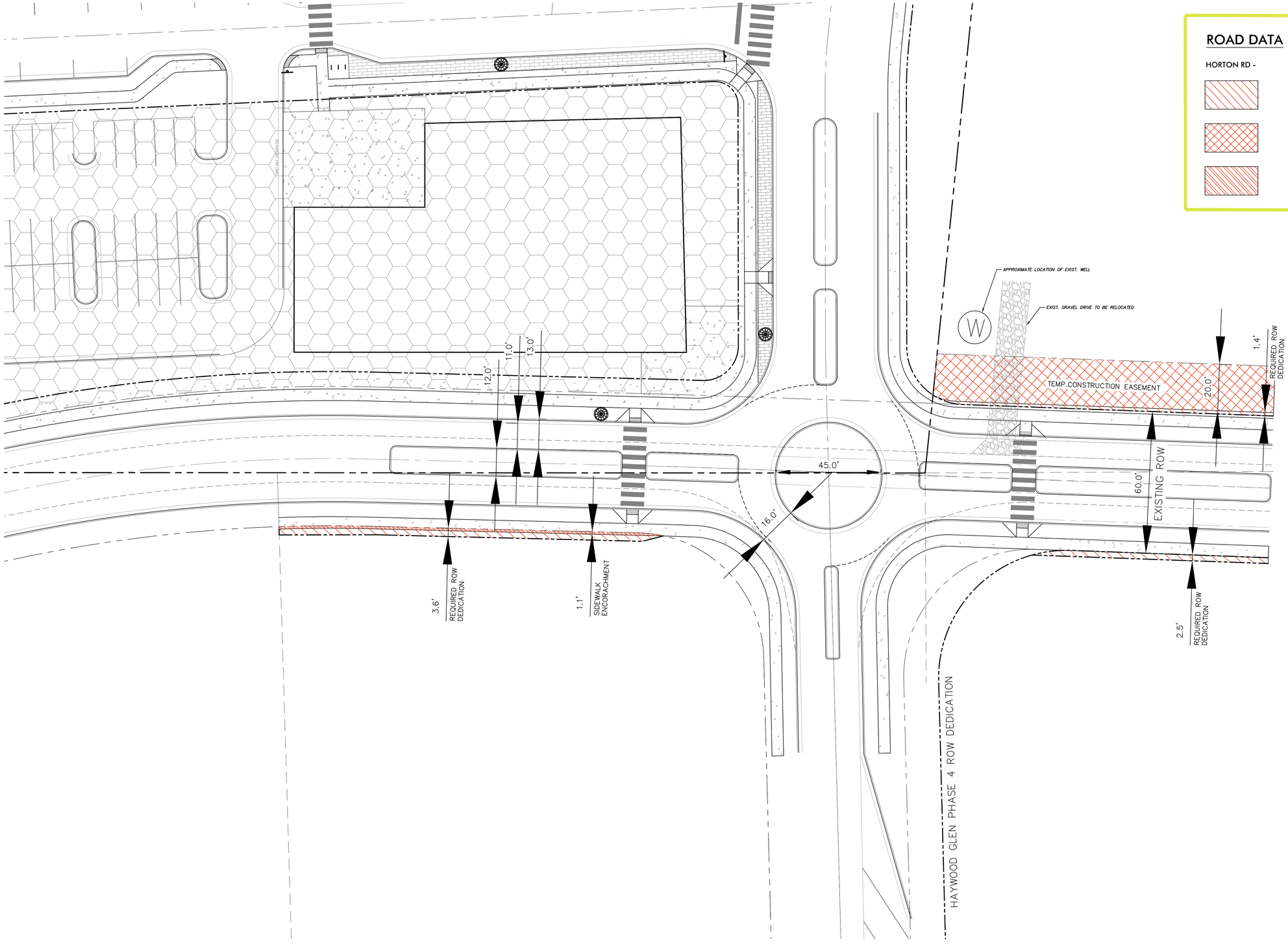
ROAD DATA

HORTON RD - SR - 2231 (60' ROW) - 45 MPH

AREA OF RIGHT OF WAY DEDICATION

TEMP. CONSTRUCTION EASEMENT

AREA OF ENCROACHMENT



WELDON

KNIGHTDALE, NC

HORTON RD MINI ROUNDABOUT STUDY

GRAPHIC SCALE
20 0 10 20 40
1 INCH = 20 FEET

1" = 20'
APRIL 3, 2023
22-RDU-083

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150 Fayetteville St., Suite 1310 Raleigh, 27601
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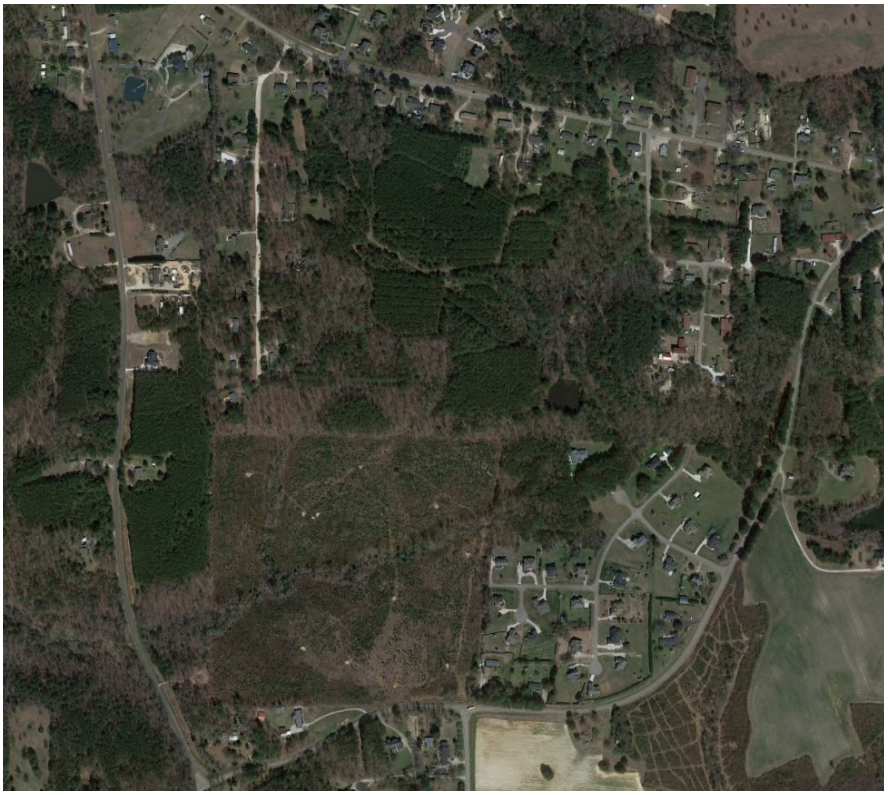
TOGETHER WE ARE LIMITLESS



Weldon Village

Traffic Impact Analysis

Knightdale, North Carolina

rameykemp.com

TRAFFIC IMPACT ANALYSIS

FOR

WELDON VILLAGE

LOCATED

IN

KNIGHTDALE, NC

Prepared For:
DRB GROUP
3000 RDU Center Drive, Ste 202
Morrisville, NC

Prepared By:
Infrastructure Consulting Services, Inc.
dba
Ramey Kemp Associates
5808 Faringdon Place
Raleigh, NC 27609
License #F-1489

OCTOBER 2022

Prepared By: TP

Reviewed By: CC

RKA Project No. 22418

TRAFFIC IMPACT ANALYSIS
WELDON VILLAGE
KNIGHTDALE, NORTH CAROLINA

EXECUTIVE SUMMARY

1. Development Overview

A Traffic Impact Analysis (TIA) was conducted for the proposed Weldon Village development in accordance with the Knightdale (Town) Unified Development Ordinance (UDO) and North Carolina Department of Transportation (NCDOT) capacity analysis guidelines. The proposed development is to be located north of Horton Road and to the east of Lucas Road in Knightdale, North Carolina. The proposed development is expected to be a maximum of 124 single-family homes, 32 townhomes, 8,000 s.f. of general office, and 8,000 s.f. of strip retail plaza and estimated to be built out in 2029. Site access is proposed via one full movement driveway that will form the fourth leg at the intersection of Horton Road and Old Knight Road and via connection to the existing Conway Ridge Crossing.

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

- 2022 Existing Traffic Conditions
- 2029+1 No-Build Traffic Conditions
- 2029+1 Build Traffic Conditions
- 2029+10 Build Traffic Conditions

2. Existing Traffic Conditions

The study area for the TIA was determined through coordination with the Town and NCDOT and consists of the following existing intersections:

- Horton Road and Lucas Road
- Horton Road and Old Knight Road / Access A
- Horton Road and Buffaloe Road
- Lucas Road and Buffaloe Road
- Horton Mill Drive and Horton Road

- Horton Road and Marks Creek Road

Existing peak hour traffic volumes were determined based on traffic counts conducted at the study intersection listed below, in August of 2022 by RKA during a typical weekday AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak periods:

- Horton Road and Lucas Road
- Horton Road and Old Knight Road / Access A
- Horton Road and Buffaloe Road
- Lucas Road and Buffaloe Road
- Horton Mill Drive and Horton Road
- Horton Road and Marks Creek Road

The traffic counts at the intersection of Knightdale Boulevard and North First Avenue were counted in June of 2022 during the same peak hours while schools were in session. Weekday AM and PM traffic volumes were balanced between study intersections, where appropriate.

3. Site Trip Generation

The proposed development is assumed to consist of 124 single family homes, 32 townhomes, 8,000 s.f. general office, and 8,000 s.f. of strip retail plaza. 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 E-1: Site Trip Generation

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	AM Peak Hour Trips (vph)		PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Single Family Detached (210)	124 DU	1,230	24	67	77	45
Townhomes (215)	32 DU	193	3	8	8	7
General Office (710)	8 KSF	546	14	10	31	32
Strip Retail Plaza (822)	8 KSF	122	16	2	3	16
Total Trips		**2,091**	57	87	119	100
*Internal Capture (6% AM & 2% PM)**			-3	-5	-1	-2
Total External Trips			54	82	118	98
Pass-By Trips			0	0	-3	-3
Total Primary Trips			54	82	115	95

4. Future Traffic Conditions

Through coordination with the Town and NCDOT, it was determined that an annual growth rate of 3% would be used to generate 2030 projected weekday AM and PM peak hour traffic volumes. The following adjacent developments were identified to be considered under future conditions:

- Buffaloe Road Assemblage
- Forestville Village
- Haywood Glen
- Marks Creek

5. Capacity Analysis Summary

The analysis considered weekday AM and PM peak hour traffic for 2022 existing, 2030 no-build, 2030 build, and 2039 build conditions. Refer to Section 7 of the TIA for the capacity analysis summary performed at each study intersection.

6. Recommendations

Based on the findings of this study, specific geometric and traffic control improvements have been identified at study intersections. The improvements are summarized below and are illustrated in Figure E-1.

Improvements to Meet Town's UDO

Marks Creek Road and Horton Road

- Monitor intersection for signalization and install traffic signal when warranted.

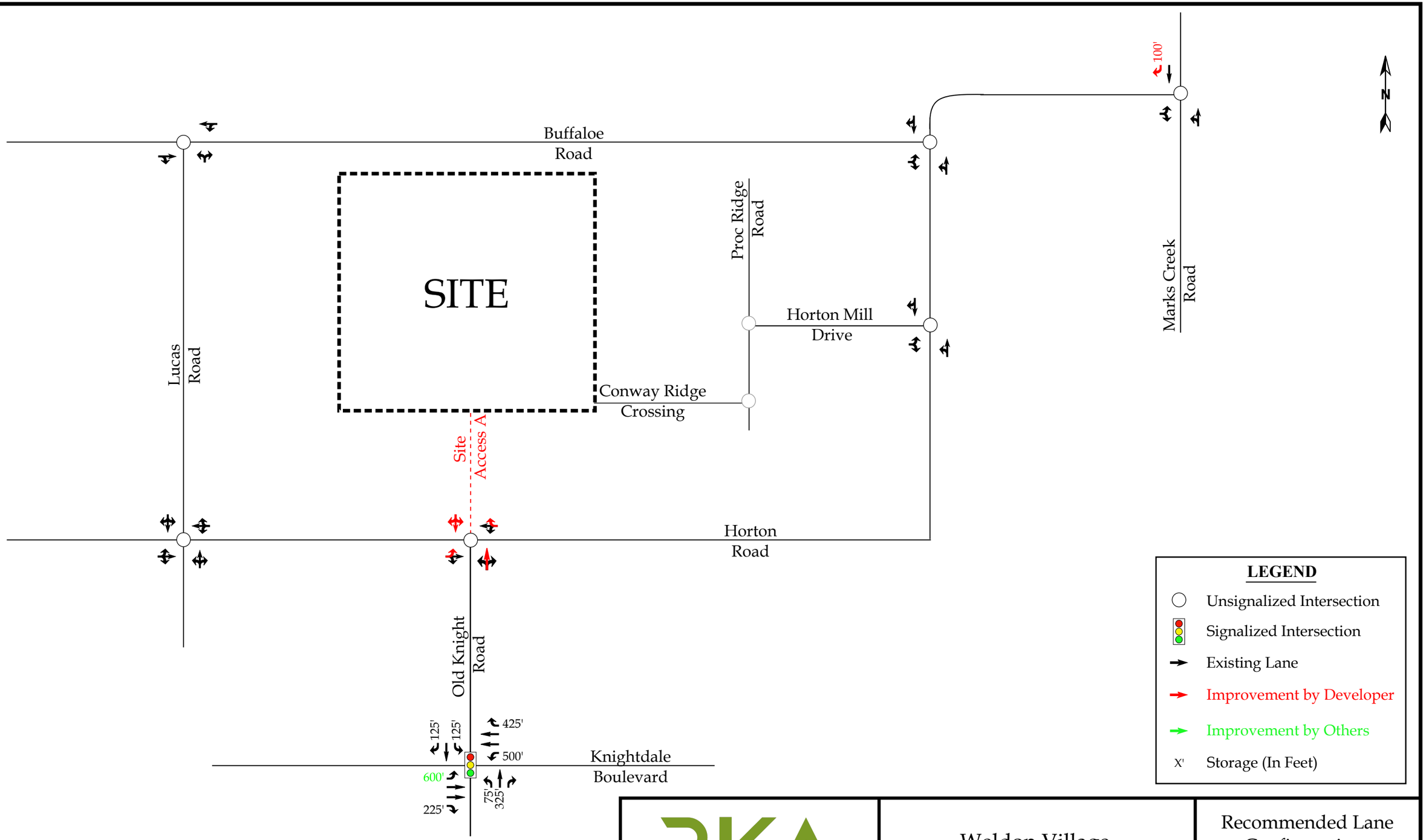
Recommended Improvements by Developer

Marks Creek Road and Horton Road

- Construct southbound right turn lane with 100 feet of storage and appropriate decel and taper.

Horton Road and Old Knight Road / Site Access A

- Construct southbound approach as one ingress lane and one egress lane.
- Provide stop-control for southbound approach.



