(Sheet List Table	C-4.7	Signage & Marking Plan Enlargement 7
Chard		C-4.8	Street Sections
Sheet Number	Sheet Title	C-4.81	Street Sections
C 1 0	Cover Sheet	C-4.9	Connectivity Index
C-1.0		C-4.10	Pedestrian Circulation
	Existing Conditions ALTA	C-5.0	Overall Storm Drainage Plan
	Existing Conditions TOPO	C-6.0	Overall Utility Plan
	Wetland Report	C-6.1	Utility Plan Enlargement 1
C-3.0	Overall Site Plan	C-6.2	Utility Plan Enlargement 2
C-3.1	Site Plan Enlargement 1	C-6.3	Utility Plan Enlargement 3
C-3.2	Site Plan Enlargement 2	C-6.4	Utility Plan Enlargement 4
C-3.3	Site Plan Enlargement 3	C-6.5	Utility Plan Enlargement 5
C-3.4	Site Plan Enlargement 4	C-6.6	, Utility Plan Enlargement 6
C-3.5	Site Plan Enlargement 5	C-6.7	Utility Plan Enlargement 7
C-3.6	Site Plan Enlargement 6	LS-1.0	Overall Landscape Plan
C-3.7	Site Plan Enlargement 7		
C-3.8	Open Space Plan	LS-1.1	Landscape Plan Enlargement
C-3.9	Phasing Plan	LS-1.2	Landscape Plan Enlargement
C-4.0	Overall Signage & Marking Plan	LS-1.3	Landscape Plan Enlargement
0 1.0	Signage & Marking Plan	LS-1.4	Landscape Plan Enlargement
C-4.1	Enlargement 1	LS-1.5	Landscape Plan Enlargement
C-4.2	Signage & Marking Plan Enlargement 2	LS-1.6	Landscape Plan Enlargement
	Signage & Marking Plan	LS-1.7	Landscape Plan Enlargement
C-4.3	Enlargement 3	LS-2.0	Landscape Details
C-4.4	Signage & Marking Plan Enlargement 4	LS-2.1	Landscape Details
C-4.5	Signage & Marking Plan	LS-3.0	Lighting Plan
C-4.6	Enlargement 5 Signage & Marking Plan Enlargement 6	A-1.0	Architectural Elevations

DISTRIBUTION OF USES

	US	SE AREA	AS S	
USE TYPE	TYP. LOT SIZE	# OF		ACRES
	(SF)	LOTS	TOTAL AREA (SF)	7.00.000
SINGLE FAMILY				
30' LOT	3,600	46	165,600	
35' LOT	4,200	39	163,800	
40' LOT	4,800	24	115,200	
60' LOT	7,200	66	475,200	
70' LOT	8,400	24	201,600	
80' LOT	9,600	10	96,000	
			1,217,400	27.9
DUPLEX / TOWNHOUSE				
20' TH	1,800	117	210,600	
22' TH	1,980	130	257,400	
22' DUPLEX	2,160	26	56,160	
	•		524,160	12.0
COMM/RETAIL*			25,689	0.6
	DISTRIBU		OF USES	
				ACRES
GROSS SITE AREA (F				171.8
DEDICATED RECREATIONAL OPEN SI		PACE		21.53
PUBLIC R/W				28.3
NET AREA**				121.97
USE TYPE		PROP. (AC)	MINMAX. DISTRIBUTION(%)	PROV. DIST. (%)
SINGLE FAMILY		27.9	15%-60%	22.9%
DUPLEX / TOWNHC	DUSE	12.0	10%-40%	9.9%
	COMMERCIAL / RETAIL			

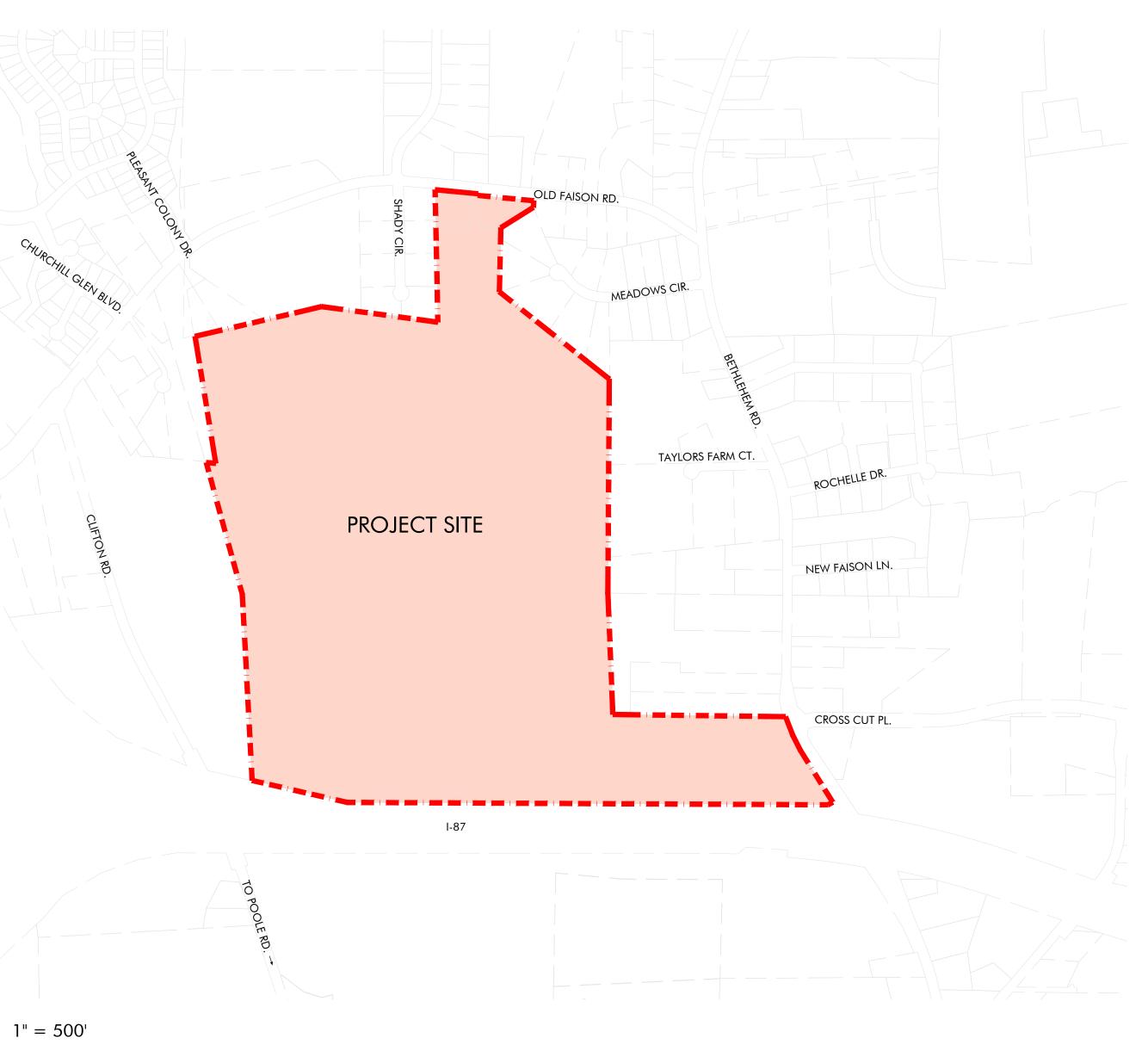
Lyndon Oaks Master Plan

VICINITY MAP

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. 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. 12. HANDICAP PARKING SPACE(S) AND HC ACCESS AISLE(S) SHALL BE NO GREATER THAN TWO PERCENT (2%) PITCH IN ANY DIRECTION(S) AS PER ÀDA STANDARDS.

Town of Knightdale RMX-PUD Master Plan Submittal: ZMA-2-23 Fourth Submittal: 05/03/2024



13. PROVIDE SIGNAGE AND STRIPING OF HANDICAP SPACES AS PER ADA STANDARDS.

DEPARTMENT STANDARDS, PROWAG STANDARDS AND ADAAG SPECIFICATIONS

17. ALL RAMPS AND HANDRAILS SHALL BE CONFORM TO ANSI STANDARDS.

INSPECTIONS OFFICE AT 919-217-2250 TO SET UP THE MEETING.

ON THIS MINIMUM CORNER CLEARANCE.

EVERGREEN SHRUBS, FENCE, OR WALL.

TRAFFIC CONTROL DEVICES (MUTCD).

INCONVENIENCE TO TRAFFIC.

DOCUMENTS.

OF THE MUTCD (MOST CURRENT EDITION).

WALLS ARE PERMITTED IN THE RIGHT-OF-WAY UNLESS APPROVED BY ENCROACHMENT.

14. ALL RETAINING WALLS GREATER THAN 30" IN HEIGHT TO INCLUDE SAFETY RAIL OR FENCE. NO RETAINING

16. WC ACCESS RAMPS WILL BE PROVIDED IN ACCORDANCE WITH TOWN OF KNIGHTDALE PUBLIC WORKS

15. THE MINIMUM CORNER CLEARANCE FROM THE CURB LINE OF INTERSECTING STREETS SHALL BE AT LEAST 20 FEET

18. ALL ABOVE GROUND UTILITY DEVICES (TO INCLUDE BUT NOT LIMITED TO TELEPHONE AND CABLE PEDESTALS,

19. 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

20. IF UNFORESEEN CONDITIONS DEVELOP DURING CONSTRUCTION, REFER TO NCDOT SPECIFICATIONS AND

DETAILS AND CONTACT TOWN OF KNIGHTDALE PUBLIC WORKS DEPARTMENT FOR FURTHER GUIDANCE.

21. PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING

22. THE CONTRACTOR SHALL CONDUCT THE WORK IN A SAFE MANNER AND WITH A MINIMUM AMOUNT OF

24. PRIOR TO CONSTRUCTION BEGINNING, ALL SIGNAGE AND TRAFFIC CONTROL SHALL BE IN PLACE

25. THE PLANS ARE PRELIMINARY AND SUBJECT TO CHANGE AT THE TIME OF SITE PLAN/CONSTRUCTION

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

23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL AND SHALL ADHERE TO THE PROVISIONS

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

ELECTRICAL TRANSFORMERS, BACKFLOW DEVICE HOTBOX, ETC) SHALL BE SCREENED FROM OFF-SITE VIEW BY

FROM THE POINT OF TANGENCY OF THE CURB FOR RESIDENTIAL DRIVEWAY. NO DRIVEWAYS SHALL ENCROACH

BUILDING SETBACKS

- FRONT:

- FRONT:

- REAR:

- SIDE:

- CORNER:

- FRONT:

- REAR:

- SIDE:

- CORNER:

- FRONT:

- REAR:

- SIDE:

CLUBHOUS

- FRONT:

- REAR - SIDE:

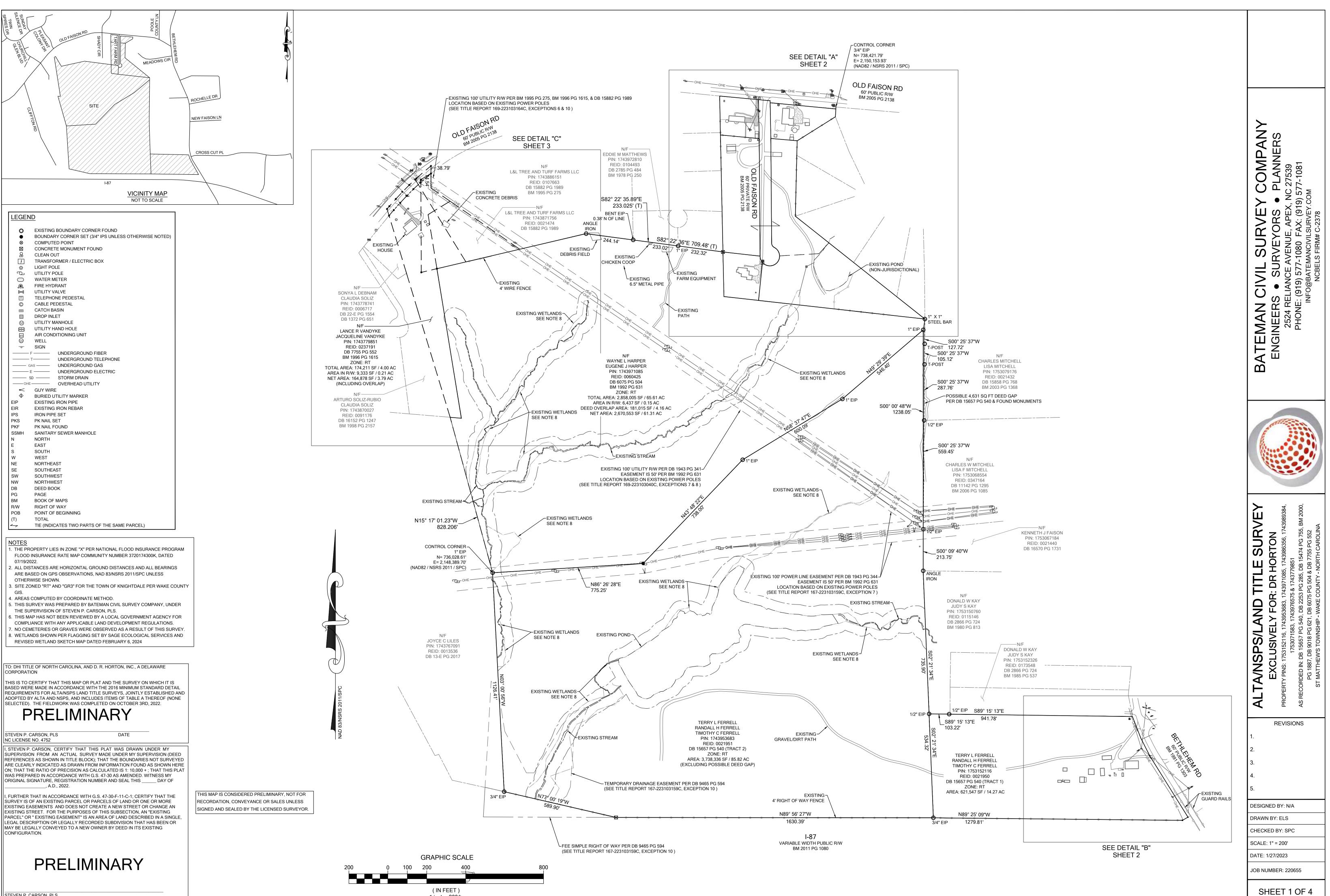
- SIDE:

TOWNHOMES/DUPLEX (REAR-LOADED):

SINGLE FAMILY DETACHED (REAR-LOADED)

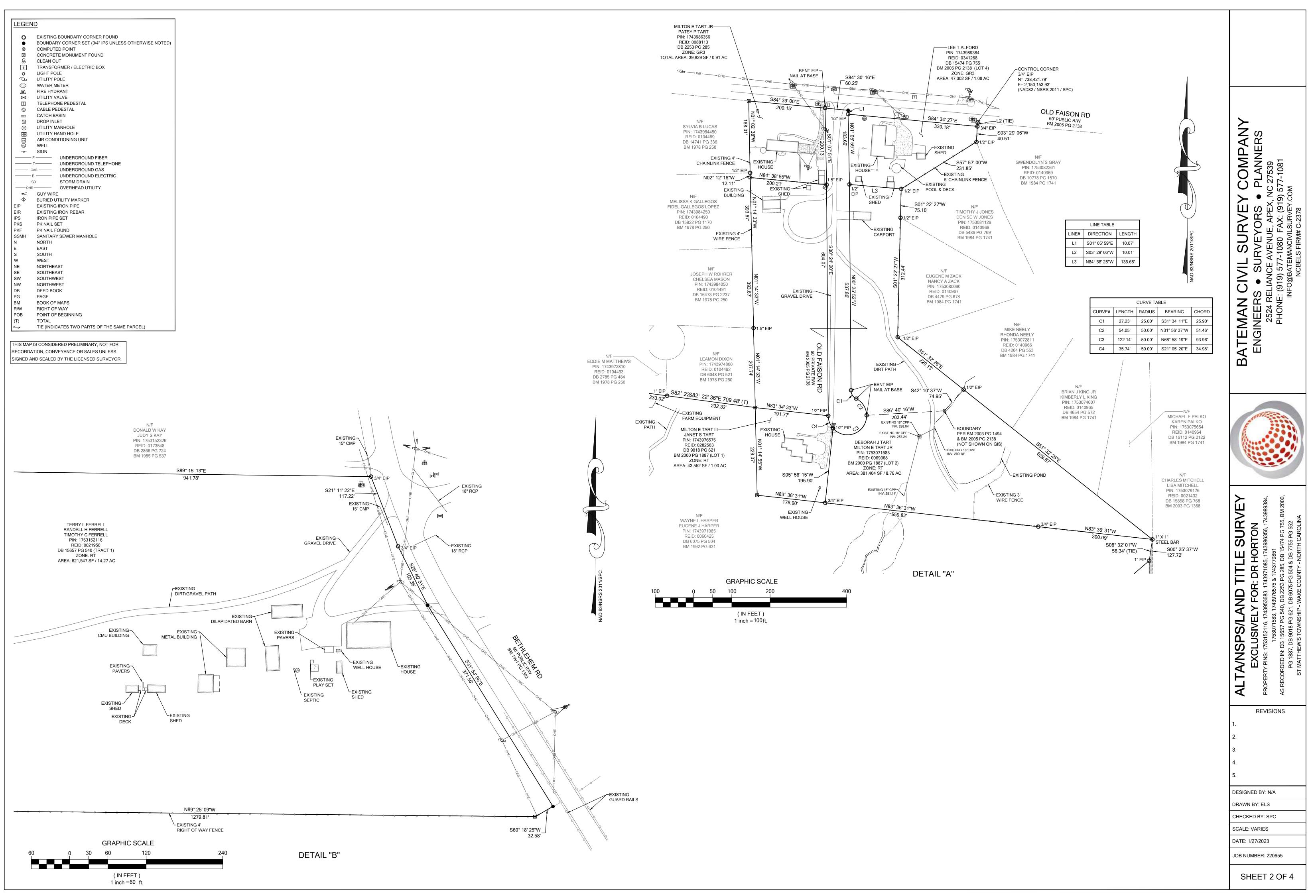
SINGLE FAMILY DETACHED (FRONT-LOADED

	CONTACT INFO:			
	OWNER: CONTACT: TERRY LANCE FERRELL, RANDAL HUTC ADDRESS: 26 SAINT JULIANS CT PAWLEYS ISLAND, SC 29585-6309	CHINS FERRELL		~
	OWNER: CONTACT: WAYNE L. HARPER, EUGENE J. HARPE ADDRESS: 4113 BREWSTER DR RALEIGH, NC 27606-1711	R	URB	
	OWNER: CONTACT: DEBORAH JANE TART, MELTON E JR ADDRESS: 4325 OLD FASION RD KNIGHTDALE NC 27545-9179		PARTN 150 fayetteville st	ERS
	OWNER: CONTACT: MILTON EDWARD III TART, JANET STA ADDRESS: 106 TART FARM RD KNIGHTDALE NC 27545-8134	NLEY TART	raleigh, nc 2 P 919.275.5 urbandesignpart	7601 5002
	OWNER: CONTACT: LEE T ALFORD ADDRESS: 4313 OLD FASION RD KNIGHTDALE NC 27545-9179		Ś	
	OWNER: CONTACT: MILTON E JR TART, PATSY P TART ADDRESS: 4325 OLD FASION RD KNIGHTDALE NC 27545-9179			
	<u>CIVIL ENGINEER:</u> URBAN DESIGN PARTNERS PLLC CONTACT: SALMAN MOAZZAM, PE			05/03/2024
	ADDRESS: 150 FAYETTEVILLE ST. SUITE 1310 RALEIGH, NC 27601 PHONE: 919-275-5002 EMAIL: SMOAZZAM@URBANDESIGNPARTNE	rs.com		201
	LANDSCAPE ARCHITECT: URBAN DESIGN PARTNERS PLLC CONTACT: BRIAN RICHARDS, PLA			ie Rd. Ste. 2
	ADDRESS: 150 FAYETTEVILLE ST. SUITE 1310 RALEIGH, NC 27601 PHONE: 919-275-5002 EMAIL: BRICHARDS@URBANDESIGNPARTNER	RS.COM	Horton	7208 Falls of Neuse Rd. Ste. Raleigh, NC 27615
	DEVELOPER: D.R. HORTON CONTACT: REESE BRIDGES , PE ADDRESS: 7208 FALLS OF NEUSE RD. SUITE 201		D.R.	7208 Fo Raleigh
	RALEIGH, NC 27615 PHONE: 984-247-9614 EMAIL: TBRIDGES@DRHORTON.COM			
	SITE DATA:			
		085; 1753071583; 1743976575; 1743989384; 16		
	TOTAL ACRES: ± 171.88 ACRES			
	EXISTING ZONING: RT (RURAL TRANSITIONA PROPOSED ZONING: RMX-PUD	L)	Ι <u>Υ</u>	
	EXISTING USE: RESIDENTIAL & AGRICUL PROPOSED USE: RESIDENTIAL & COMMEN		AC	
	DEVELOPMENT SUMMARY:			
	PROFESSIONAL SERVIC	ARE CENTER (6 OR MORE PEOPLE), PERSONAL SERVICES, CES, MEDICAL SERVICES, NEIGHBORHOOD	Plan	Sheet North Carolina
	BAR/TAVERN/MICROB *NOTE: SEE PUD DOCUMENT RESIDENTIAL: •TOTAL LAND AREA: ± 129.2	2 AC	ster Z	
	2.8 UN	JITS/171.88 AC ITS/AC J TOTAL (UP TO 500 DU PERMITTED)	Va Va Va	Cover Knightdale,
	→ TOWNHOMES/DUPLEXES 20' UNIT 117 UN 22' TOWNHOME 130 UN			
	22' TOWNTHOME 100 GN 22' DUPLEX 26 UNI → SINGLE FAMILY (REAR-LOAD)			
	30' LOT 46 LOT 35' LOT 39 LOT 40' LOT 39 LOT	S		
TBACKS	40' LOT 24 LOT → SINGLE FAMILY (FRONT-LOAD) 60' LOT 66 LOT			
EX (REAR-LOADED): 0' MIN TO 25' MAX	70' LOT 24 LOT 80' LOT 10 LOT	s		
10' MIN CHED (REAR-LOADED)	OPEN SPACE:		N. N	
10' MIN 10' MIN	- ACTIVE: 8.63 AC (TOTAL REQUIRED 50% OF REQ. OPEN SPACE)	REVISIONS	
3' MIN 10' MIN CHED (FRONT-LOADED)	\rightarrow PROPOSED: <u>21.53 AC</u>	50% OF REQ. OPEN SPACE)	<u>ــــــــــــــــــــــــــــــــــــ</u>	
10' MIN 20' MIN	- PASSIVE: 12.76 AC	ACTIVE OPEN SPACE PROP. PASSIVE OPEN SPACE PROP.	DATE: B 11/27/2023 02/05/2024 03/28/2024	
5' MIN 10' MIN		TOTAL REQUIRED TOTAL PROPOSED	# # [#] # 3 8 9	
10' MIN 0' MIN		T C-3.0 FOR BREAKDOWN & REQUIREMENTS	Project No: 22-RI Date: 05/03/202	
6' MIN 10' MIN	LAND USE TOTALS: → TOTAL ACRES: <u>171.88 AG</u> - COMMERCIAL: ± <u>1.76 AG</u>	<u>C TOTAL</u> <u>C TOTAL PROP.</u>	Sheet No:	
10' MIN 0' MIN 6' MIN	- RESIDENTIAL: ± 129.2 Å - OPEN SPACE: ± 21.53 Å	AC TOTAL PROP. AC TOTAL PROP. AC TOTAL PROP.	C-1.	\mathbf{O}
)		

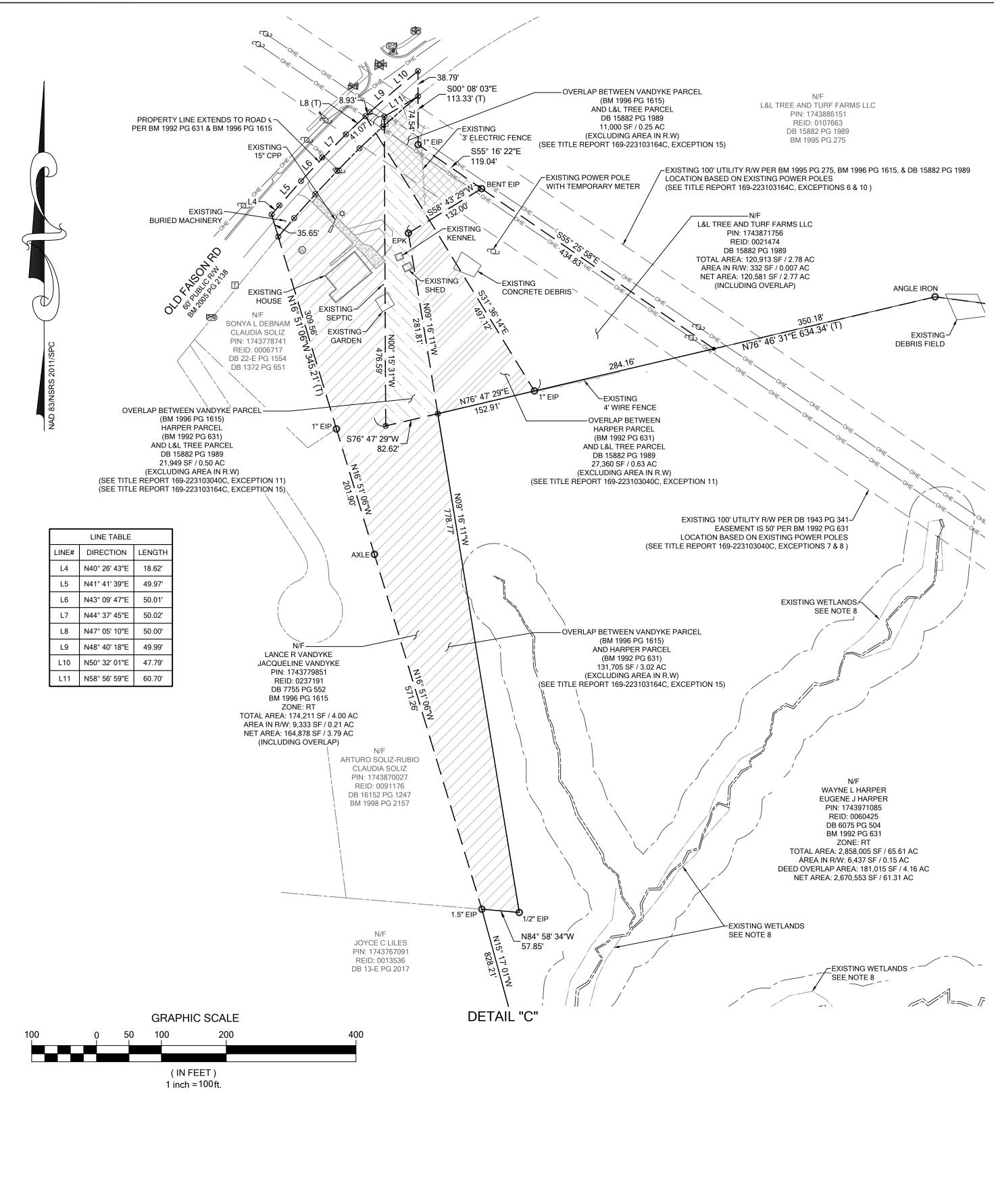


STEVEN P. CARSON, PLS NC LICENSE NO. 4752

1 inch = 200 ft.



o:\2022 Projects\220655 Old Faison ALTA - DR Horton\DWG\220655 Old Faison ALTA.



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

LEGEN	<u>)</u>
0	EXISTING BOUNDARY CORNER FOUND BOUNDARY CORNER SET (3/4" IPS UNLESS OTHERWISE NOTED
8	COMPUTED POINT
×	CONCRETE MONUMENT FOUND
8	CLEAN OUT
5	TRANSFORMER / ELECTRIC BOX
☆	LIGHT POLE
	UTILITY POLE
	WATER METER
	FIRE HYDRANT
	UTILITY VALVE
Т	TELEPHONE PEDESTAL
	CABLE PEDESTAL
-	CATCH BASIN
	DROP INLET
	UTILITY MANHOLE
	UTILITY HAND HOLE
	AIR CONDITIONING UNIT
	WELL
-0-	
—— F	UNDERGROUND FIBER UNDERGROUND TELEPHONE
—т	UNDERGROUND TELEPHONE
——— GA	s — UNDERGROUND GAS
	UNDERGROUND ELECTRIC
	STORM DRAIN
	OVERHEAD UTILITY
	GUY WIRE
	BURIED UTILITY MARKER
	EXISTING IRON PIPE
	EXISTING IRON REBAR
	IRON PIPE SET
	PK NAIL SET
PKF	PK NAIL FOUND
	SANITARY SEWER MANHOLE
	NORTH
E	EAST
S	SOUTH
W	WEST
NE SE	NORTHEAST
SE	SOUTHEAST SOUTHWEST
NW	NORTHWEST
DB	DEED BOOK
PG	PAGE
BM	BOOK OF MAPS
R/W	RIGHT OF WAY
POB	POINT OF BEGINNING
(T)	TOTAL
(1)	TIE (INDICATES TWO PARTS OF THE SAME PARCEL)

SURVEY COMMENTS SURVEY MADE BY BATEMAN CIVIL SURVEY COMPANY DATED 12/12/2022, JOB NO. 220655

SCHEDULE A

ISSUING OFFICE: DHI TITLE OF NORTH CAROLINA, 12276 SAN JOSE BLVD, SUITE 739, JACKSONVILLE, FL 32223 COMMITMENT NO.: 167-223103159C

PROPERTY ADDRESS: LOT ACQUISITION FERRELL: MASTER. N/A. NC 00000

. COMMITMENT DATE: NOVEMBER 8, 2022 AT 09:00 AM

. POLICY TO BE ISSUED:

(A) ALTA OWNER'S POLICY (06-16-07) PROPOSED INSURED: D.R. HORTON, INC., A DELAWARE CORPORATION

PROPOSED POLICY AMOUNT: \$10,000.00 . THE ESTATE OR INTEREST IN THE LAND DESCRIBED OR REFERRED TO IN THIS COMMITMENT IS:

FEE SIMPLE

. THE TITLE IS, AT THE COMMITMENT DATE, VESTED IN: TIMOTHY CLARENCE FERRELL, RANDALL HUTCHINS FERRELL, AND TERRY LANCE FERRELL AND CHERYL ANNE FERRELL, TRUSTEES OF THE TERRY LANCE FERRELL AND CHERYL ANN FERRELL FAMILY TRUST DATED JULY 26, 2018

. THE LAND IS DESCRIBED AS FOLLOWS:

LYING AND BEING IN WAKE COUNTY, NORTH CAROLINA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

FIRST TRACT

LOCATED ON THE WEST SIDE OF PAVED ROAD NO. 2049 AND BEGINNING AT POINT IN CENTER OF SAID ROAD BEING THE SOUTHEAST CORNER OF TRACT NO. 2 ON MAP HEREINAFTER REFERRED TO, AND RUNS THENCE SOUTH 29 DEG. 00 MIN. EAST 632 FEET TO CORNER IN SAID ROAD; THENCE NORTH 85 DEG. 33. MIN. WEST 1350 FEET TO CORNER; THENCE NORTH 00 DEG. 48 MIN. EAST 551 FEET TO THE SOUTHWEST CORNER OF THE NORTH PORTION OF TRACT NO. L; THENCE A DIVIDING LINE BETWEEN THE NORTH AND SOUTH PORTIONS OF TRACT NO. L, SOUTH 85 DEG. 33 MIN. EAST 1045 FEET TO THE POINT OF BEGINNING, AND BEING THE SOUTH PORTION OF TRACT NO. L OF THE PROPERTY OF THE J. I. FERRELL HEIRS AS SHOWN ON MAP PREPARED BY SMITH AND SMITH, APEX N. C. FROM DEEDS NOTED ON SAID MAP. CONTAINS 14 ½ ACRES MORE OR LESS.

SECOND TRACT:

BOUNDED ON THE NORTH BY A ROAD; ON THE EAST BY THE FAISON AND FERRELL LAND; ON THE SOUTH BY A. C. SPARKS AND ON THE WEST BY A BRANCH, AND DESCRIBED AS FOLLOWS; BEGINNING AT A FENCE POST, CORNER BETWEEN J. I. FERRELL AND A.C. SPARKS, AND RUNS THENCE NORTH 86 DEG, WEST 2331 FEET TO A BRANCH, SAID POINT BEING WITNESSED BY A STAKE AND POINTERS; THENCE ALONG SAID BRANCH IN A NORTHERLY DIRECTION 1100 FEET TO A ROAD; THENCE ALONG SAID ROAD THE FOLLOWING COURSES AND DISTANCES, N. 88 DEG. 30 MIN. EAST 770 FEET; N. 48 DEG. 10 MIN. E. 758 FEET; N. 63 DEG. E. 600 FEET; N. 53 DEG 50 MIN. E. 546.3 FEET TO A STAKE IN FAISON'S LINE ON SOUTH SIDE OF SAID ROAD; THENCE ALONG FAISON'S LINE S. 4 DEG. 40 MIN. W. 1238.7 FEET TO A STAKE, A CORNER BETWEEN THE FAISON AND FERRELL LANDS; THENCE ALONG THE FERRELL LINE S. L DEG. 45 MIN W. 1295 FEET TO THE BEGINNING, CONTAINING 82 ACRES MORE OR LESS ACCORDING TO A SURVEY AND MAP MADE BY PITTMAN STELL, C.S. DATED DEC. 14, 1944, AND BEING THE NORTHERN END OF TRACT NO. 13 OF "THE OAKS FARM", SEE SURVEY AND MAP MADE G. SAM ROWE, C.E. DATED NOVEMBER 1944.

LESS AND EXCEPT THAT PROPERTY DESCRIBED IN THE CONSENT JUDGMENT WITH THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION OF RECORD IN BOOK 9465, PAGE 594, WAKE COUNTY REGISTRY.