*Intersection shown for illustrative purposes

RAMEY KEMP ASSOCIATES

Weldon Village
Knightdale, NC

Recommended Lane Configurations

Scale: Not to Scale | Figure E-1

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TRAFFIC IMPACT ANALYSIS
WELDON VILLAGE
KNIGHTDALE, NORTH CAROLINA

1. INTRODUCTION

The contents of this report present the findings of the Traffic Impact Analysis (TIA) conducted for the proposed Weldon Village development to be located north of Horton Road and to the east of Lucas 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 in 2029, is assumed to consist of the following uses:

- 124 single family homes
- 32 townhomes
- 8,000 square foot (s.f.) general office
- 8,000 square foot (s.f.) strip retail plaza

Per the Town of Knightdale (Town) Unified Development Ordinance (UDO), future analysis should include the build year + 1, as well as a future (build year + 10 years) scenario. The study analyzes traffic conditions during the weekday AM and PM peak hours for the following scenarios:

- 2022 Existing Traffic Conditions
- 2029+1 No-Build Traffic Conditions
- 2029+1 Build Traffic Conditions
- 2029+10 Build Traffic Conditions

1.1. Site Location and Study Area

The development is proposed to be located north of Horton Road and to the east of Lucas 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 and consists of the following existing intersections:

- Horton Road and Lucas Road
- Horton Road and Old Knight Road / Access A
- Horton Road and Buffaloe Road
- Lucas Road and Buffaloe Road
- Horton Mill Drive and Horton Road
- Horton Road and Marks Creek Road
- Knightdale Boulevard and First Avenue / Old Knight 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 north of Horton Road and to the east of Lucas Road. The proposed development, anticipated to be completed in 2029, is assumed to consist of the following uses:

- 124 single family homes
- 32 townhomes
- 8,000 square foot (s.f.) general office
- 8,000 square foot (s.f.) strip retail plaza

These land uses are assumed at this time. Site access is proposed via one full movement driveway that will form the fourth leg at the intersection of Horton Road and Old Knight Road and via connection to the existing Conway Ridge Crossing. 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 undeveloped land and residential development.

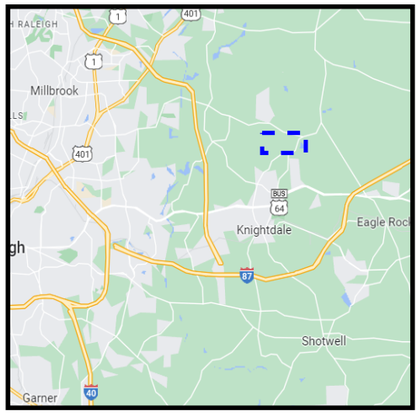
1.4. Existing Roadways

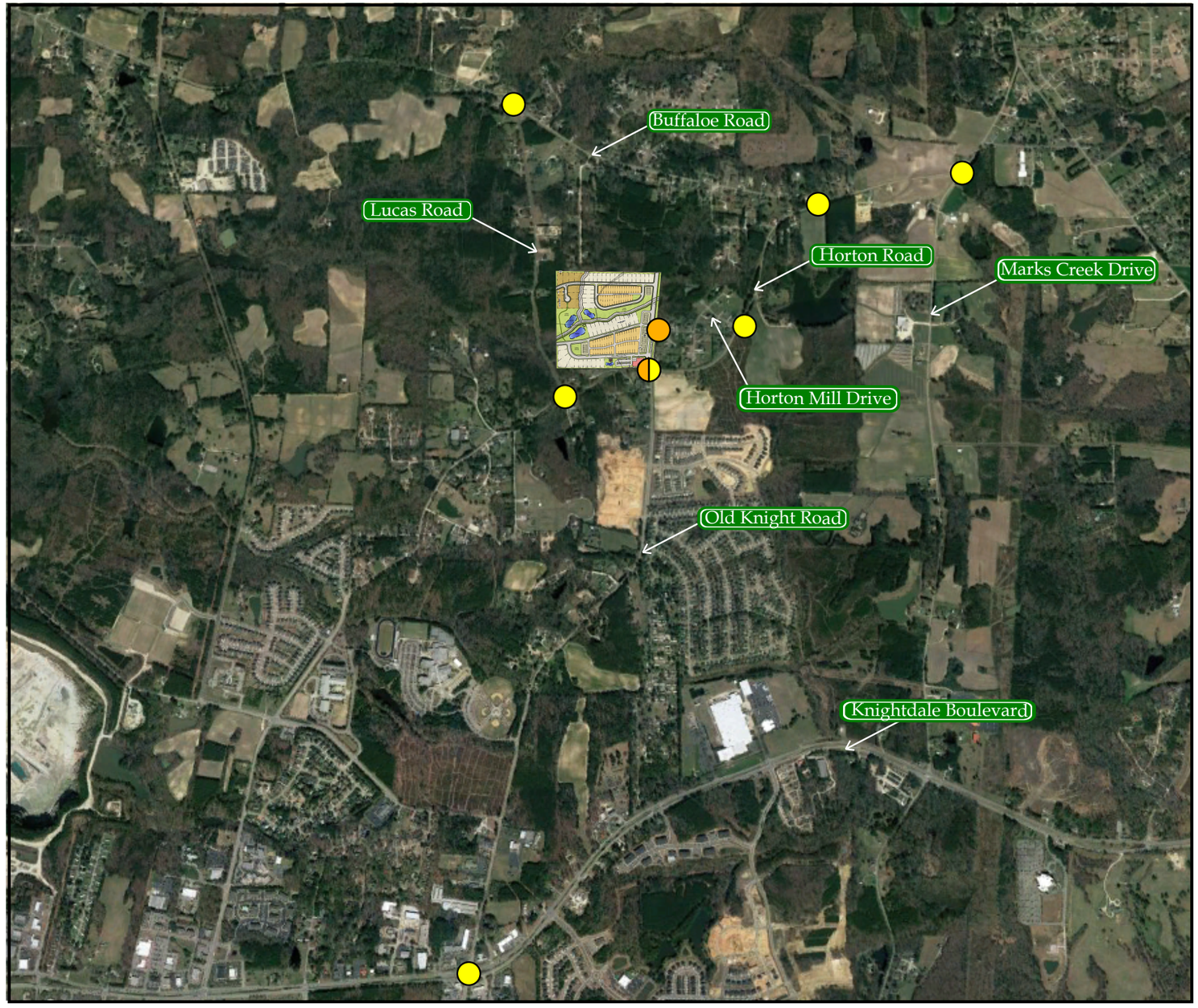
Existing lane configurations (number of traffic lanes on each intersection approach), lane widths, storage capacities, and other intersection and roadway information within the study area are shown in Figure 3. Table 1 provides a summary of this information, as well.

Table 1: Existing Roadway Inventory

Road Name	Route Number	Typical Cross Section	Speed Limit	2019 AADT (vpd)
Buffaloe Road	SR 2215	2-lane undivided	45 mph	3,800
Lucas Road	SR 2260	2-lane undivided	45 mph	860*
Horton Road	SR 2231	2-lane undivided	Not Posted	2,300
Old Knight Road	SR 2049	2-lane undivided	Not Posted	6,800**
Marks Creek Road	SR 2234	2-lane undivided	Not Posted	3,700
North 1st Avenue	SR 2049	2-lane undivided	25 mph	7,500
Knightdale Boulevard	US 64	4-lane divided	45 mph	24,000
Horton Mill Drive	N/A	2-lane undivided	Not Posted	180*

*ADT from 2017
**ADT from 2015
**ADT based on the traffic counts from 2022 and assuming the weekday PM peak hour volume is 10% of the average daily traffic.





LEGEND

- Study Intersection
- Proposed Site Access
- Study Area

N

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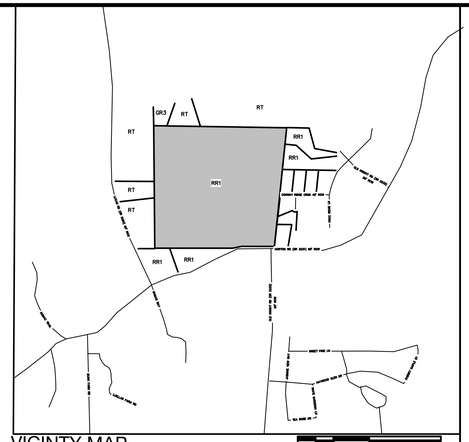
Weldon Village
Knightdale, NC

Site Location Map

Scale: Not to Scale | Figure 1



SITE DATA

TAX PARCEL ID #:	1755757607
TOTAL SITE AREA:	± 41 AC
EXISTING ZONING:	RR1
PROPOSED ZONING:	RMX-PUD
WATERSHED CLASSIFICATION:	N/A

DEVELOPMENT SUMMARY

RESIDENTIAL MIX

- 80' WIDE SINGLE FAMILY FRONT LOADED - 10 PARCELS
- 60' WIDE SINGLE FAMILY FRONT LOADED - 44 PARCELS
- 32' X 70' WIDE SINGLE FAMILY REAR LOADED - 72 PARCELS
- TOWNHOMES - 32 UNITS

TOTAL - 158 DWELLING UNITS

COMMERCIAL

- ± 1.5 AC OUTPARCEL
- ± 15,000 SF
- PARKING REQUIRED ± 51 - 103 SPACES
- PARKING PROVIDED : 51 SPACES

*OPEN SPACE:

- OPEN SPACE REQUIRED ± 5.8 AC (50% PASSIVE - 50% ACTIVE)
- LAND DEDICATED FOR OPEN SPACE ± 8.4 AC

*TO FULFILL KNIGHTDALE COMMUNITY, RECREATION, PUBLIC, ENVIRONMENTAL AND CREATIVE PROGRAMMING REQUIREMENTS

CONNECTIVITY INDEX

- 1.40 LINK/NODE RATIO

TREE COVER AREA

- REQUIRED - ± 5522.7 LF (PERIMETER) X 20 = 110,454 SF = 2.5 AC
- PROVIDED - ± 120,118 SF (RIVER BUFFER) = 2.75 AC

WATER ALLOCATION

WATER ALLOCATION POINTS - MAJOR SUBDIVISION

- MAJOR SUBDIVISION BASE POINTS - 15 POINTS
- RESIDENTIAL ARCHITECTURAL STANDARDS - 15 POINTS
- CONSTRUCT MORE THAN 2000 LINEAR FT OF 10FT WIDE PATH - 6 POINTS
- CONSTRUCT A FOUNTAIN WITHIN THE BMP - 4 POINTS
- DECK/PATIO (3000 SF) - 3 POINTS
- PROVISION OF ON-STREET PUBLIC PARKING - 4 POINTS
- IPEMA CERTIFIED PLAYGROUND EQUIPMENT - 4 POINTS
- OUTDOOR DISPLAY OF PUBLIC ART - 4 POINTS

TOTAL - 55 POINTS

WATER ALLOCATION POINTS - SINGLE USE RETAIL

- SINGLE USE RETAIL BASE POINTS - 41 POINTS
- OUTDOOR DISPLAY OF PUBLIC ART - 4 POINTS
- DECK/PATIO (3000 SF) - 3 POINTS
- CONSTRUCT A FOUNTAIN WITHIN THE BMP - 4 POINTS
- PROVISION OF ON STREET PUBLIC PARKING - 4 POINTS

TOTAL - 56 POINTS

NOTES

1. THIS PLAN IS CONCEPTUAL IN NATURE AND IS SUBJECT TO CHANGE.
2. THIS EXHIBIT WAS PREPARED USING AVAILABLE RECORD INFORMATION, GIS MAPS, RECORD PLANS, AERIAL IMAGERY, AND LAND RECORDS
3. THIS PLAN WILL BE SUBJECT TO REVIEW AND APPROVAL BY LOCAL AND STATE PLANNING AND ENGINEERING REVIEW AGENCIES.
4. THE WORK OF THIS PRODUCT IS THE PROPERTY OF URBAN DESIGN PARTNERS, PLLC. NO USE OR REPRODUCTION OF THIS PLAN IS PERMITTED WITHOUT WRITTEN AUTHORIZATION FROM URBAN DESIGN PARTNERS, PLLC.

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WELDON VILLAGE MIXED USE | YIELD STUDY

KNIGHTDALE, NC

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August 2, 2022
Job #22-RDU-030

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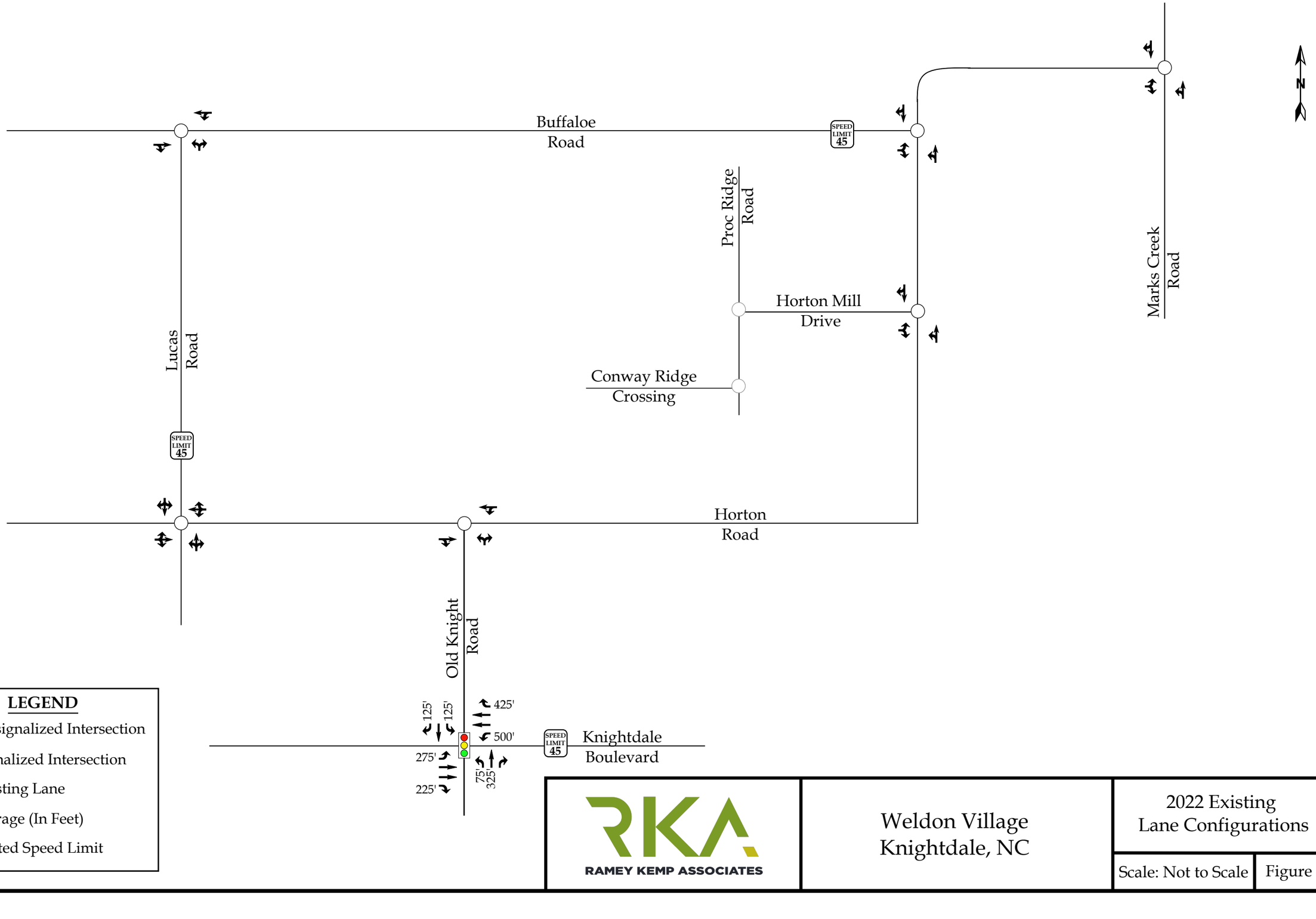