COMMITMENT NO.: 167-223103159C

SCHEDULE B, PART II EXCEPTIONS

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

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

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

2. TAXES AND ASSESSMENTS FOR THE YEAR 2023, A LIEN NOW DUE AND PAYABLE AND SUBSEQUENT YEARS, A LIEN NOT YET DUE AND PAYABLE (NO MATTER OF SURVEY)

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

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

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

6. ALL DEFERRED TAXES (NO MATTER OF SURVEY)

EASEMENTS TO CAROLINA POWER & LIGHT RECORDED IN BOOK 1828, PAGE 340; BOOK 1943, PAGE 344; AND BOOK 4023, PAGE 701, WAKE COUNTY REGISTRY. (AS SHOWN HEREON)

3. MEMORANDUM OF CONTRACT DATED JULY 14, 2022, RECORDED IN BOOK 19098, PAGE 869, WAKE COUNTY REGISTRY.

(NO MATTER OF SURVEY)

). THE CORRECTNESS OF THE SQUARE FOOTAGE/ACREAGE COMPUTATION CONTAINED IN THE DESCRIPTION OF THE LAND IS NOT **NSURED** (NO MATTER OF SURVEY)

0. CONSENT JUDGMENT IN FAVOR OF THE DEPARTMENT OF TRANSPORTATION FOR 1.193 ACRES, WAKE COUNTY CIVIL ACTION 01-CVS-3306, RECORDED IN BOOK 9465, PAGE 594, WAKE COUNTY REGISTRY. (AS SHOWN HEREON)

1. UTILITY EASEMENTS AFFECTING THE LAND. (NO DOCUMENTS CITED)

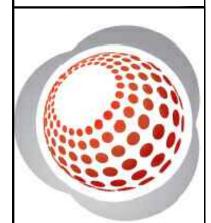
2. ACCESS TO SECOND TRACT THE LAND IS AVAILABLE ONLY BY MEANS OF ACCESS OVER FIRST TRACT, AND IS CONDITIONED UPON OWNERSHIP OF SAID ADJOINING PARCEL BY THE INSURED. (NO MATTER OF SURVEY)

3. ACCESS BY WAY OF INTERSTATE 87, A CONTROLLED ACCESS HIGHWAY, IS NOT INSURED.

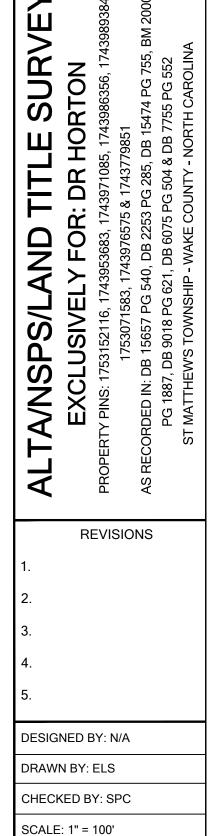
(NO MATTER OF SURVEY)

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

COMPAN' Ц \bigcirc ≻ • ш R< 0R \supset SURVE S CIVI S MAN . ∠ ____



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DATE: 1/27/2023 JOB NUMBER: 220655

SURVEY COMMENTS SURVEY MADE BY BATEMAN CIVIL SURVEY COMPANY SURVEY MADE BY BATEM DATED 12/12/2022, JOB NO. 220655 DATED 12/12/2022 SCHEDULE A <u>SCHEI</u> SSUING OFFICE: DHI TITLE OF NORTH CAROLINA, 12276 SAN JOSE BLVD, SUITE 739, JACKSONVILLE, FL 32223 COMMITMENT NO.: 169-223103040C ISSUING OFFICE: DHI TITLE OF NORTH CAROLINA, 12276 SAN JOSE B PROPERTY ADDRESS: LOT ACQUISITION TRACT 12, N/A, NC 00000 COMMITMENT NO.: 167-223103038C PROPERTY ADDRESS: FOUR TRACTS IN WAKE COUNTY TO BE KNOW 1. COMMITMENT DATE: OCTOBER 28, 2022 AT 12:00 AM 1. COMMITMENT DATE: OCTOBER 27, 2022 AT 12:00 AM 2. POLICY TO BE ISSUED: (A) ALTA OWNER'S POLICY (06-16-07) 2. POLICY TO BE ISSUED: PROPOSED INSURED: D.R. HORTON, INC., A DELAWARE CORPORATION (A) ALTA OWNER'S POLICY (06-16-07) PROPOSED POLICY AMOUNT: \$10,000.00 PROPOSED INSURED: D.R. HORTON, INC., A DELAWARE CORPO PROPOSED POLICY AMOUNT: \$1,800,000.00 3. THE ESTATE OR INTEREST IN THE LAND DESCRIBED OR REFERRED TO IN THIS COMMITMENT IS: FEE SIMPLE 3. THE ESTATE OR INTEREST IN THE LAND DESCRIBED OR REFERRE FEE SIMPLE 4. THE TITLE IS. AT THE COMMITMENT DATE. VESTED IN: WAYNE L. HARPER AND EUGENE J. HARPER 4. THE TITLE IS, AT THE COMMITMENT DATE, VESTED IN: TRACT 1 5. THE LAND IS DESCRIBED AS FOLLOWS: DEBORAH JANE TART AND MILTON E. TART, JR. AS TENANTS IN ALL THAT CERTAIN TRACT OR PARCEL OF LAND LYING IN SAINT MATTHEWS TOWNSHIP, WAKE COUNTY, NORTH CAROLINA, TRACT 2 MILTON EDWARD TART, III AND WIFE, JANET STANLEY TART CONTAINING 61.35 ACRES MORE OR LESS, AND BEING MORE PARTICULARLY SHOWN ON THAT CERTAIN PLAT OF SURVEY TITLED, SURVEY OF TRACT #12 OF THE OAKS FARM IN THE D.J. ROBERTSON ESTATE", BY TALLEY AND ASSOCIATES, WHICH PLAT IS RECORDED IN BOOK OF MAPS 1992, PAGE 631, WAKE COUNTY REGISTRY, AND IS BY MILTON EDWARD TART, JR. AND WIFE, PATSY PRICE TART REFERENCE, INCORPORATED HEREIN AS A PART OF THIS DESCRIPTION. TRACT 4 COMMITMENT NO.: 169-223103040C LEE T. ALFORD SCHEDULE B, PART II EXCEPTIONS 5. THE LAND IS DESCRIBED AS FOLLOWS: THIS COMMITMENT DOES NOT REPUBLISH ANY COVENANT, CONDITION, RESTRICTION, OR LIMITATION CONTAINED IN ANY DOCUMENT TRACT ⁻ REFERRED TO IN THIS COMMITMENT TO THE EXTENT THAT THE SPECIFIC COVENANT, CONDITION, RESTRICTION, OR LIMITATION PARCEL 1 VIOLATES STATE OR FEDERAL LAW BASED ON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, GENDER IDENTITY, HANDICAP, ALL THAT CERTAIN TRACT OR PARCEL OF LAND LYING IN SAINT MA FAMILIAL STATUS, OR NATIONAL ORIGIN. CONTAINING 2.694 ACRES MORE OR LESS, AND BEING MORE PARTIC THE POLICY WILL NOT INSURE AGAINST LOSS OR DAMAGE RESULTING FROM THE TERMS AND PROVISIONS OF ANY LEASE OR SURVEY ENTITLED, " FINAL PLAT MINOR FAMILY SUBDIVISION GLADY EASEMENT IDENTIFIED IN SCHEDULE A, AND WILL INCLUDE THE FOLLOWING EXCEPTIONS UNLESS CLEARED TO THE SATISFACTION OF WHICH PLAT IS RECORDED IN BOOK OF MAPS 2003, PAGE 1494, WAKE THE COMPANY: INCORPORATED HEREIN AS A PART OF THIS DESCRIPTION. I. ANY DEFECT, LIEN, ENCUMBRANCE, ADVERSE CLAIM, OR OTHER MATTER THAT APPEARS FOR THE FIRST TIME IN THE PUBLIC RECORDS OR IS CREATED, ATTACHES, OR IS DISCLOSED BETWEEN THE COMMITMENT DATE AND THE DATE ON WHICH ALL OF THE PARCEL 2 SCHEDULE B, PART I - REQUIREMENTS ARE MET. ALL THAT CERTAIN TRACT OR PARCEL OF LAND LYING IN SAINT MAT (NO MATTER OF SURVEY) CONTAINING 3.896 ACRES MORE OR LESS, AND BEING MORE PARTIC BY GIL CLARK SURVEYING, WHICH PLAT IS RECORDED IN BOOK OF I 2. TAXES AND ASSESSMENTS FOR THE YEAR 2023, A LIEN NOW DUE AND PAYABLE AND SUBSEQUENT YEARS, A LIEN NOT YET DUE AND IS BY REFERENCE, INCORPORATED HEREIN AS A PART OF THIS DES PAYABLE. (NO MATTER OF SURVEY) PARCEL 3 3. TITLE TO ANY AREAS WITHIN STREET, HIGHWAY OR RAILROAD RIGHTS OF WAY, IF ANY. ALL THAT CERTAIN TRACT OR PARCEL OF LAND LYING IN SAINT MAT (NO MATTER OF SURVEY) CONTAINING 2.166 ACRES MORE OR LESS, AND BEING MORE PARTIC BY GIL CLARK SURVEYING, WHICH PLAT IS RECORDED IN BOOK OF I 4. THE CREATION OR LOSS OF LAND BY NATURAL OR ARTIFICIAL CHANGES ALONG WATER FORMING PART OF THE BOUNDARY OF THE IS BY REFERENCE, INCORPORATED HEREIN AS A PART OF THIS DES LAND: AND/OR TITLE TO LAND LYING BELOW THE HIGHER OF THE MEAN HIGH WATER MARK AND/OR THE NORMAL BOUNDS OF ANY BODY OF WATER; AND/OR RIPARIAN RIGHTS INCIDENT TO ANY BRANCHES, CREEKS, STREAMS, LAKES OR OTHER WATERS COURSING PARCEL 4 OR ABUTTING THE LAND. ALL THAT CERTAIN TRACT OR PARCEL OF LAND LYING IN SAINT MAT (NO MATTER OF SURVEY) AS "TART FARM RD. NEW 6' PRIVATE R/W" ON THAT CERTAIN PLAT O 5. ANY DISCREPANCY, CONFLICT, ACCESS, SHORTAGE IN AREA OR BOUNDARY LINES, ENCROACHMENT, ENCUMBRANCE, VIOLATION, IS RECORDED IN BOOK OF MAPS 2000, PAGE 1877, WAKE COUNTY RE OVERLAP, SETBACK, EASEMENT OR CLAIMS OF EASEMENT, RIPARIAN RIGHT, AND TITLE TO LAND WITHIN ROADS, WAYS, RAILROADS, HEREIN AS A PART OF THIS DESCRIPTION. WATERCOURSES, BURIAL GROUNDS, MARSHES, DREDGED OR FILLED AREAS OR LAND BELOW THE MEAN HIGHWATER MARK OR WITHIN THE BOUNDS OF ANY ADJOINING BODY OF WATER, OR OTHER ADVERSE CIRCUMSTANCE AFFECTING THE TITLE THAT WOULD TRACT 2 BE DISCLOSED BY A CURRENT INSPECTION AND ACCURATE AND COMPLETE LAND SURVEY OF THE LAND. ALL THAT CERTAIN TRACT OR PARCEL OF LAND LYING IN SAINT MA (AS SHOWN HEREON) CONTAINING 1.000 ACRE MORE OR LESS, AND BEING MORE PARTICL 6. ALL DEFERRED TAXES. BY GIL CLARK SURVEYING, WHICH PLAT IS RECORDED IN BOOK OF I (NO MATTER OF SURVEY) IS BY REFERENCE, INCORPORATED HEREIN AS A PART OF THIS DES 7. ANY RIGHT, EASEMENT, SETBACK, INTEREST, CLAIM, ENCROACHMENT, ENCUMBRANCE, VIOLATION, VARIATIONS OR OTHER TRACT 3 ADVERSE CIRCUMSTANCE AFFECTING THE TITLE DISCLOSED BY PLAT(S) RECORDED IN BOOK OF MAPS 1992, AT PAGE 631 AND BEGINNING AT A NAIL AND CAP IN THE CENTER OF FAISON ROAD (S MATTERS SHOWN THEREON. PROPERTY OF JAMES R. FAISON, SOUTHERN LINE OF THE PROPERT (AS SHOWN HEREON) P. FAISON AND FROM THE POINT AND PLACE OF BEGINNING SOUTH EASTERN LINE OF THE PROPERTY OF JAMES R. FAISON AND THE WI 8. RIGHT OF WAY TO CAROLINA POWER AND LIGHT OF RECORD IN BOOK 1943, PAGE 341, BOOK 4945, PAGE 929, WAKE COUNTY DEGREES 4 MINUTES EAST 200 FEET TO A STAKE; THENCE NORTH 0 REGISTRY LOCATES IN THE CENTER OF FAISON ROAD (STATE ROAD 2515); THE (AS SHOWN HEREON) MINUTES WEST 200 FEET TO THE POINT AND PLACE OF BEGINNING OF WAY OF FAISON ROAD (STATE ROAD 2515).). RIGHT OF WAY TO THE NC STATE HIGHWAY COMMISSION OF RECORD IN BOOK 1445, PAGE 577, WAKE COUNTY REGISTRY. (NO PLOTTABLE DESCRIPTION FOUND) 10. ANY RIGHT, EASEMENT, SETBACK, INTEREST, CLAIM, ENCROACHMENT, ENCUMBRANCE, VIOLATION, VARIATIONS OR OTHER ALL THAT CERTAIN TRACT OR PARCEL OF LAND LYING IN SAINT MAT ADVERSE CIRCUMSTANCE AFFECTING THE TITLE DISCLOSED BY PLAT(S) RECORDED IN BOOK OF MAPS 1996, AT PAGE 1615 AND CONTAINING 1.079 ACRES MORE OR LESS, AND BEING MORE PARTIC MATTERS SHOWN THEREON. GIL CLARK SURVEYING, WHICH PLAT IS RECORDED IN BOOK OF MAP REFERENCE, INCORPORATED HEREIN AS A PART OF THIS DESCRIPT (AS SHOWN HEREON) 11. SUBJECT TO THE CLAIMS OF L&L TREE AND TURF FARMS, LLC BASED UPON THE DEED INTO L&L TREE AND TURF FARMS, LLC IN BOOK 15882, PAGE 1989 (TRACT 3). (AS SHOWN HEREON) 12. THE CORRECTNESS OF THE SQUARE FOOTAGE/ACREAGE COMPUTATION CONTAINED IN THE DESCRIPTION OF THE LAND IS NOT INSURED. (NO MATTER OF SURVEY) 13. ANY RIGHT, EASEMENT, SETBACK, INTEREST, CLAIM, ENCROACHMENT, ENCUMBRANCE, VIOLATION, VARIATIONS OR OTHER ADVERSE CIRCUMSTANCE AFFECTING THE TITLE DISCLOSED BY PLAT(S) RECORDED IN BOOK OF MAPS , AT PAGE AND MATTERS SHOWN THEREON (NO DOCUMENT CITED) 14. NO CLOSING SERVICES INSUBANCE: AS TO THE TRANSACTION FOR WHICH THIS COMMITMENT IS ISSUED. THE COMPANY DOES NOT AFFORD INSURED CLOSING PROTECTION/CLOSING SERVICES INSURANCE ABSENT REVISION OF THIS COMMITMENT TO INCLUDE A STATEMENT THAT COVERAGE IS AFFORDED TO THOSE PARTIES IDENTIFIED IN A SEPARATE CLOSING PROTECTION LETTER ISSUED SIMULTANEOUSLY WITH REVISION OF THE COMMITMENT. ANY CLOSING PROTECTION COVERAGE OR LETTER WHICH HERETOFORE MAY HAVE BEEN ISSUED IS HEREBY RESCINDED AND SHALL NOT BE EFFECTIVE AS TO THIS TRANSACTION. ANY CLOSING PROTECTION LETTER SUBSEQUENTLY ISSUED SHALL NOT BE EFFECTIVE AS TO THIS TRANSACTION ABSENT THE ACCOMPANYING REQUISITE **REVISION OF THIS COMMITMENT.** (NO MATTER OF SURVEY)

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

COMMENTS AN CIVIL SURVEY COMPANY	COMMITMENT NO.: 167-223103038C
2, JOB NO. 220655	SCHEDULE B, PART II EXCEPTIONS
DULE A	THIS COMMITMENT DOES NOT REPUBLISH ANY COVENANT, CONDITION, RESTRICTION, OR LIMITATION CONTAINED IN ANY DOCUMENT REFERRED TO IN THIS COMMITMENT TO THE EXTENT THAT THE SPECIFIC COVENANT, CONDITION, RESTRICTION, OR LIMITATION VIOLATES STATE OR
BLVD, SUITE 739, JACKSONVILLE, FL 32223	FEDERAL LAW BASED ON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, GENDER IDENTITY, HANDICAP, FAMILIAL STATUS, OR NATIONAL ORIGIN.
VN AS TART, N/A, NC 00000	THE POLICY WILL NOT INSURE AGAINST LOSS OR DAMAGE RESULTING FROM THE TERMS AND PROVISIONS OF ANY LEASE OR EASEMENT IDENTIFIED IN SCHEDULE A, AND WILL INCLUDE THE FOLLOWING EXCEPTIONS UNLESS CLEARED TO THE SATISFACTION OF THE COMPANY:
ORATION	1. ANY DEFECT, LIEN, ENCUMBRANCE, ADVERSE CLAIM, OR OTHER MATTER THAT APPEARS FOR THE FIRST TIME IN THE PUBLIC RECORDS OR IS CREATED, ATTACHES, OR IS DISCLOSED BETWEEN THE COMMITMENT DATE AND THE DATE ON WHICH ALL OF THE SCHEDULE B, PART I - REQUIREMENTS ARE MET. (NO MATTER OF SURVEY)
	2. TAXES AND ASSESSMENTS FOR THE YEAR 2023, A LIEN NOW DUE AND PAYABLE AND SUBSEQUENT YEARS, A LIEN NOT YET DUE AND PAYABLE. (NO MATTER OF SURVEY)
ED TO IN THIS COMMITMENT IS:	3. TITLE TO ANY AREAS WITHIN STREET, HIGHWAY OR RAILROAD RIGHTS OF WAY, IF ANY. (NO MATTER OF SURVEY)
N COMMON	4. THE CREATION OR LOSS OF LAND BY NATURAL OR ARTIFICIAL CHANGES ALONG WATER FORMING PART OF THE BOUNDARY OF THE LAND; AND/OR TITLE TO LAND LYING BELOW THE HIGHER OF THE MEAN HIGH WATER MARK AND/OR THE NORMAL BOUNDS OF ANY BODY OF WATER; AND/OR RIPARIAN RIGHTS INCIDENT TO ANY BRANCHES, CREEKS, STREAMS, LAKES OR OTHER WATERS COURSING OR ABUTTING THE
	LAND. (NO MATTER OF SURVEY)
	5. ANY DISCREPANCY, CONFLICT, ACCESS, SHORTAGE IN AREA OR BOUNDARY LINES, ENCROACHMENT, ENCUMBRANCE, VIOLATION, OVERLAP, SETBACK, EASEMENT OR CLAIMS OF EASEMENT, RIPARIAN RIGHT, AND TITLE TO LAND WITHIN ROADS, WAYS, RAILROADS, WATERCOURSES, BURIAL GROUNDS, MARSHES, DREDGED OR FILLED AREAS OR LAND BELOW THE MEAN HIGHWATER MARK OR WITHIN THE BOUNDS OF ANY ADJOINING BODY OF WATER, OR OTHER ADVERSE CIRCUMSTANCE AFFECTING THE TITLE THAT WOULD BE DISCLOSED BY A CURRENT INSPECTION AND ACCURATE AND COMPLETE LAND SURVEY OF THE LAND. (AS SHOWN HEREON)
	6. ALL DEFERRED TAXES (NO MATTER OF SURVEY)
TTHEWS TOWNSHIP, WAKE COUNTY, NORTH CAROLINA, CULARLY SHOWN AS LOT 2 ON THAT CERTAIN PLAT OF	7. TRACT 1: A. ANY RIGHT, EASEMENT, SETBACK, INTEREST, CLAIM, ENCROACHMENT, ENCUMBRANCE, VIOLATION, VARIATIONS OR OTHER ADVERSE CIURCUMSTANCE AFFECTING THE TITLE DISCLOSED BY PLAT(S) RECORDED IN BOOK MAP 2003, AT PAGE 1494 AND BOOK MAP 2005, PAGE 2138 AND MATTERS SHOWN THEREON. (AS SHOWN HEREON)
YS F. TART", BY GIL CLARK SURVEYING, KE COUNTY REGISTRY, AND IS BY REFERENCE,	8. TRACTS 1 AND 2: A. EASEMENTS TO CAROLINA POWER & LIGHT COMPANY OF RECORD IN BOOK 1946, PAGE 168; BOOK 4327, PAGE 198; AND BOOK 9483, PAGE 792, WAKE COUNTY REGISTRY. (LOCATION CANNOT BE DETERMINED FROM RECORD DOCUMENTS)
TTHEWS TOWNSHIP, WAKE COUNTY, NORTH CAROLINA, CULARLY SHOWN AS LOT 5 ON THAT CERTAIN PLAT OF SURVEY MAPS 2003, PAGE 1494, WAKE COUNTY REGISTRY, AND	B. ORDER GRANTING A VARIANCE BY THE KNIGHTDALE BOARD OF ADJUSTMENT, DATED JULY 19, 2000, OF RECORD IN BOOK 8647, PAGE 1755, WAKE COUNTY REGISTRY. (NO MATTER OF SURVEY)
SCRIPTION.	C. ROAD MAINTENANCE AGREEMENT FOR TART FARM ROAD BETWEEN GLADYS F. TART, MILTON EDWARD TART, JR., AND MILTON EDWARD TART, III, OF RECORD IN BOOK 8692, PAGE 161, AND RE-RECORDED IN BOOK 8710, PAGE 2779, WAKE COUNTY REGISTRY. (NO MATTER OF SURVEY)
TTHEWS TOWNSHIP, WAKE COUNTY, NORTH CAROLINA, CULARLY SHOWN AS LOT 3 ON THAT CERTAIN PLAT OF SURVEY MAPS 2005, PAGE 2138, WAKE COUNTY REGISTRY, AND SCRIPTION.	D. MEMORANDUM OF CONTRACT WITH D.R. HORTON, INC. OF RECORD IN BOOK 19098, PAGE 791, WAKE COUNTY REGISTRY. (NO MATTER OF SURVEY)
TTHEWS TOWNSHIP, WAKE COUNTY, NORTH CAROLINA, SHOWN	9. TRACT 2: A. ANY RIGHT, EASEMENT, SETBACK, INTEREST, CLAIM, ENCROACHMENT, ENCUMBRANCE, VIOLATION, VARIATIONS OR OTHER ADVERSE CIURCUMSTANCE AFFECTING THE TITLE DISCLOSED BY PLAT(S) RECORDED IN BOOK MAP 2000, AT PAGE 1877 AND MATTERS SHOWN THEREON. (AS SHOWN HEREON)
EGISTRY, AND IS BY REFERENCE, INCORPORATED	10. TRACTS 3 AND 4: A. RIGHT OF WAY AGREEMENT BETWEEN MILTON E. TART, GLADYS F. TART, AND THE STATE HIGHWAY COMMISSION FOR SR# 2515, RECORDED IN BOOK 1445, PAGE 579, WAKE COUNTY REGISTRY. (NO PLOTTABLE DESCRIPTION FOUND)
TTHEWS TOWNSHIP, WAKE COUNTY, NORTH CAROLINA, ULARLY SHOWN AS LOT 1 ON THAT CERTAIN PLAT OF SURVEY MAPS 2000, PAGE 1877, WAKE COUNTY REGISTRY, AND	B. EASEMENTS TO CAROLINA POWER AND LIGHT RECORDED IN BOOK 1946, PAGE 168; BOOK 4327, PAGE 199; AND BOOK 9483, PAGE 790, WAKE COUNTY REGISTRY. (LOCATION CANNOT BE DETERMINED FROM RECORD DOCUMENTS)
CRIPTION.	C. ROAD MAINTENANCE AGREEMENT FOR TART FARM ROAD BETWEEN GLADYS F. TART, MILTON EDWARD TART, JR., AND MILTON EDWARD TART, III, OF RECORD IN BOOK 8692, PAGE 161, AND RE-RECORDED IN BOOK 8710, PAGE 2779, WAKE COUNTY REGISTRY. (NO MATTER OF SURVEY)
TY HERETOFORE BELONGING TO OLLIE W. FAISON AND WIFE DAISY 00 DEGREES 19 MINUTES WEST 230.74 FEET TO A STAKE IN THE ESTERN LINE OF GLADYS FAISON TART; THENCE SOUTH 83	D. MEMORANDUM OF CONTRACT WITH D.R. HORTON, INC., DATED JULY 13, 2022, OF RECORD IN BOOK 19098, PAGE 791, WAKE COUNTY REGISTRY. (NO MATTER OF SURVEY)
0 DEGREES 19 MINUTES EAST 230.74 FEET TO A NAIL AND CAP ENCE WITH THE CENTER OF SAID ROAD NORTH 83 DEGREES 4 CONTAINING 1.05 ACRES MORE OR LESS INCLUSIVE OF THE RIGHT	E. ORDER GRANTING A VARIANCE BY THE KNIGHTDALE BOARD OF ADJUSTMENT, DATED JULY 19, 2000, OF RECORD IN BOOK 8647, PAGE 1755, WAKE COUNTY REGISTRY. (NO MATTER OF SURVEY)
THEWS TOWNSHIP, WAKE COUNTY, NORTH CAROLINA, CULARLY SHOWN AS LOT 4 ON THAT CERTAIN PLAT OF SURVEY BY PS 2005, PAGE 2138, WAKE COUNTY REGISTRY, AND IS BY	11. TRACT 4: A. ANY RIGHT, EASEMENT, SETBACK, INTEREST, CLAIM, ENCROACHMENT, ENCUMBRANCE, VIOLATION, VARIATIONS OR OTHER ADVERSE CIURCUMSTANCE AFFECTING THE TITLE DISCLOSED BY PLAT(S) RECORDED IN BOOK MAP 2005, AT PAGE 2138 AND MATTERS SHOWN THEREON. (AS SHOWN HEREON)
TION.	12. THE CORRECTNESS OF THE SQUARE FOOTAGE/ACREAGE COMPUTATION CONTAINED IN THE DESCRIPTION OF THE LAND IS NOT INSURED. (NO MATTER OF SURVEY)
	13. NO CLOSING SERVICES INSURANCE: AS TO THE TRANSACTION FOR WHICH THIS COMMITMENT IS ISSUED, THE COMPANY DOES NOT AFFORD INSURED CLOSING PROTECTION/CLOSING SERVICES INSURANCE ABSENT REVISION OF THIS COMMITMENT TO INCLUDE A STATEMENT THAT

COVERAGE IS AFFORDED TO THOSE PARTIES IDENTIFIED IN A SEPARATE CLOSING PROTECTION LETTER ISSUED SIMULTANEOUSLY WITH REVISION OF THE COMMITMENT. ANY CLOSING PROTECTION COVERAGE OR LETTER WHICH HERETOFORE MAY HAVE BEEN ISSUED IS HEREBY RESCINDED AND SHALL NOT BE EFFECTIVE AS TO THIS TRANSACTION. ANY CLOSING PROTECTION LETTER SUBSEQUENTLY ISSUED SHALL NOT BE EFFECTIVE AS TO THIS TRANSACTION ABSENT THE ACCOMPANYING REQUISITE REVISION OF THIS COMMITMENT.

(NO MATTER OF SURVEY)

SURVEY COMMENTS SURVEY MADE BY BATEMAN CIVIL SURVEY COMPANY DATED 12/12/2022, JOB NO. 220655

SCHEDULE A

ISSUING OFFICE: DHI TITLE OF NORTH CAROLINA, 12276 SAN JOSE BLVD, SUITE 739, JACKSONVILLE, FL 32223

COMMITMENT NO.: 169-223103164C PROPERTY ADDRESS: ACQUISITION TRACT 4, ED PLUMMER ESTATE PROPERTY, N/A, NC 00000

1. COMMITMENT DATE: NOVEMBER 8, 2022 AT 12:00 AM

POLICY TO BE ISSUED:

(A) ALTA OWNER'S POLICY (06-16-07) PROPOSED INSURED: D.R. HORTON, INC., A DELAWARE CORPORATION PROPOSED POLICY AMOUNT: \$1,400,000.00

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

4. THE TITLE IS, AT THE COMMITMENT DATE, VESTED IN: LANCE R. VANDYKE AND WIFE, JACQUELINE VANDYKE

5. THE LAND IS DESCRIBED AS FOLLOWS:

COMMITMENT NO.: 169-223103164C

BEING ALL OF TRACT 4 OF THE ED PLUMMER ESTATE PROPERTY ON OLD FAISON RD. AS DEPICTED IN MAP BOOK 1996, PAGE 1615, WAKE COUNTY REGISTRY.

SCHEDULE B, PART II EXCEPTIONS

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

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

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

2. TAXES AND ASSESSMENTS FOR THE YEAR 2022 AND SUBSEQUENT YEARS, NOT YET DUE AND PAYABLE.

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

(NO MATTER OF SURVEY)

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

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

6. ANY RIGHT, EASEMENT, SETBACK, INTEREST, CLAIM, ENCROACHMENT, ENCUMBRANCE, VIOLATION, VARIATIONS OR OTHER ADVERSE CIRCUMSTANCE AFFECTING THE TITLE DISCLOSED BY PLAT(S) RECORDED IN BOOK OF MAPS 1996, AT PAGE 1615, OF THE WAKE COUNTY REGISTRY. (AS SHOWN HEREON)

7. EASEMENT FOR ROADWAY DATED 11/10/1945 IN BOOK 930, PAGE 590, WAKE COUNTY REGISTRY

8. RIGHT OF WAY EASEMENT DATED 4/11/1949 IN BOOK 1018, PAGE 553, WAKE COUNTY REGISTRY.

(EASEMENT HAS TERMINATED PER TERMS)

9. EASEMENT TO CAROLINA POWER AND LIGHT DATED 9/13/1956 OF RECORD IN BOOK 1252, PAGE 485, WAKE COUNTY REGISTRY. (EASEMENT IS BLANKET IN NATURE)

10. RIGHT OF WAY AGREEMENT DATED 12/7/1960 TO THE STATE HIGHWAY COMMISSION IN BOOK 1445, PAGE 575, WAKE COUNTY REGISTRY. (NO PLOTTABLE DESCRIPTION FOUND)

(NO PLOTTABLE DESCRIPTION FOUND)

(NO MATTER OF SURVEY)

(AS SHOWN HEREON)

11. EASEMENT TO CAROLINA POWER AND LIGHT DATED 7/14/1970 OF RECORD IN BOOK 1939, PAGE 230, WAKE COUNTY REGISTRY. (AS SHOWN HERON)

12. EASEMENT TO CAROLINA POWER AND LIGHT DATED 1/13/1972 OF RECORD IN BOOK 2052, PAGE 131, WAKE COUNTY REGISTRY. (EASEMENT IS BLANKET IN NATURE)

13. EQUITY LINE DEED OF TRUST TO COASTAL FEDERAL CREDIT UNION DATED 2/14/2022 OF RECORD IN BOOK 18924, PAGE 945, WAKE COUNTY REGISTRY. (NO MATTER OF SURVEY)

14. MEMORANDUM OF CONTRACT WITH DR HORTON, INC. OF RECORD IN BOOK 19098, PAGE 653, WAKE COUNTY REGISTRY.

15. SUBJECT TO THE CLAIMS OF PROPERTY OWNERS TO THE EAST BASED UPON THE MAP IN BM 1996, PAGE 1615, WHICH CREATES AN OVERLAP AND SHOWS THE ADJACENT TRACT WITH NO ACCESS AND NOT ADJACENT TO THE PUBLIC ROAD

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

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

ALTA/NSPS/LAND TITLE SURVEY	EXCLUSIVELY FOR: DR HORTON	PROPERTY PINS: 1753152116, 1743953683, 1743971085, 1743986356, 1743989384,	1753071583, 1743976575 & 1743779851	AS RECORDED IN: DB 15657 PG 540, DB 2253 PG 285, DB 15474 PG 755, BM 2000,	PG 1887, DB 9018 PG 621, DB 6075 PG 504 & DB 7755 PG 552	ST MATTHEW'S TOWNSHIP - WAKE COUNTY - NORTH CAROLINA
	R	EVI	SIO	NS		
1.						
1. 2.						
1. 2. 3.						
3.						
3. 4.	NED E	3Y: N	J/A			
3. 4. 5.						
3. 4. 5. DESIG	N BY:	ELS				
3. 4. 5. DESIG DRAW	N BY: KED B	ELS Y: S				
 3. 4. 5. DESIG DRAW CHECH 	N BY: KED B :: VAR	ELS Y: S IES				



NOTE: Location, shape and size of depicted features on the evaluated site are approximate and should be surveyed by a licensed NC surveyor for final site planning.

SF01 Start Stream

Potential Non-Wetland Waters of the US SF - 550 LF

Potential Wetland Waters of the US WE-3 = 0.6 Ac.

Potential Non-Wetland

Waters of the US SG - 750 LF

WGDP1 Wet

400 Ramp SB

-1.495

Ramp NB-

Potential Wetland Waters of the US WG-2 - 0.23 Ac.

Potential Non-Wetland Waters of the US SB1 - 217 LF

de Martina

US 64 Hwy EB

Potential Wetland Waters of the US WE-2 -0.1 Ac.

old Raison Rd

SD01 Start Stream-

Potential Wetland Waters of the US WD-2 - 0.4 Ac.

Potential Wetland

Waters of the US WC-1 - 0.42 Ac.

87 SB

SE01 Start Stream

Potential Wetland Waters of the US WE-1 - 0.17 Ac.

Potential Non-Wetland Waters of the US SD - 2085 LF

Potential Wetland Waters of the US WB-2 - 0.08 Ac.

SFSB-1

Potential Wetland Waters of the US WB-1 - 1.2 Ac.

DP6 Wet

Potential Non-Wetland Waters of the US SB - 1390 LF

Potential Non-Wetland Waters of the US SE - 1330 LF

Potential Wetland

Waters of the US WB-4 - 0.006 Ac.

Potential Wetland Waters of the US WD-1 -0.6 Ac.

Potential Wetland Waters of the US WG-1 - 0.73 Ac.

SFSB1-1

DP5 Up

495 Ramp SB

SFSB1-2

WGDP2 up

Spires Dr

NOTE: This map is a revision of the previously submitted map based on the ite meeting with Matt Martin of the U.S. Army Corp of Engineers Raleigh Regulatory Field Office on January 25, 2024.

Taylors Farm Ct

Meadow

Pond 2

Potential Wetland Waters of the US WD-3 - 0.08 Ac.

DP2 Up

DP3 Up

Potential Wetland Waters of the US WB-3 - 0.16 Ac.

DP4Up

DP7 Up

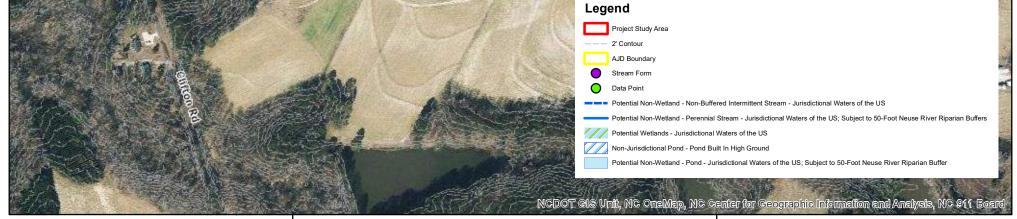
Potential Non-Wetland Waters of the US Pond 1 - 4.9 Ac.

- 22

Stream SB

US 64 Hwy WB

DP1 Wet



Map Location



AJD/ PJD Revised Wetland Sketch Map

Bethlehem Rd. Project Sage Project # 2022.105

February 6, 2024

1" = 400'



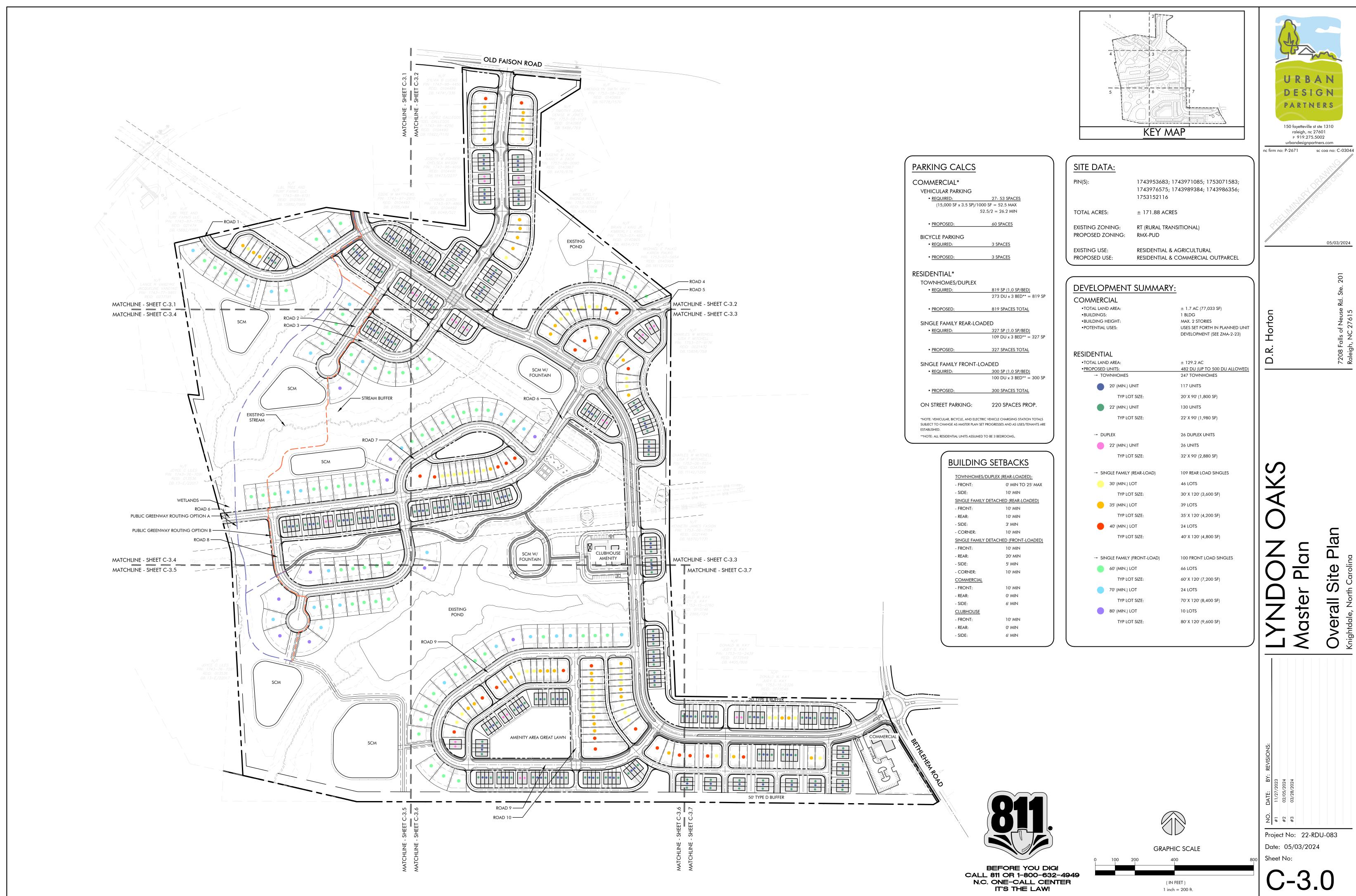


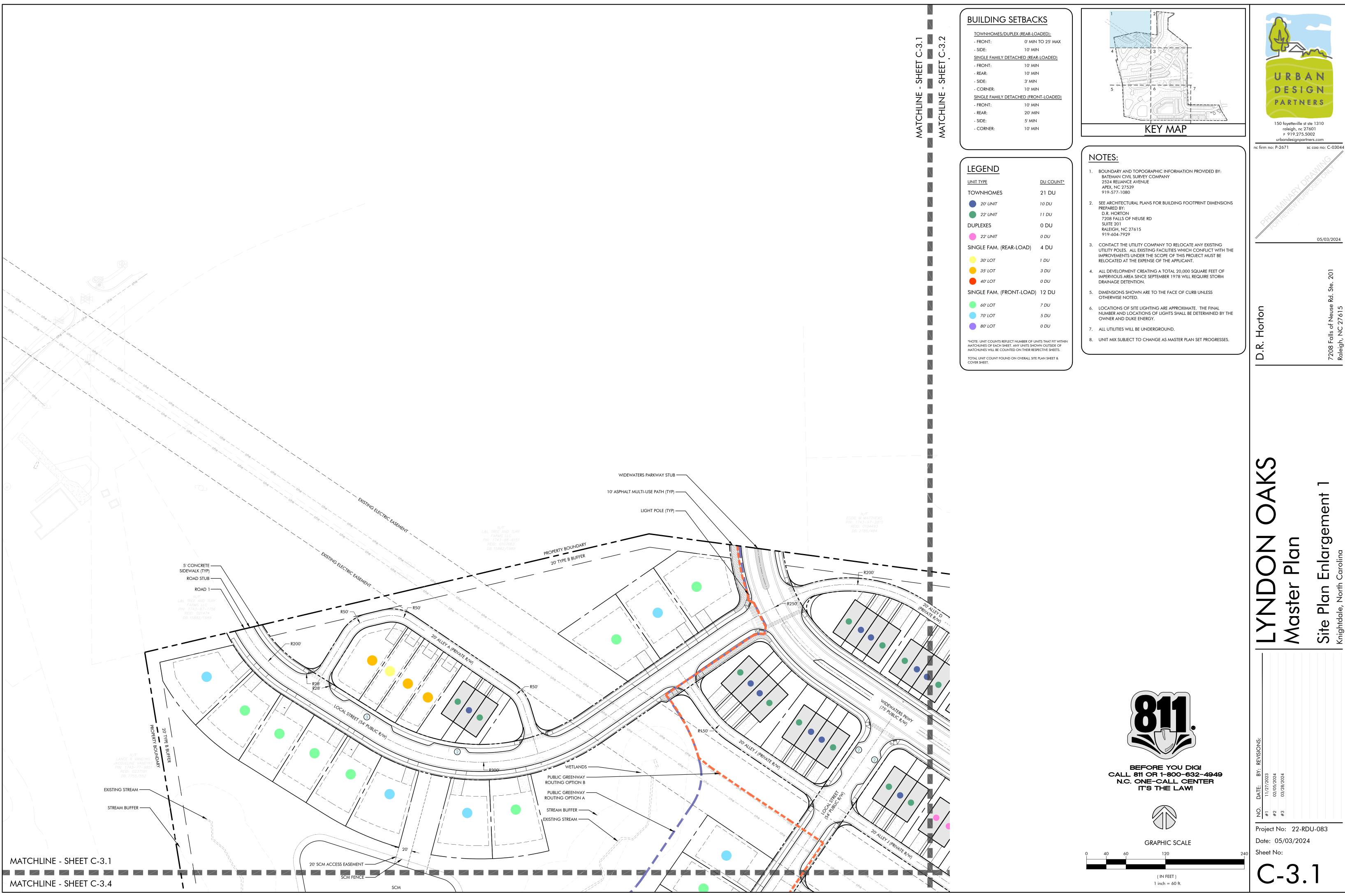
Ν

Figure 3

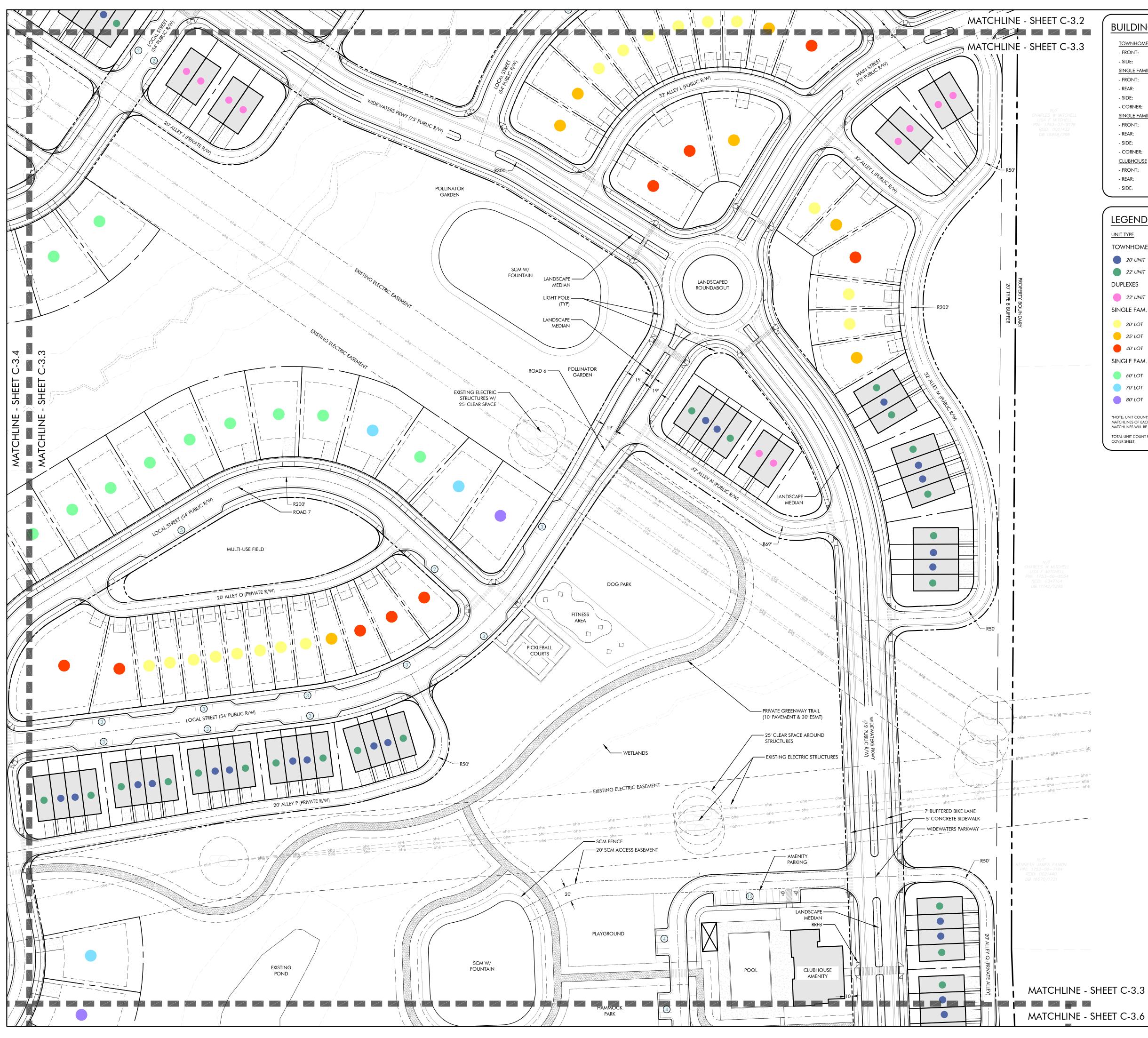
Drawn By: **David Gainey**

Sage Ecological Services, Inc. Office: 919-335-6757 Cell: 919-559-1537









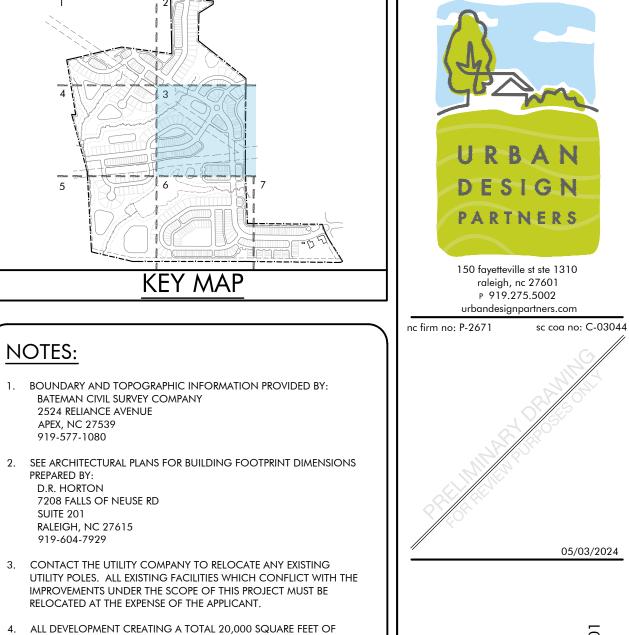
BUILDING SETBACKS TOWNHOMES/DUPLEX (REAR-LOADED): - FRONT: 0' MIN TO 25' MAX

- 3	SIDE:	10' MIN
S	INGLE FAMILY DETACHE	d (Rear-loaded)
-	FRONT:	10' MIN
-	REAR:	10' MIN
-	SIDE:	3' MIN
-	CORNER:	10' MIN
SI	INGLE FAMILY DETACHE	d (Front-loaded)
-	FRONT:	10' MIN
-	REAR:	20' MIN
- 3	SIDE:	5' MIN
-	CORNER:	10' MIN
<u>C</u>	LUBHOUSE	
-	FRONT:	10' MIN
-	REAR:	0' MIN

- SIDE: 6' MIN LEGEND UNIT TYPE DU COUNT* TOWNHOMES 41 DU 20' UNIT 20 DU 22' UNIT 21 DU DUPLEXES 10 DU 22' UNIT 10 DU SINGLE FAM. (REAR-LOAD) 29 DU

<i>30' LOT</i>	14 DU
<i>35' LOT</i>	6 DU
40' LOT	9 DU
SINGLE FAM. (FRONT-LOAD)	15 DU
60' LOT	11 DU
70' LOT	3 DU
80' LOT	1 DU
*NOTE: UNIT COUNTS REFLECT NUMBER OF UN	ITS THAT FIT WITHI

MATCHLINES OF EACH SHEET, ANY UNITS SHOWN OUTSIDE OF MATCHLINES WILL BE COUNTED ON THEIR RESPECTIVE SHEETS. TOTAL UNIT COUNT FOUND ON OVERALL SITE PLAN SHEET & COVER SHEET.



- ALL DEVELOPMENT CREATING A TOTAL 20,000 SQUARE FEET OF IMPERVIOUS AREA SINCE SEPTEMBER 1978 WILL REQUIRE STORM DRAINAGE DETENTION.
- DIMENSIONS SHOWN ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
- . LOCATIONS OF SITE LIGHTING ARE APPROXIMATE. THE FINAL NUMBER AND LOCATIONS OF LIGHTS SHALL BE DETERMINED BY THE OWNER AND DUKE ENERGY.
- ALL UTILITIES WILL BE UNDERGROUND.
- 8. UNIT MIX SUBJECT TO CHANGE AS MASTER PLAN SET PROGRESSES.

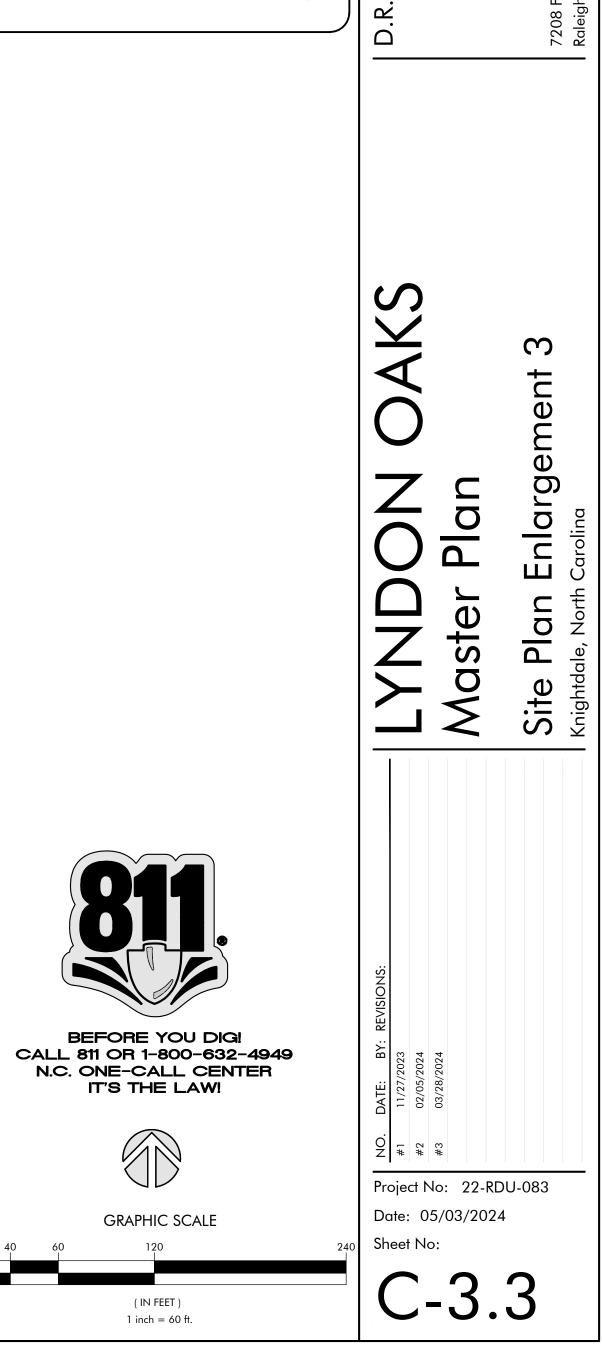
AR

GRAPHIC SCALE

120

(IN FEET)

1 inch = 60 ft.

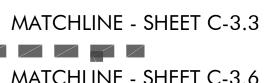


05/03/2024

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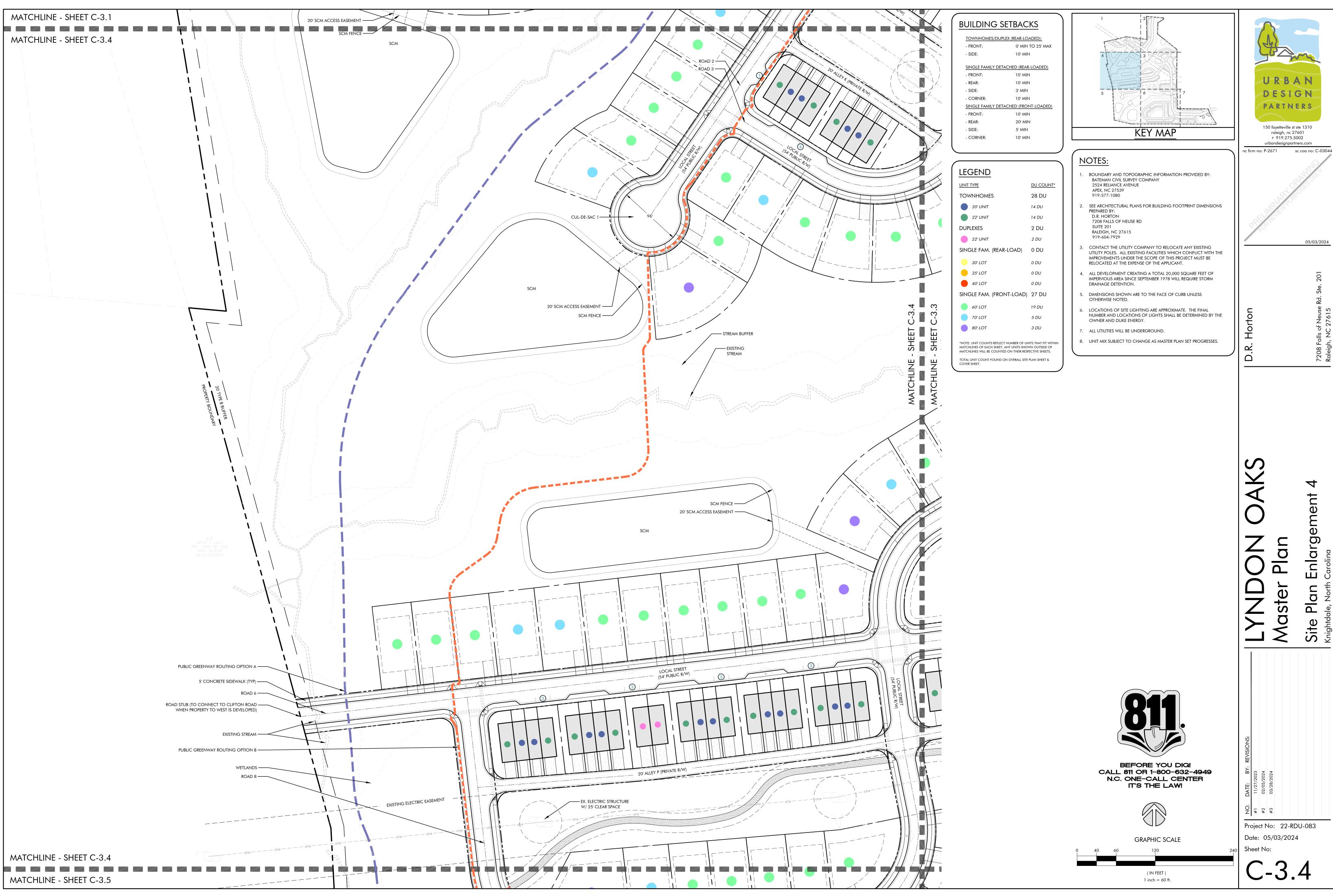
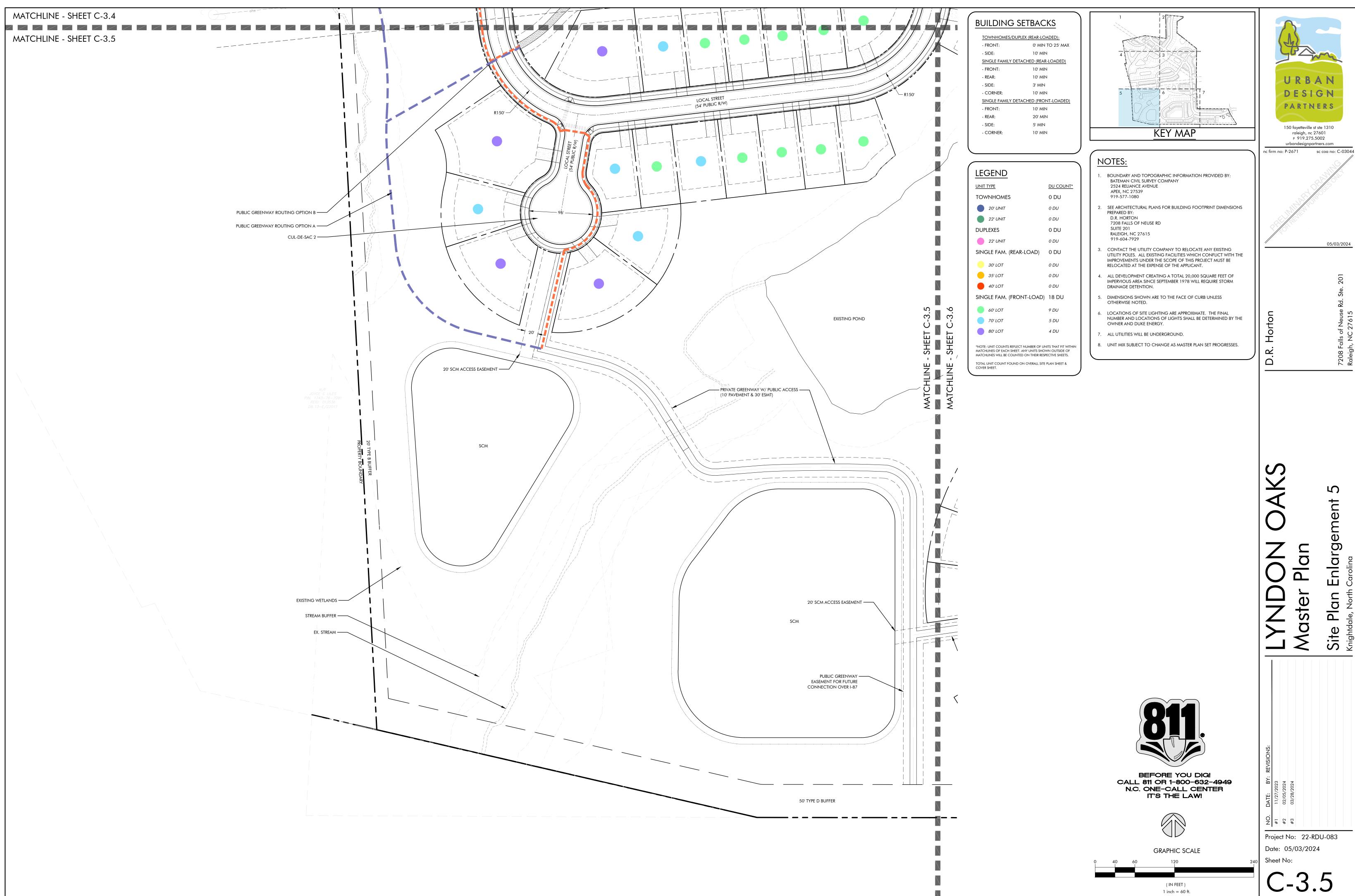


	Image: Constraint of the second state of the second sta
BEFORE YOU DIGI CALL 811 OR 1-800-632-4949 N.C. ONE-CALL CENTER IT'S THE LAW!	DATE: BY: REVISIONS: 11/27/2023 02/05/2024 03/28/2024
GRAPHIC SCALE 40 60 120 240 (IN FEET) 1 inch = 60 ft.	$\frac{9}{2}$ = $\frac{1}{4}$ = $\frac{1}{4}$ = $\frac{1}{4}$ Project No: 22-RDU-083 Date: 05/03/2024 Sheet No: C-3.4

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05/03/2024

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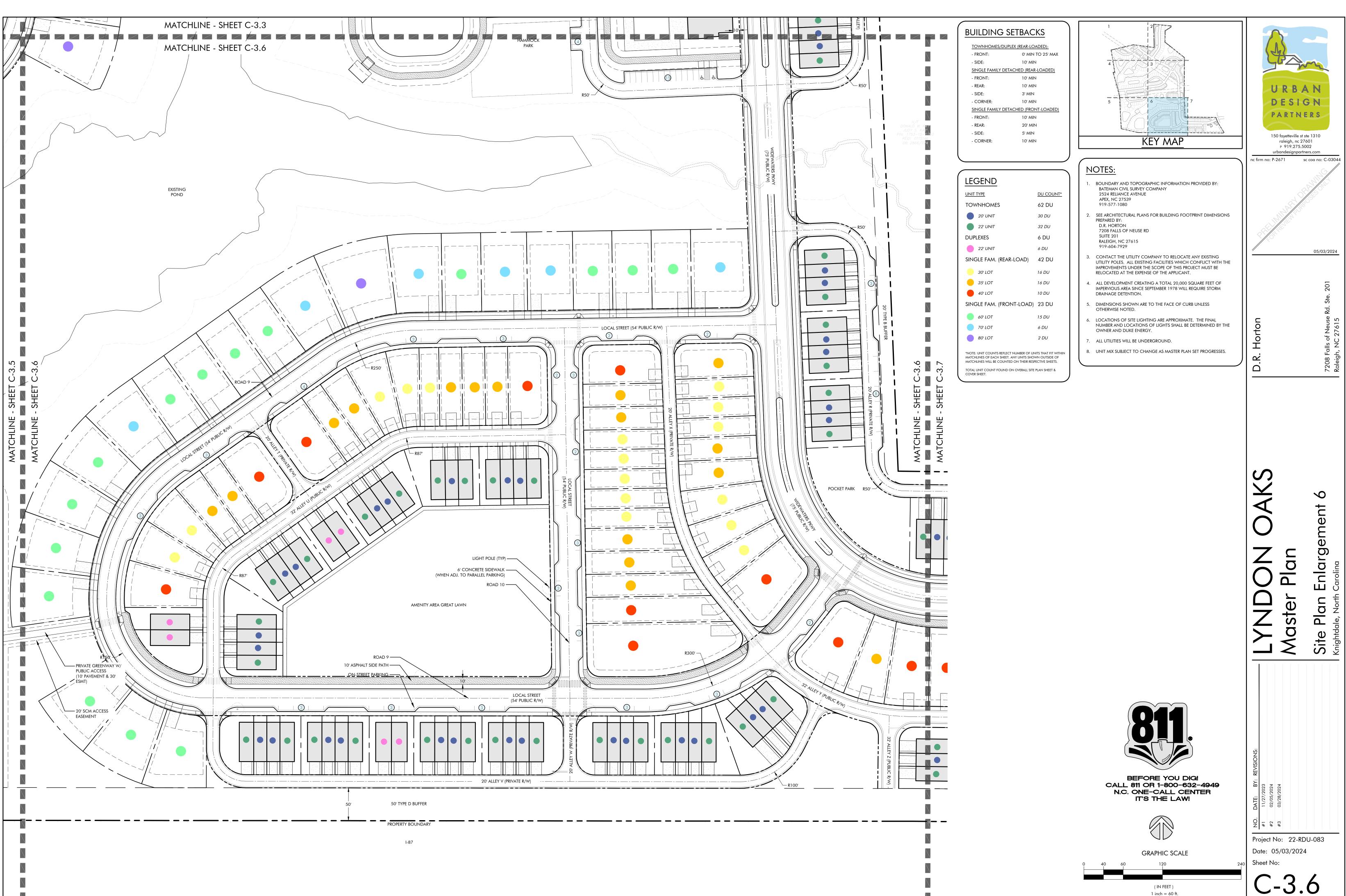
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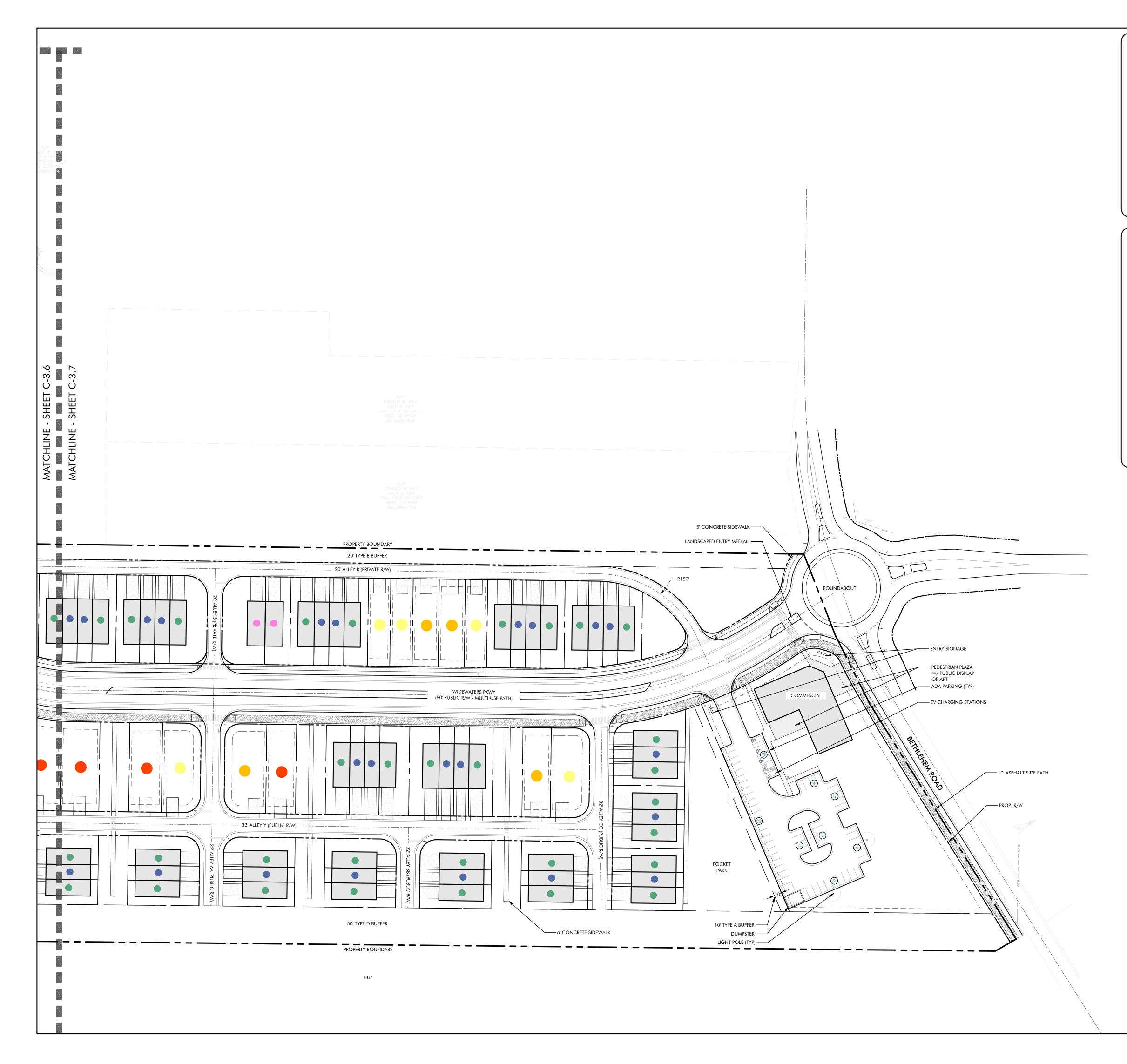
Enlarger

Plan

Site



1 inch = 60 ft.