Buffaloe
Road
SPEED LIMIT 45
Proc Ridge
Road
Marks Creek
Road
Horton Mill
Drive
Conway Ridge
Crossing
Lucas
Road
SPEED LIMIT 45
Horton
Road
Old Knight
Road
125'
125'
425'
500'
275'
225'
75'
325'
SPEED LIMIT 45
Knightdale
Boulevard
N
LEGEND
Unsignalized Intersection
Signalized Intersection
Existing Lane
X' Storage (In Feet)
SPEED LIMIT XX Posted Speed Limit
RKA
RAMEY KEMP ASSOCIATES
Weldon Village
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

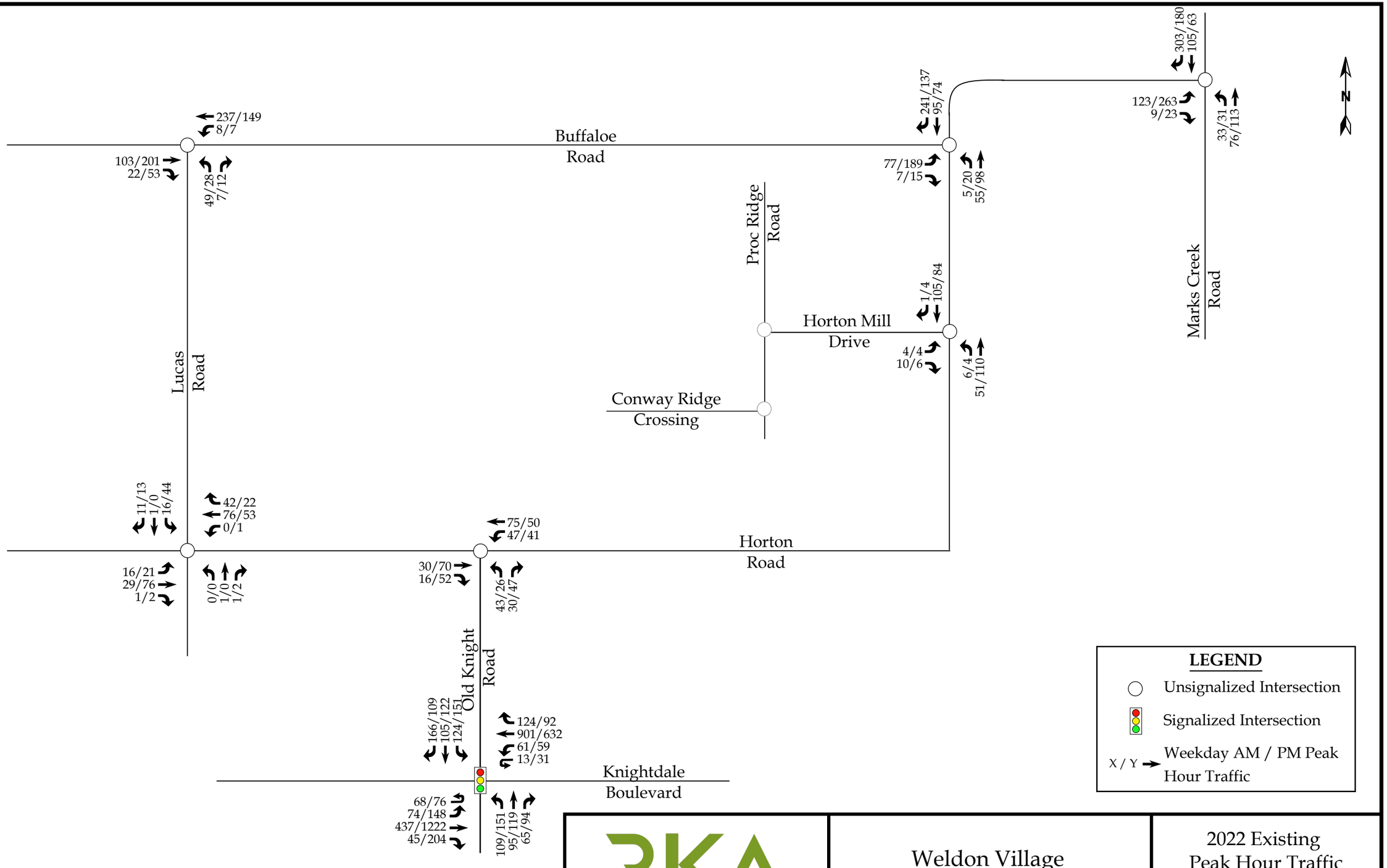
Existing peak hour traffic volumes were determined based on traffic counts conducted at the study intersections listed below, in August of 2022 by RKA and Burns Service, Inc. during a typical weekday AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak periods while schools were in session:

- Horton Road and Lucas Road
- Horton Road and Old Knight Road / Access A
- Horton Road and Buffaloe Road
- Lucas Road and Buffaloe Road
- Horton Mill Drive and Horton Road
- Horton Road and Marks Creek Road

The traffic counts at the intersection of Knightdale Boulevard and North First Avenue were counted in June of 2022 during the same peak hours while schools were in session. 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 7 of this report.



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.

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Weldon Village
Knightdale, NC

2022 Existing
Peak Hour Traffic

Scale: Not to Scale | Figure 4

3. 2030 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 2030 projected weekday AM and PM peak hour traffic volumes. Refer to Figure 5 for 2030 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:

- Buffaloe Road Assemblage
- Forestville Village
- Haywood Glen
- Marks Creek

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
Buffaloe Road Assemblage	South of Buffaloe Road, east of Old Crews Road	2027	799 single family homes and 514 townhomes	RKA
Forestville Village	West of Old Knight Road, north of Forestville Road	2025	90 single family homes, 190 townhomes, and 40,000 s.f. of shopping center	RKA
Haywood Glen	Southeastern quadrant of the Old Knight Road and Horton Road intersection	2024	112 single family homes	Timmons Group
Marks Creek	West of Marks Creek Road, north of US 64 Business	2028	246 single family homes and 121 apartments	RKA

It should be noted that including trips from the above adjacent developments on top of an annually compounded growth rate is anticipated to provide conservative results in this area, as local development growth is the most impactful for more rural areas. Additionally, there is expected to be interaction between some of the adjacent developments and the proposed development based on the different land uses; however, no reduction in adjacent development trips was proposed to provide a conservative estimation of future traffic volumes. 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

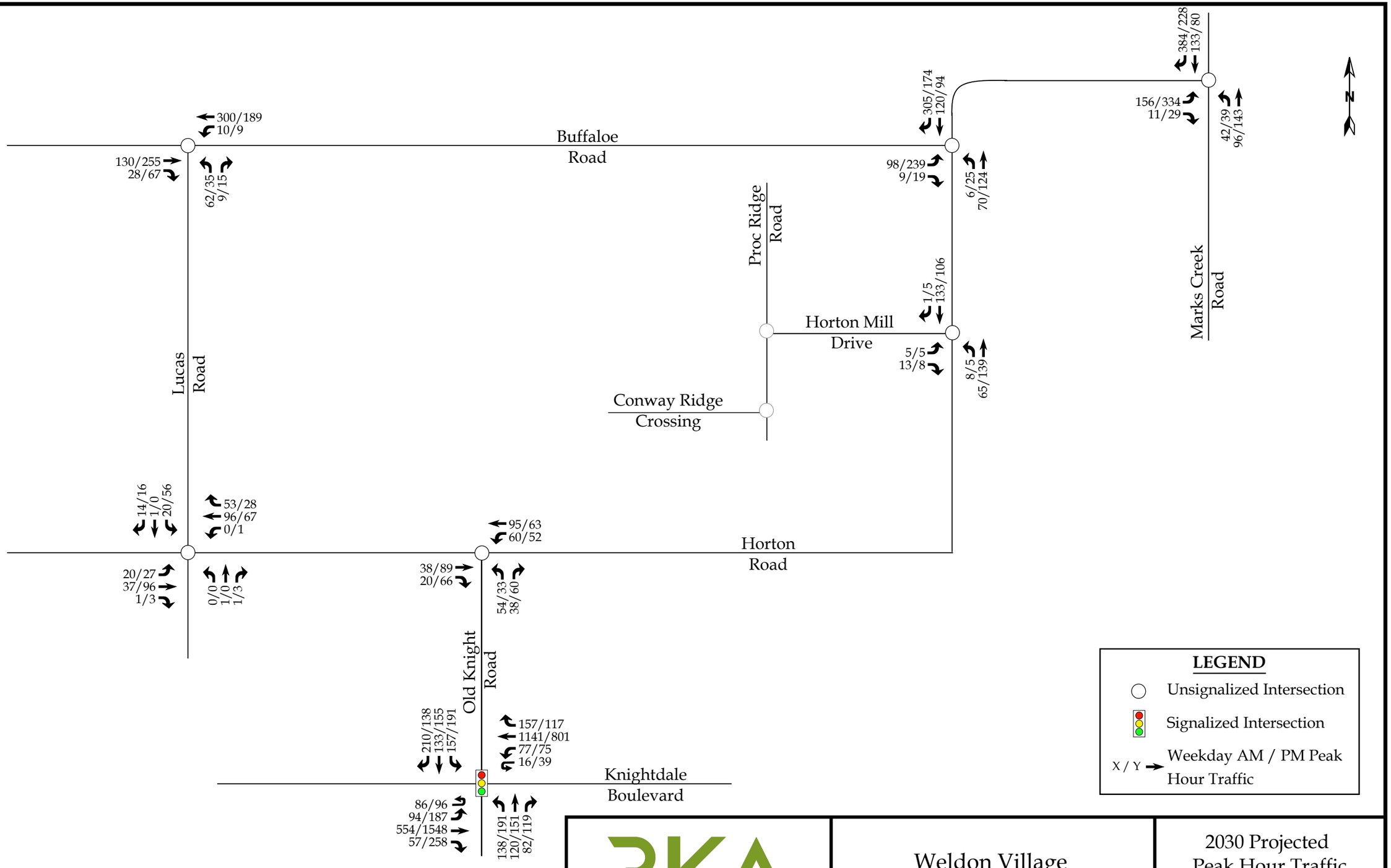
Based on coordination with the Town and NCDOT, two roundabouts are expected along Old Knight Road. Site trips are anticipated to be primarily through traffic at both of these roundabouts which would have minimal impacts on the capacity of the intersection. Due to the minimal impacts anticipated, and the conservative design of the roundabouts, neither roundabout will be included in the study.

3.4. 2030 No-Build Peak Hour Traffic Volumes

The 2030 no-build traffic volumes were determined by projecting the 2022 existing peak hour traffic to the year 2030, and adding the adjacent development trips. Refer to Figure 7 for an illustration of the 2030 no-build peak hour traffic volumes at the study intersections.

3.5. Analysis of 2030 No-Build Peak Hour Traffic Conditions

The 2030 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 7 of this report.



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.

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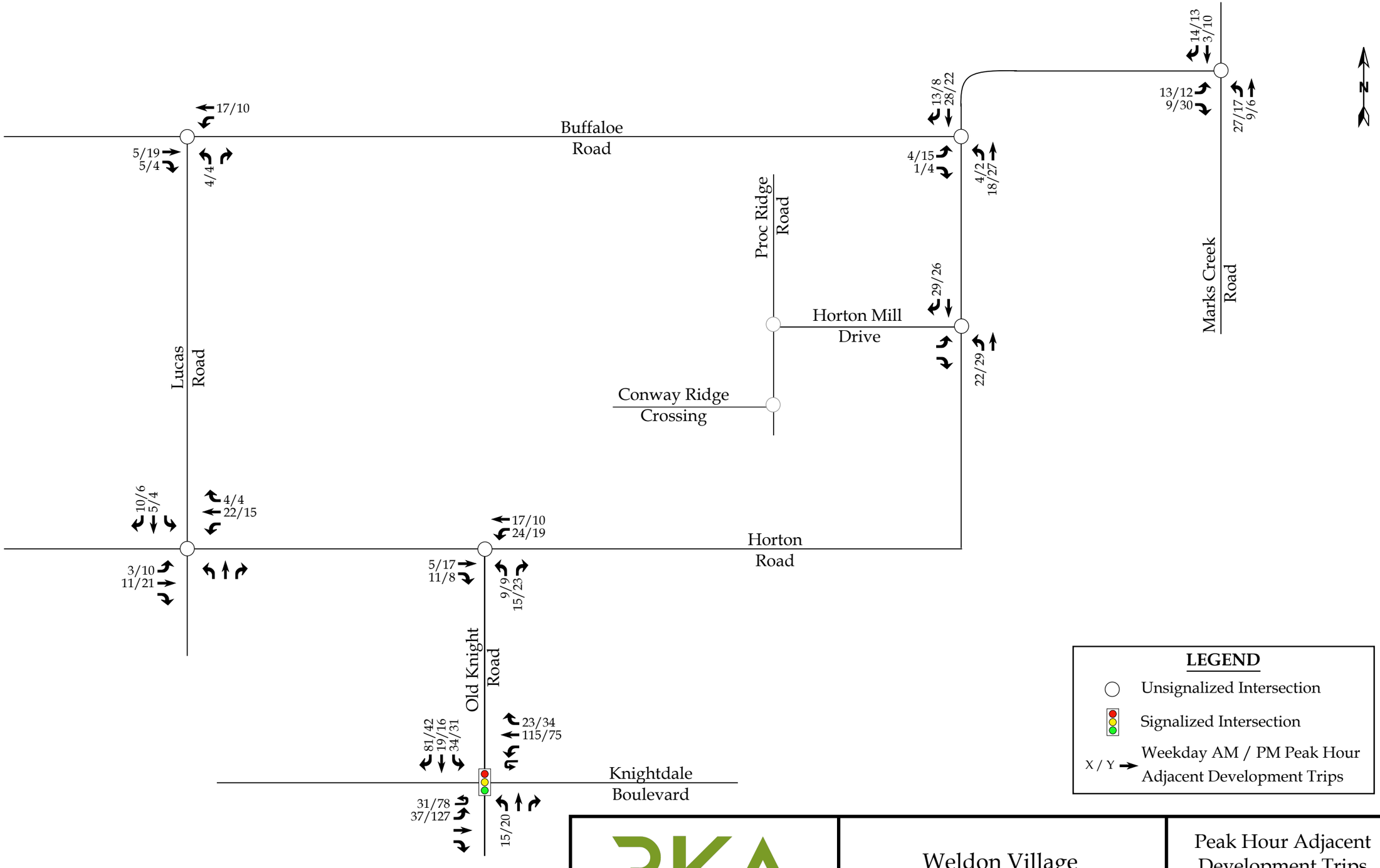
Weldon Village
Knightdale, NC