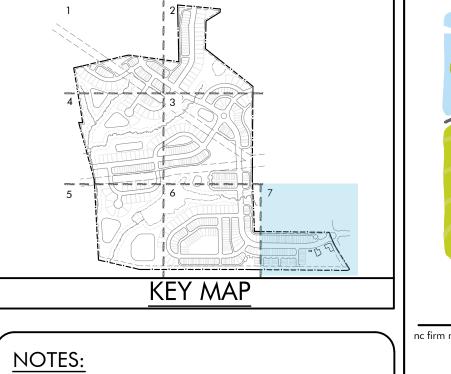


BUILDING SETBACKS

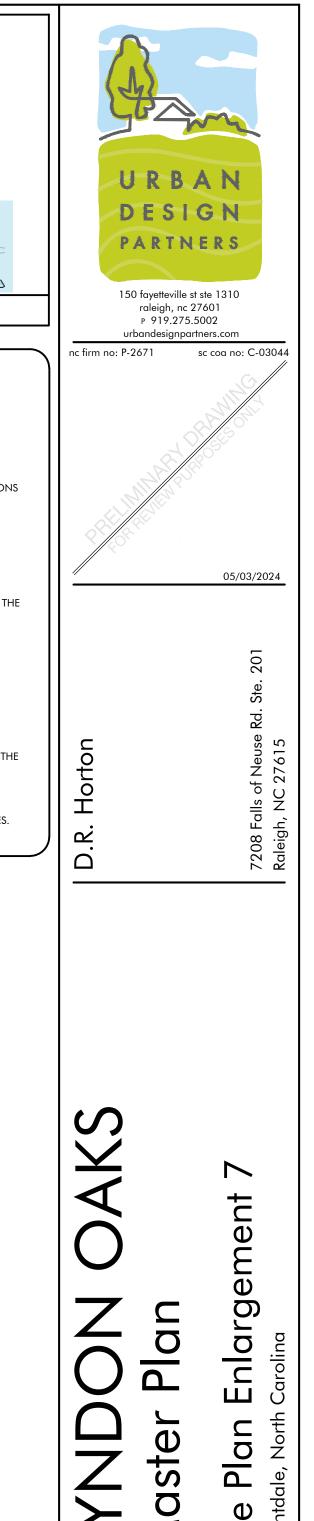
TOWNHOMES/DU	PLEX (REAR-LOADED):
- FRONT:	0' MIN TO 25' MA
- SIDE:	10' MIN
SINGLE FAMILY DE	TACHED (REAR-LOADED)
- FRONT:	10' MIN
- REAR:	10' MIN
- SIDE:	3' MIN
- CORNER:	10' MIN
SINGLE FAMILY DE	TACHED (FRONT-LOADED
- FRONT:	10' MIN
- REAR:	20' MIN
- SIDE:	5' MIN
- CORNER:	10' MIN
COMMERCIAL	
- FRONT:	10' MIN
- REAR:	0' MIN
- SIDE:	6' MIN

LEGEND

UNIT TYPE	DU COUNT*
TOWNHOMES	54 DU
20' UNIT	23 DU
22' UNIT	31 DU
DUPLEXES	2 DU
22' UNIT	2 DU
SINGLE FAM. (REAR-LOAD)	12 DU
<i>30' LOT</i>	5 DU
🥚 35' LOT	4 DU
40' LOT	3 DU
SINGLE FAM. (FRONT-LOAD)	0 DU
60' LOT	0 DU
70' LOT	0 DU
80' LOT	0 DU
*NOTE: UNIT COUNTS REFLECT NUMBER OF UN MATCHLINES OF EACH SHEET. ANY UNITS SHOV MATCHLINES WILL BE COUNTED ON THEIR RESP	VN OUTSIDE OF
TOTAL UNIT COUNT FOUND ON OVERALL SITE COVER SHEET.	PLAN SHEET &



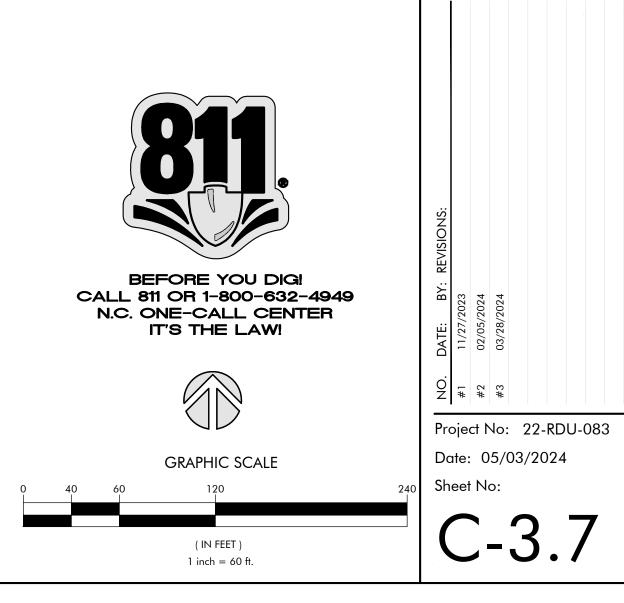
- BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY: BATEMAN CIVIL SURVEY COMPANY 2524 RELIANCE AVENUE APEX, NC 27539 919-577-1080
- SEE ARCHITECTURAL PLANS FOR BUILDING FOOTPRINT DIMENSIONS
- PREPARED BY: D.R. HORTON 7208 FALLS OF NEUSE RD
- SUITE 201
- RALEIGH, NC 27615 919-604-7929
- CONTACT THE UTILITY COMPANY TO RELOCATE ANY EXISTING UTILITY POLES. ALL EXISTING FACILITIES WHICH CONFLICT WITH THE IMPROVEMENTS UNDER THE SCOPE OF THIS PROJECT MUST BE RELOCATED AT THE EXPENSE OF THE APPLICANT.
- 4. ALL DEVELOPMENT CREATING A TOTAL 20,000 SQUARE FEET OF IMPERVIOUS AREA SINCE SEPTEMBER 1978 WILL REQUIRE STORM DRAINAGE DETENTION.
- DIMENSIONS SHOWN ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
- 6. LOCATIONS OF SITE LIGHTING ARE APPROXIMATE. THE FINAL NUMBER AND LOCATIONS OF LIGHTS SHALL BE DETERMINED BY THE OWNER AND DUKE ENERGY.
- 7. ALL UTILITIES WILL BE UNDERGROUND.
- 8. UNIT MIX SUBJECT TO CHANGE AS MASTER PLAN SET PROGRESSES.



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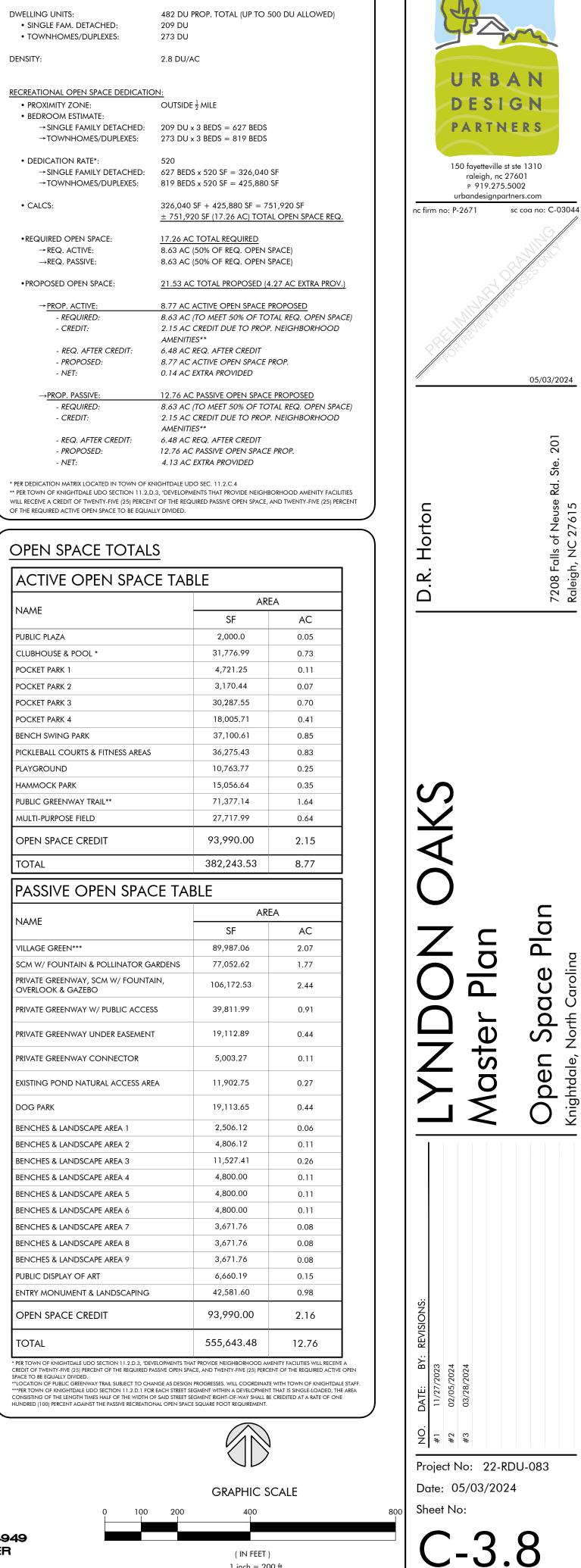
Site Knightdo





811.

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



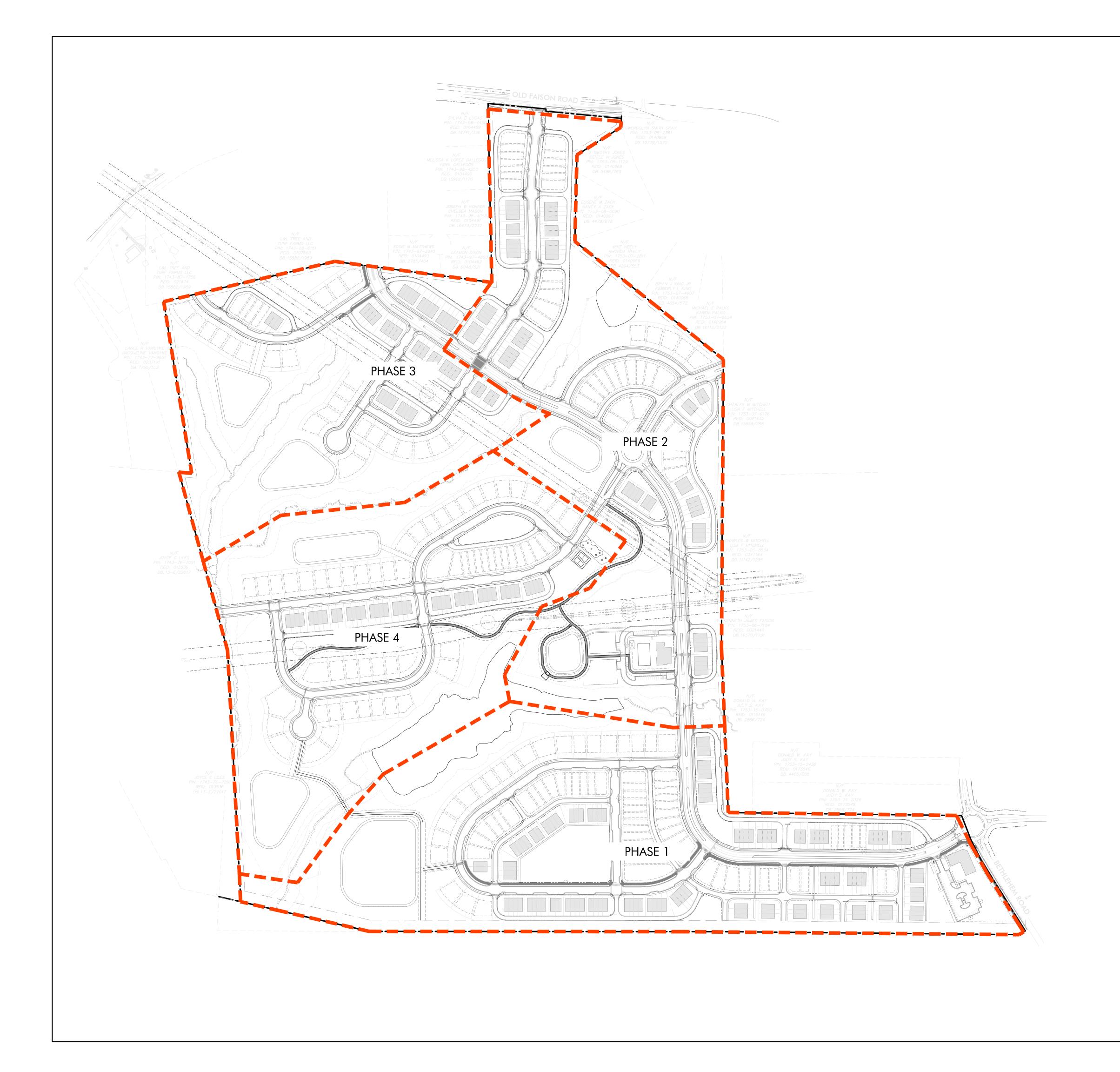
(IN FEET)

1 inch = 200 ft.

OPEN SPACE CALCULATIONS

± 171.88 ACRES

TOTAL SITE AREA:



NOTES:

COMMERCIAL PARCEL WILL BE PLATTED WITH FIRST PHASE OF DEVELOPMENT.

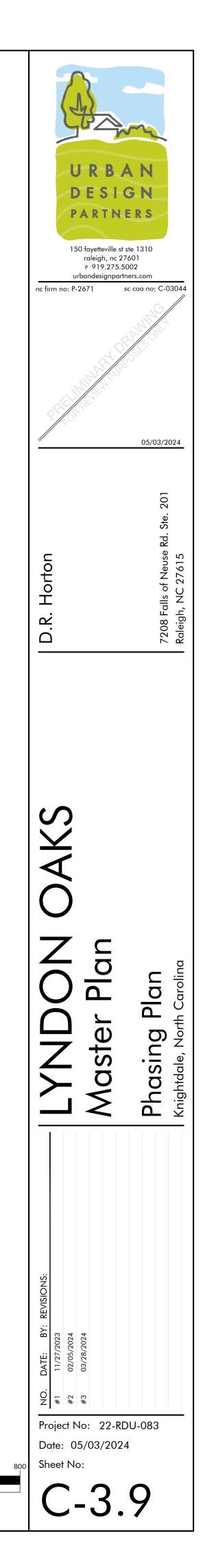
BEFORE YOU DIG! CALL 811 OR 1-800-632-4949 N.C. ONE-CALL CENTER IT'S THE LAW!

GRAPHIC SCALE

400

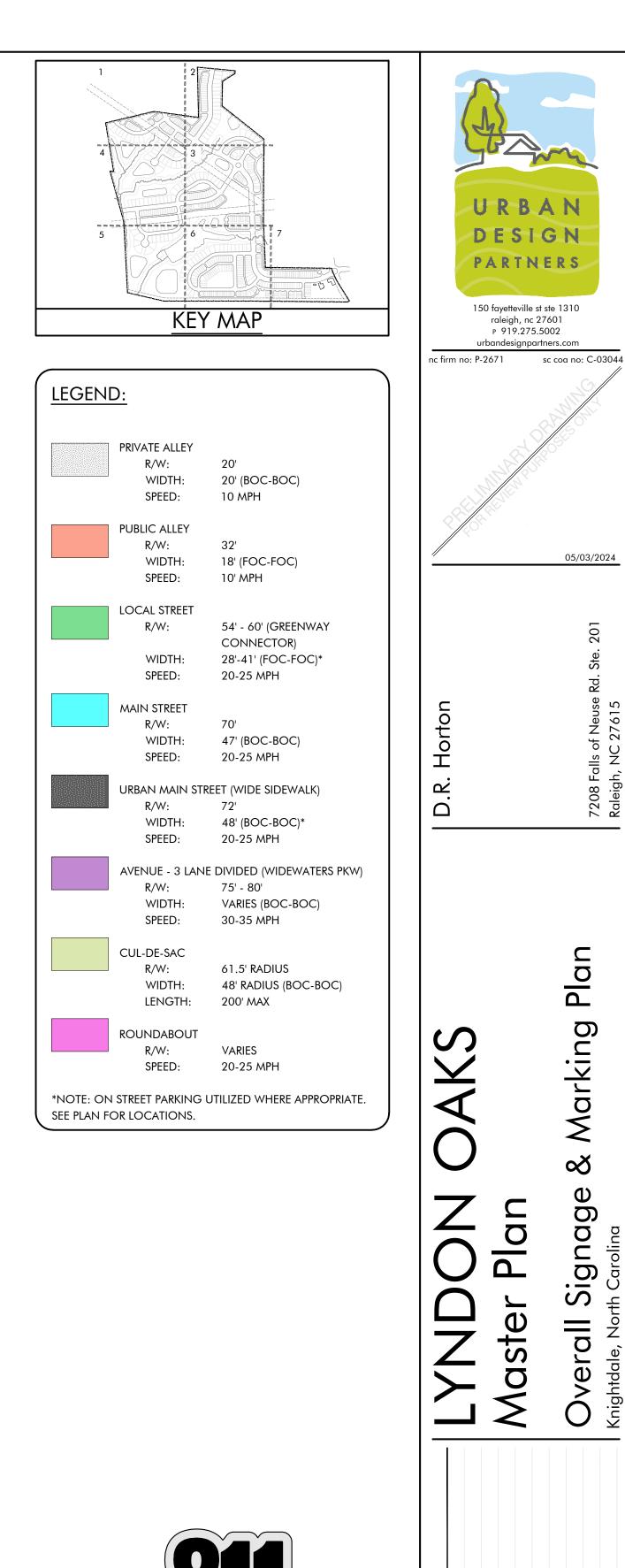
(IN FEET) 1 inch = 200 ft.

200





STREET TABENAMELENGTH (LF)ROAD 1934'ROAD 2443'ROAD 3698'ROAD 4740'ROAD 5513'ROAD 62,081'ROAD 7923'ROAD 7923'ROAD 72,504'ROAD 10565'ROAD 7120'ROAD 7120'ROAD 81,372'ROAD 92,504'ROAD 10565'CUL-DE-SAC 1200'TART FARM ROAD1,235'MDEWATERS PARKWAY4,424'MIDEWATERS PARKWAY4,424'NAMELENGTHALLEY A501'ALLEY A501'ALLEY A156'ALLEY B1154'ALLEY A163'ALLEY G144'ALLEY H1154'ALLEY H1154'ALLEY K323'ALLEY M1332'ALLEY M1332'ALLEY M1332'ALLEY M1332'ALLEY M1332'ALLEY M1332'ALLEY M1332'ALLEY M134'ALLEY M127'ALLEY M127'ALLEY M127'ALLEY M121'ALLEY M123'ALLEY M123'ALLEY M123'ALLEY M121'ALLEY M123'ALLEY M123'ALLEY M123'ALLEY M123'ALLEY M283'ALLE			
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ALLEY BB 108'			
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ALLEY CC 289'		108'	
	ALLEY CC	289'	

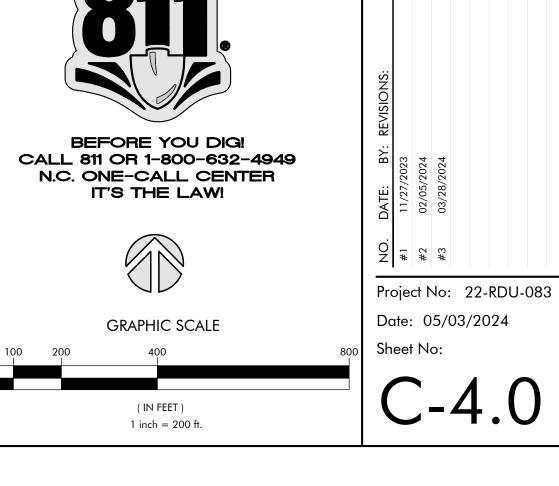


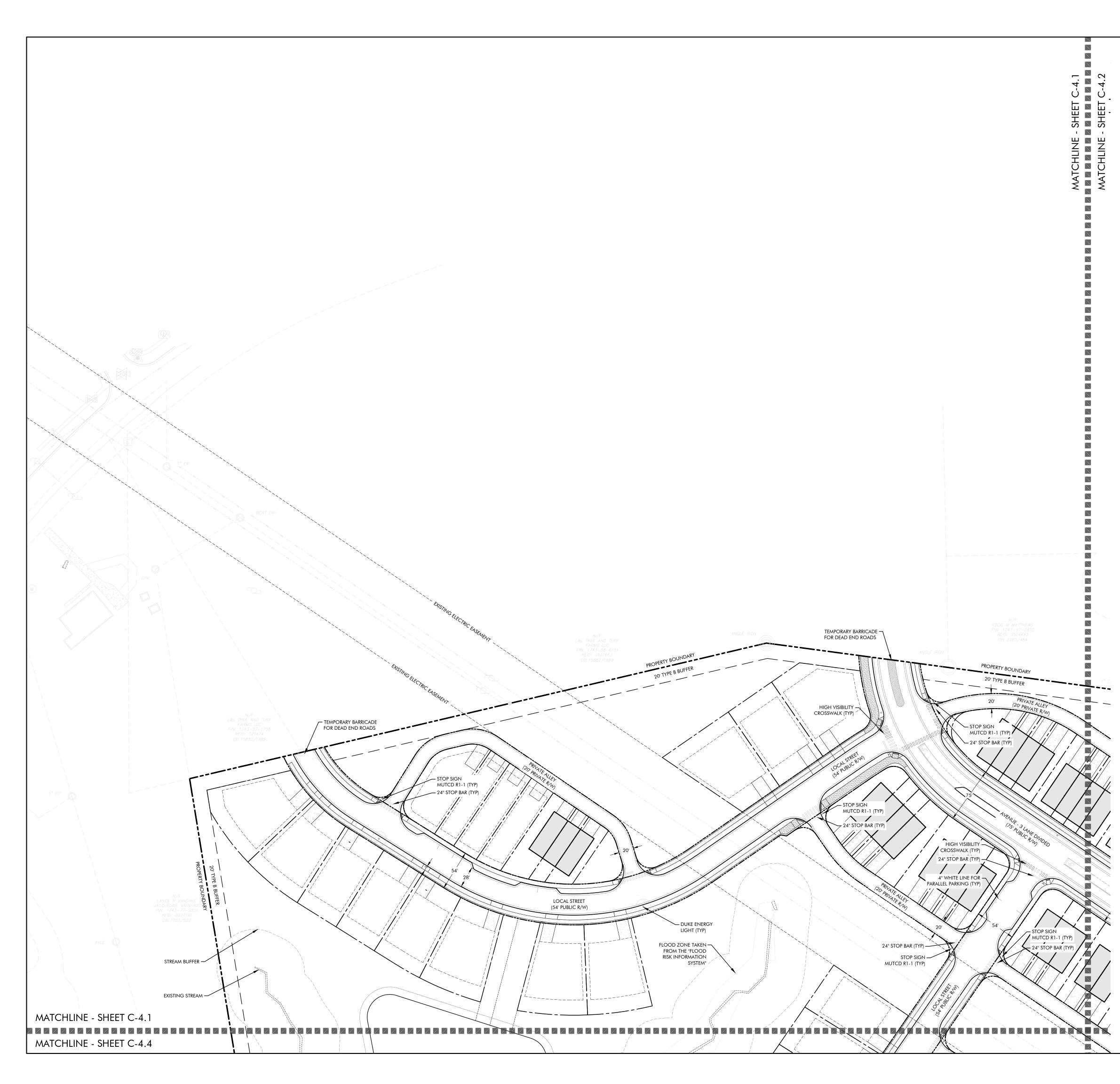
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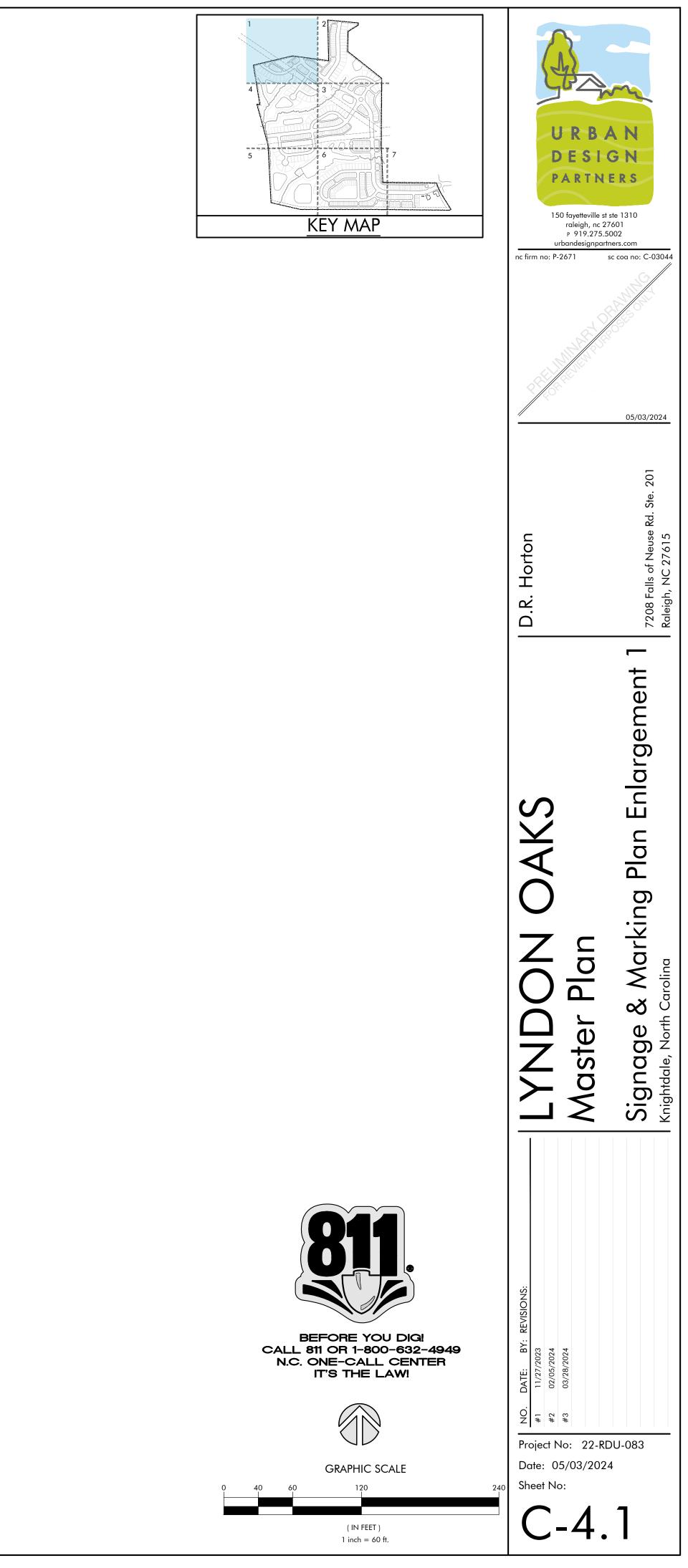
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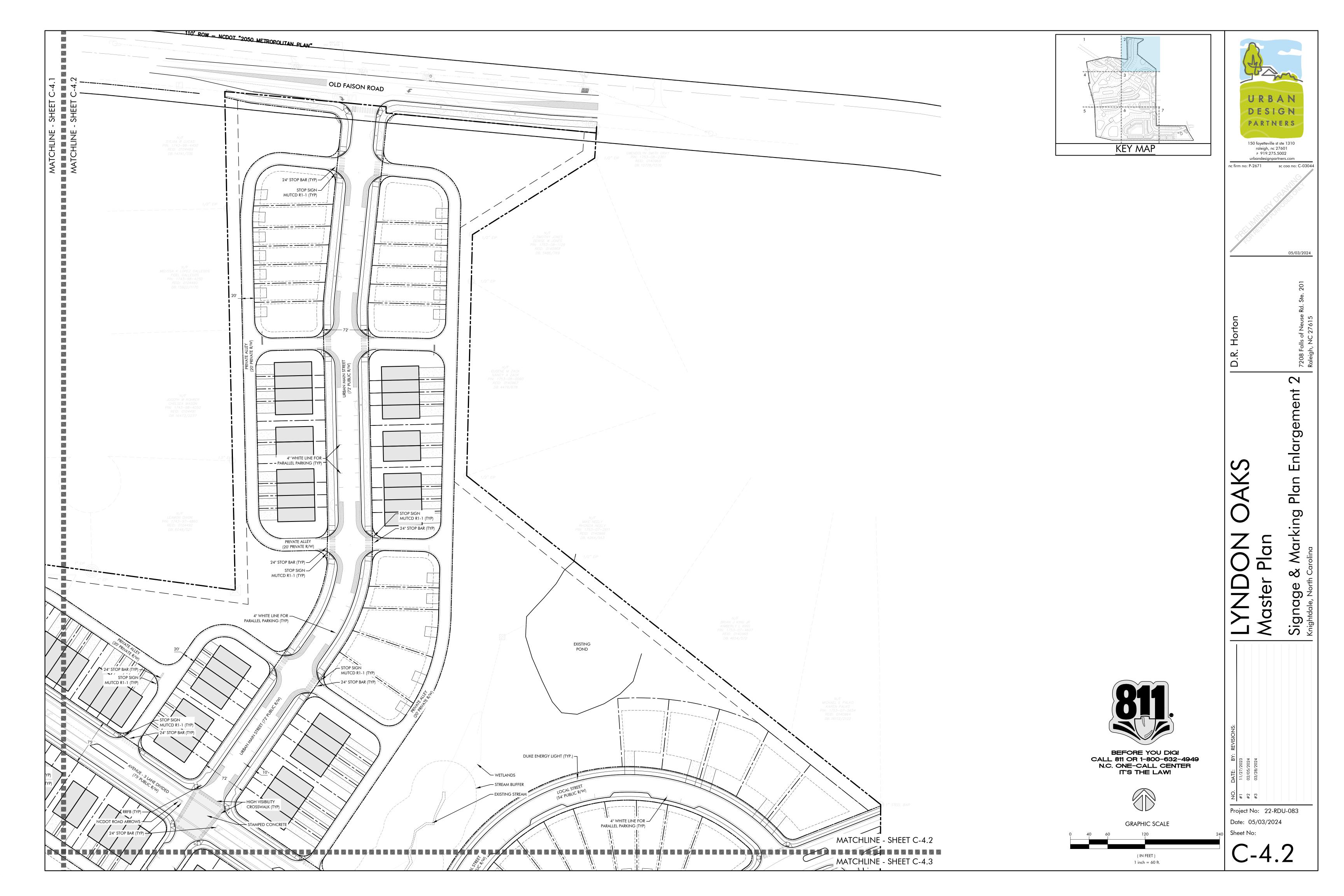
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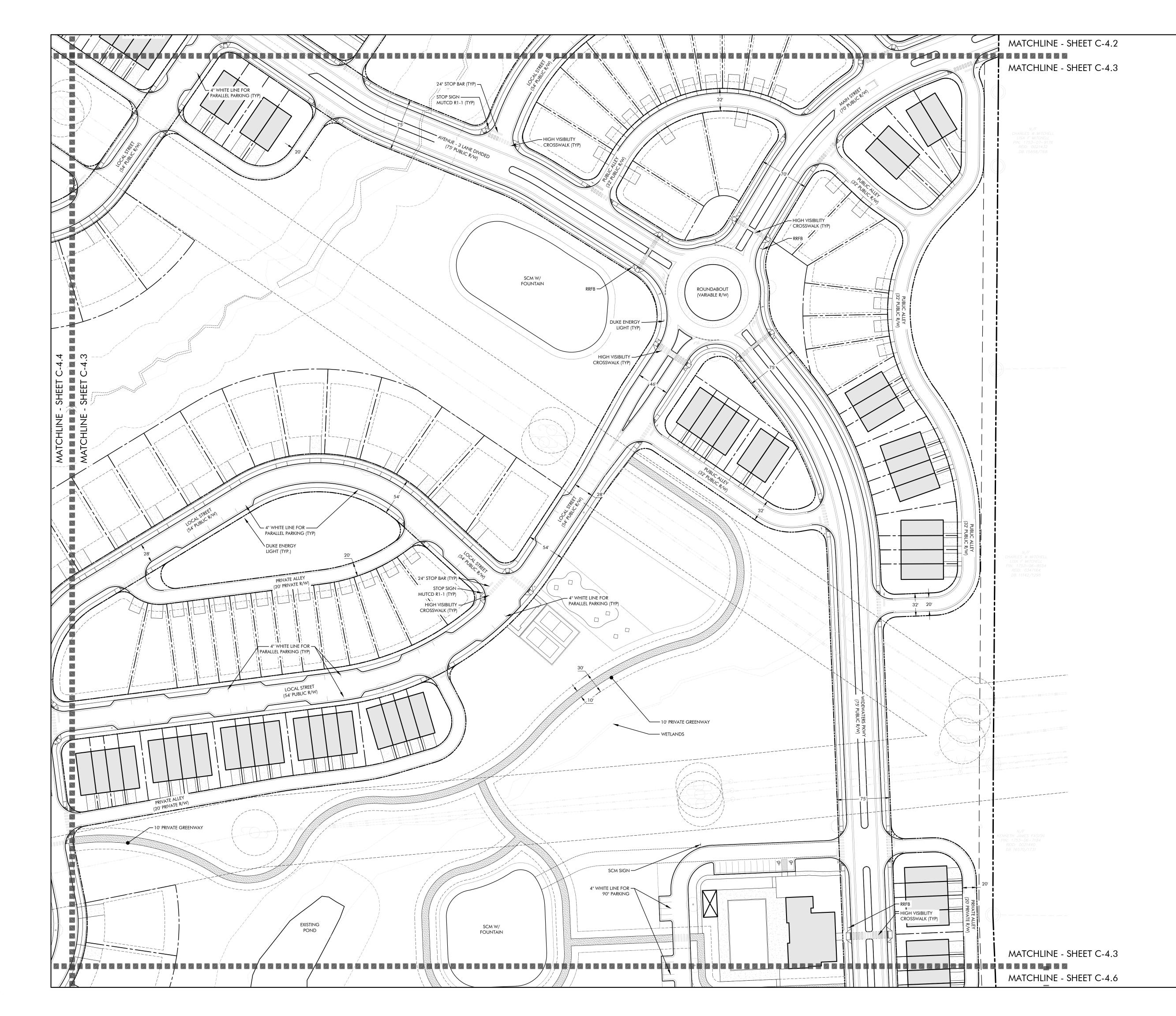
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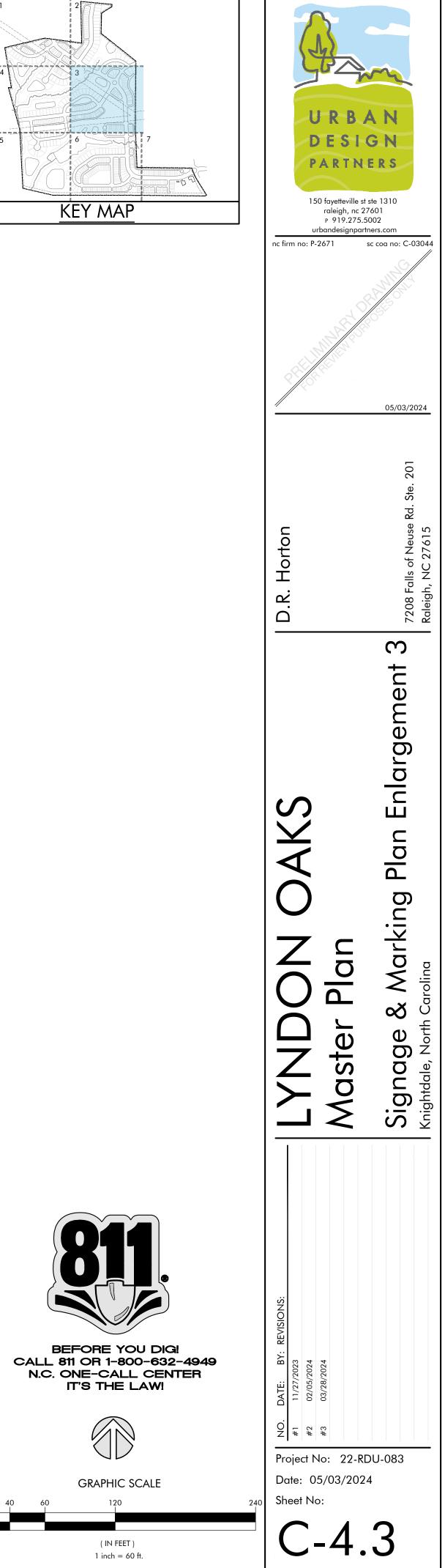