2030 Projected
Peak Hour Traffic

Scale: Not to Scale | Figure 5



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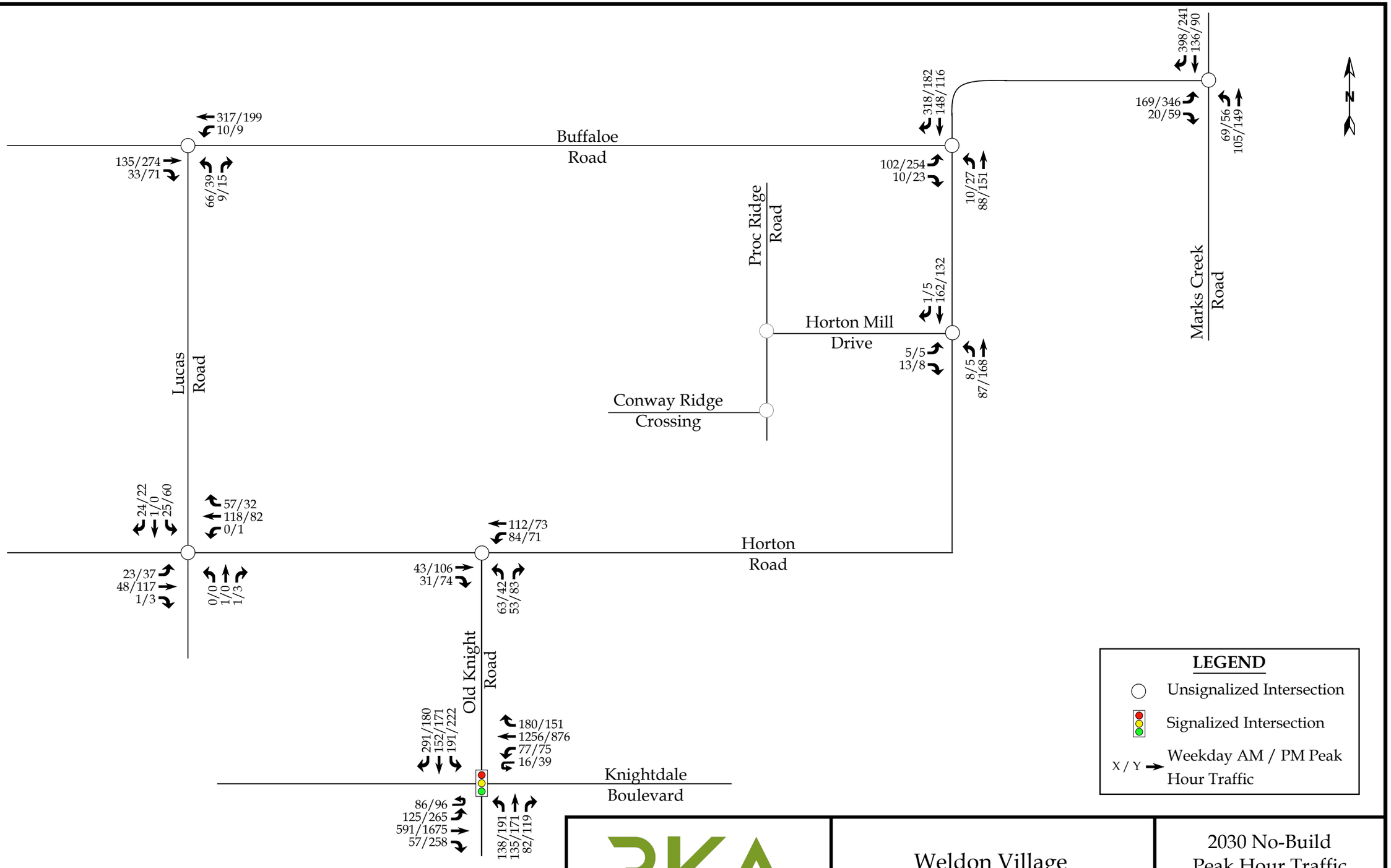
Weldon Village
Knightdale, NC

Peak Hour Adjacent Development Trips

Scale: Not to Scale

Figure 6



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

Weldon Village
Knightdale, NC

2030 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 124 single family homes, 32 townhomes, 8,000 s.f. general office, and 8,000 s.f. of strip retail plaza. 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)	AM Peak Hour Trips (vph)		PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Single Family Detached (210)	124 DU	1,230	24	67	77	45
Townhomes (215)	32 DU	193	3	8	8	7
General Office (710)	8 KSF	546	14	10	31	32
Strip Retail Plaza (822)	8 KSF	122	16	2	3	16
Total Trips		**2,091**	57	87	119	100
*Internal Capture (6% AM & 2% PM)**			-3	-5	-1	-2
Total External Trips			54	82	118	98
Pass-By Trips			0	0	-3	-3
Total Primary Trips			54	82	115	95

*Utilizing methodology contained in the NCHRP Report 684.

It is estimated that the proposed development will generate approximately 2,091 total site trips on the roadway network during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that 144 trips (57 entering and 87 exiting) will occur during the weekday AM peak hour and 219 trips (119 entering and 100 exiting) will occur during the weekday PM peak hour.

Internal capture of trips between the office, residential, and retail uses was considered in this study. Internal capture is the consideration for trips that will be made within the site between different land uses, so the vehicle technically never leaves the internal site but can still be considered as a trip to that specific land use. Internal capture typically only considers trips between residential, office, and retail/restaurant land uses. Based on NCHRP Report 684 methodology, a weekday AM peak hour internal capture of 6% and a weekday PM peak hour internal capture rate of 2% was applied to the total trips. The internal capture reductions are expected to account for approximately 8 (3 entering and 5 exiting) trips during the weekday AM peak hour and 3 (1 entering and 2 exiting) trips during the weekday PM peak hour.

Pass-by trips were also taken into consideration in this study. Pass-by trips are made by the traffic already using the adjacent roadway, entering the site as an intermediate stop on their way to another destination. Pass-by percentages are applied to site trips after adjustments for internal capture. Pass-by trips are expected to account for approximately 6 trips (3 entering and 3 exiting) during the weekday PM peak hour. It should be noted that the pass-by trips were balanced, as it is likely that these trips would enter and exit in the same hour.

The total primary site trips are the calculated site trips after the reduction for internal capture and pass-by trips. Primary site trips are expected to generate approximately 136 trips (54 entering and 82 exiting) during the weekday AM peak hour and 210 trips (115 entering and 95 exiting) 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 residential site trips will be regionally distributed as follows:

- 20% to/from the north via Marks Creek Road
- 20% to/from the west via Buffaloe Road
- 30% to/from the west via Horton Road

- 15% to/from the west via Knightdale Boulevard
- 15% to/from the east via Knightdale Boulevard

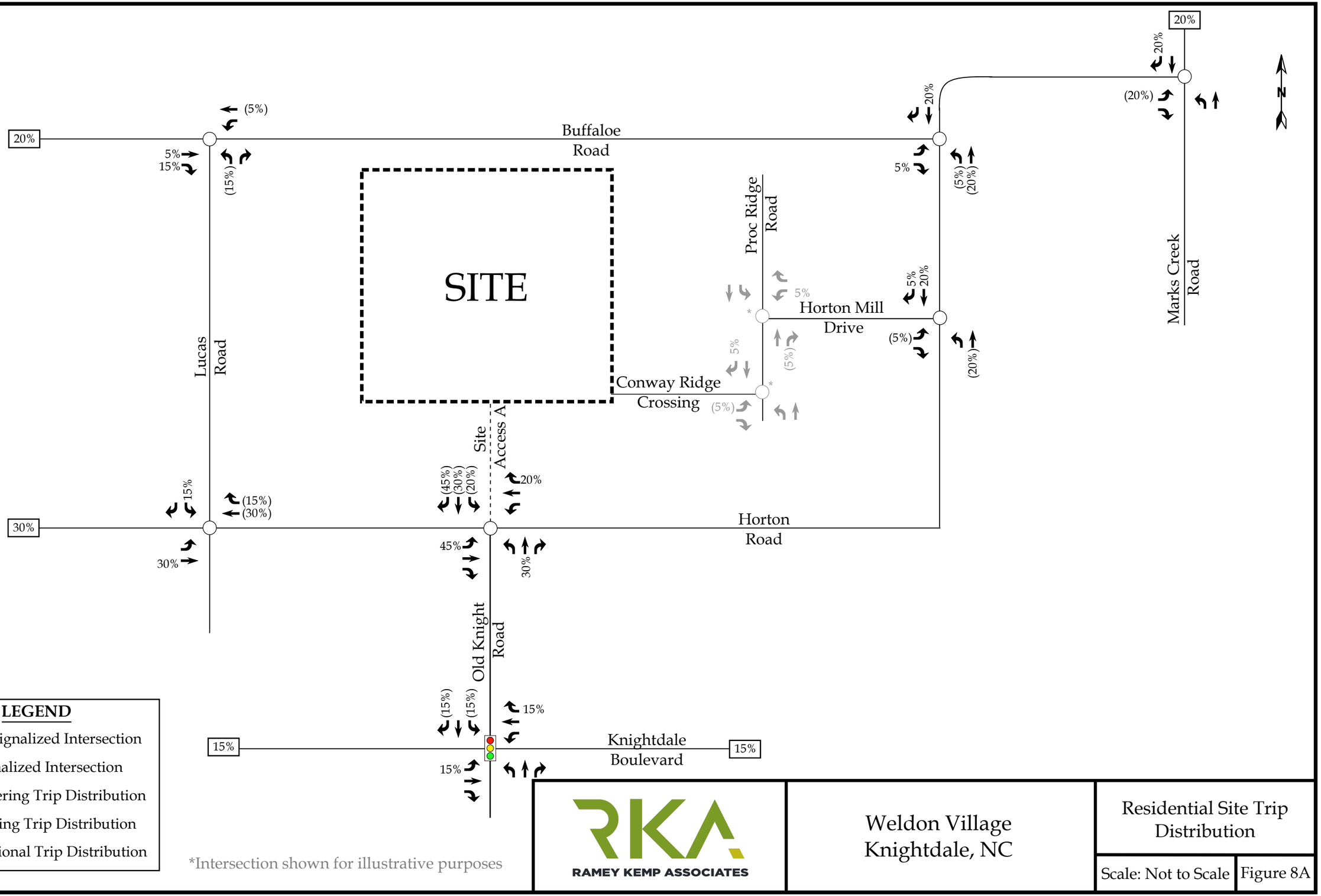
It is estimated that the office/retail site trips will be regionally distributed as follows:

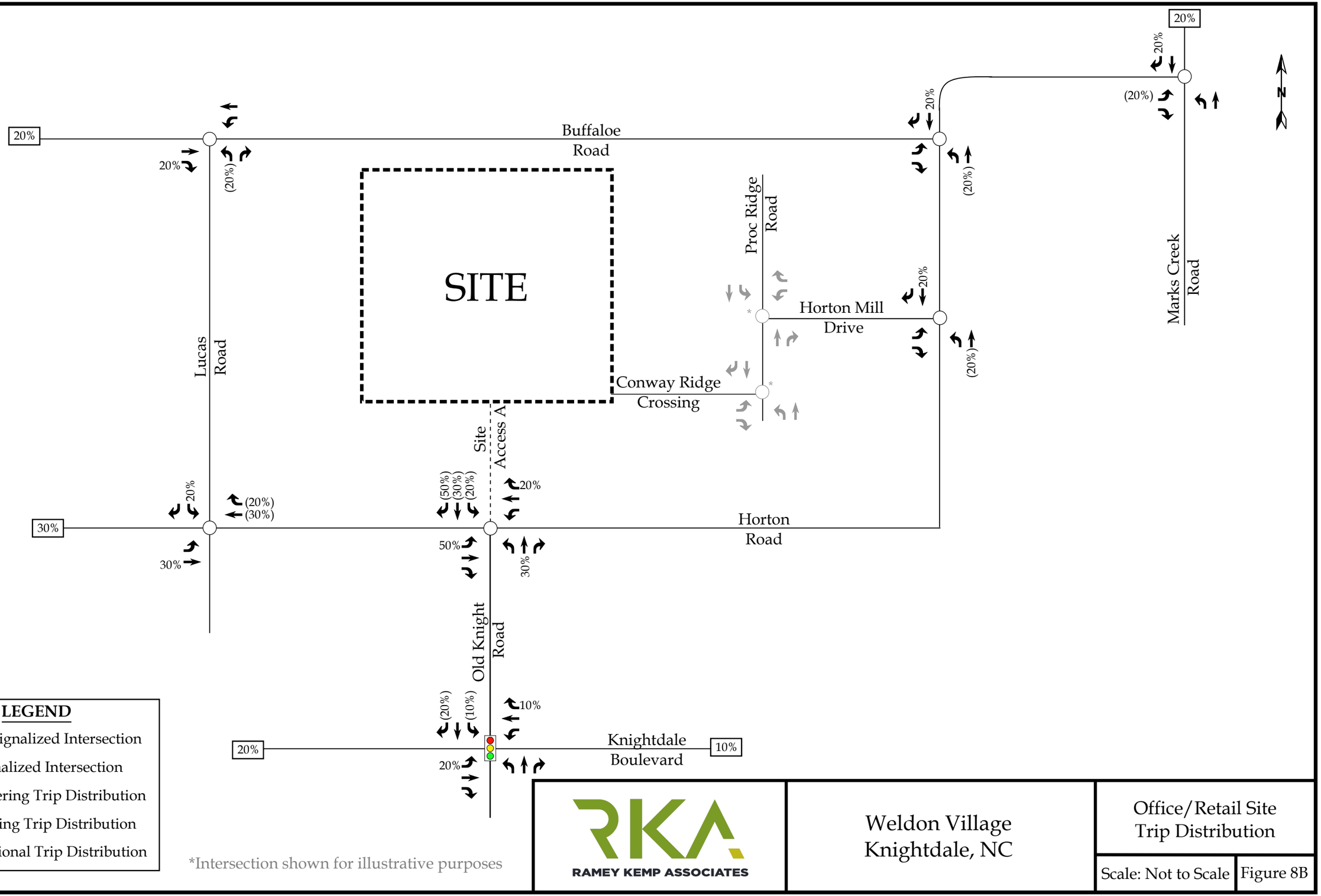
- 20% to/from the north via Marks Creek Road
- 20% to/from the west via Buffaloe Road
- 30% to/from the west via Horton Road
- 20% to/from the west via Knightdale Boulevard
- 10% to/from the east via Knightdale Boulevard

The residential site trip distribution is shown in Figure 8A, and the office/retail site trip distribution is shown in Figure 8B. Refer to Figure 9A for the residential site trip assignment, Figure 9B for office site trip assignment, and Figure 9C for the retail site trip assignment.

The pass-by site trips were distributed based on existing traffic patterns with consideration given to the proposed driveway access and site layout. Refer to Figure 10 for the pass-by site trip distribution. Pass-by site trips are shown in Figure 11.

The total site trips were determined by adding the primary site trips and the pass-by site trips. Refer to Figure 12 for the total peak hour site trips at the study intersections.


SITE
Buffaloe Road
Lucas Road
Proc Ridge Road
Horton Mill Drive
Conway Ridge Crossing
Site Access A
Marks Creek Road
Horton Road
Old Knight Road
Knightdale Boulevard
20%
30%
15%
N
(5%)
5%
15%
(15%)
20%
(20%)
(45%)
(30%)
45%
LEGEND
Unsignalized Intersection
Signalized Intersection
X% Entering Trip Distribution
(Y%) Exiting Trip Distribution
XX% Regional Trip Distribution
*Intersection shown for illustrative purposes
RAMEY KEMP ASSOCIATES
Weldon Village
Knightdale, NC
Residential Site Trip Distribution
Scale: Not to Scale
Figure 8A

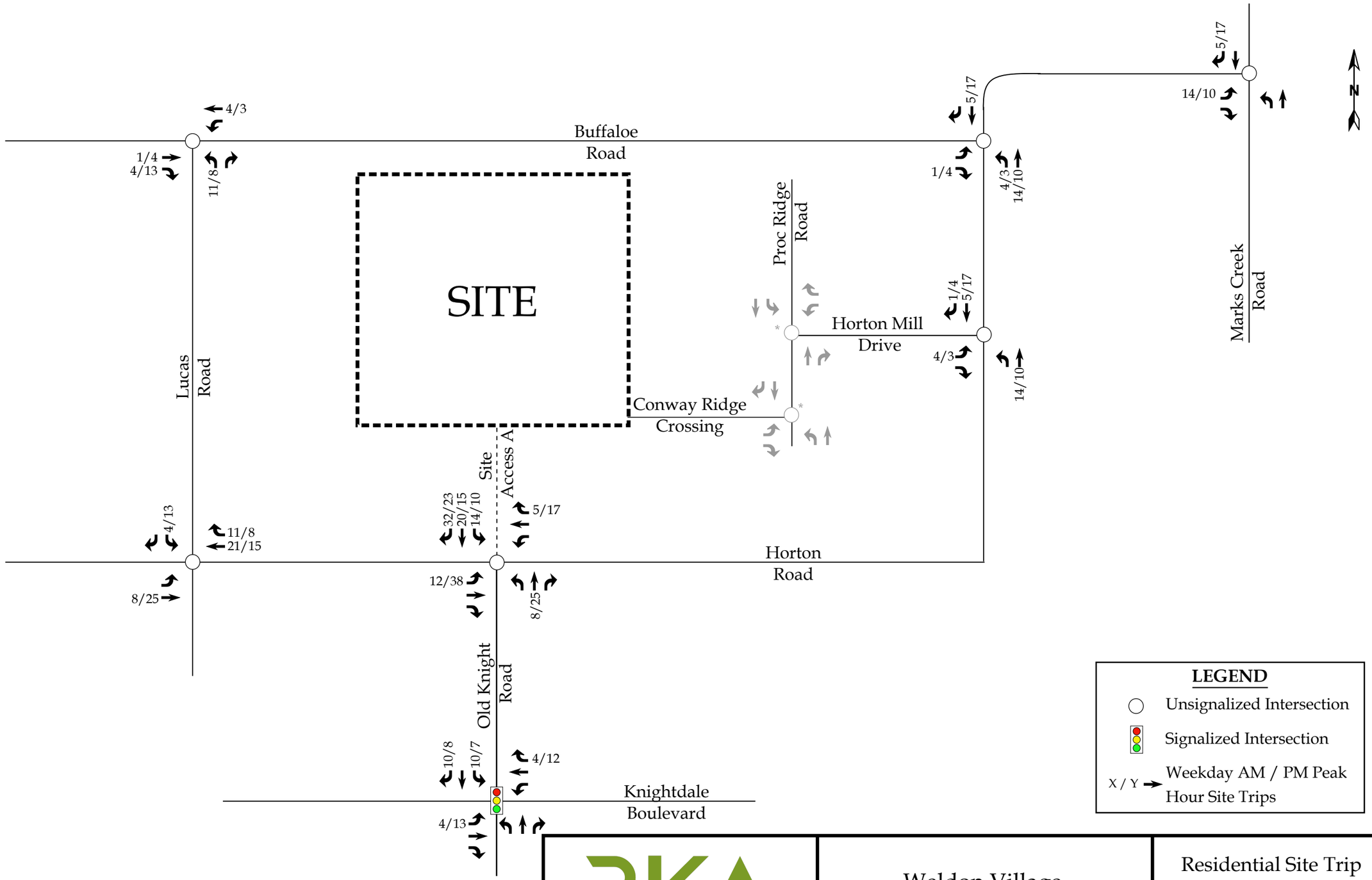


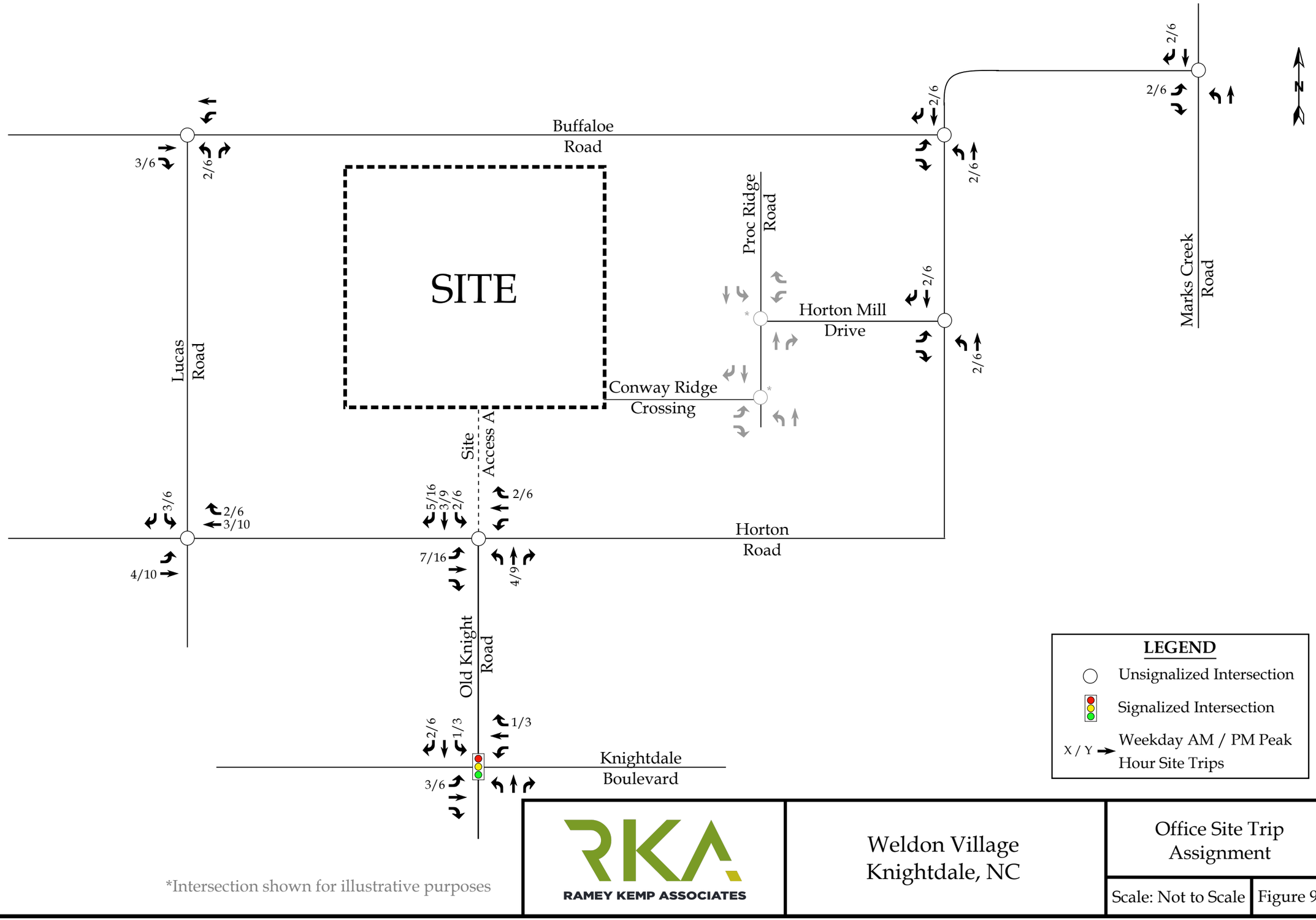
RAMEY KEMP ASSOCIATES

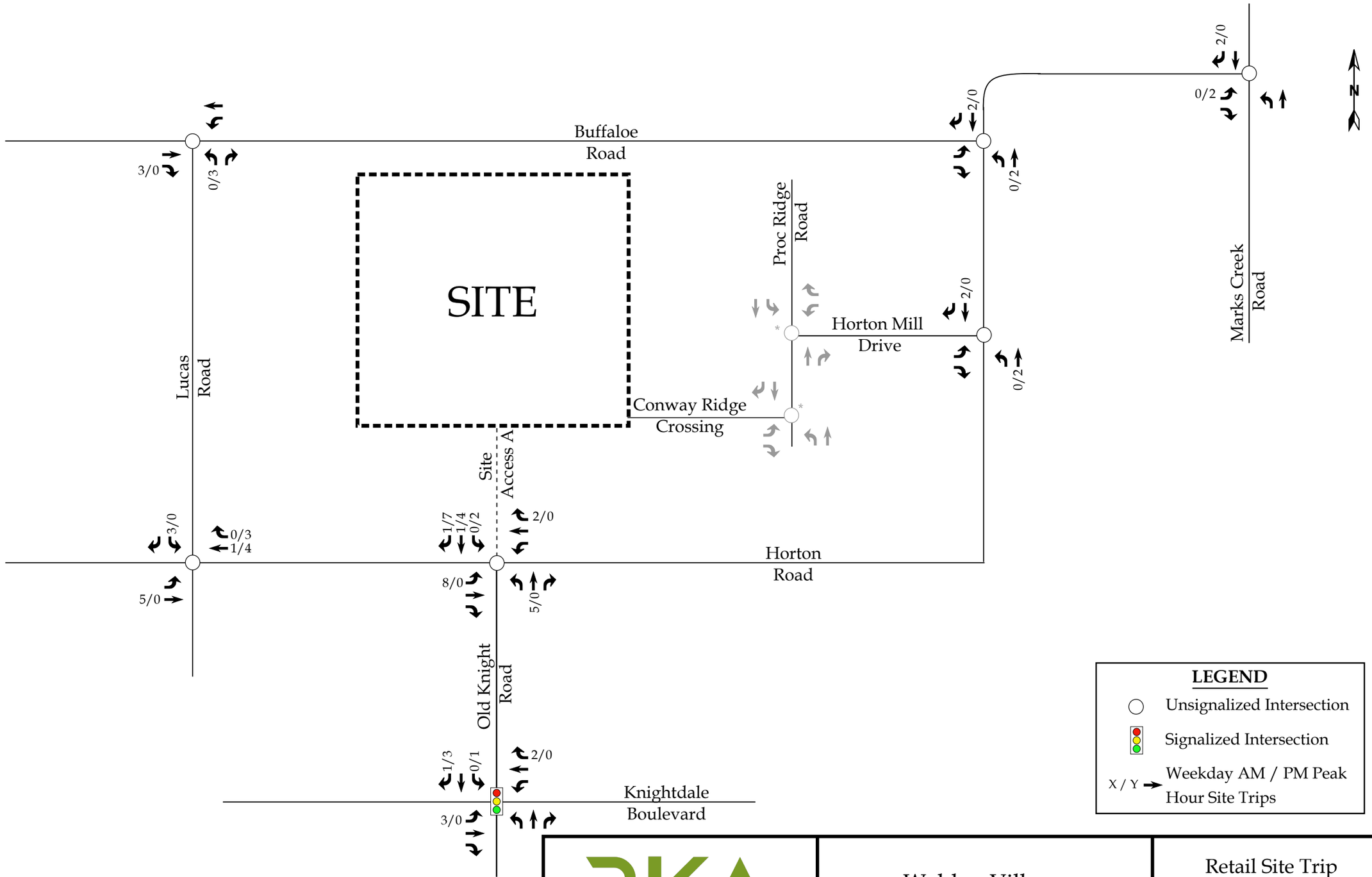
Weldon Village
Knightdale, NC

Office/Retail Site
Trip Distribution

Scale: Not to Scale | Figure 8B


SITE
Buffaloe Road
Lucas Road
Proc Ridge Road
Horton Mill Drive
Conway Ridge Crossing
Marks Creek Road
Site Access A
Horton Road
Old Knight Road
Knightdale Boulevard
4/3
1/4
4/13
11/8
5/17
14/10
1/4
4/3
14/10
5/17
1/4
5/17
4/3
14/10
5/17
4/13
11/8
21/15
8/25
32/23
20/15
14/10
5/17
12/38
8/25
10/8
10/7
4/12
4/13
N
LEGEND
Unsignalized Intersection
Signalized Intersection
X / Y
Weekday AM / PM Peak Hour Site Trips
*Intersection shown for illustrative purposes
RAMEY KEMP ASSOCIATES
Weldon Village
Knightdale, NC
Residential Site Trip Assignment
Scale: Not to Scale
Figure 9A


Buffaloe Road
SITE
Lucas Road
Proc Ridge Road
Horton Mill Drive
Conway Ridge Crossing
Marks Creek Road
Site Access A
Horton Road
Old Knight Road
Knightdale Boulevard
3/6
2/6
2/6
2/6
2/6
2/6
2/6
3/6
2/6
3/10
4/10
5/16
3/9
2/6
2/6
7/16
4/9
2/6
1/3
3/6
1/3
N
LEGEND
Unsignalized Intersection
Signalized Intersection
X / Y
Weekday AM / PM Peak Hour Site Trips
*Intersection shown for illustrative purposes
RAMEY KEMP ASSOCIATES
Weldon Village
Knightdale, NC
Office Site Trip Assignment
Scale: Not to Scale
Figure 9B