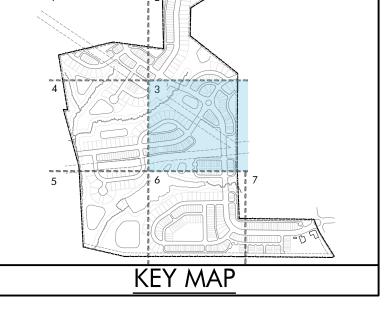


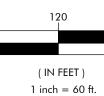






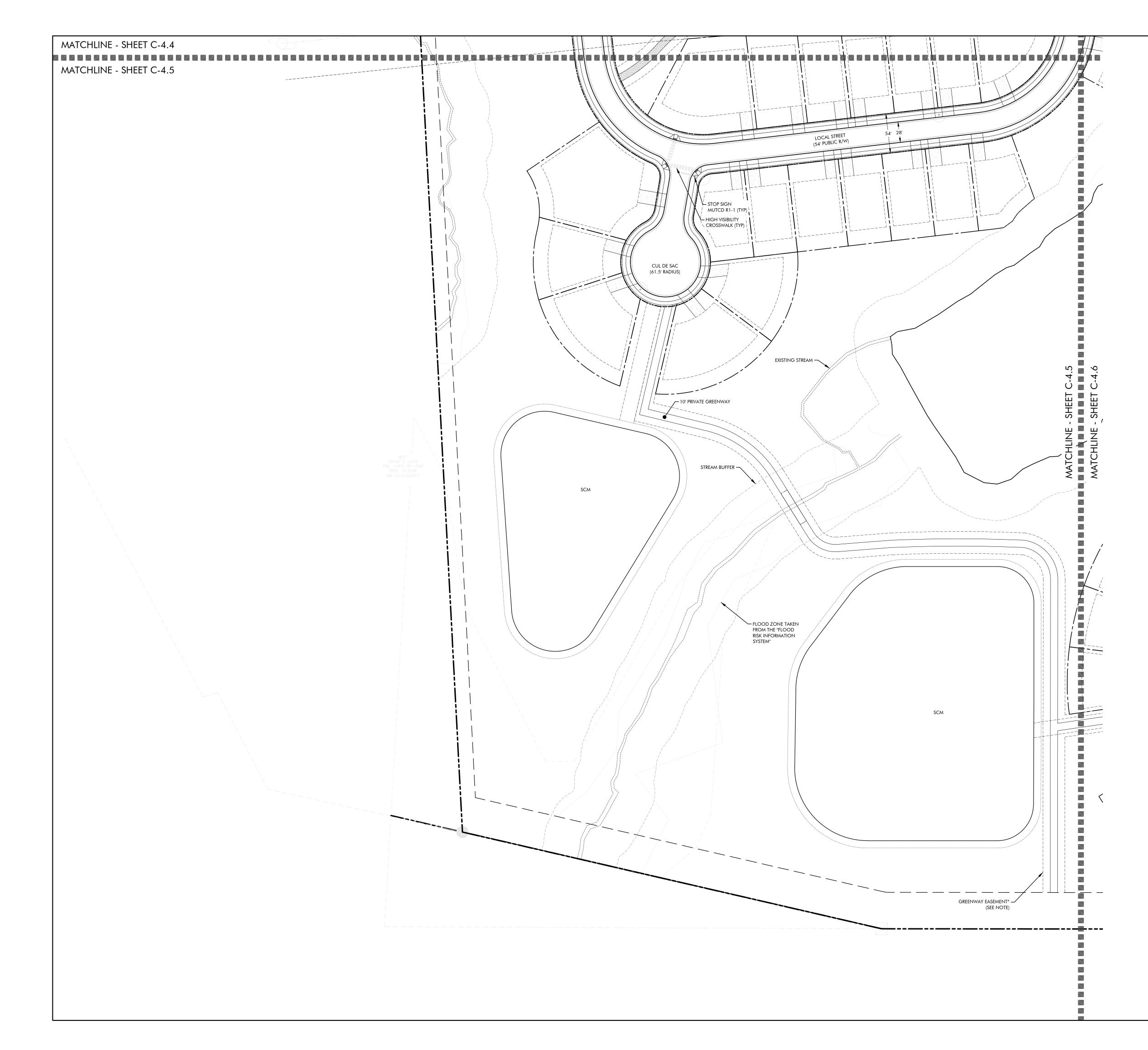


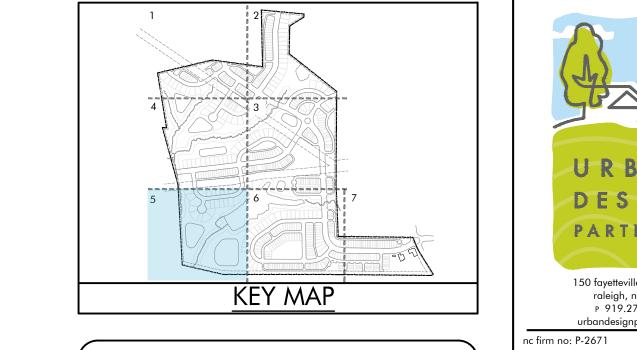




GRAPHIC SCALE







NOTES:

PER ZMA-2-23 REGARDING EASEMENT FOR FUTURE PEDESTRIAN BRIDGE OVER I-87:

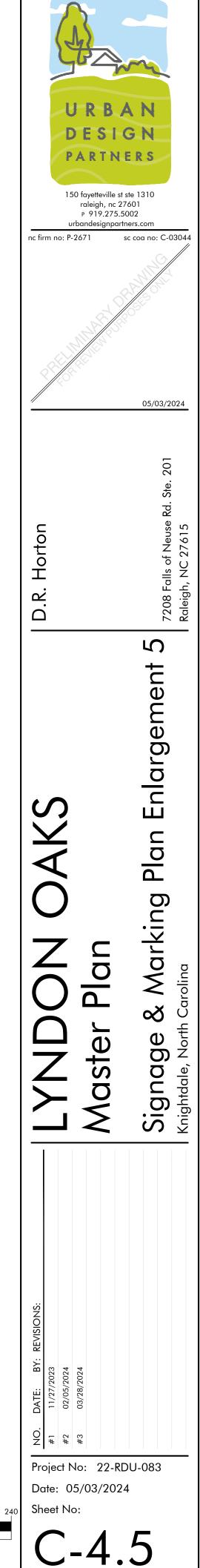
PRIOR TO APPROVAL OF CONSTRUCTION DRAWINGS FOR THE FIRST PHASE OF DEVELOPMENT, THE APPLICANT WILL OFFER A MINIMUM OF 100 SQUARE FEET OF SITE AREA AS A NON-EXCLUSIVE, PERMANENT EASEMENT AREA TO BE DEDICATED TO THE TOWN FOR CONSTRUCTION, MAINTENANCE, AND REPAIRE OF FOOTINGS FOR A FUTURE PEDESTRIAN BRIDGE OVER I-87, TOGETHER WITH SUCH TEMPORARY CONSTRUCTION EASEMENTS AS NECESSARY FOR COMPLETION OF SUCH WORK. IF ACCEPTED BY THE TOWN TRANSPORTATION DIRECTOR, SUCH EASEMENT AREA SHALL BE SHOWN ON THE CONSTRUCTION DRAWINGS AND SUBDIVISION PLAT AND GRANTED TO THE TOWN PURSUANT TO A RECORDED DEED OF EASEMENT.

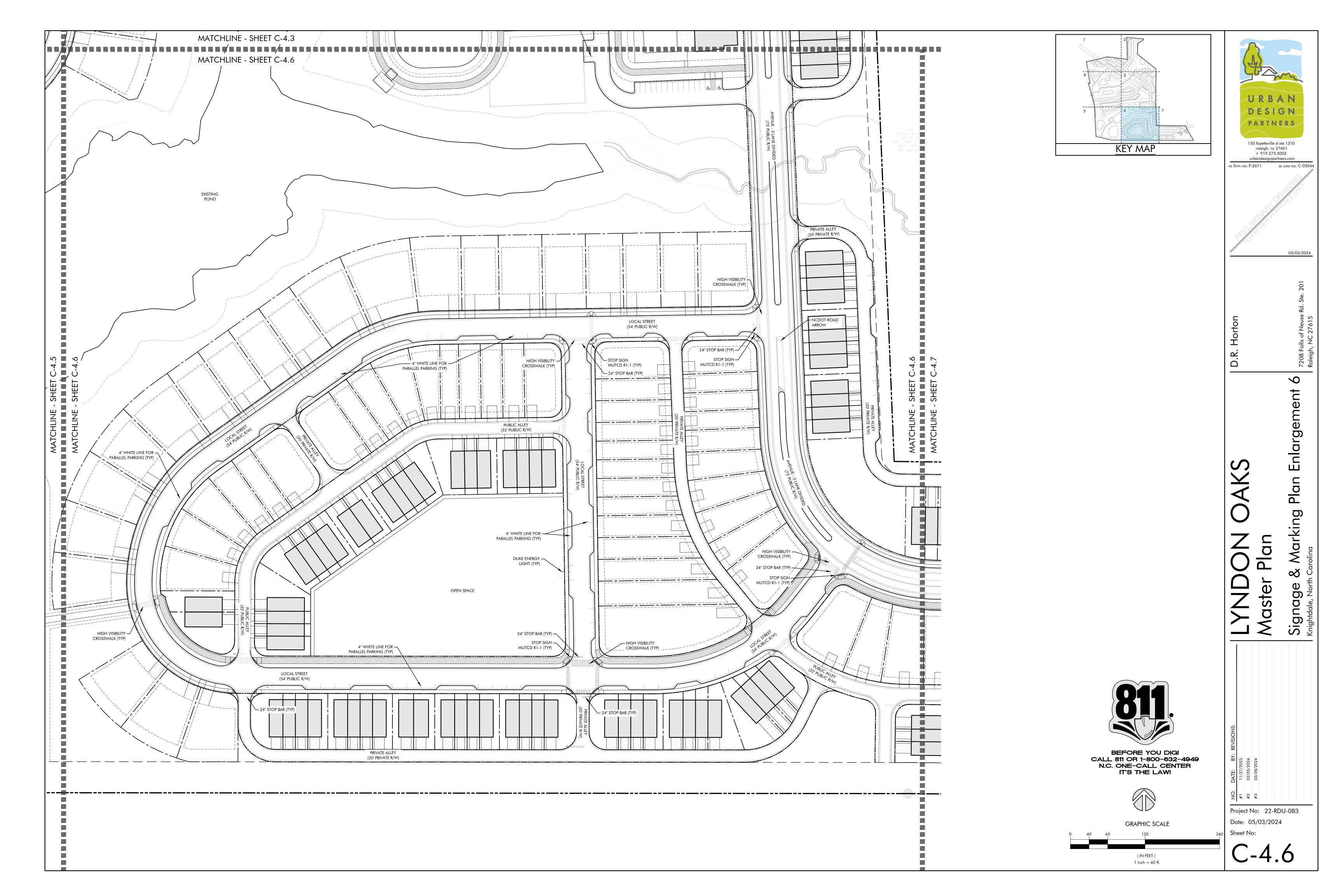
> BEFORE YOU DIG! CALL 811 OR 1-800-632-4949 N.C. ONE-CALL CENTER IT'S THE LAW!

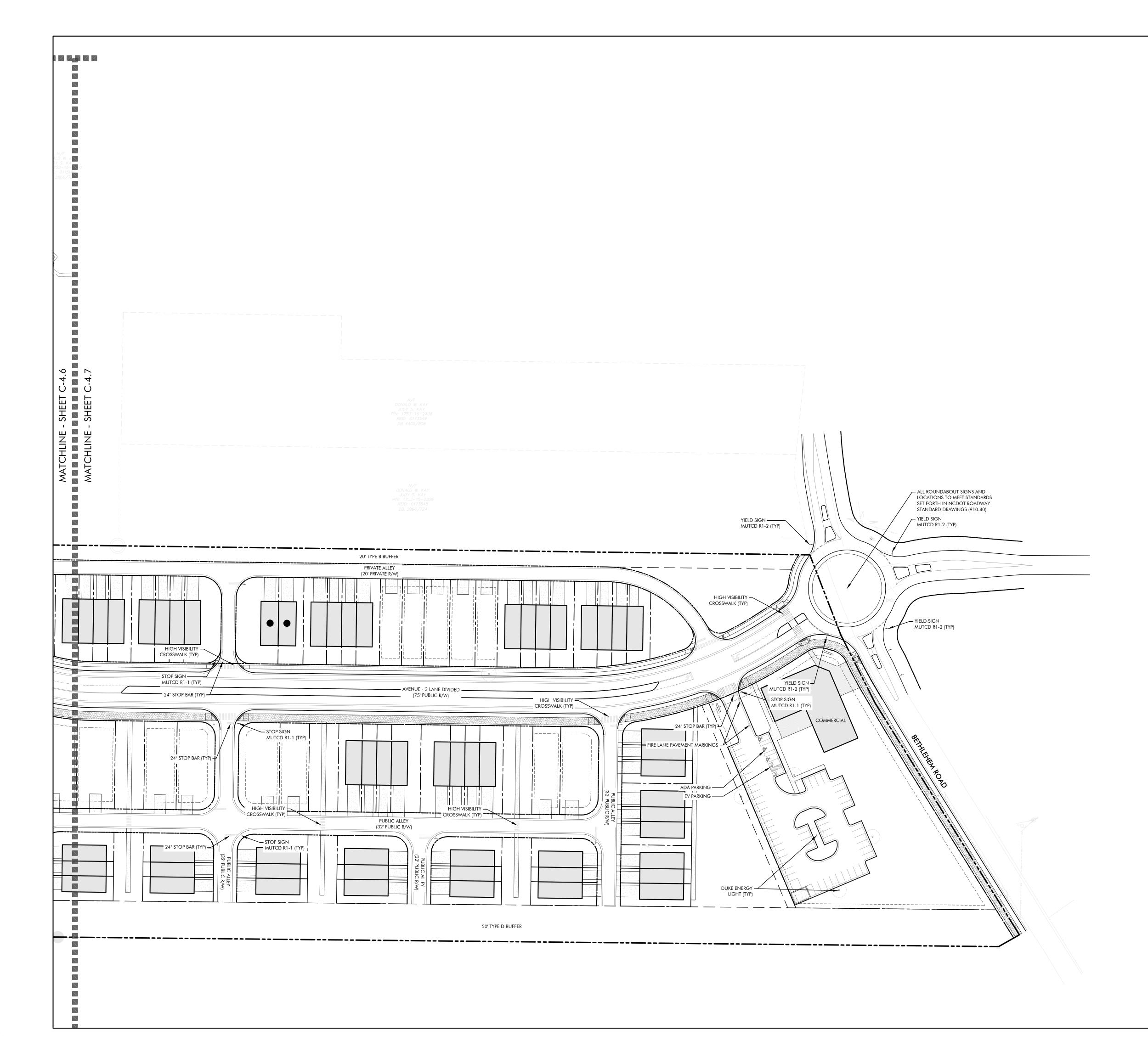
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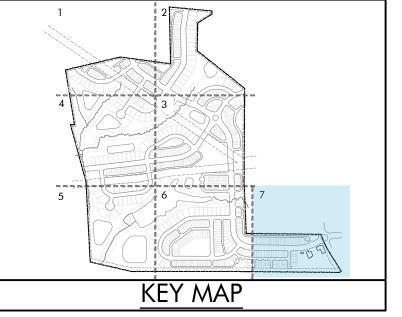
GRAPHIC SCALE

(IN FEET) 1 inch = 60 ft.









NOTES:

 ROUNDABOUT DESIGN TO BE FURTHER STUDIED AT TIME OF CONSTRUCTION DOCUMENTS.
 ROUNDABOUT TO MEET ALL NCDOT AND TOWN OF KNIGHTDALE

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

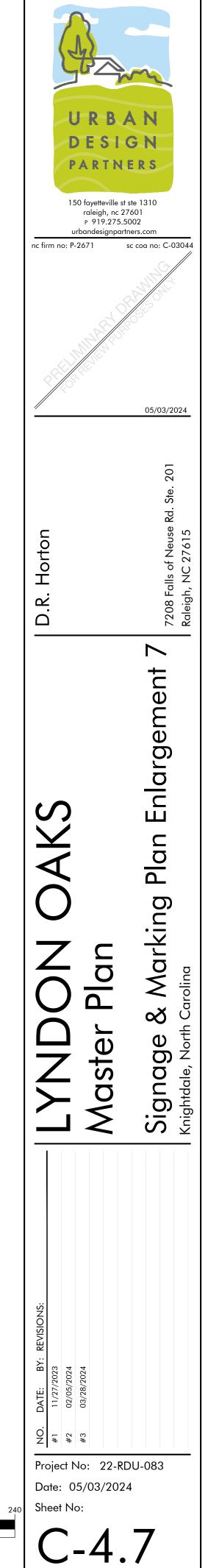
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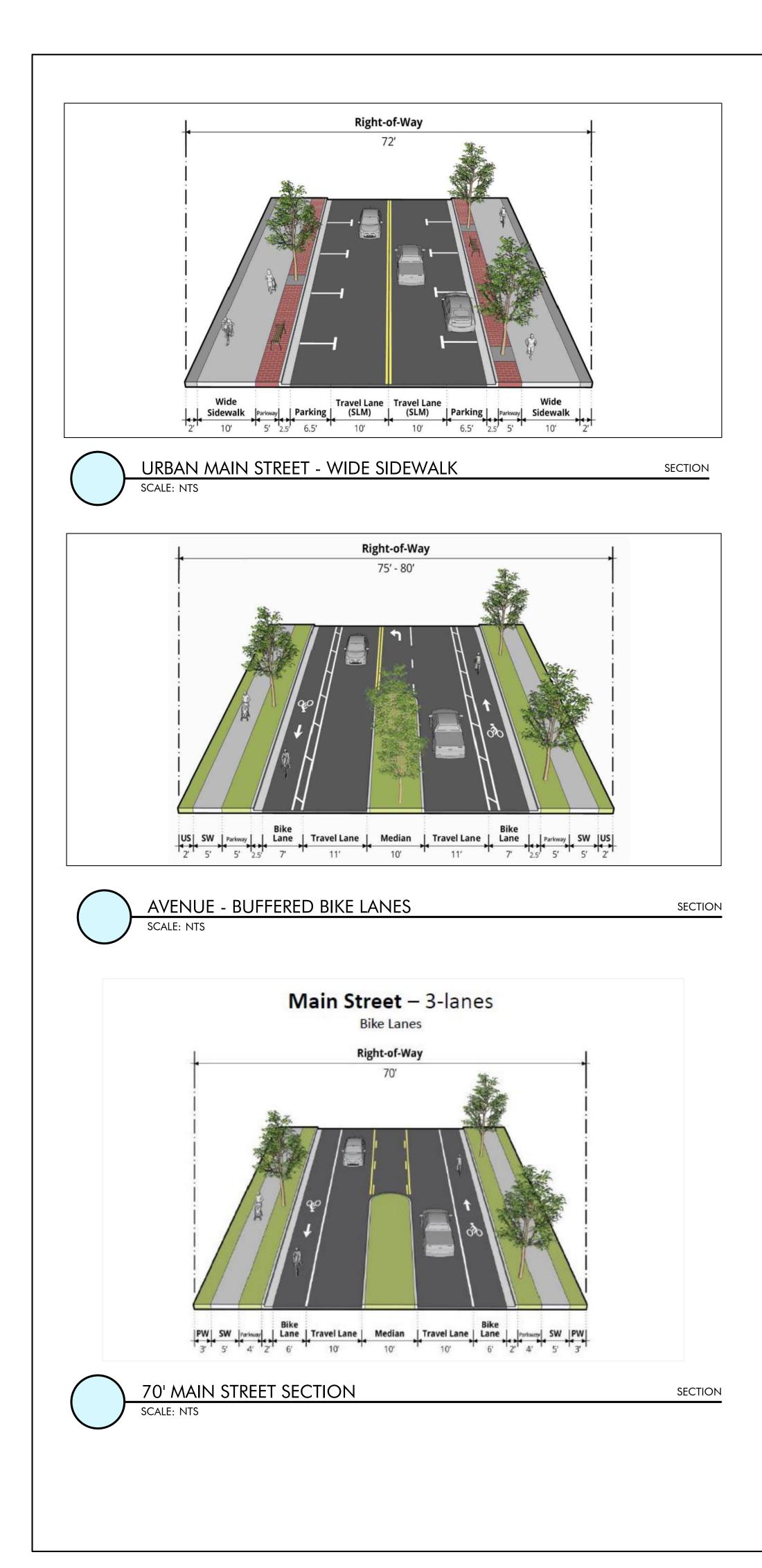
GRAPHIC SCALE

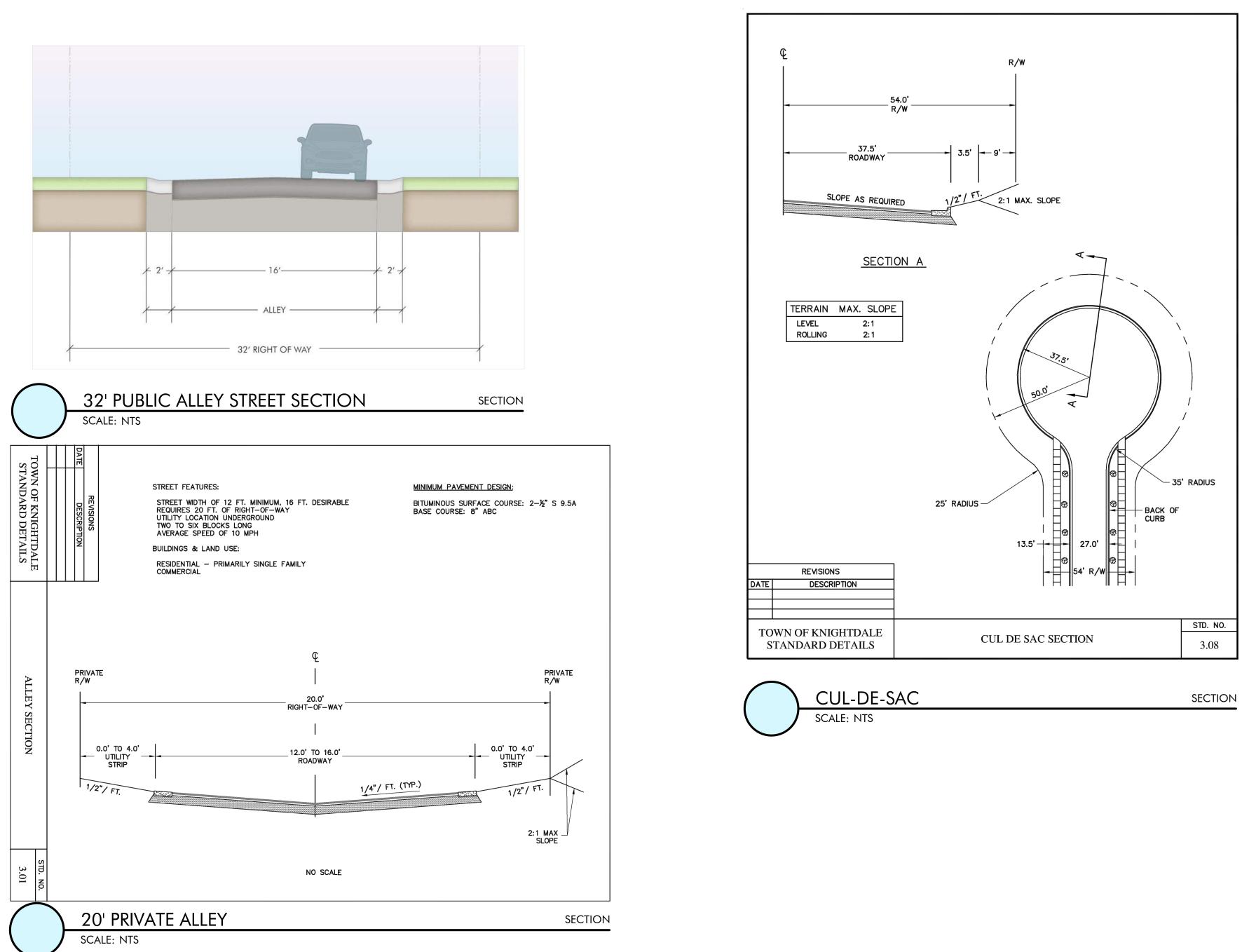
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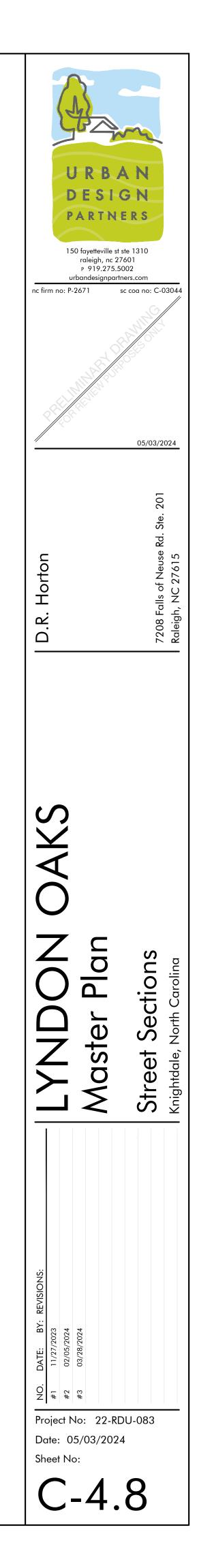
(IN FEET) 1 inch = 60 ft.

2. ROUNDABOUT STANDARDS.





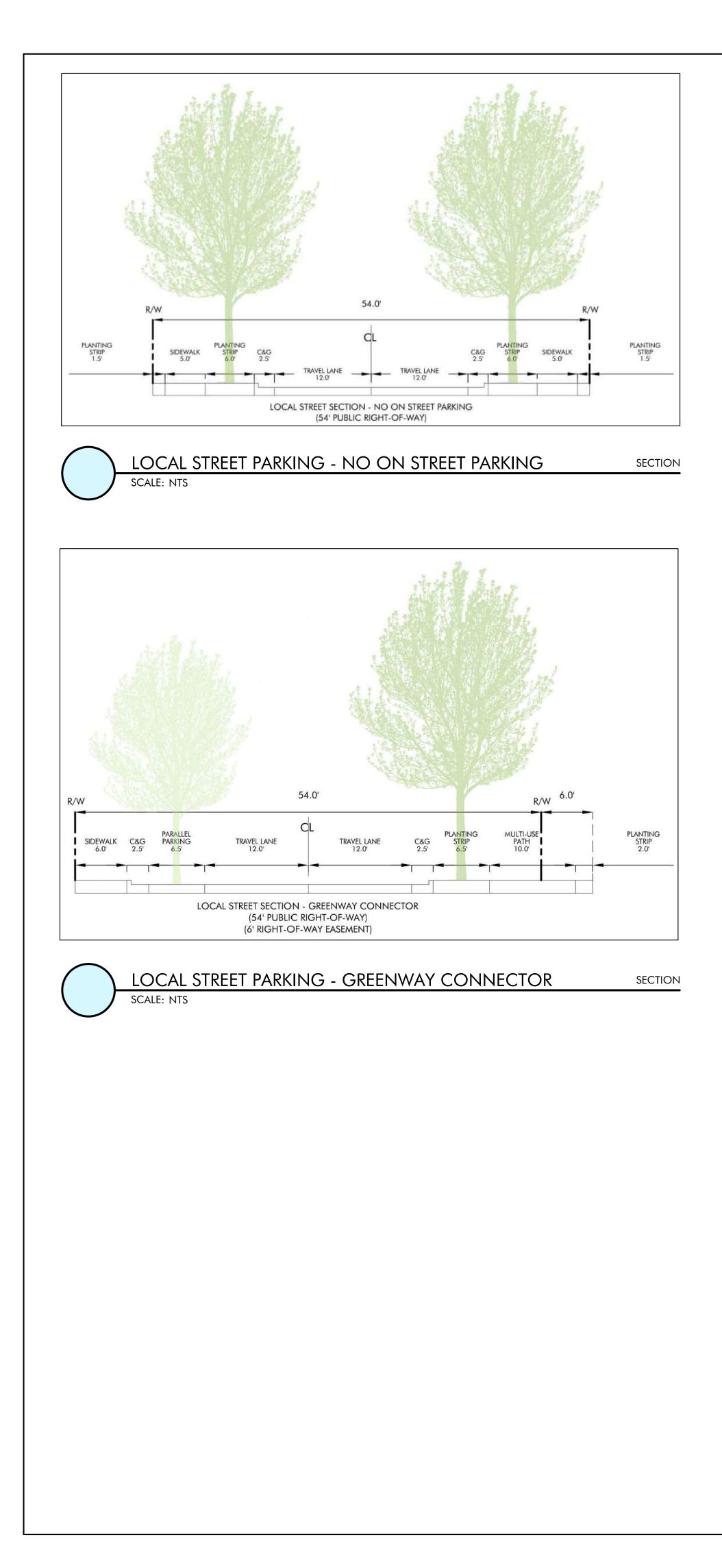


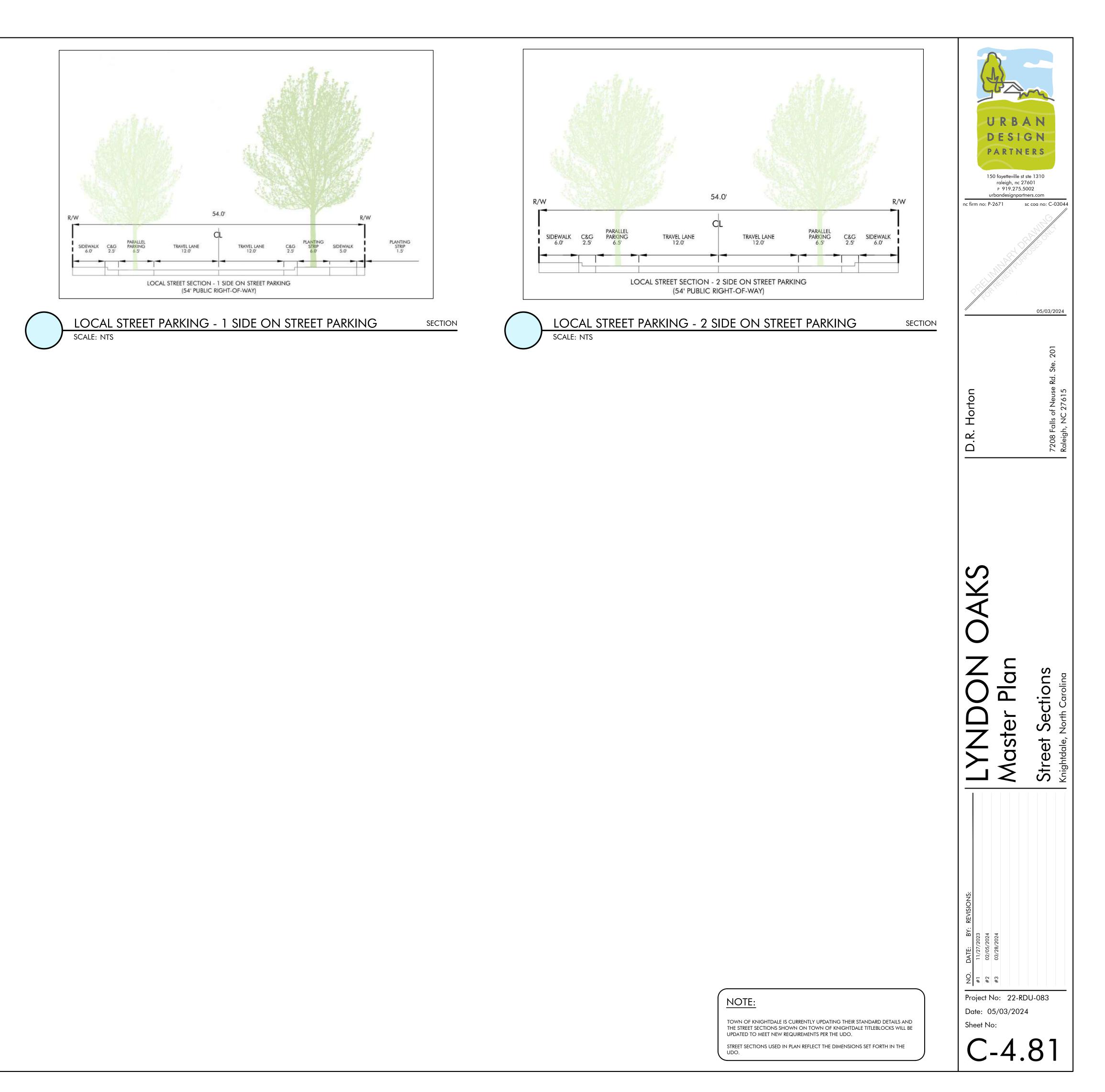


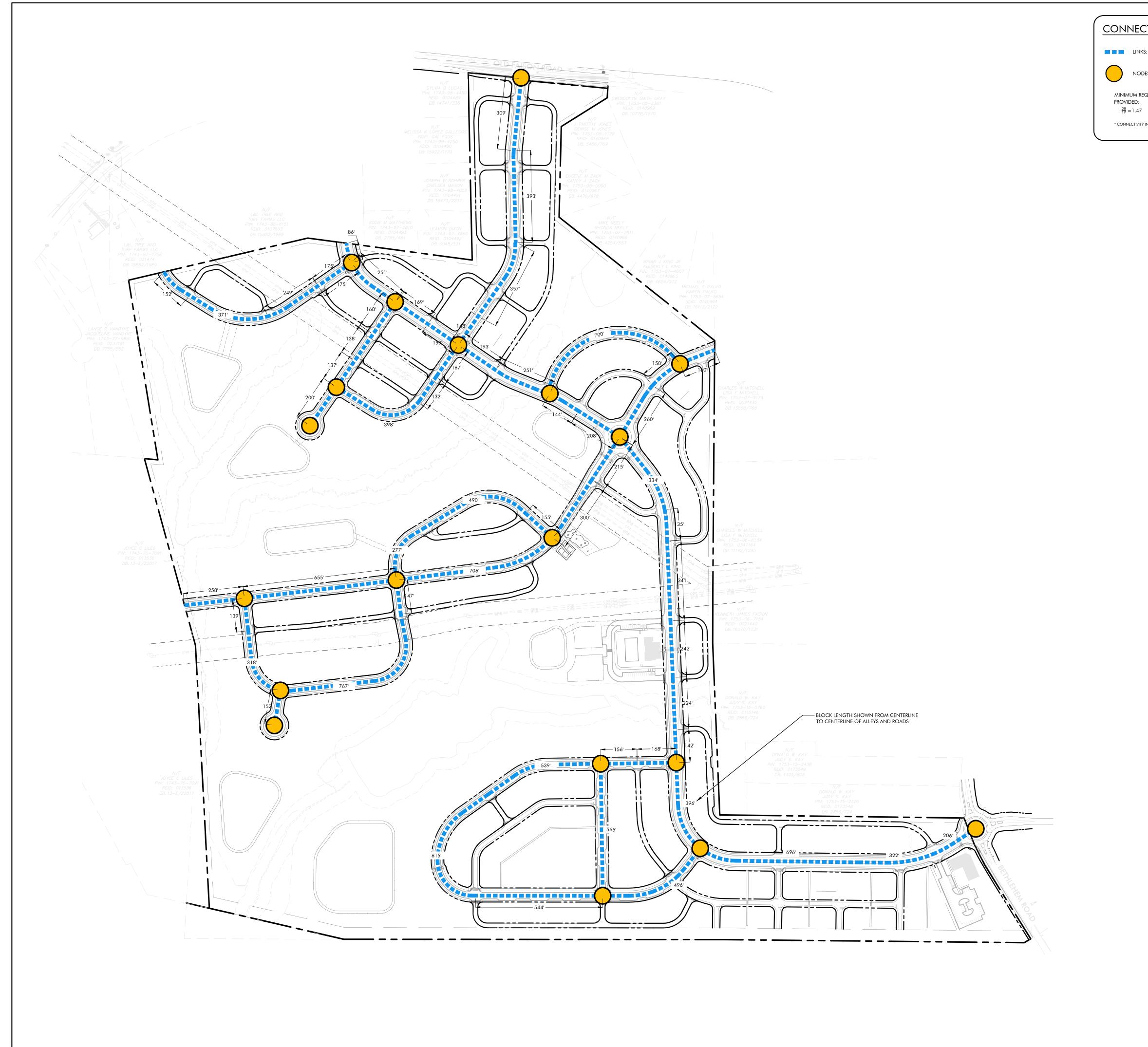
NOTE:

UDO.