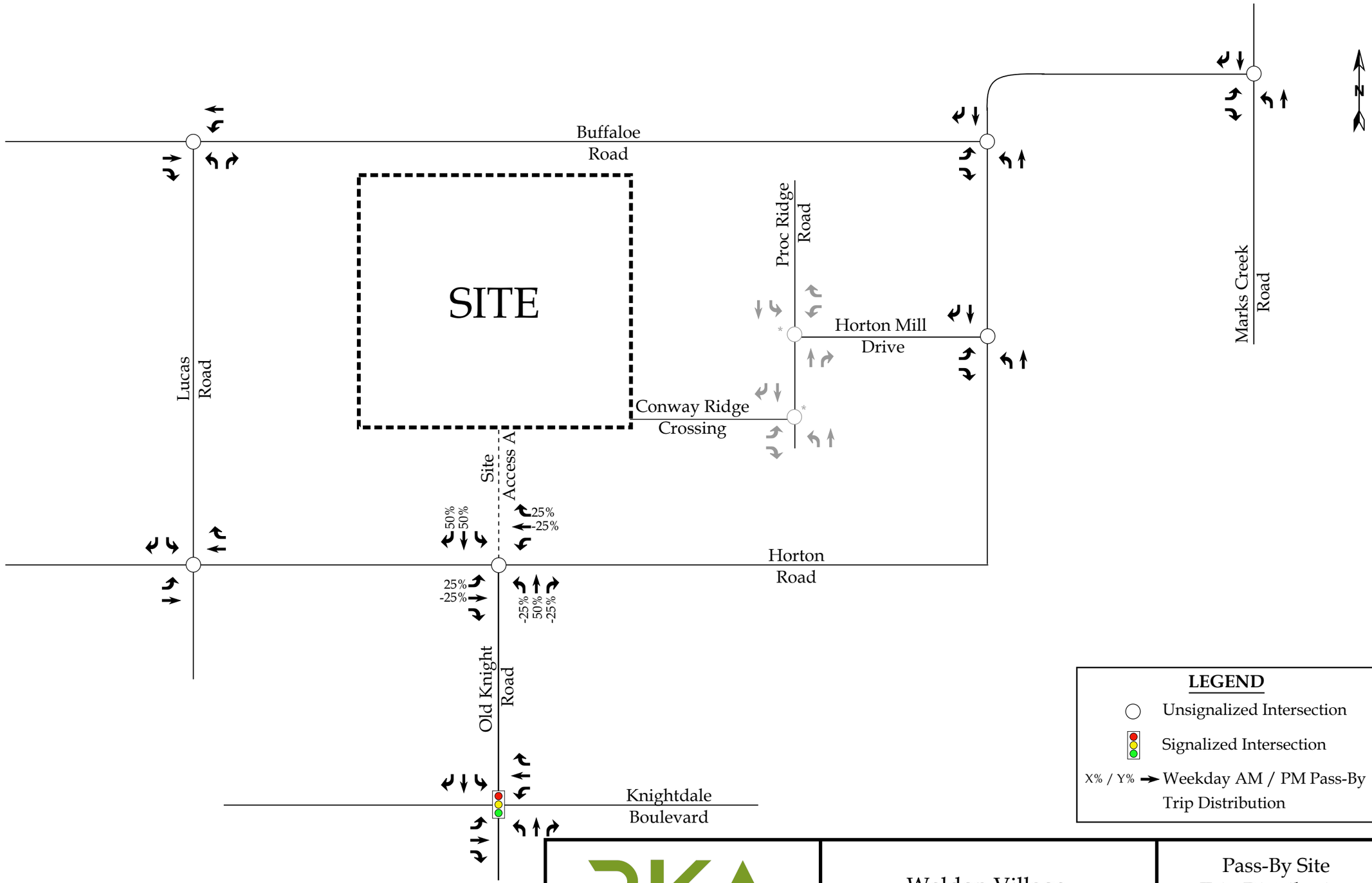
*Intersection shown for illustrative purposes

RAMEY KEMP ASSOCIATES

Weldon Village
Knightdale, NC

Retail Site Trip Assignment

Scale: Not to Scale | Figure 9C



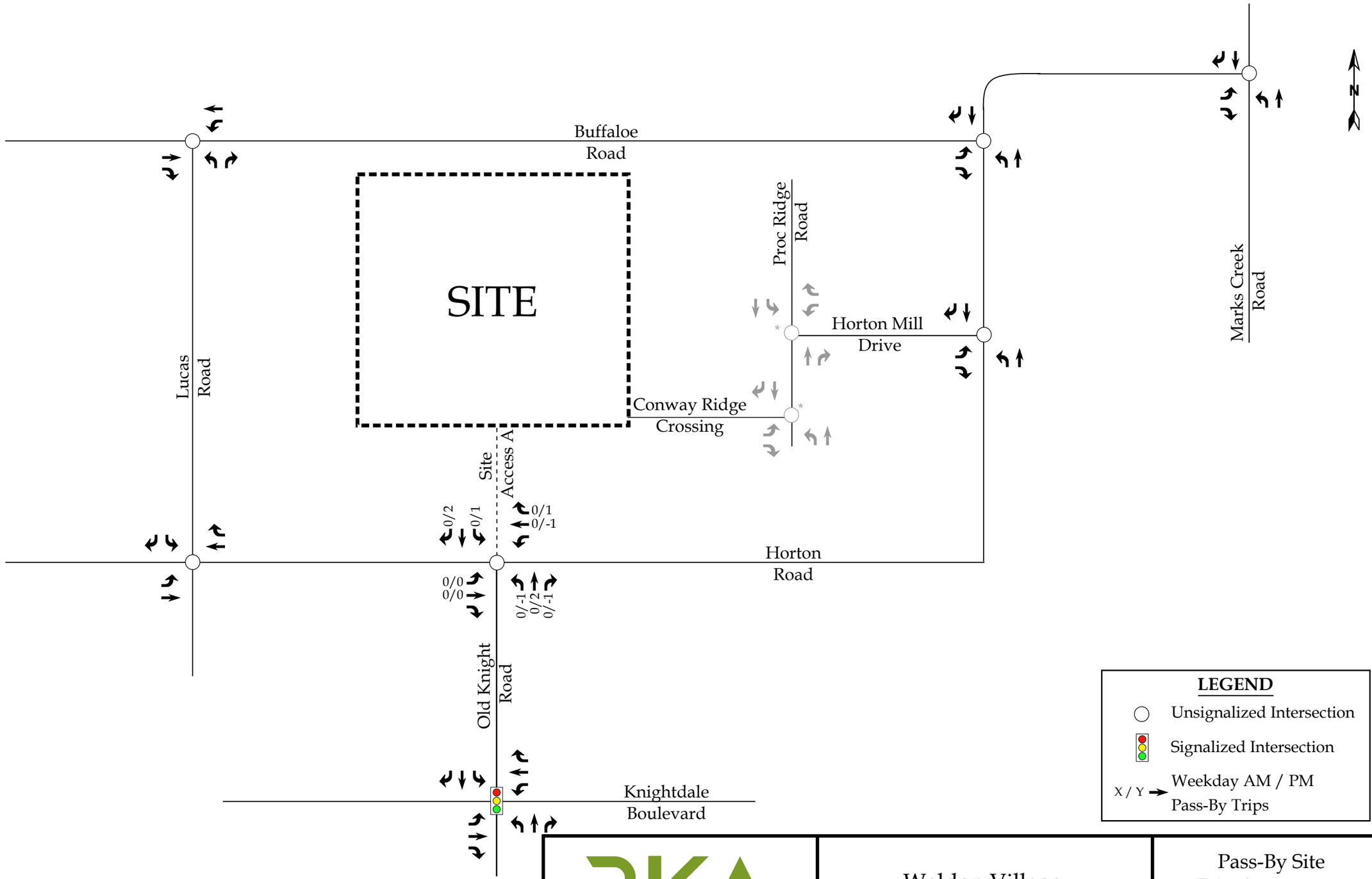
*Intersection shown for illustrative purposes

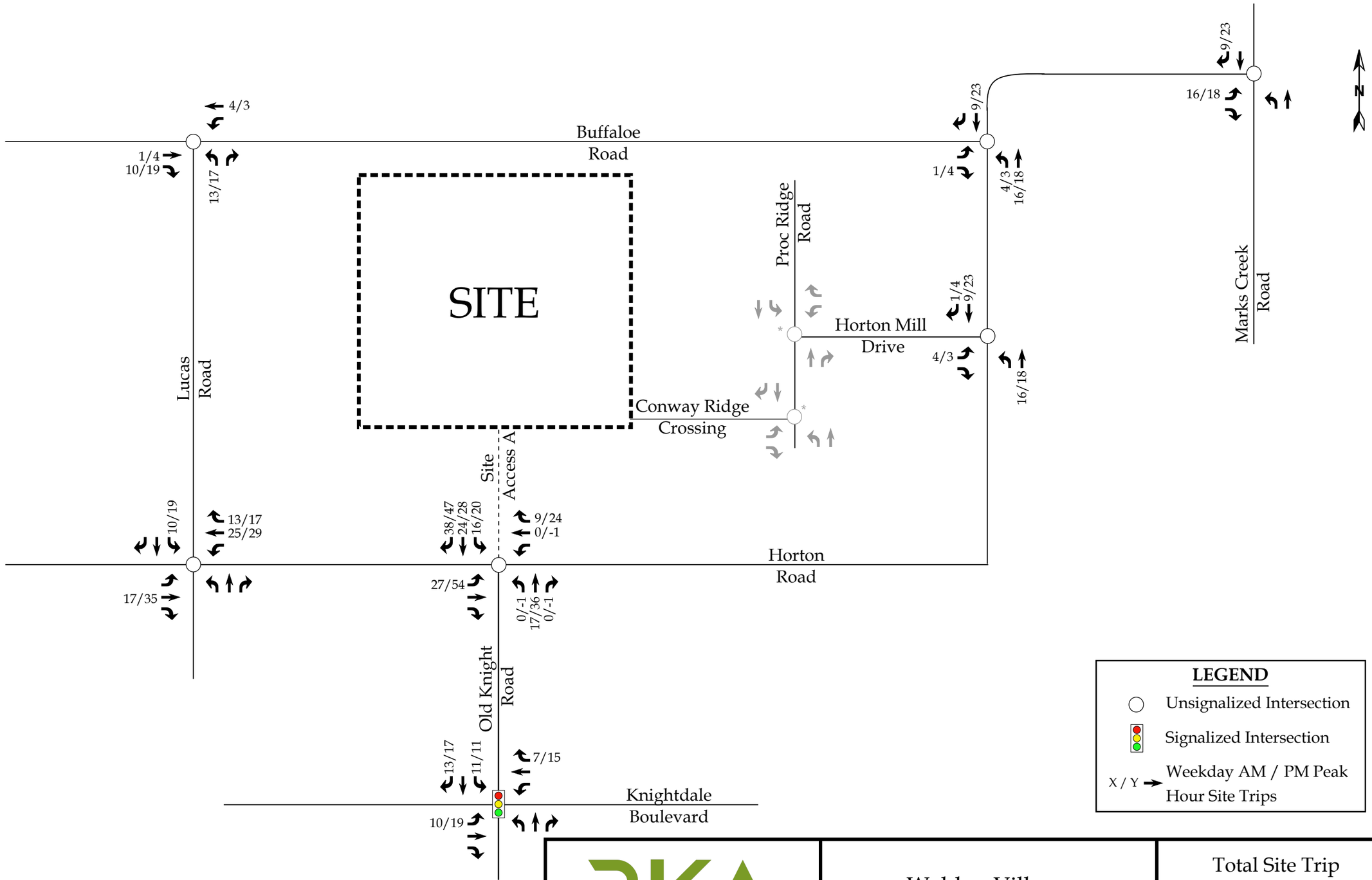
RAMEY KEMP ASSOCIATES

Weldon Village
Knightdale, NC

Pass-By Site
Trip Distribution

Scale: Not to Scale | Figure 10


Buffaloe
Road
SITE
Proc Ridge
Road
Horton Mill
Drive
Marks Creek
Road
Lucas
Road
Conway Ridge
Crossing
Site
Access A
0/2
0/1
0/1
0/-1
Horton
Road
0/0
0/0
0/-1
0/2
0/-1
Old Knight
Road
Knightdale
Boulevard
N
LEGEND
Unsignalized Intersection
Signalized Intersection
X / Y
Weekday AM / PM
Pass-By Trips
*Intersection shown for illustrative purposes
RAMEY KEMP ASSOCIATES
Weldon Village
Knightdale, NC
Pass-By Site
Trip Assignment
Scale: Not to Scale
Figure 11



*Intersection shown for illustrative purposes

RAMEY KEMP ASSOCIATES

Weldon Village
Knightdale, NC

Total Site Trip Assignment

Scale: Not to Scale | Figure 12

5. 2030/2039 BUILD TRAFFIC CONDITIONS

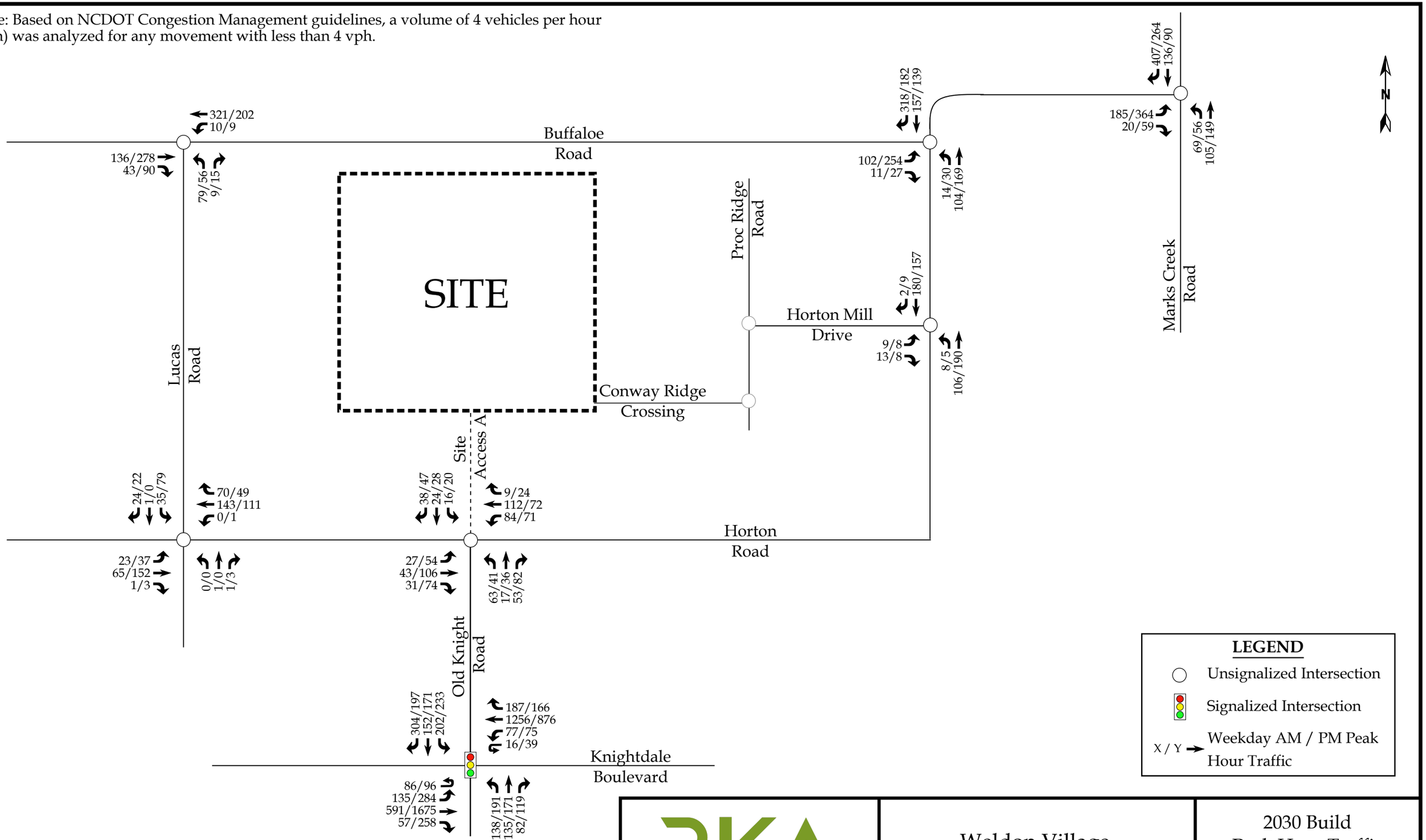
5.1. 2030/2039 Build Peak Hour Traffic Volumes

To estimate traffic conditions with the site fully built-out, the total site trips were added to the 2030 no-build traffic volumes to determine the 2030 build traffic volumes. The 2039 build traffic volumes were developed using the same methodology as the 2030 build traffic volumes; however, background volumes were grown to the year 2039 rather than 2030. Refer to Figure 13A for an illustration of the 2030 build peak hour traffic volumes with the proposed site fully developed and Figure 13B for an illustration of the 2039 build peak hour traffic volumes.