TOWN OF KNIGHTDALE IS CURRENTLY UPDATING THEIR STANDARD DETAILS AND THE STREET SECTIONS SHOWN ON TOWN OF KNIGHTDALE TITLEBLOCKS WILL BE UPDATED TO MEET NEW REQUIREMENTS PER THE UDO. STREET SECTIONS USED IN PLAN REFLECT THE DIMENSIONS SET FORTH IN THE







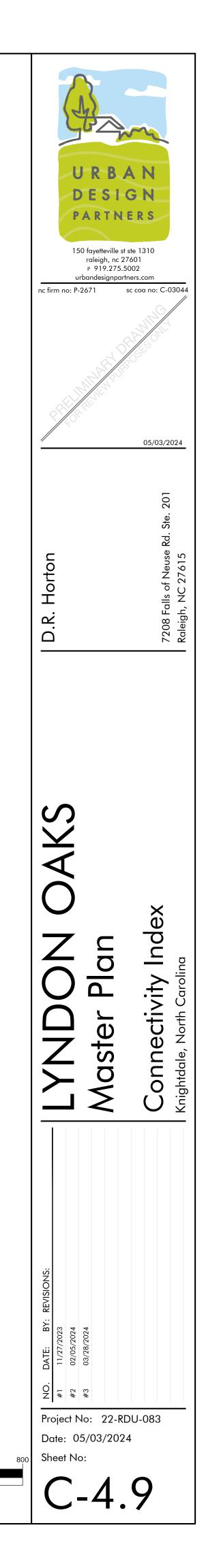
CONNECTIVITY INDEX

LINKS: 28

NODES: 19

MINIMUM REQUIRED: 1.40 1.47*

* CONNECTIVITY INDEX IS CALCULATED ACCORDING TO TOWN OF KNIGHTDALE UDO SEC. 11.3.E.7



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

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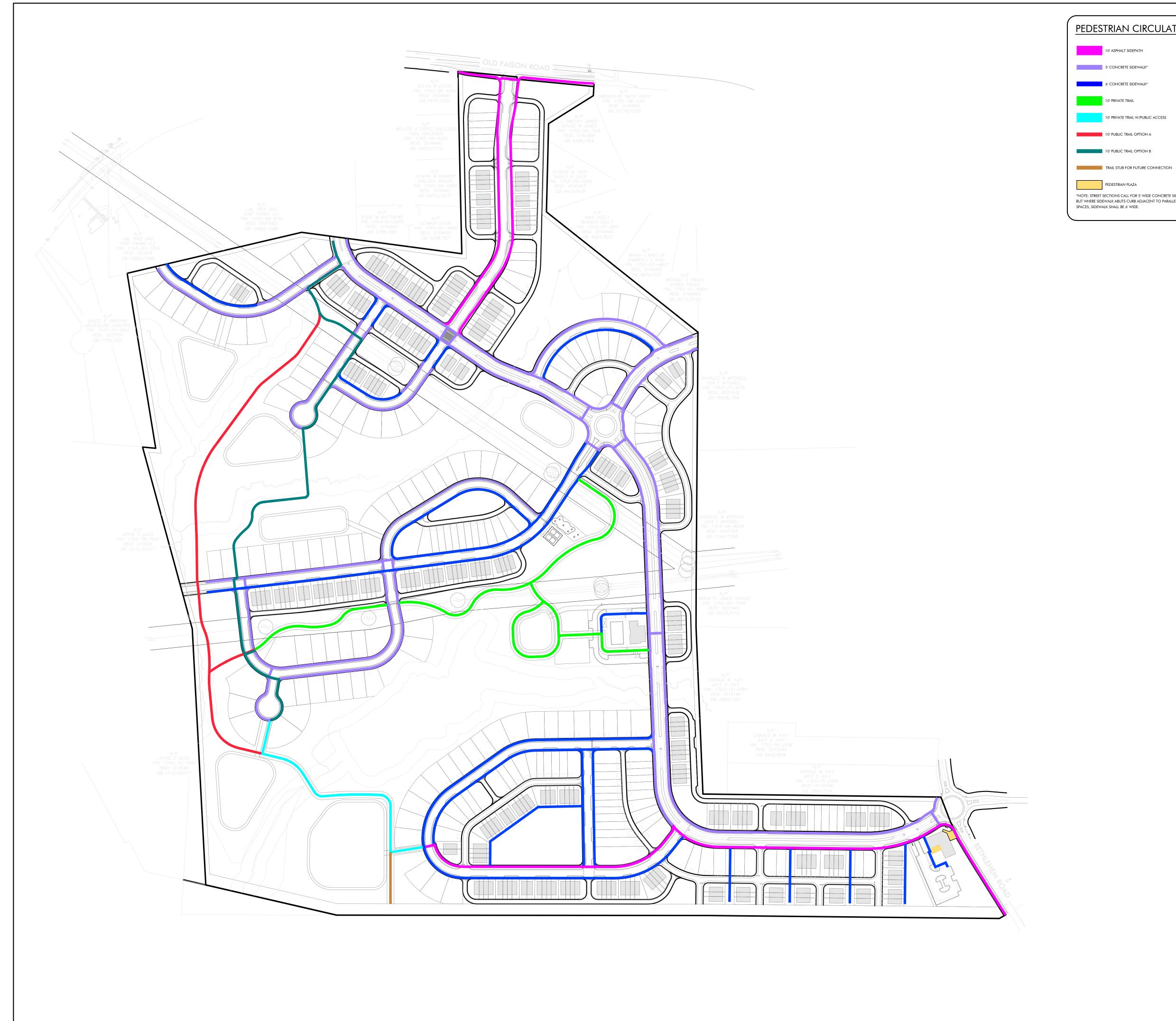
JL

GRAPHIC SCALE

400

(IN FEET) 1 inch = 200 ft.

200



PEDESTRIAN CIRCULATION

10' ASPHALT SIDEPATH

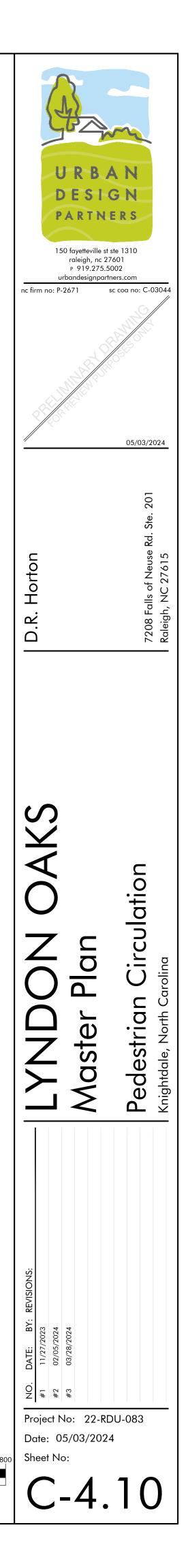
5' CONCRETE SIDEWALK*

10' PRIVATE TRAIL

10' PRIVATE TRAIL W/PUBLIC ACCESS

PEDESTRIAN PLAZA

*NOTE: STREET SECTIONS CALL FOR 5' WIDE CONCRETE SIDEWALK, BUT WHERE SIDEWALK ABUTS CURB ADJACENT TO PARALLEL PARKING SPACES, SIDEWALK SHALL BE 6' WIDE.



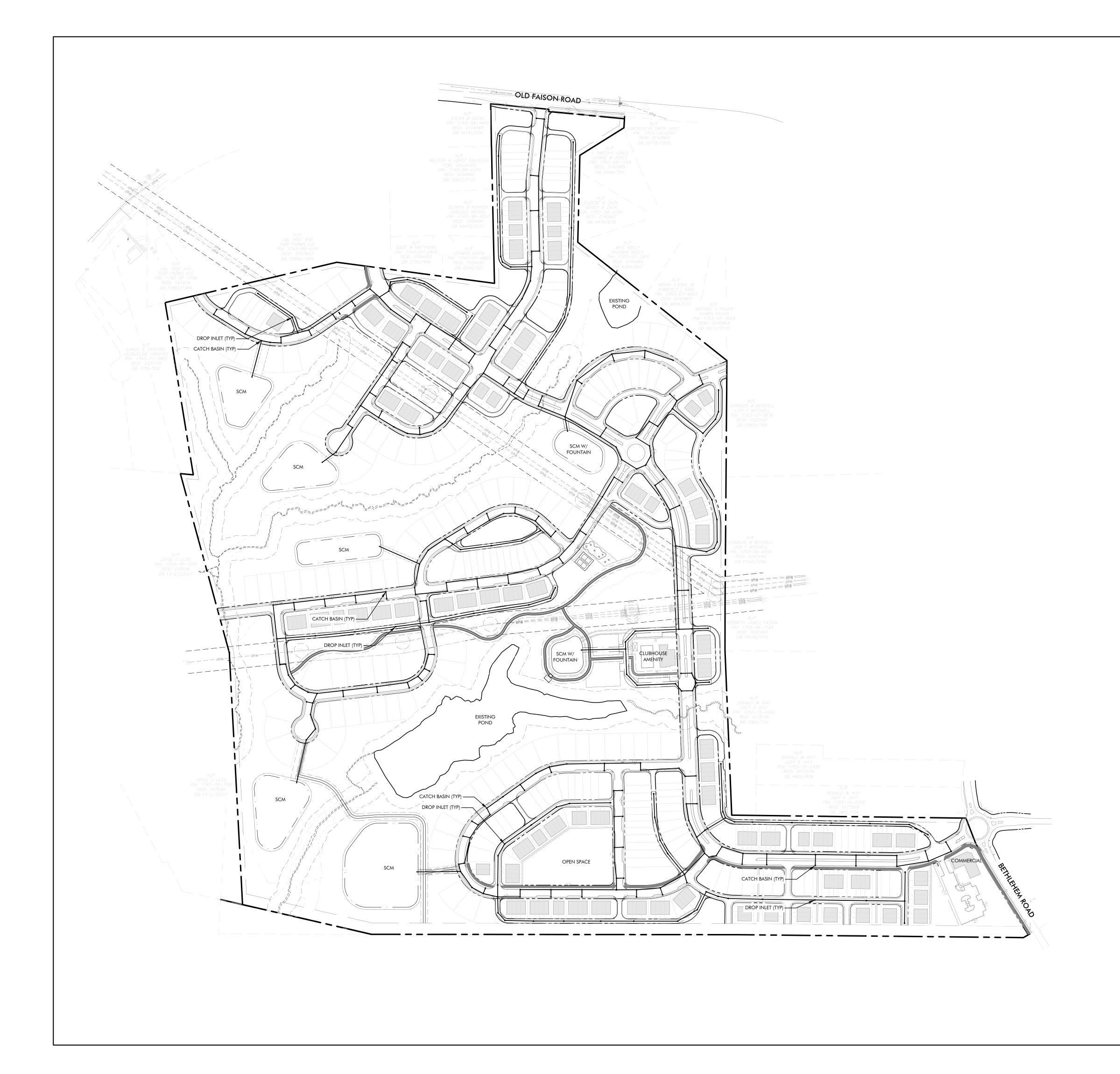
BEFORE YOU DIG! CALL 811 OR 1-800-632-4949 N.C. ONE-CALL CENTER IT'S THE LAW!

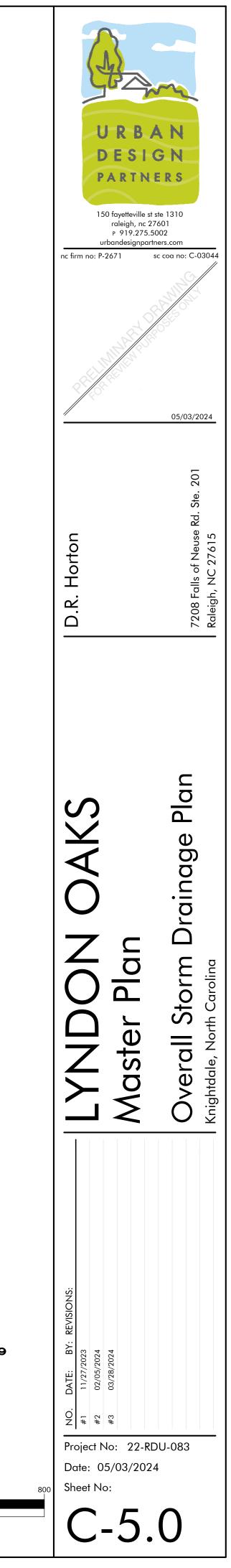
GRAPHIC SCALE

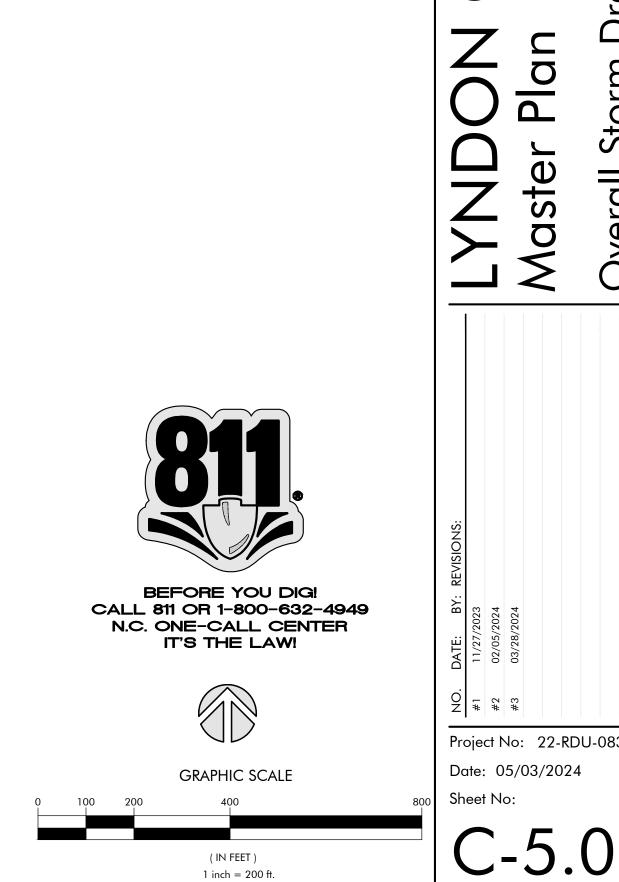
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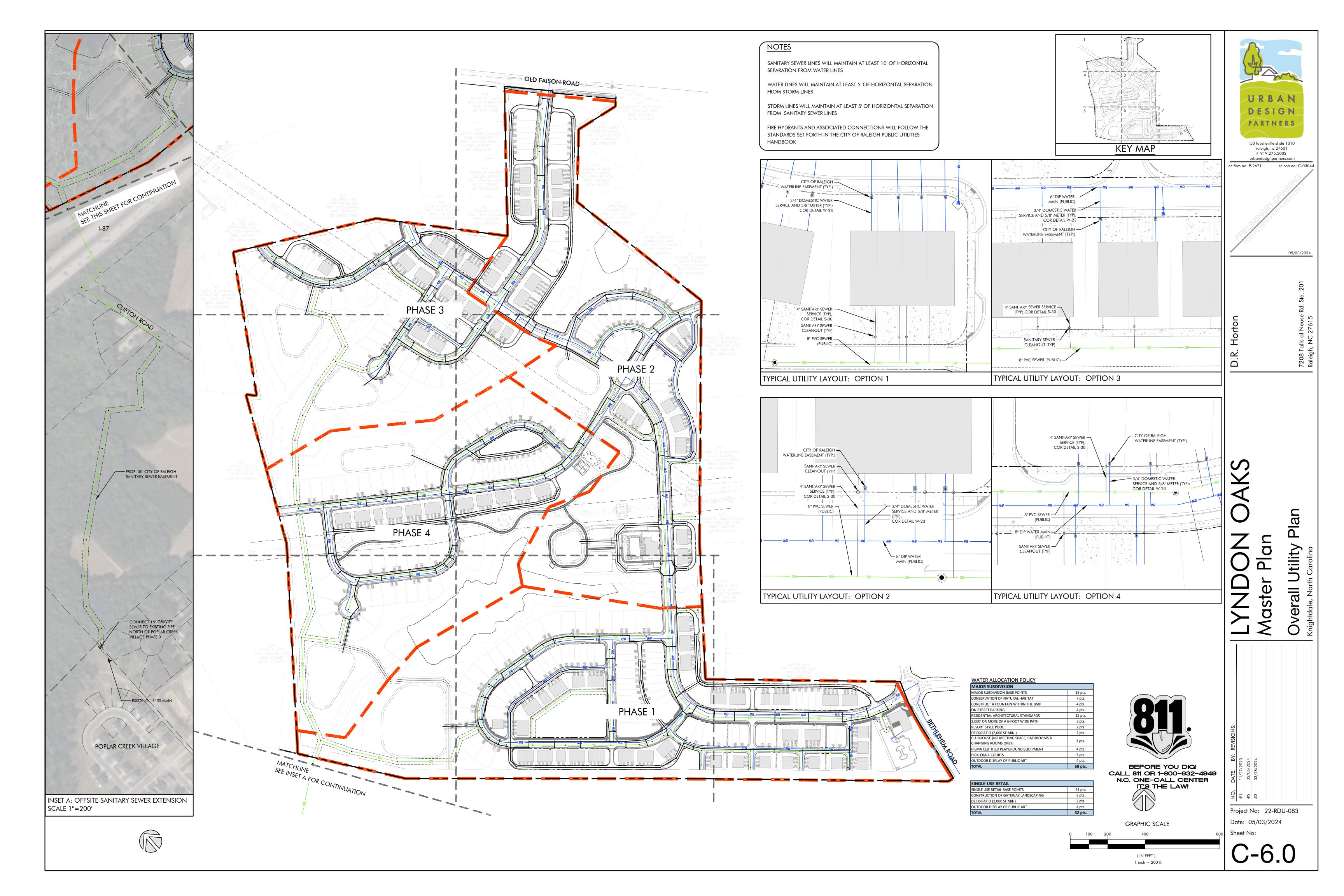
(IN FEET) 1 inch = 200 ft.

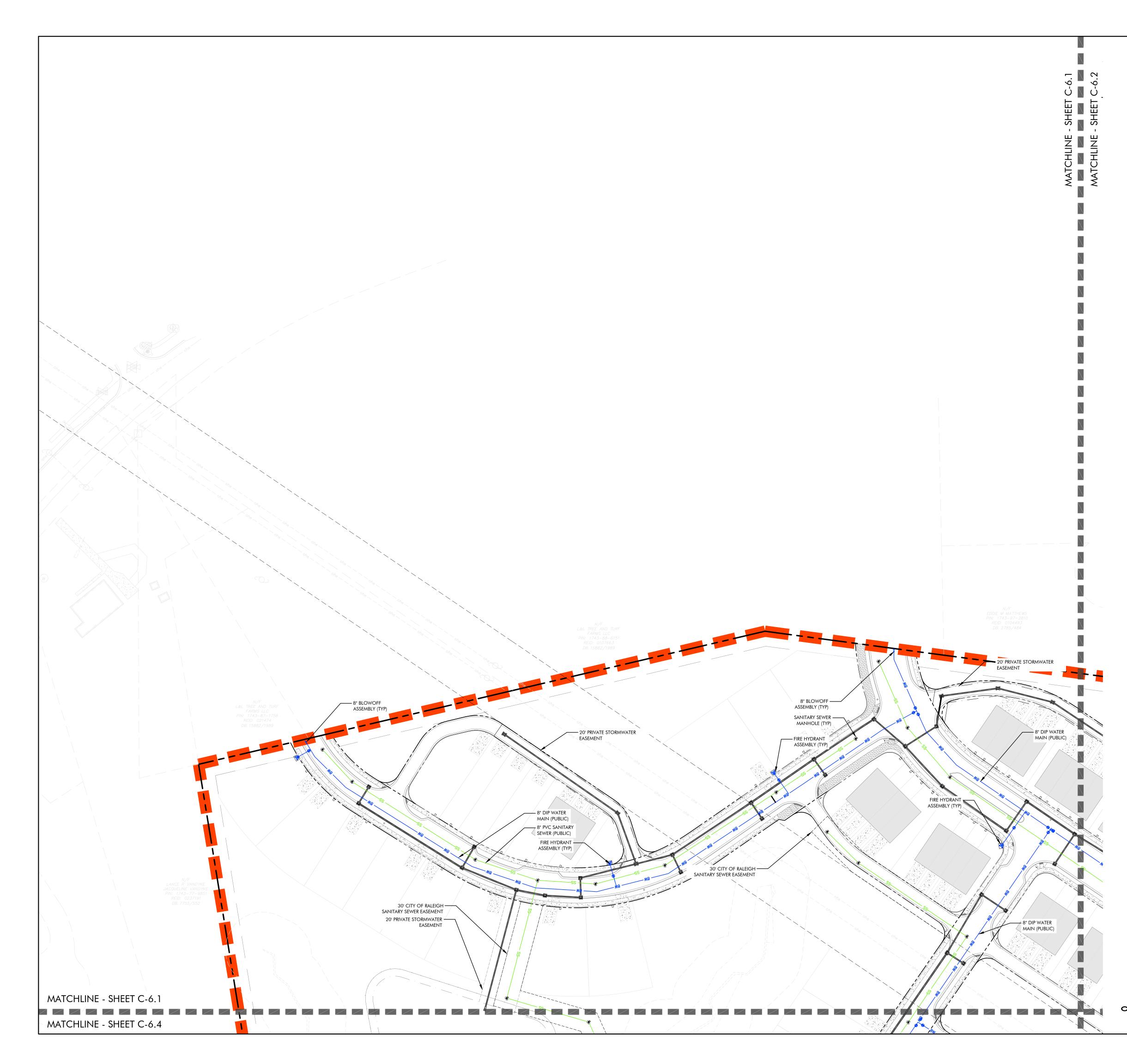
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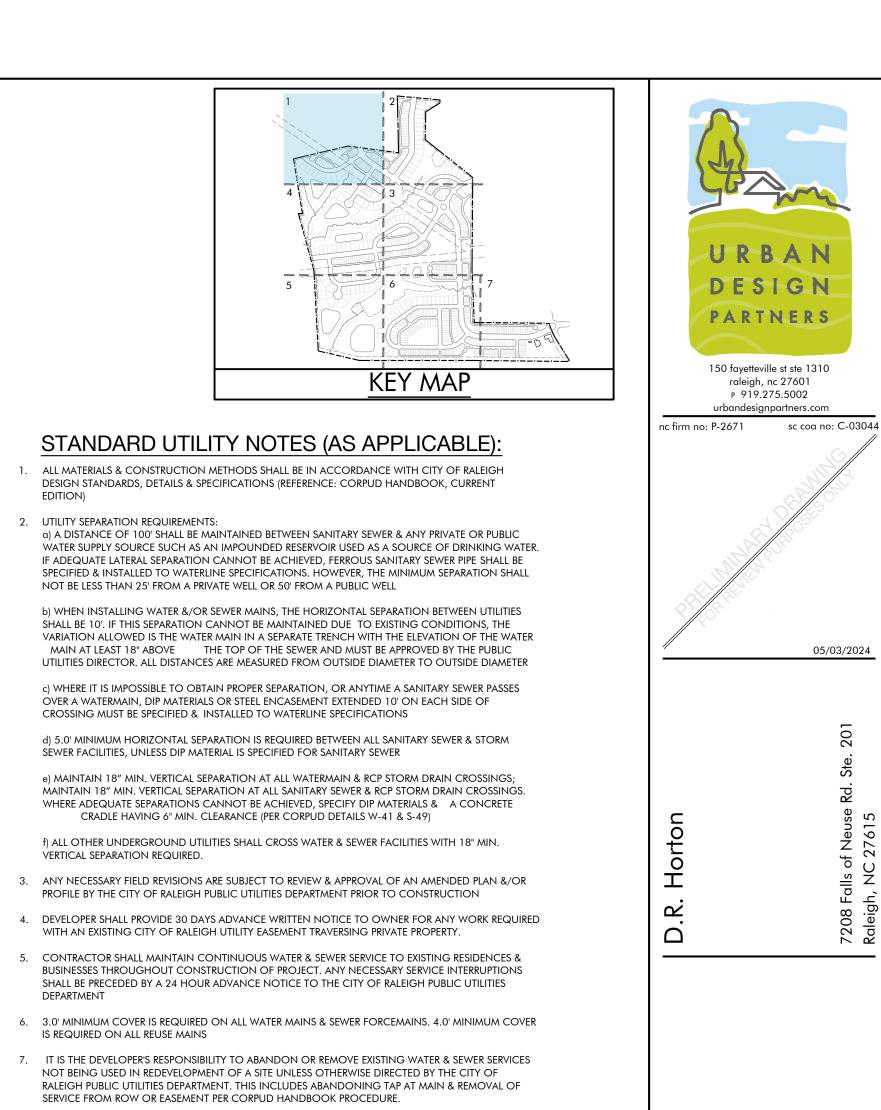












- 8. INSTALL 3/4" COPPER WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2'X2' WATERLINE EASEMENT IMMEDIATELY ADJACENT. NOTE: IT IS THE APPLICANT'S RESPONSIBILITY TO PROPERLY SIZE THE WATER SERVICE FOR EACH CONNECTION TO PROVIDE ADEQUATE FLOW & PRESSURE.
- 9. INSTALL 4" PVC SEWER SERVICES @ 1.0% 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.
- 15. THE DEVICES SHALL MEET AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARDS OR BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST.
- 16. THE DEVICE AND INSTALLATION SHALL MEET THE GUIDELINES OF APPENDIX A GUIDELINES AND REQUIREMENTS FOR THE CROSS CONNECTION PROGRAM IN RALEIGH'S SERVICE AREA.
- 17. 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 CROSS.CONNECTION@RALEIGHNC.GOV FOR MORE INFORMATION.
- 18. NOTICE FOR PROJECTS WITH REPLACE OR OVERSIZED MAINS: IF THE CITY'S REIMBURSEMENT FOR AN OVERSIZED MAIN OR URBAN MAIN REPLACEMENT PROJECT IS \$250,000 OR GREATER, THE PROJECT MUST BE PUBLICLY BID.



SANITARY SEWER LINES WILL MAINTAIN AT LEAST 10' OF HORIZONTAL SEPARATION FROM WATER LINES

WATER LINES WILL MAINTAIN AT LEAST 5' OF HORIZONTAL SEPARATION FROM STORM LINES

STORM LINES WILL MAINTAIN AT LEAST 5' OF HORIZONTAL SEPARATION FROM SANITARY SEWER LINES

FIRE HYDRANTS AND ASSOCIATED CONNECTIONS WILL FOLLOW THE STANDARDS SET FORTH IN THE CITY OF RALEIGH PUBLIC UTILITIES handbook







120

(IN FEET)

1 inch = 60 ft.

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

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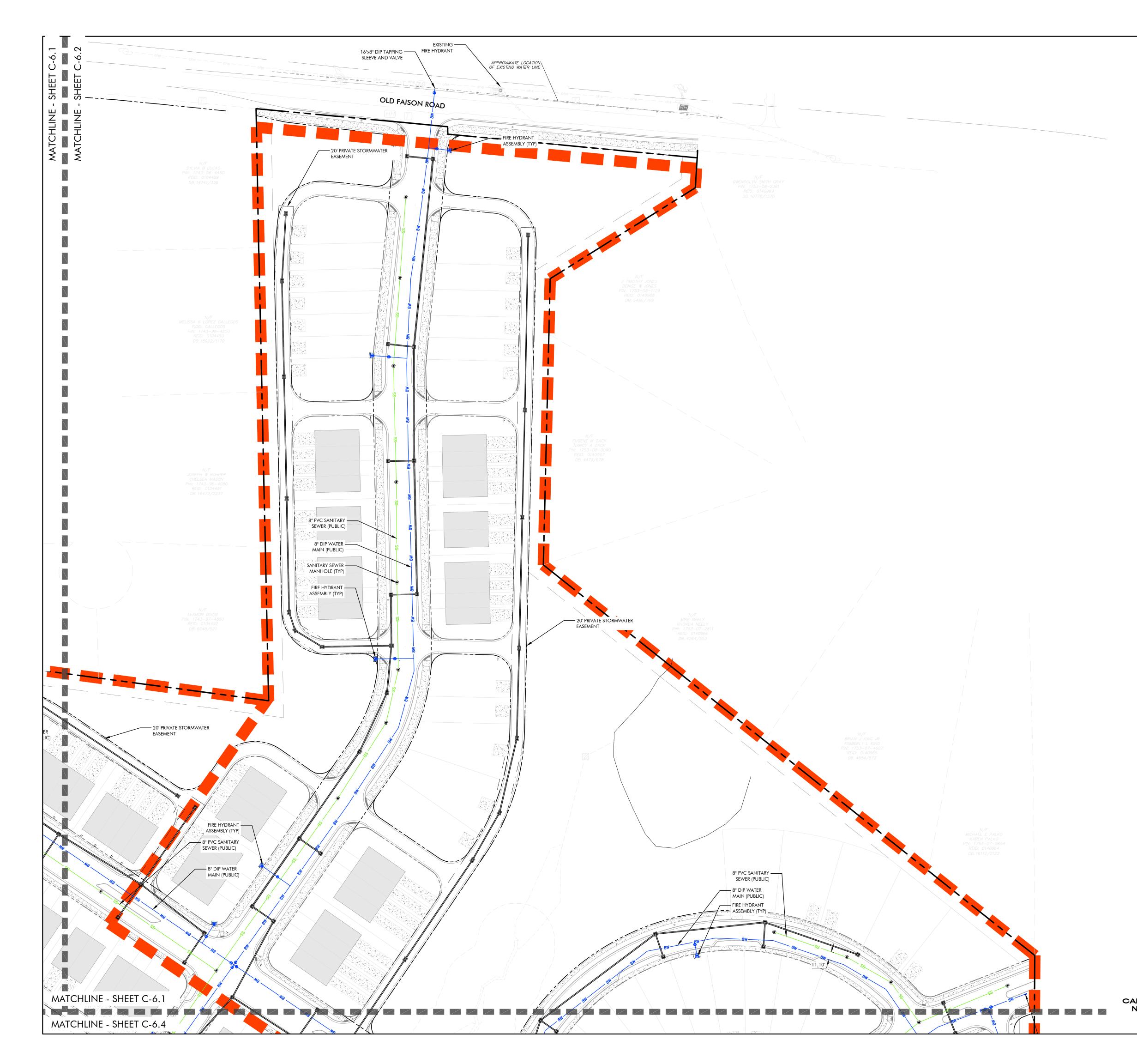
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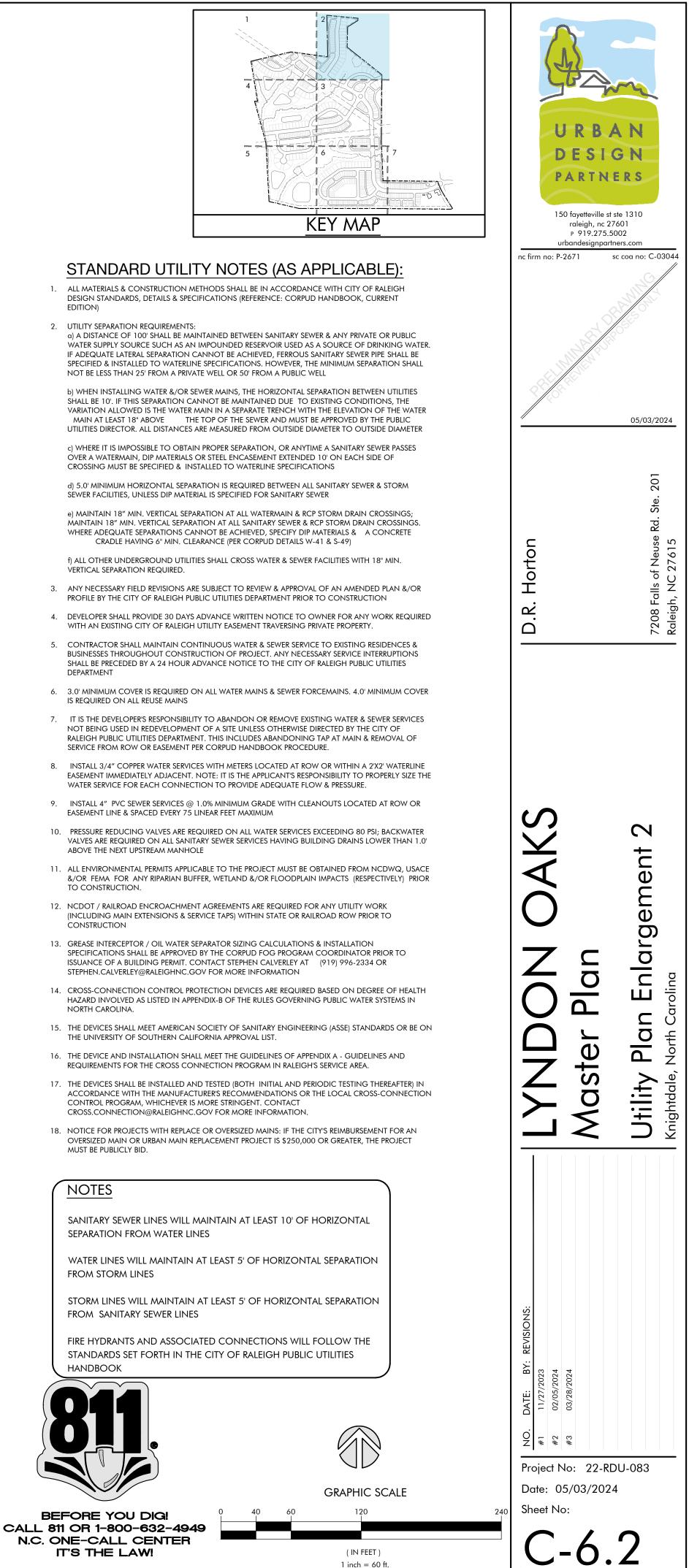
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Utility S σ