5.2. Analysis of 2030/2039 Build Peak Hour Traffic Conditions

Study intersections were analyzed with the 2030/2039 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 7 of this report.

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.



*Intersection shown for illustrative purposes

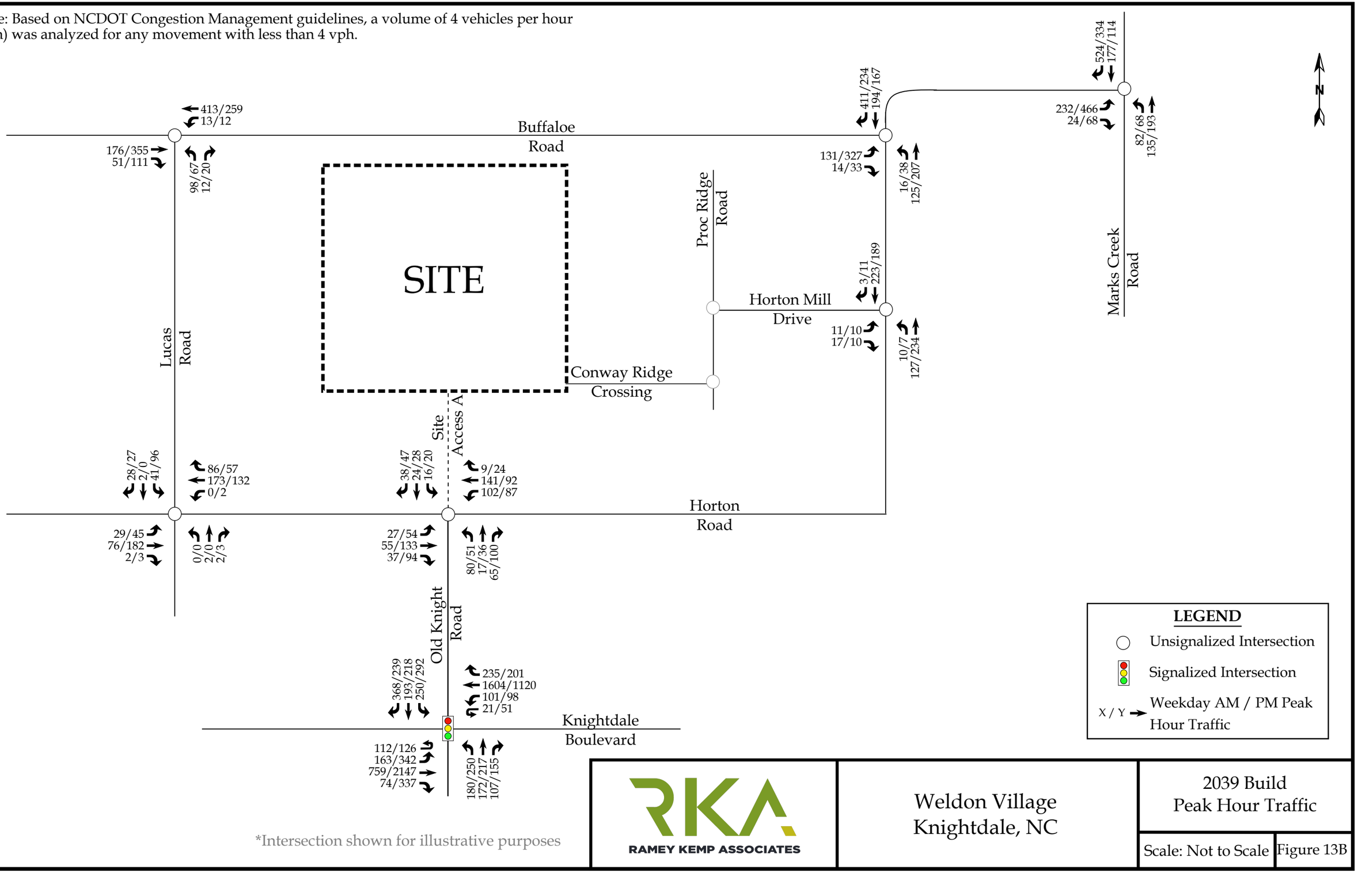
RAMEY KEMP ASSOCIATES

Weldon Village
Knightdale, NC

2030 Build
Peak Hour Traffic

Scale: Not to Scale | Figure 13A

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.



*Intersection shown for illustrative purposes

RAMEY KEMP ASSOCIATES

Weldon Village
Knightdale, NC

2039 Build
Peak Hour Traffic

Scale: Not to Scale | Figure 13B

6. 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

6.1. Adjustments to Analysis Guidelines

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

7. CAPACITY ANALYSIS

7.1. Buffaloe Road [EB-WB] and Lucas Road [NB]

The existing unsignalized intersection of Buffaloe Road and Lucas Road was analyzed under 2022 existing, 2030 no-build, 2030 build, and 2039 build traffic conditions with lane configurations and traffic control shown in Table 5. Refer to Table 5 for a summary of the analysis results. Refer to Appendix E for the Synchro capacity analysis reports.

Table 5: Analysis Summary of Buffaloe Road and Lucas 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] B[2]	N/A
2030 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
2030 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
2039 Build	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, 2030 no-build, 2030 build, and 2039 build traffic conditions indicates the major street left-turn movement of Buffaloe Road and Lucas Road is expected to operate at LOS A during both weekday AM and PM peak hours. The minor-street approach is expected to operate at LOS B under all analysis scenarios during both weekday AM and PM peak hours. No significant queues are expected.

7.2. Horton Road [NB-SB] and Buffaloe Road [EB]

The existing unsignalized intersection of Horton Road and Buffaloe Road was analyzed under 2022 existing, 2030 no-build, 2030 build, and 2039 build traffic conditions with existing lane configurations and traffic control. Refer to Table 6 for a summary of the analysis results. Refer to Appendix F for the Synchro capacity analysis reports.

Table 6: Analysis Summary of Horton Road and Buffaloe 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 NB SB	1 LT- RT 1 LT-TH 1 TH-RT	B[2] A[1] --	N/A	B[2] A[1] --	N/A
2030 No-Build	EB NB SB	1 LT- RT 1 LT-TH 1 TH-RT	B[2] A[1] --	N/A	C[2] A[1] --	N/A
2030 Build	EB NB SB	1 LT- RT 1 LT-TH 1 TH-RT	B[2] A[1] --	N/A	C[2] A[1] --	N/A
2039 Build	EB NB SB	1 LT- RT 1 LT-TH 1 TH-RT	C[2] A[1] --	N/A	F[2] A[1] --	N/A
2039 Build – to Meet UDO	EB NB SB	1 LT, **1 RT** 1 LT-TH 1 TH, **1 RT**	B[2] A[1] --	N/A	D[2] A[1] --	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 2022 existing, 2030 no-build, 2030 build, and 2039 build traffic conditions indicates the major street left-turn movement of Horton Road and Buffaloe Road is expected to operate at LOS A during both weekday AM and PM peak hours. The minor-street approach is expected to operate at LOS C or better under all 2030 analysis scenarios during both weekday AM and PM peak hours.

Per the Town's UDO requirements to show improvements necessary that would allow the intersection to operate at acceptable levels of service (D or better), an analysis scenario with

the improvements necessary to bring the intersection back to LOS D or better is shown under 2039 Build – to Meet UDO. Under this scenario the eastbound approach is expected to operate at LOS D or better during the AM and PM peak hours. To obtain this LOS, the intersection would require an additional right turn lane on the eastbound and southbound approaches.

Site traffic is expected to only account for approximately 4% of the total volume for the intersection during either the weekday AM or PM peak hour under 2039 build conditions. Additionally, under the 2039 build conditions, a majority of the impacts are caused by the background growth expected in the 10 years after the site its built. Due to the minimal impact by the proposed site, no improvements by the developer are recommended.

7.3. Marks Creek Road [NB-SB] and Horton Road [EB]

The existing unsignalized intersection of Marks Creek Road and Horton Road was analyzed under 2022 existing, 2030 no-build, 2030 build, and 2039 build traffic conditions with the lane configurations and traffic control shown in Table 7. Refer to Table 7 for a summary of the analysis results. Refer to Appendix G for the Synchro capacity analysis reports.

Table 7: Analysis Summary of Marks Creek Road and Horton 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 NB SB	1 LT- RT 1 LT-TH 1 TH-RT	B[2] A[1] --	N/A	C[2] A[1] --	N/A
2030 No-Build	EB NB SB	1 LT- RT 1 LT-TH 1 TH-RT	C[2] A[1] --	N/A	E[2] A[1] --	N/A
2030 Build	EB NB SB	1 LT- RT 1 LT-TH 1 TH-RT	C[2] A[1] --	N/A	F[2] A[1] --	N/A
2030 Build with Improvements	EB NB SB	1 LT- RT 1 LT-TH 1 TH, **1 RT**	C[2] A[1] --	N/A	D[2] A[1] --	N/A
2039 Build	EB NB SB	1 LT- RT 1 LT-TH 1 TH-RT	F[2] A[1] --	N/A	F[2] A[1] --	N/A
2039 Build – to Meet UDO	EB NB SB	1 LT- RT 1 LT-TH 1 TH, **1 RT**	C A B	B (16)	B C A	B (14)

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 2022 existing, 2030 no-build, 2030 build, and 2039 build traffic conditions indicates the major street left-turn movement of Marks Creek Road and Horton Road is expected to operate at LOS A during both weekday AM and PM peak hours. The minor-street approach is expected to degrade from LOS E under 2030 no-build PM conditions to LOS F under 2030 build PM conditions. Queues are also expected to increase by approximately 100 feet when comparing these conditions. It is not uncommon for a minor-street approach at an

unsignalized intersection to experience high delays. In order to meet the Town UDO requirements under 2030 build conditions, a southbound right turn lane was considered. The additional turn lane is expected to reduce the eastbound LOS F to LOS D. A southbound right turn lane is recommended.

Per the Town's UDO requirements to show improvements necessary that would allow the intersection to operate at acceptable levels of service (D or better), an analysis scenario with the improvements necessary to bring the intersection back to LOS D or better is shown under 2039 Build – to Meet UDO. Under this scenario the overall intersection is expected to operate at LOS B during both the weekday AM and PM peak hours. All approaches are expected to operate at LOS C or better. To obtain this LOS, a traffic signal is proposed, as well as the additional southbound right proposed under 2030 build with improvements conditions.

Under 2039 build conditions, site traffic is expected to only account for approximately 3% of the total volume for the intersection during either the weekday AM or PM peak hour. Additionally, under the 2039 build conditions, a majority of the impacts are caused by the background growth expected in the 10 years after the site its built. Due to the minimal impact by the proposed site, no improvements by the developer are recommended under 2039 build conditions.

7.4. Horton Road [NB-SB] and Horton Mill Drive [EB]

The existing unsignalized intersection of Horton Road and Horton Mill Drive was analyzed under 2022 existing, 2030 no-build, 2030 build, and 2039 build traffic conditions with existing lane configurations and traffic control. Refer to Table 8 for a summary of the analysis results. Refer to Appendix H for the Synchro capacity analysis reports.

Table 8: Analysis Summary of Horton Road and Horton Mill Drive

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 NB SB	1 LT- RT 1 LT-TH 1 TH-RT	A[2] A[1] --	N/A	A[2] A[1] --	N/A
2030 No-Build	EB NB SB	1 LT- RT 1 LT-TH 1 TH-RT	A[2] A[1] --	N/A	A[2] A[1] --	N/A
2030 Build	EB NB SB	1 LT- RT 1 LT-TH 1 TH-RT	B[2] A[1] --	N/A	B[2] A[1] --	N/A
2039 Build	EB NB SB	1 LT- RT 1 LT-TH 1 TH-RT	B[2] A[1] --	N/A	B[2] A[1] --	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, 2030 no-build, 2030 build, and 2039 build traffic conditions indicates the major street left-turn movement and minor-street approach is expected to operate at LOS B or better under all conditions. No significant queues are expected.

7.5. Horton Road [EB-WB] and Mama's Way [NB] / Lucas Road [SB]

The existing unsignalized intersection of Horton Road and Lucas Road / Mama's Way was analyzed under 2022 existing, 2030 no-build, 2030 build, and 2039 build traffic conditions with existing lane configurations and traffic control. Refer to Table 9 for a summary of the analysis results. Refer to Appendix I for the Synchro capacity analysis reports.

Table 9: Analysis Summary of Horton Road and Mama's Way / Lucas 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	A[1] A[1] A[2] A[2]	N/A	A[1] A[1] A[2] B[2]	N/A
2030 No-Build	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT	A[1] A[1] B[2] B[2]	N/A	A[1] A[1] B[2] B[2]	N/A
2030 Build	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT	A[1] A[1] B[2] B[2]	N/A	A[1] A[1] B[2] B[2]	N/A
2039 Build	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT	A[1] A[1] B[2] B[2]	N/A	A[1] A[1] B[2] B[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, 2030 no-build, 2030 build, and 2039 build traffic conditions indicates the major street left-turn movements of Horton Road and Mama's Way / Lucas Road is expected to operate at LOS A during both weekday AM and PM peak hours. The minor-street approach is expected to operate at LOS B or better under 2030 no-build and 2030 build conditions during both weekday AM and PM peak hours. No significant queues are expected.

7.6. Horton Road [EB-WB] and Old Knight Road [NB] / Site Access A [SB]

The existing unsignalized intersection of Horton Road and Old Knight Road / Site Access A was analyzed under 2022 existing, 2030 no-build, 2030 build, and 2039 build traffic conditions with existing lane configurations and traffic control. Refer to Table 10 for a summary of the analysis results. Refer to Appendix J for the Synchro capacity analysis reports.

Table 10: Analysis Summary of Horton Road and Old Knight Road / Site Access A

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] A[2]	N/A	-- A[1] A[2]	N/A
2030 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
2030 Build	EB WB NB **SB**	1 **LT-**TH-RT 1 LT-TH-**RT** 1 LT-**TH**-RT **1 LT-TH-RT**	A[1] A[1] B[2] B[2]	N/A	A[1] A[1] C[2] B[2]	N/A
2039 Build	EB WB NB **SB**	1 **LT-**TH-RT 1 LT-TH-**RT** 1 LT-**TH**-RT **1 LT-TH-RT**	A[1] A[1] C[2] B[2]	N/A	A[1] A[1] C[2] C[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 2022 existing, 2030 no-build, 2030 build, and 2039 build traffic conditions indicates the major street left-turn movement of Horton Road and Old Knight Road / Site Access A is expected to operate at LOS A during both weekday AM and PM peak hours. The minor-street approach is expected to operate at LOS C or better under all future conditions. No significant queues are expected.

7.7. US 64 (Knightdale Boulevard) and 1st Avenue / Old Knight Road

The proposed signalized intersection of US 64 (Knightdale Boulevard) and 1st Avenue / Old Knight Road was analyzed under 2022 existing, 2030 no-build, 2030 build, and 2039 build 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 K for the Synchro capacity analysis reports.