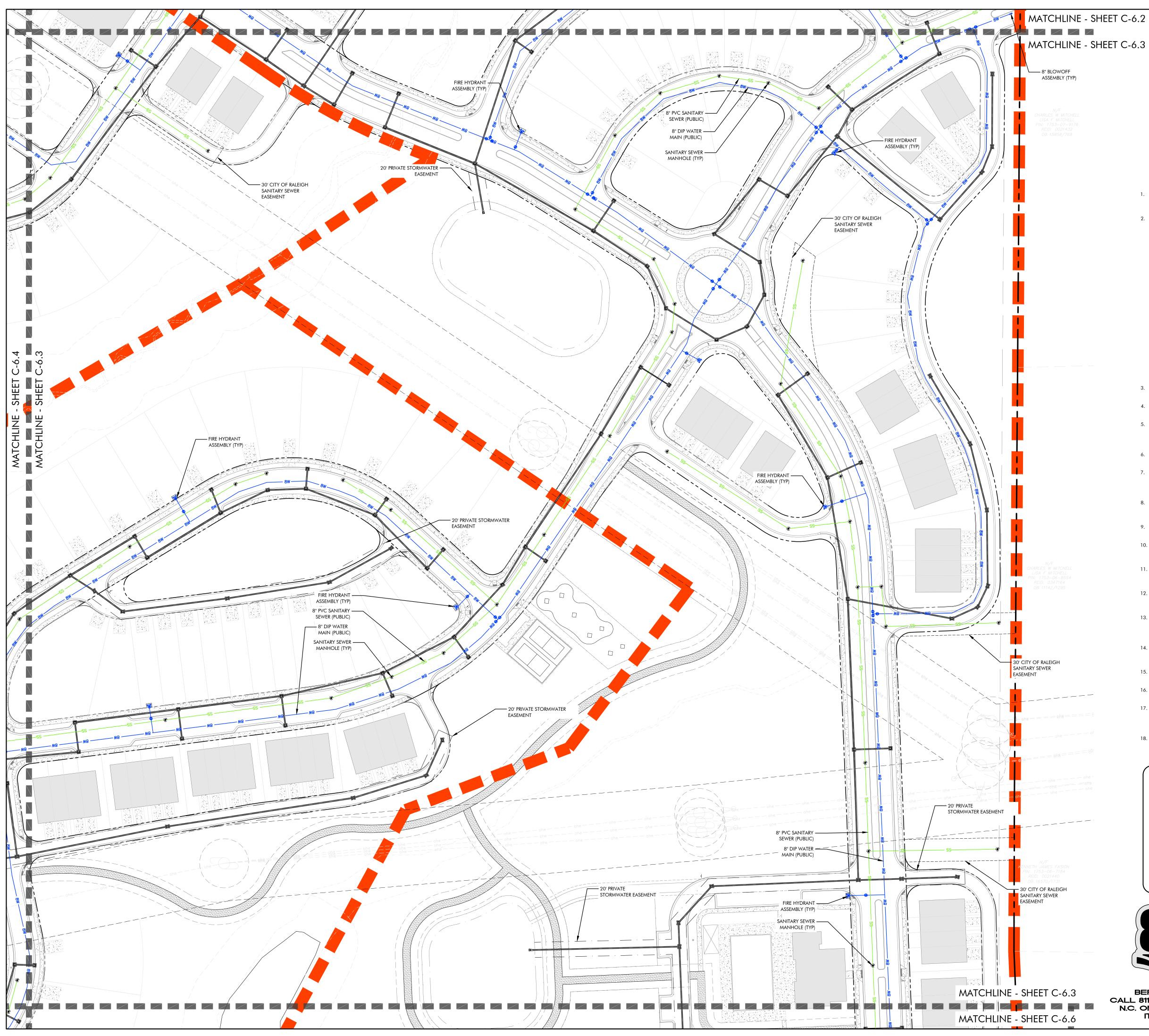
NO

Project No: 22-RDU-083 Date: 05/03/2024

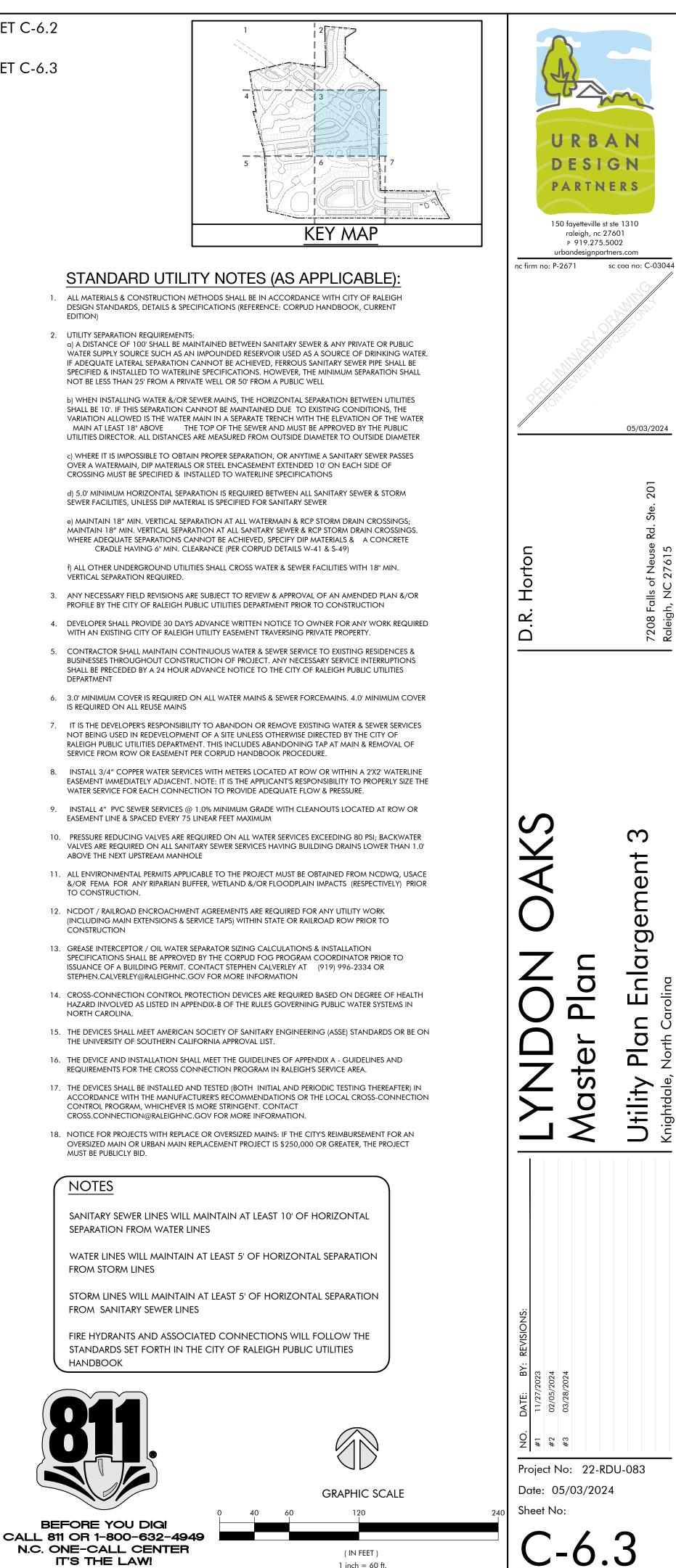




1 inch = 60 ft.

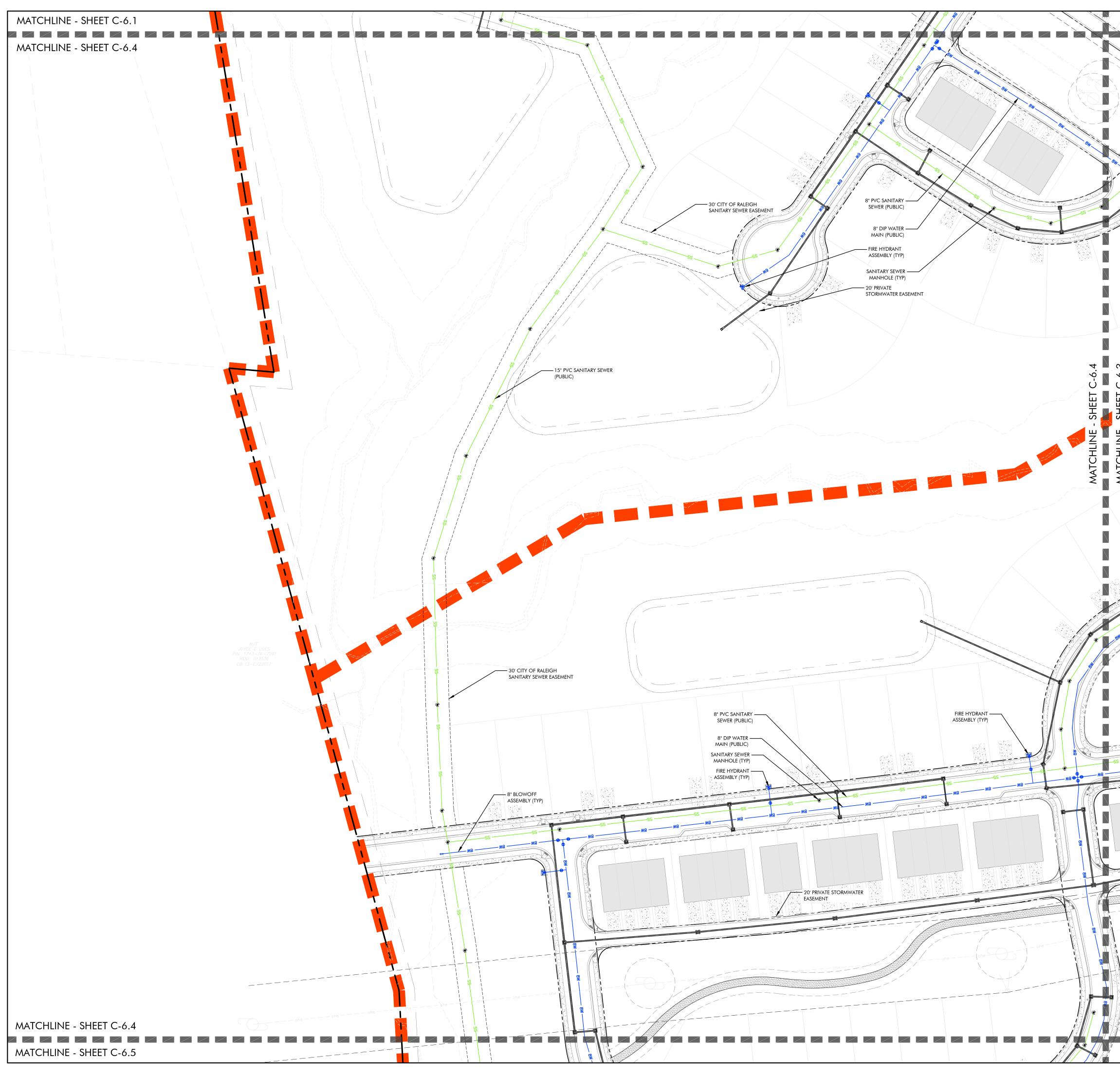


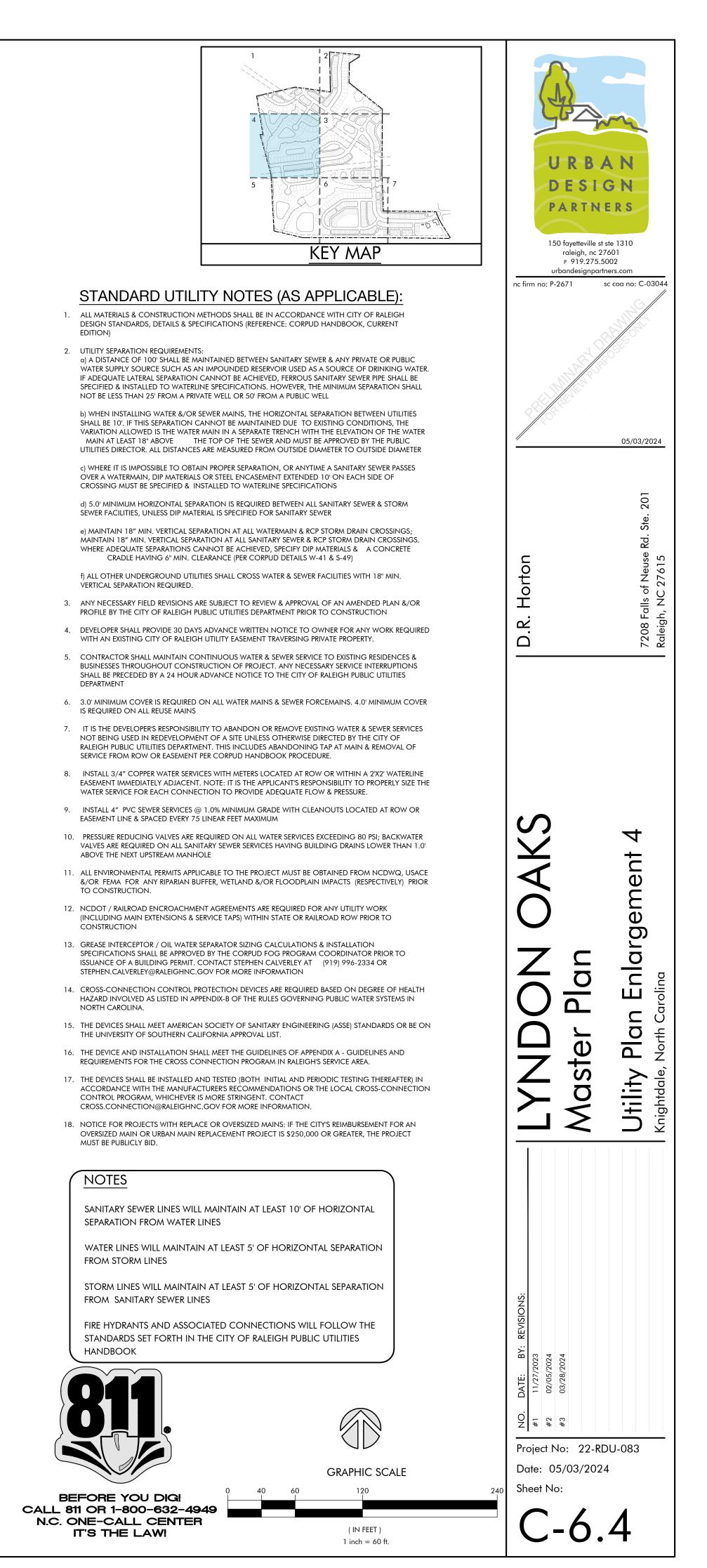
MATCHLINE - SHEET C-6.2

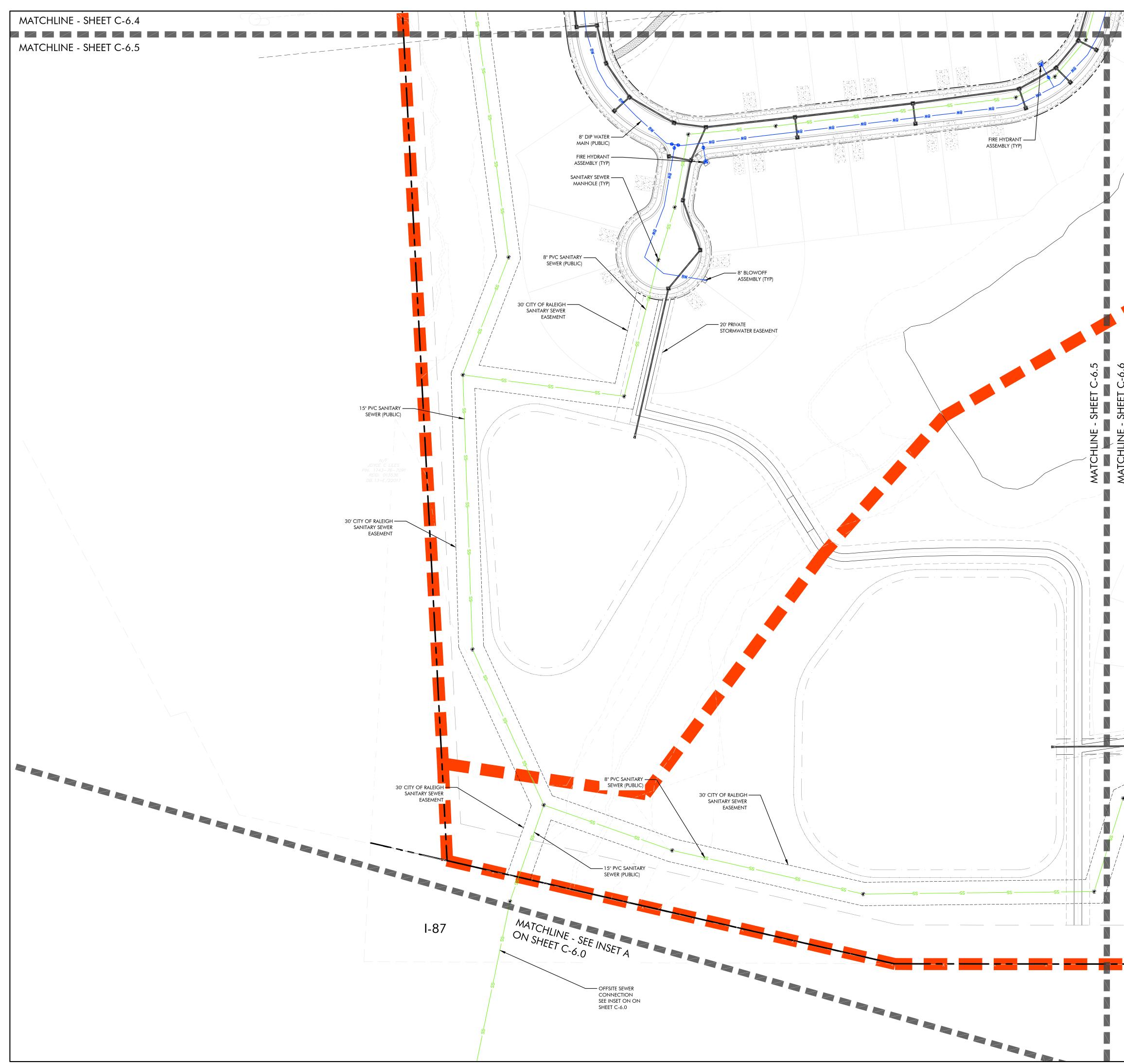


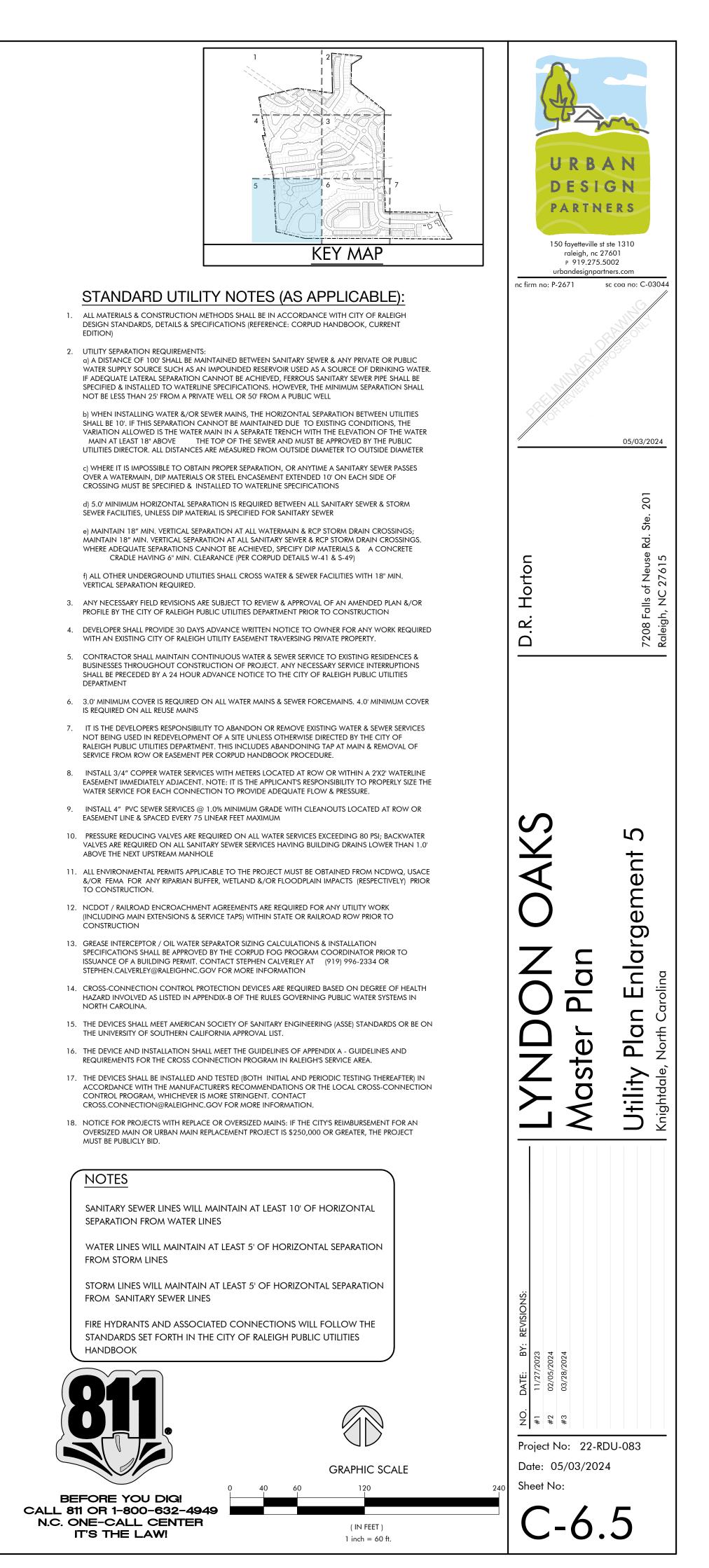
IT'S THE LAW!

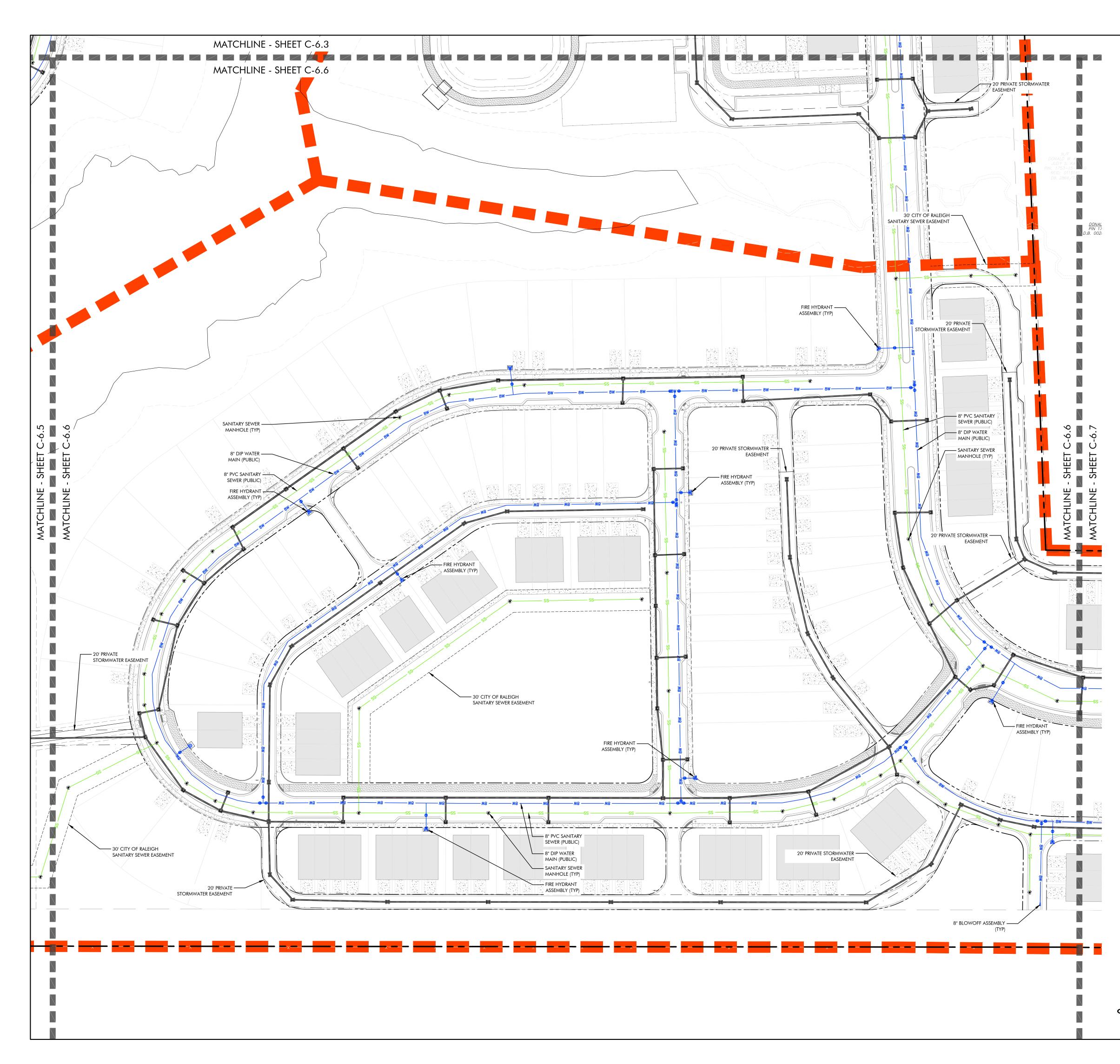
1 inch = 60 ft.

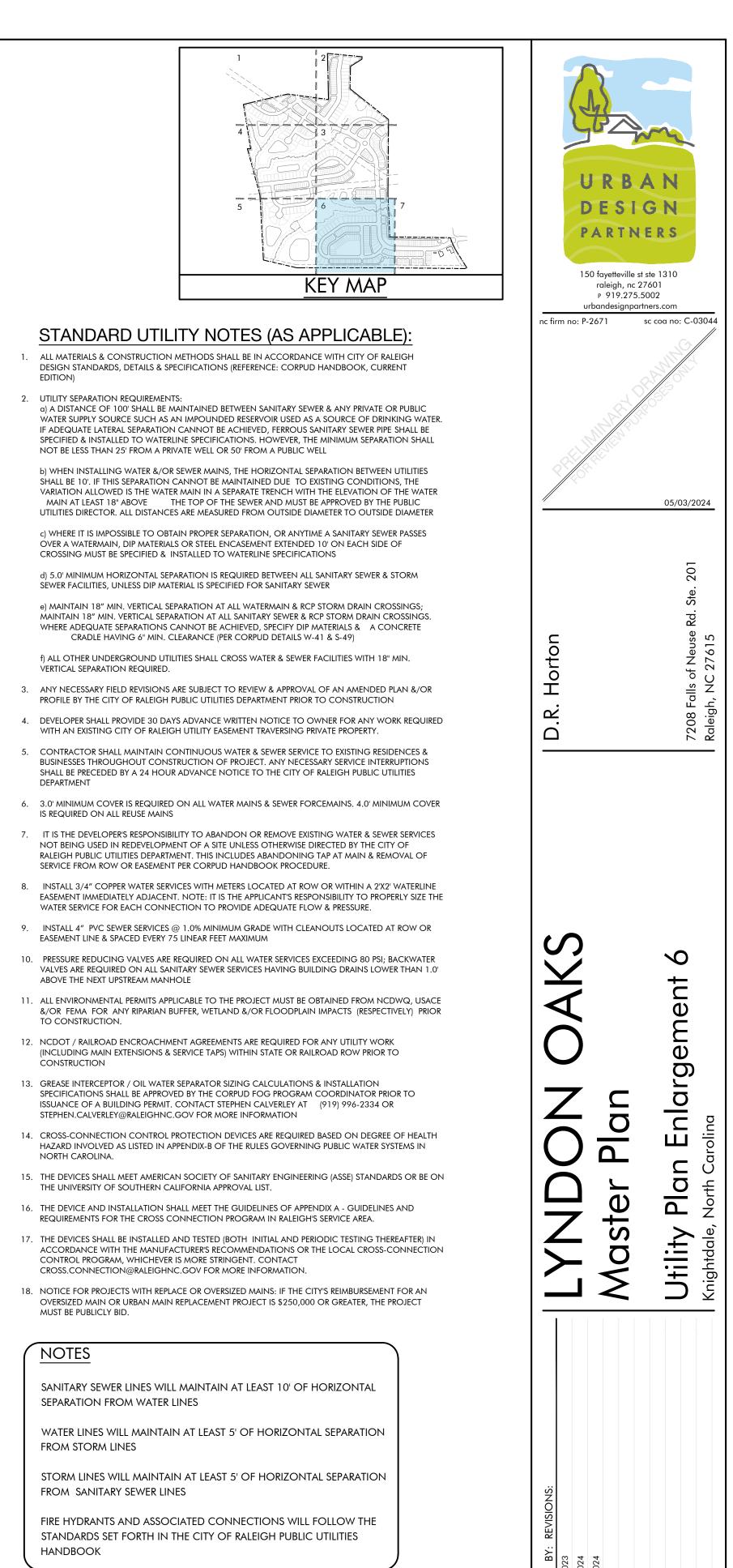














BEFORE YOU DIG! CALL 811 OR 1-800-632-4949 N.C. ONE-CALL CENTER IT'S THE LAW!

(IN FEET) 1 inch = 60 ft.

GRAPHIC SCALE

120

DATE

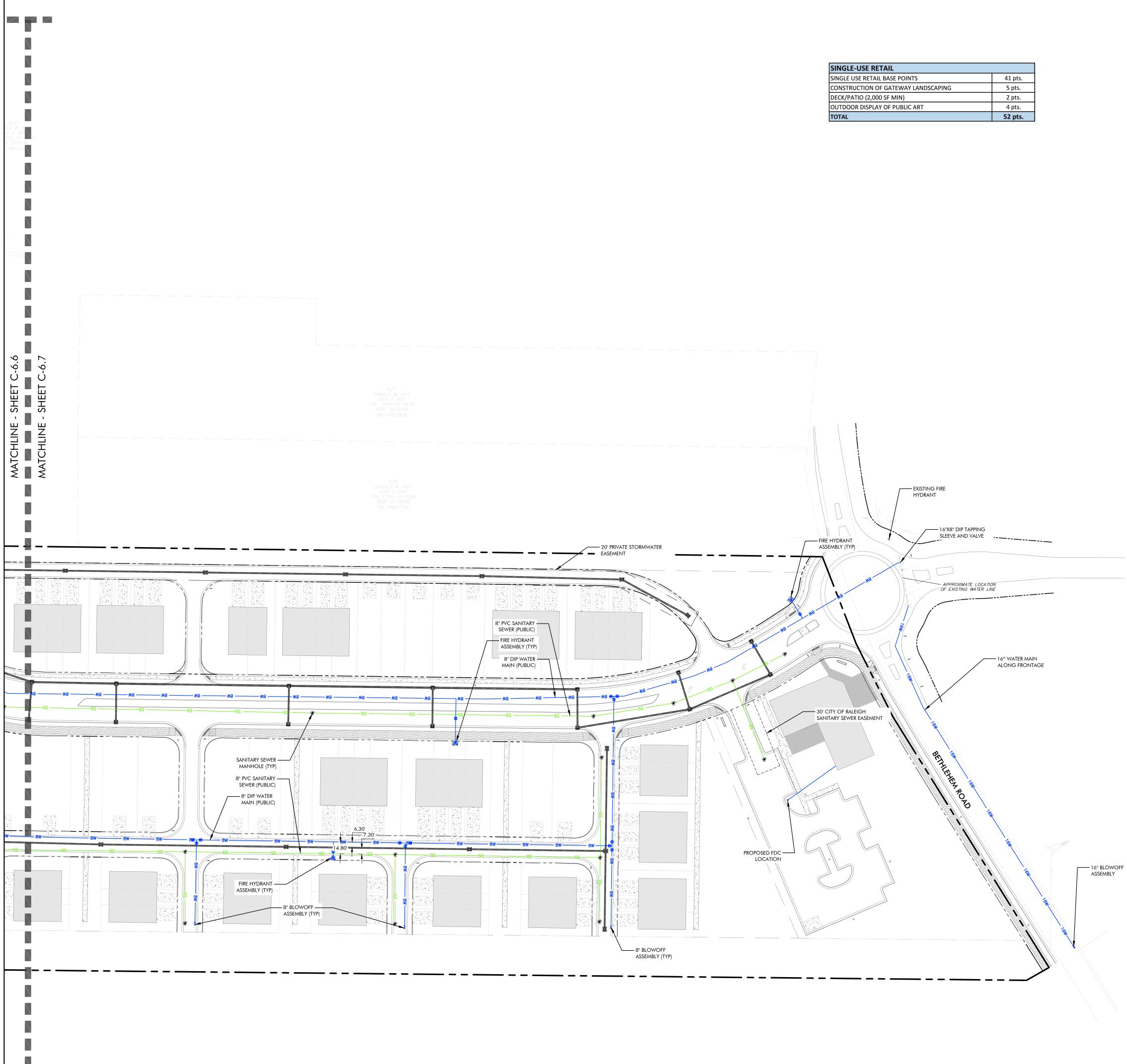
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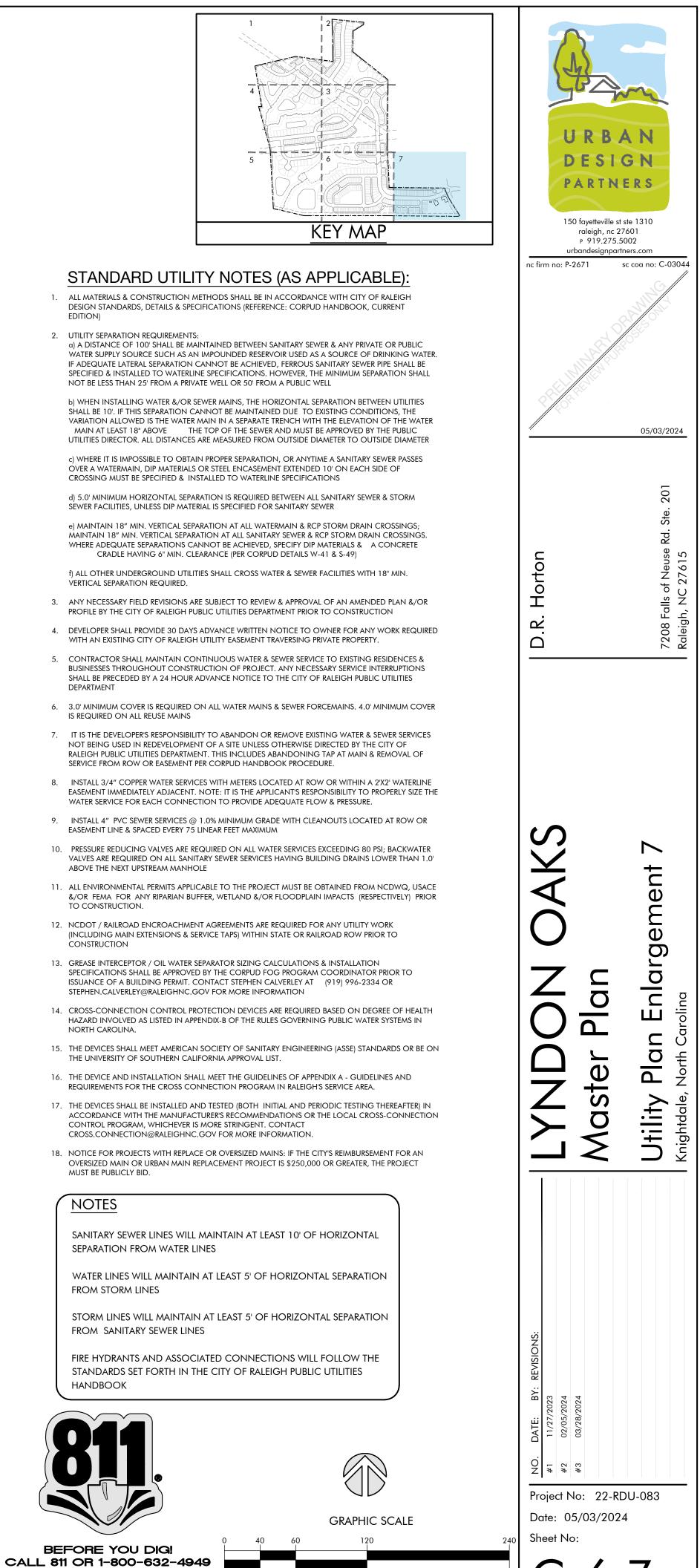
Project No: 22-RDU-083

Date: 05/03/2024

C-6.6



SINGLE-USE RETAIL	
SINGLE USE RETAIL BASE POINTS	41 pts.
CONSTRUCTION OF GATEWAY LANDSCAPING	5 pts.
DECK/PATIO (2,000 SF MIN)	2 pts.
OUTDOOR DISPLAY OF PUBLIC ART	4 pts.
TOTAL	52 pts.