Table 11: Analysis Summary of US 64 (Knightdale Boulevard) and 1st Avenue / Old Knight 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	1 LT, 2 TH, 1 RT	C	C (31)	C	D (36)
	WB	1 LT, 2 TH, 1 RT	C		C	
	NB	1 LT, 1 TH, 1 RT	D		E	
	SB	1 LT, 1 TH, 1 RT	E		E	
2030 No-Build	EB	1 LT, 2 TH, 1 RT	C	D (39)	E	E (56)
	WB	1 LT, 2 TH, 1 RT	D		D	
	NB	1 LT, 1 TH, 1 RT	D		D	
	SB	1 LT, 1 TH, 1 RT	D		E	
2030 Build	EB	1 LT, 2 TH, 1 RT	C	D (41)	E	E (60)
	WB	1 LT, 2 TH, 1 RT	D		D	
	NB	1 LT, 1 TH, 1 RT	D		D	
	SB	1 LT, 1 TH, 1 RT	D		E	
2030 Build with Improvements	EB	1 LT, 2 TH, 1 RT	C	D (41)	E	D (55)
	WB	1 LT, 2 TH, 1 RT	D		D	
	NB	1 LT, 1 TH, 1 RT	D		D	
	SB	1 LT, 1 TH, 1 RT	D		D	
2039 Build	EB	1 LT, 2 TH, 1 RT	D	F (96)	F	F (158)
	WB	1 LT, 2 TH, 1 RT	F		D	
	NB	1 LT, 1 TH, 1 RT	D		E	
	SB	1 LT, 1 TH, 1 RT	E		E	

Capacity analysis of 2022 existing, 2030 no-build, 2030 build, and 2039 build traffic conditions indicates that each approach is expected to operate at LOS D or E under all future PM conditions. During the AM peak hour, all approaches are expected to operate at LOS C or LSO D. No significant increases in delay or queues are expected when comparing the 2030

no-build and 2030 build conditions. In order to meet the Town UDO, signal timings were modified and right turn on reds were allowed.

Under 2037 build conditions, the intersection is expected to continue to operate at an overall LOS F during the weekday AM and PM peak hours. The heavy overall delays under 2037 build conditions are anticipated to be primarily due to the background growth expected in the next 17 years and is not anticipated to be due to the traffic from the proposed development. Based on SimTraffic queuing results, heavy queuing is anticipated on Knightdale Boulevard during the weekday peak hour. Corridor level improvements would be required in order to meet the Town UDO under these conditions.

8. CONCLUSIONS

This Traffic Impact Analysis was conducted to determine the potential traffic impacts of the proposed Weldon Village development to be located north of Horton Road and to the east of Lucas Road in Knightdale, North Carolina. The proposed development is expected to be a mixed-use development and be built out in 2029. Site access is proposed via one full movement driveway that will form the fourth leg at the intersection of Horton Road and Old Knight Road and via connection to the existing Conway Ridge Crossing.

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

- 2022 Existing Traffic Conditions
- 2029+1 No-Build Traffic Conditions
- 2029+1 Build Traffic Conditions
- 2029+10 Build Traffic Conditions

Trip Generation

It is estimated that the proposed development will generate approximately 144 primary trips (57 entering and 87 exiting) during the weekday AM peak hour and 219 primary trips (119 entering and 100 exiting) 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 6.1 of this report for a detailed description of any adjustments to these guidelines made throughout the analysis.

Intersection Capacity Analysis Summary

All the study area intersections (including the proposed site driveways) are expected to operate at acceptable levels-of-service under existing and future year conditions with the exception of the intersections listed below. A summary of the study area intersections that are expected to need improvements are as follows:

Marks Creek Road and Horton Road

Capacity analysis of 2022 existing, 2030 no-build, 2030 build, and 2039 build traffic conditions indicates the major street left-turn movement of Marks Creek Road and Horton Road is expected to operate at LOS A during both weekday AM and PM peak hours. The minor-street approach is expected to degrade from LOS E under 2030 no-build PM conditions to LOS F under 2030 build PM conditions. Queues are also expected to increase by approximately 100 feet when comparing these conditions. It is not uncommon for a minor-street approach at an unsignalized intersection to experience high delays. In order to meet the Town UDO requirements under 2030 build conditions, a southbound right turn lane was considered. The additional turn lane is expected to reduce the eastbound LOS F to LOS D. A southbound right turn lane is recommended. Per the Town's UDO requirements to show improvements necessary that would allow the intersection to operate at acceptable levels of service (D or better), an analysis scenario with the improvements necessary to bring the intersection back to LOS D or better is shown under 2039 Build – to Meet UDO. Under this scenario the overall intersection is expected to operate at LOS B during both the weekday AM and PM peak hours. All approaches are expected to operate at LOS C or better. To obtain this LOS, a traffic signal is proposed, as well as the additional southbound right proposed under 2030 build with improvements conditions. Under 2039 build conditions, site traffic is expected to only account for approximately 3% of the total volume for the intersection during either the weekday AM or PM peak hour. Additionally, under the 2039 build conditions, a majority of the impacts are caused by the background growth expected in the 10 years after the site its built. Due to the minimal impact by the proposed site, no improvements by the developer are recommended under 2039 build conditions.

Horton Road and Old Knight Road / Site Access A

Capacity analysis of 2022 existing, 2030 no-build, 2030 build, and 2039 build traffic conditions indicates the major street left-turn movement of Horton Road and Old Knight Road / Site Access A is expected to operate at LOS A during both weekday AM and PM peak hours. The minor-street approach is expected to operate at LOS C or better under all future conditions. No significant queues are expected.

9. 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 Figure 14 for an illustration of the recommended lane configuration for the proposed development.

Improvements to Meet Town's UDO

Marks Creek Road and Horton Road

- Monitor intersection for signalization and install traffic signal when warranted.

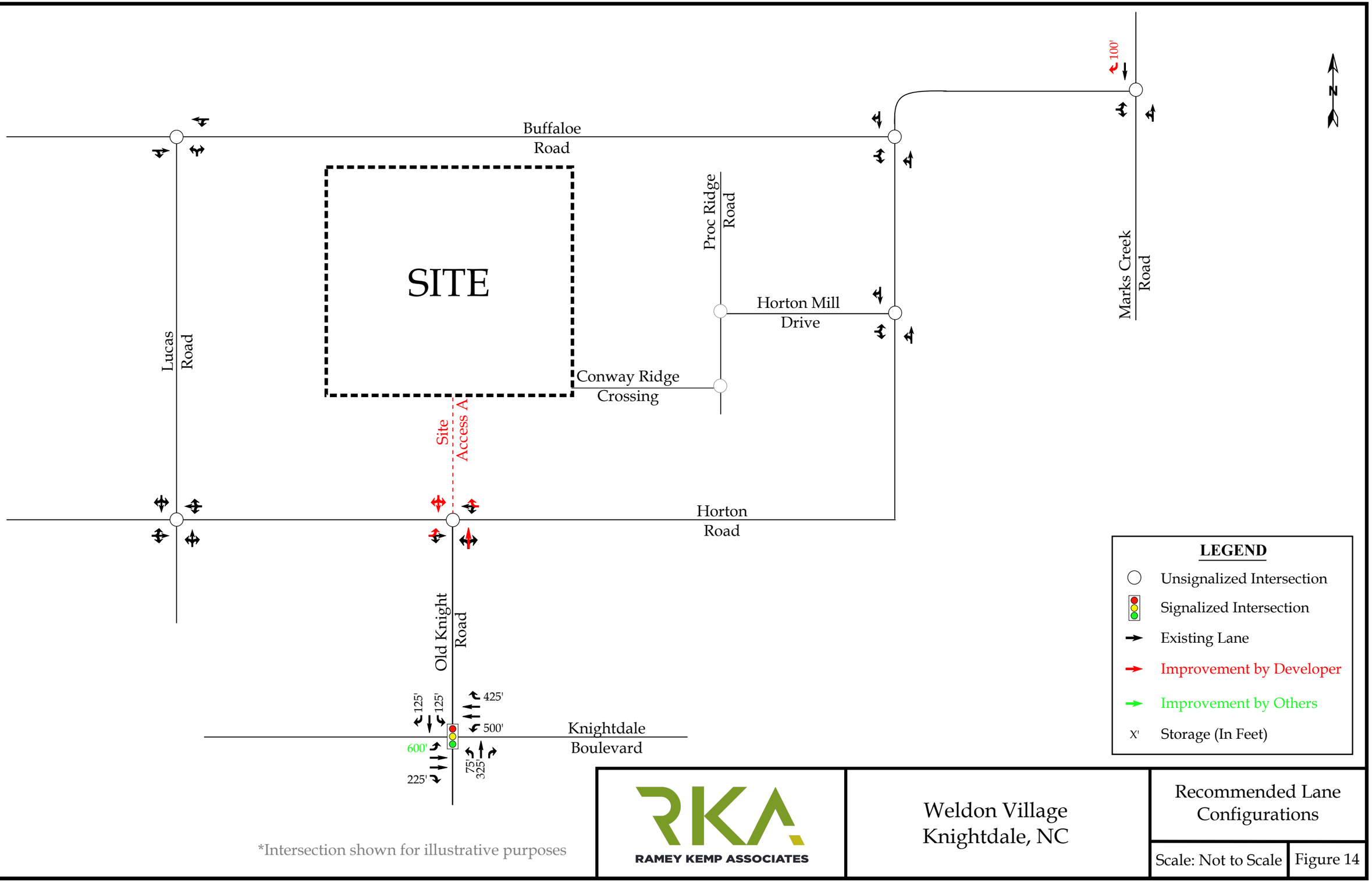
Recommended Improvements by Developer

Marks Creek Road and Horton Road

- Construct southbound right turn lane with 100 feet of storage and appropriate decel and taper.

Horton Road and Old Knight Road / Site Access A

- Construct southbound approach as one ingress lane and one egress lane.
- Provide stop-control for southbound approach.



*Intersection shown for illustrative purposes

RAMEY KEMP ASSOCIATES

Weldon Village
Knightdale, NC

Recommended Lane Configurations

Scale: Not to Scale | Figure 14

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

November 21, 2022

Weldon Village

Traffic Impact Analysis Review Report
Congestion Management Section

TIA Project: SC-2022-321
Division: 5
County: Wake

Clarence B. Bunting, IV, P.E. Regional Engineer
Charles Sorrell, Project Design Engineer

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
TRANSPORTATION MOBILITY & SAFETY DIVISION
1561 MAIL SERVICE CENTER
RALEIGH, NC 27699-1561

Telephone: (919) 814-5000
Fax: (919) 771-2745
Customer Service: 1-877-368-4968

Website: www.ncdot.gov

Location:
750 N. GREENFIELD PARKWAY
GARNER, NC 27529

Weldon Village TIA

SC-2022-321	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 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	10/24/22	Date of Site Plan	8/2/22
Date of Complete Information	10/24/22	Date of Sealed TIA	10/21/22

Proposed Development

The TIA assumes the development is to be completed by 2029 and consist of the following:

Land Use	Land Use Code	Size
Single Family Detached	210	124 units
Townhomes	215	32 units
General Office	710	8,000 s.f.
Strip Retail Plaza	822	8,000 s.f.

Trip Generation - Unadjusted Volumes During a Typical Weekday

	IN	OUT	TOTAL
AM Peak Hour	57	87	144
PM Peak Hour	119	100	219
Daily Trips			2,091

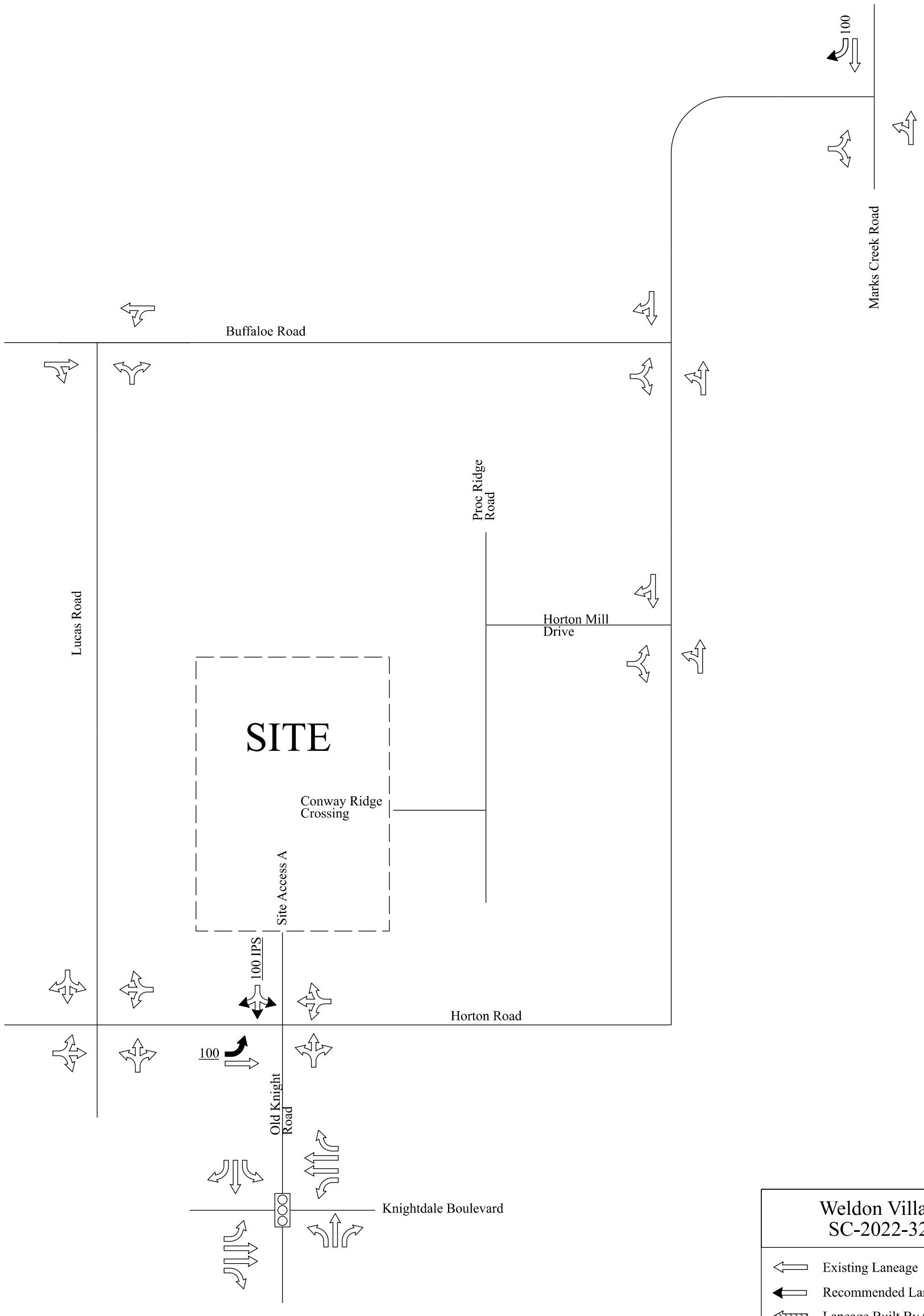
General Reference

For reference to various documents applicable to this review please reference the following link: *https://connect.ncdot.gov/resources/safety/Pages/Congestion-Management.aspx*

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.



Weldon Village
SC-2022-321

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