N.C. ONE-CALL CENTER IT'S THE LAW!

(IN FEET) 1 inch = 60 ft. C-6.



				OTES:	
SIZE	E N	AATURE HEIGHT	1.	AREAS. WHERE SUFFICIENT MATE	PRESERVED IN ALL BUFFER AREAS AS PRIO RIAL DOES NOT MEET REQUIREMENTS, SU MEET BUFFER OPACITY STANDARDS.
8` HT	2	5-'ht.	2.		ITAL BUFFER PLANTINGS TO BE COORDIN RE DEVELOPED. SEE SHEET LS-2.0 FOR TYP
8` HT			3.	ANY REQUIRED SCREENING AREA	as that overlap with sight distance " S and use groundcover plantings.
	-		4.	ALL SIDES OF PARKING LOTS FRO BUFFER YARD PER UDO.	DNTING RIGHT-OF-WAYS WILL BE SCREEN
	15	5 - ' ht.	5.		PLANTINGS ON PLANS DO NOT MATCH ATION OF PLANTINGS WILL GOVERN.
	4	0 - f' ht.	6.	TREES NOT IN A LANDSCAPE BED	SHALL RECEIVE A 6' DIAMETER MULCH RI
	4(0 - 65ft. ht.	7.	LIMITS OF IRRIGATION INCLUDE NOT LOCATED IN A LANDSCAPE	denoted landscape beds, all sod/se bed.
			8.	FULL LANDSCAPE SCHEDULE ON	SHEET LS-2.0
	40	0 - 65ft. ht.	9.	LANDSCAPE SPECIES, LOCATION CONSTRUCTION DOCUMENTS.	, AND QUANTITY IS SUBJECT TO CHANGE
		65ft. ht.	10.	FOR EVERY TWO THOUSAND (2,0 TWENTY-THOUSAND (20,000) SG LOT OCCUPIED BY A RECORDED	(LOT SHALL CONTAIN A MINIMUM OF OI 000) SQUARE FEET OF LOT AREA OR FRAC QUARE FEET IN LOT AREA. ANY PORTION O UTILITY EASEMENT SHALL NOT BE INCLUE OF PLANTING TO ACCOUNT FOR PHYSI USE ADMINISTRATOR.
			11.	THE USE OF EXISTING TREES MEE REQUIREMENT IS ENCOURAGED.	TING THE FOLLOWING STANDARDS TO S EXISTING LARGE SHADE TREES MEASURIN D TOWARDS FULFILLING THIS REQUIREME
	15	5 - ' ht.	12.	FULFILLMENT OF THE RESIDENTIA	ECTION 7.4 (L)) MAY NOT BE COUNTED TO LL LANDSCAPING REQUIREMENT. APART FF SHALL BE PLANTED WITHIN THE PRIVATE LO
		5 - 25ft. ht.	13.	FOUNDATION PLANTINGS CONS THE ENTIRE FOUNDATION WALL	SISTING OF EVERGREEN SHRUBS SHALL BE OF THE BUILDING. PLANT INSTALLATION
	6	- ' ht.		OF TWO (2) FEET IN HEIGHT PLAT	NTED AT FOUR (4) FOOT INTERVALS.
	15	5 - 25ft. ht.			
	٨			NDSCAPE REQUI	
				FFER YARD TYPE B (PERIMETE - BUFFER TYPE: - WIDTH REQ'D:	<u>B</u> 20' MIN.
3 -	-	- 6ft. ht.		- WIDTH PROV:	20'
18	3	8 - 6' ht.		- LENGTH: - REQUIRED PLANTINGS: • CANOPY TREES:	± 12,730 LF TOTAL
3		- 6ft. ht.		 CANOPY TREES: UNDERSTORY TREES: SHRUBS: 	3 TREES/100 LF 5 TREES/100 LF 20 SHRUBS/100 LF
18 - 3	3 - 3	36in. ht.		(12,730 LF/ 100 LF)(3) = (12,730 LF/ 100 LF)(5) = (12,730 LF/ 100 LF)(20) = - PROPOSED PLANTINGS:	637 UNDERSTORY TREES REQ'D
6 - ' ht	- ' ht	<i>i.</i>			
3 - 6ft	- 6ft	t. ht.	BOI	FFER YARD TYPE D (PERIMETI - BUFFER TYPE: - WIDTH REQ'D:	ER BUFFER) D 50' MIN.
]		- WIDTH REQU: - WIDTH PROV: - LENGTH:	50' ± 3,486 LF
				- MIN WALL HT & OPACITY:	A FULLY OPAQUE, MASONRY WALL WITH HEIGHT OF SIX (6) FEET AND A MAXIMUM
				- REQUIRED PLANTINGS:	(8) FEET SHALL BE PROVIDED.
				 CANOPY TREES: UNDERSTORY TREES: SHRUBS: 	5 TREES/100 LF 8 TREES/100 LF 35 SHRUBS/100 LF
				(3,486 LF/ 100 LF)(5) =	175 CANOPY TREES REQ'D
				(3,486 LF/ 100 LF)(8) = (3,486 LF/ 100 LF)(35) = - PROPOSED PLANTINGS:	1,221 SHRUBS REQ'D EXISTING PLANT MATERIAL IN BUFFERS TO REMAIN AND BE SUPPLEMENTED TO MEE AS STATED ABOVE
			STR	REET TREES	
				- SPACING: - SPECIES:	40' O.C. (CANOPY) 30' O.C. (UNDERSTORY) SPECIES OF EVERY OTHER TREE ALONG T FRONTAGE SHALL ALTERNATE
			ov	'ERALL TREE CANOPY/TREE F	PRESERVATION (UDO SEC 7.4.M)
			-		
				- REQUIRED:	A TREE COVER AREA EQUAL TO THE PERI DEVELOPMENT IN FEET MULTIPLIED BY 20 MAINTAINED ON SITE.

NT MATERIAL TO BE PRESERVED IN ALL BUFFER AREAS AS PRIORITY TIER 1 TREE SAVE E SUFFICIENT MATERIAL DOES NOT MEET REQUIREMENTS, SUPPLEMENTAL PLANT L BE REQUIRED TO MEET BUFFER OPACITY STANDARDS. ON OF SUPPLEMENTAL BUFFER PLANTINGS TO BE COORDINATED WHEN ION DOCUMENTS ARE DEVELOPED. SEE SHEET LS-2.0 FOR TYPICAL BUFFER ED SCREENING AREAS THAT OVERLAP WITH SIGHT DISTANCE TRIANGLES WILL URBAN ING REQUIREMENTS AND USE GROUNDCOVER PLANTINGS. DESIGN PARKING LOTS FRONTING RIGHT-OF-WAYS WILL BE SCREENED WITH A TYPE B PER UDO. PARTNERS EPRESENTATION OF PLANTINGS ON PLANS DO NOT MATCH QUANTITIES IN PLANT GRAPHIC REPRESENTATION OF PLANTINGS WILL GOVERN. A LANDSCAPE BED SHALL RECEIVE A 6' DIAMETER MULCH RING. 150 fayetteville st ste 1310 raleigh, nc 27601 P 919.275.5002 GATION INCLUDE DENOTED LANDSCAPE BEDS, ALL SOD/SEED AREAS, AND TREES ED IN A LANDSCAPE BED. urbandesignpartners.com nc firm no: P-2671 sc coa no: C-03044 CAPE SCHEDULE ON SHEET LS-2.0 PECIES, LOCATION, AND QUANTITY IS SUBJECT TO CHANGE AT TIME OF ION DOCUMENTS. -FAMILY OR DUPLEX LOT SHALL CONTAIN A MINIMUM OF ONE (1) CANOPY TREE NO THOUSAND (2,000) SQUARE FEET OF LOT AREA OR FRACTION THEREOF UP TO USAND (20,000) SQUARE FEET IN LOT AREA. ANY PORTION OF THE RESIDENTIAL ED BY A RECORDED UTILITY EASEMENT SHALL NOT BE INCLUDED AS PART OF THE REA. THE LOCATION OF PLANTING TO ACCOUNT FOR PHYSICAL CONDITIONS STED BY THE LAND USE ADMINISTRATOR. XISTING TREES MEETING THE FOLLOWING STANDARDS TO SATISFY THIS T IS ENCOURAGED. EXISTING LARGE SHADE TREES MEASURING MORE THAN SIX (6) H MAY BE COUNTED TOWARDS FULFILLING THIS REQUIREMENT. REET TREES (UDO SECTION 7.4 (L)) MAY NOT BE COUNTED TOWARDS THE OF THE RESIDENTIAL LANDSCAPING REQUIREMENT. APART FROM REQUIRED 05/03/2024 ALL OTHER TREES SHALL BE PLANTED WITHIN THE PRIVATE LOT. N PLANTINGS CONSISTING OF EVERGREEN SHRUBS SHALL BE INSTALLED ALONG OUNDATION WALL OF THE BUILDING. PLANT INSTALLATION SHALL BE A MINIMUM EET IN HEIGHT PLANTED AT FOUR (4) FOOT INTERVALS. APE REQUIREMENTS: YPE B (PERIMETER BUFFER) 20' MIN. ± 12,730 LF TOTAL LANTINGS: TREES: 3 TREES/100 LF TORY TREES: 5 TREES/100 LF \square 20 SHRUBS/100 LF 730 LF/ 100 LF)(3) = 382 CANOPY TREES REQ'D 730 LF/ 100 LF)(5) = 637 UNDERSTORY TREES REQ'D 30 LF / 100 LF (20) =2,546 SHRUBS REQ'D PLANTINGS: EXISTING PLANT MATERIAL IN BUFFERS TO REMAIN AND BE SUPPLEMENTED TO MEET REQUIREMENTS AS STATED ABOVE YPE D (PERIMETER BUFFER 50' MIN ± 3,486 LF A FULLY OPAQUE, MASONRY WALL WITH A MINIMUM T & OPACITY: HEIGHT OF SIX (6) FEET AND A MAXIMUM HEIGHT OF EIGHT (8) FEET SHALL BE PROVIDED. LANTINGS: TREES: 5 TREES/100 LF TORY TREES: 8 TREES/100 LF 35 SHRUBS/100 LF 175 CANOPY TREES REQ'D 6 LF/ 100 LF)(5) = $(\cap$ 6 LF/ 100 LF)(8) = 279 UNDERSTORY TREES REQ'D 5 LF/ 100 LF)(35) = 1,221 SHRUBS REQ'D \mathbf{V} , EXISTING PLANT MATERIAL IN BUFFERS TO REMAIN AND BE SUPPLEMENTED TO MEET REQUIREMENTS PLANTINGS: AS STATED ABOVE Pla 40' O.C. (CANOPY) 30' O.C. (UNDERSTORY) SPECIES OF EVERY OTHER TREE ALONG THE STREET þe FRONTAGE SHALL ALTERNATE

A TREE COVER AREA EQUAL TO THE PERIMETER OF THE DEVELOPMENT IN FEET MULTIPLIED BY 20 SHALL BE

844,604 SF (19.39 AC) TREE PRESERVATION PROV.

32,524 SF (0.75 AC) WITHIN PERIMETER BUFFERS*

812,080 SF (18.64 AC) WITHIN STREAM BUFFERS

(14,079 LF)(20) = 281,580 SF (6.46 AC) REQUIRED

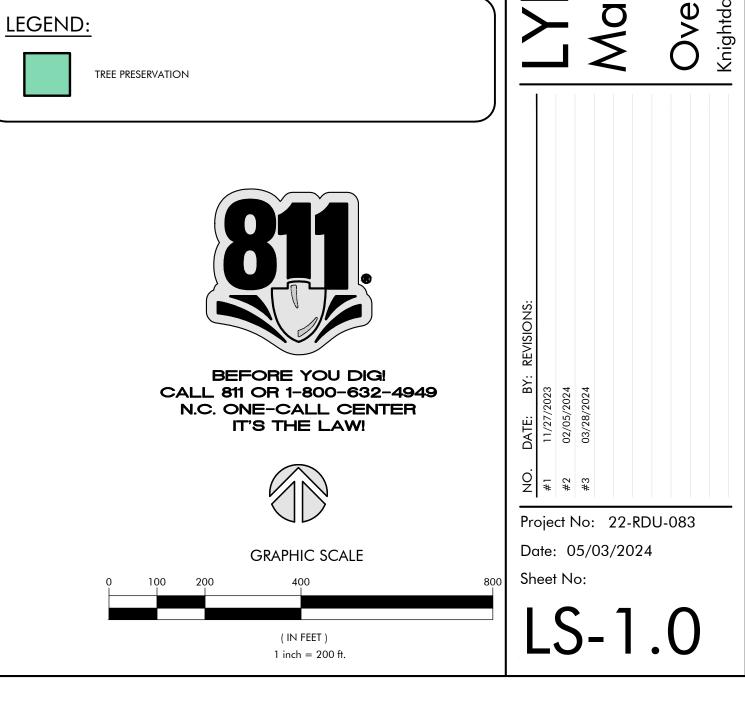
* SUPPLEMENTAL PERIMETER BUFFER TREES TO BE STUDIED AT TIME OF CDs

6.46 AC / 171.88 AC = 3.7% OF SITE

- PROVIDED:

• PERIMETER BUFFERS:

STREAM BUFFERS:



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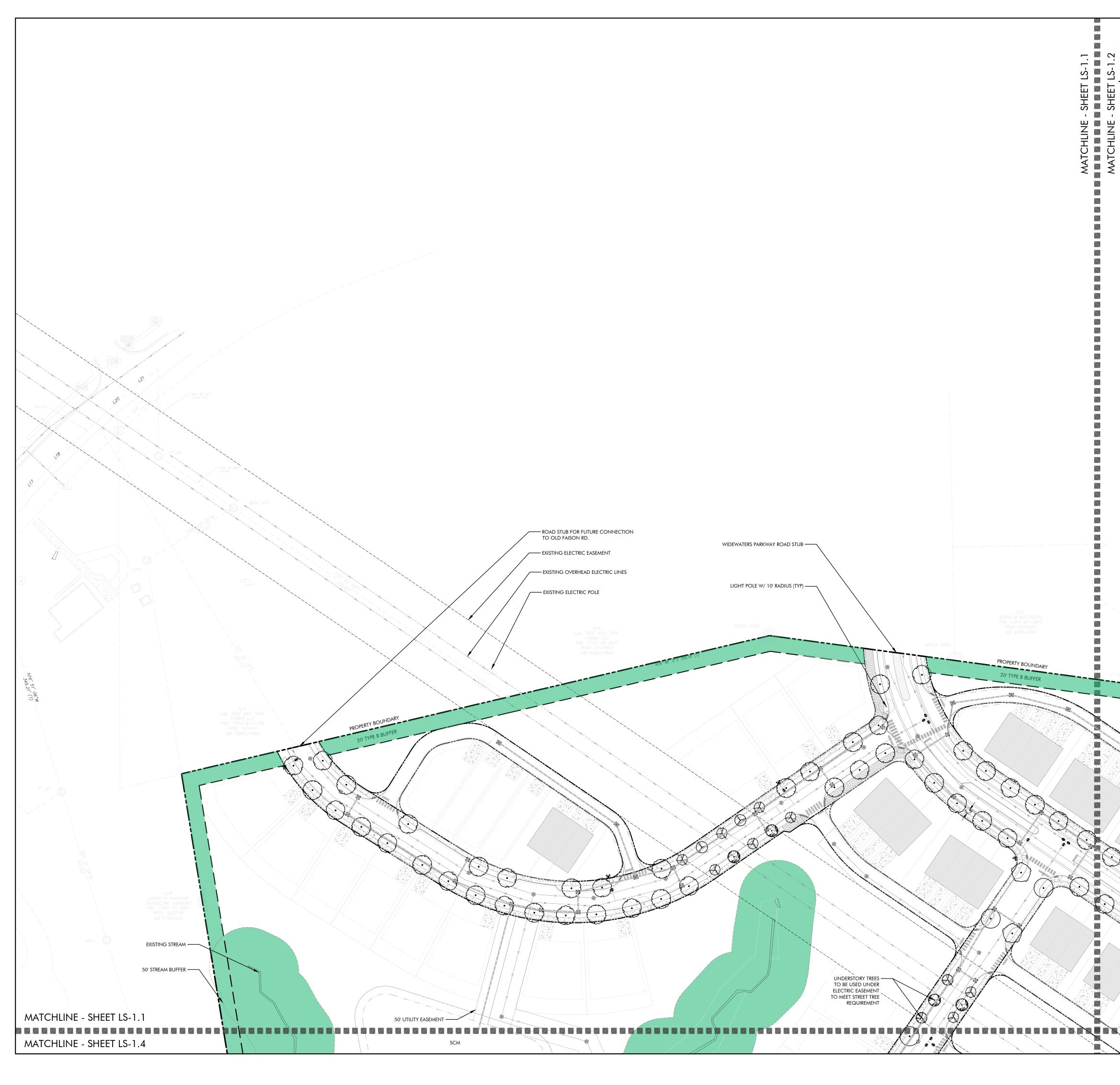
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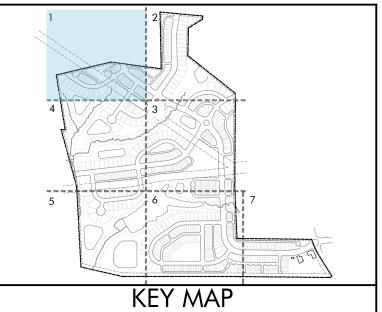
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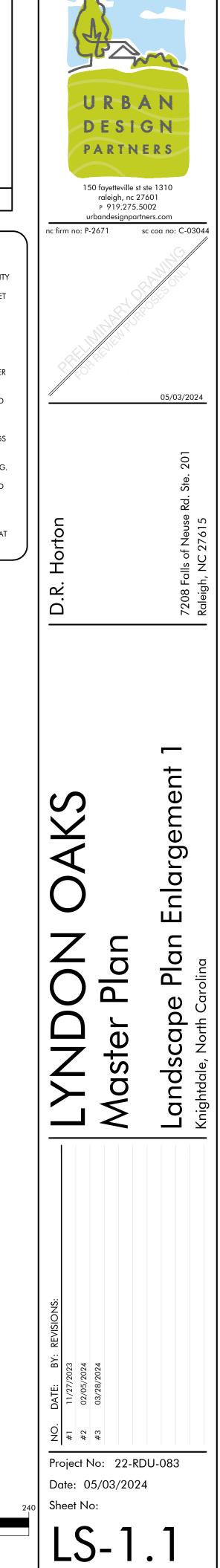
- EXISTING PLANT MATERIAL TO BE PRESERVED IN ALL BUFFER AREAS AS PRIORITY TIER 1 TREE SAVE AREAS. WHERE SUFFICIENT MATERIAL DOES NOT MEET REQUIREMENTS, SUPPLEMENTAL PLANT MATERIAL WILL BE REQUIRED TO MEET BUFFER OPACITY STANDARDS.
- 2. FINAL LOCATION OF SUPPLEMENTAL BUFFER PLANTINGS TO BE COORDINATED WHEN CONSTRUCTION DOCUMENTS ARE DEVELOPED. SEE SHEET LS-2.0 FOR TYPICAL BUFFER SECTIONS.
- . ANY REQUIRED SCREENING AREAS THAT OVERLAP WITH SIGHT DISTANCE TRIANGLES WILL WAIVE PLANTING REQUIREMENTS AND USE GROUNDCOVER PLANTINGS.
- 4. ALL SIDES OF PARKING LOTS FRONTING RIGHT-OF-WAYS WILL BE SCREENED WITH A TYPE B BUFFER YARD PER UDO.
- 5. IF GRAPHIC REPRESENTATION OF PLANTINGS ON PLANS DO NOT MATCH QUANTITIES IN PLANT SCHEDULE, GRAPHIC REPRESENTATION OF PLANTINGS
- WILL GOVERN. 6. TREES NOT IN A LANDSCAPE BED SHALL RECEIVE A 6' DIAMETER MULCH RING.
- LIMITS OF IRRIGATION INCLUDE DENOTED LANDSCAPE BEDS, ALL SOD/SEED AREAS, AND TREES NOT LOCATED IN A LANDSCAPE BED.
- 8. FULL LANDSCAPE SCHEDULE ON SHEET LS-2.0
- . LANDSCAPE SPECIES, LOCATION, AND QUANTITY IS SUBJECT TO CHANGE AT TIME OF CONSTRUCTION DOCUMENTS.

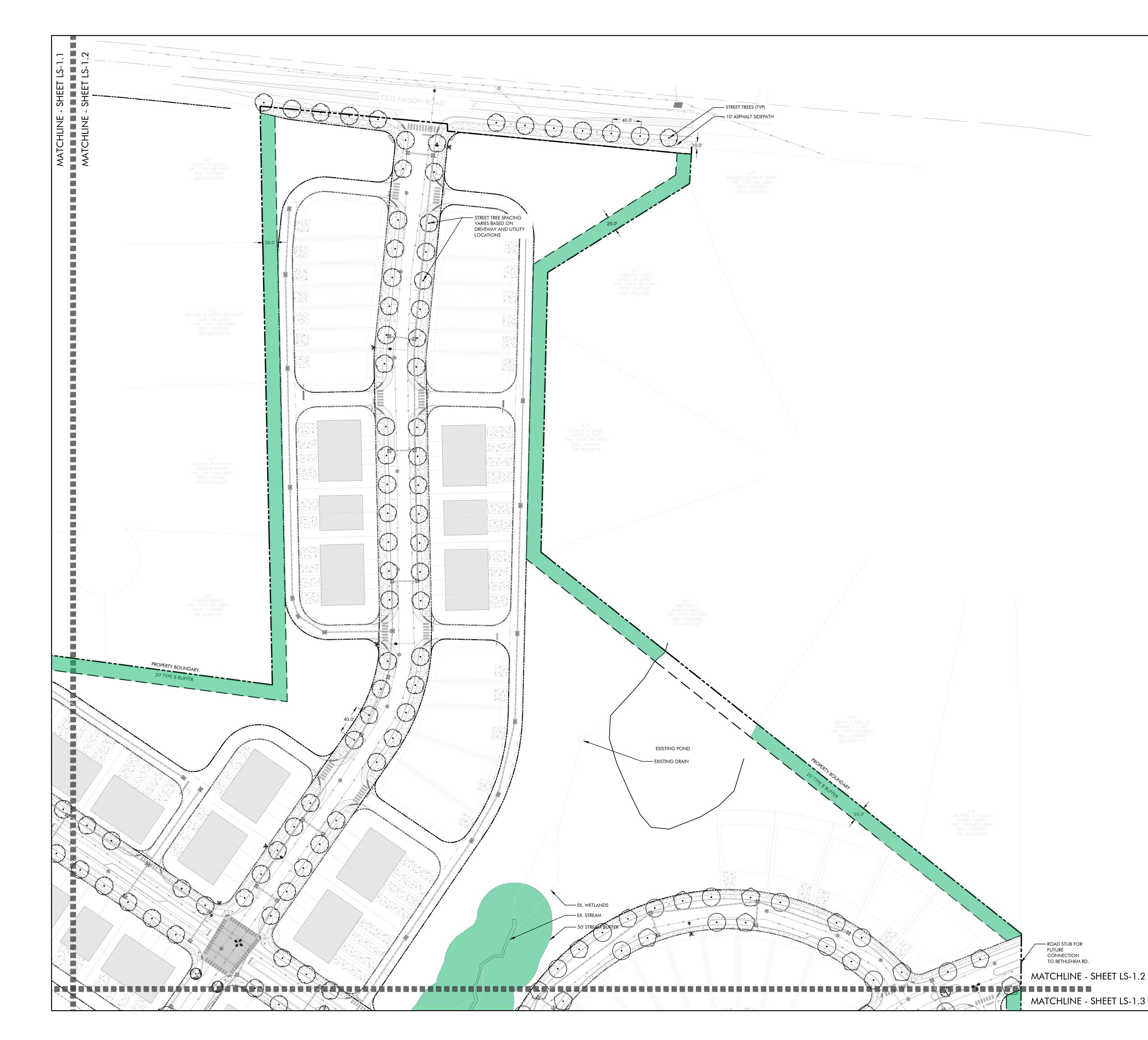
BEFORE YOU DIG! CALL 811 OR 1-800-632-4949 N.C. ONE-CALL CENTER IT'S THE LAW!

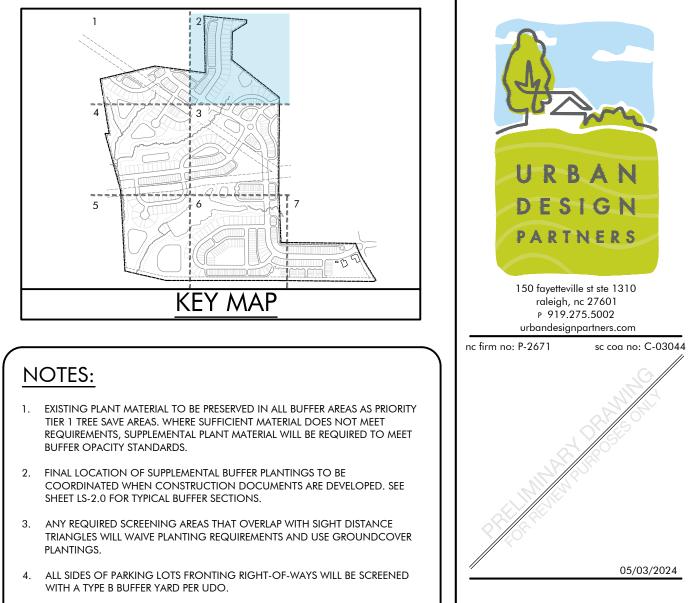
GRAPHIC SCALE

(IN FEET)

1 inch = 60 ft.







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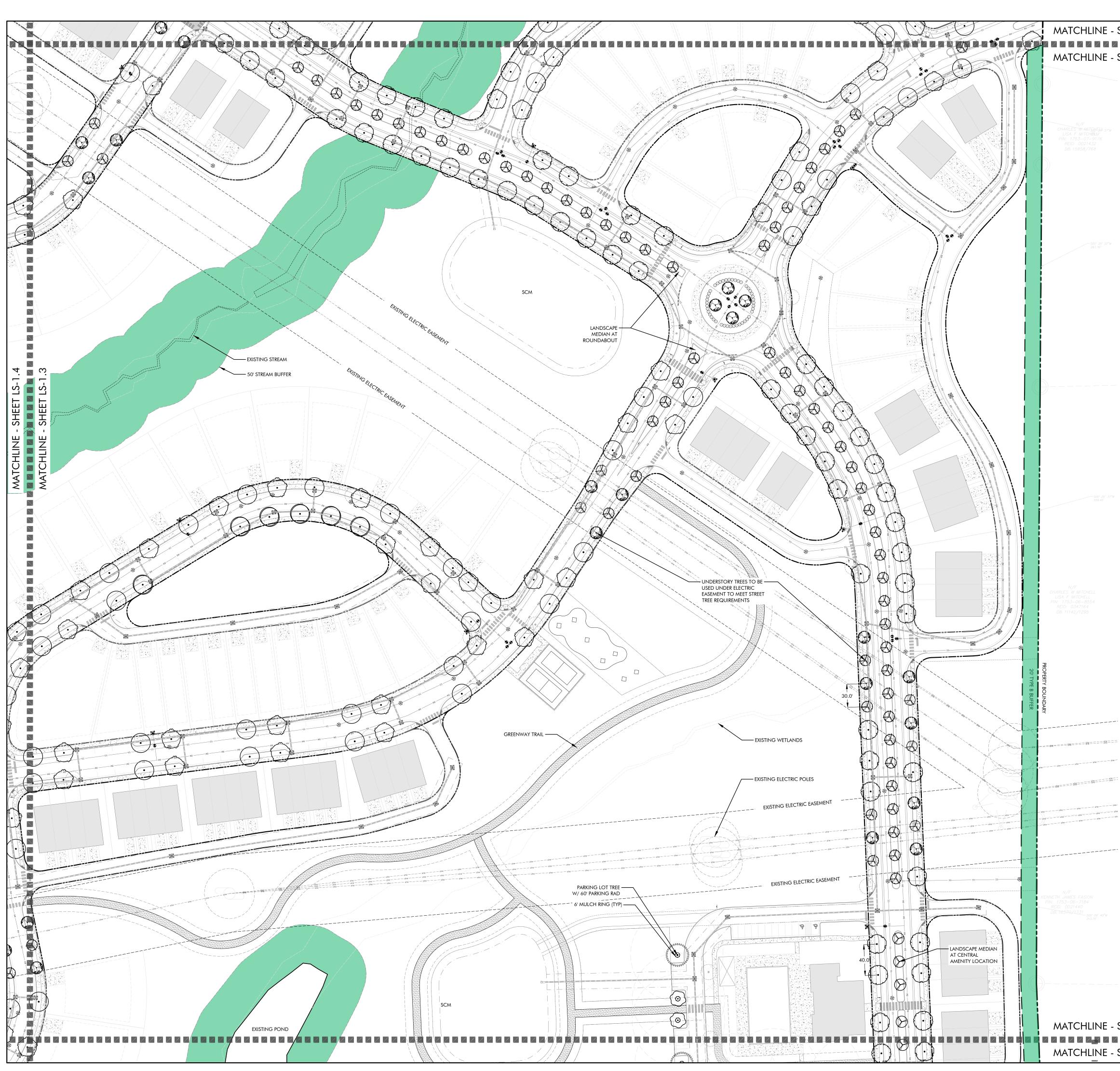
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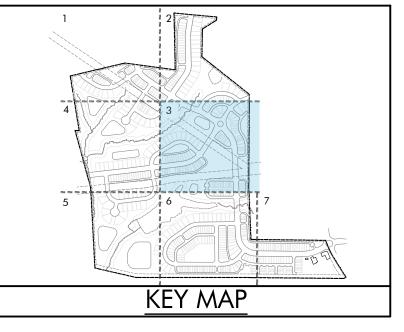
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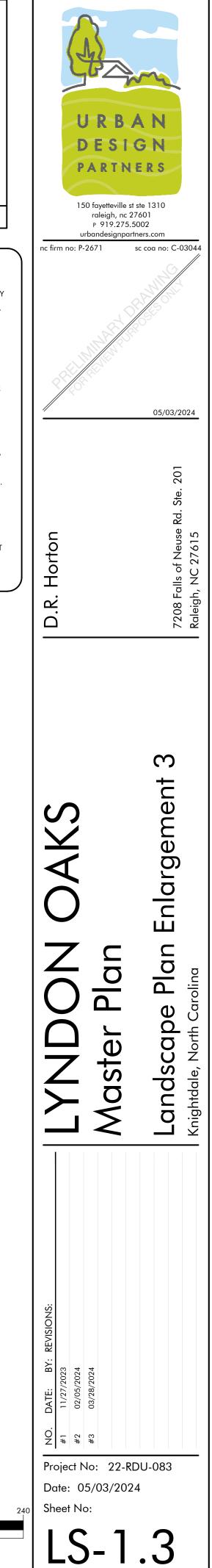


MATCHLINE - SHEET LS-1.2 MATCHLINE - SHEET LS-1.3



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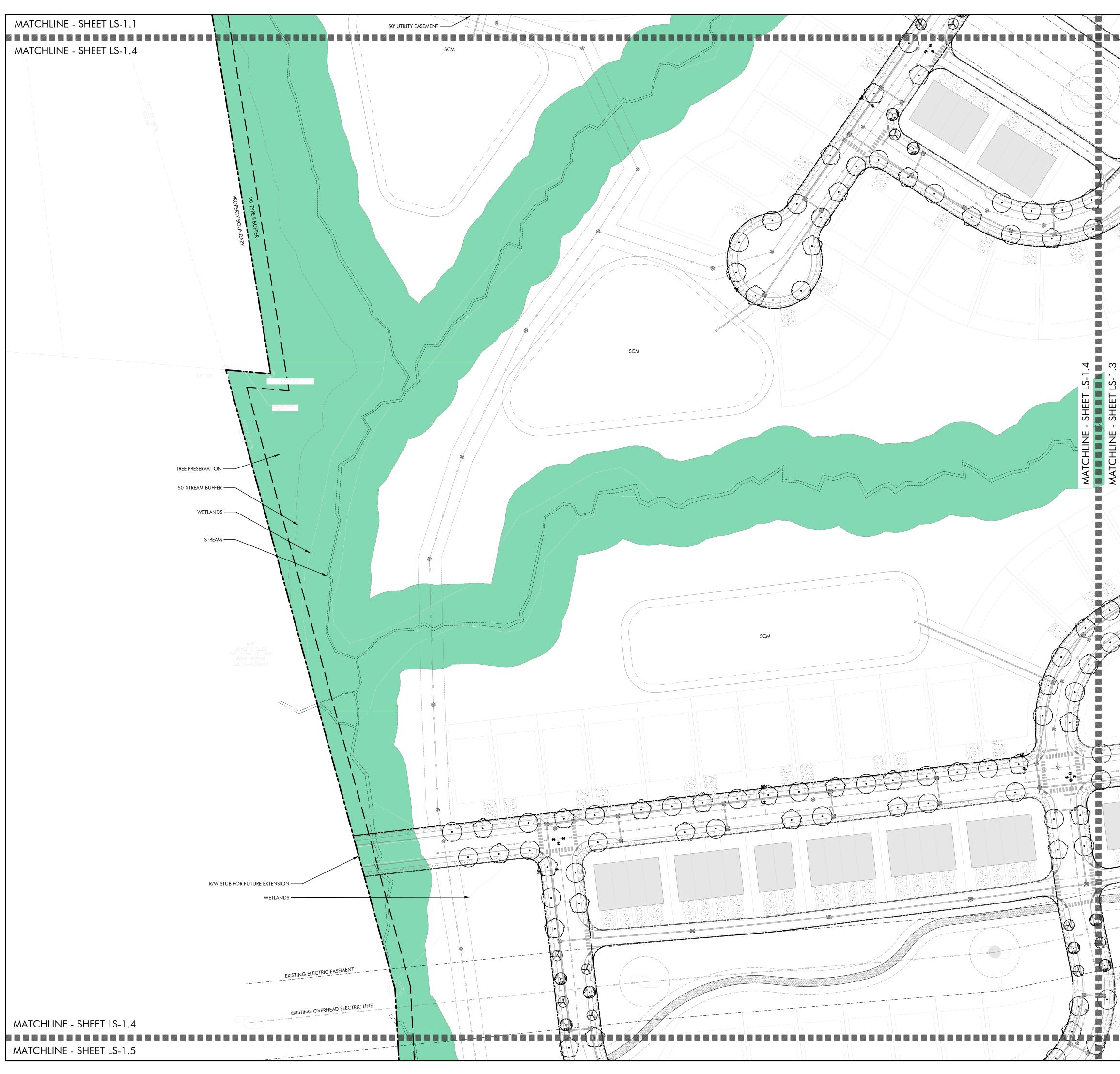
MATCHLINE - SHEET LS-1.3 MATCHLINE - SHEET LS-1.6

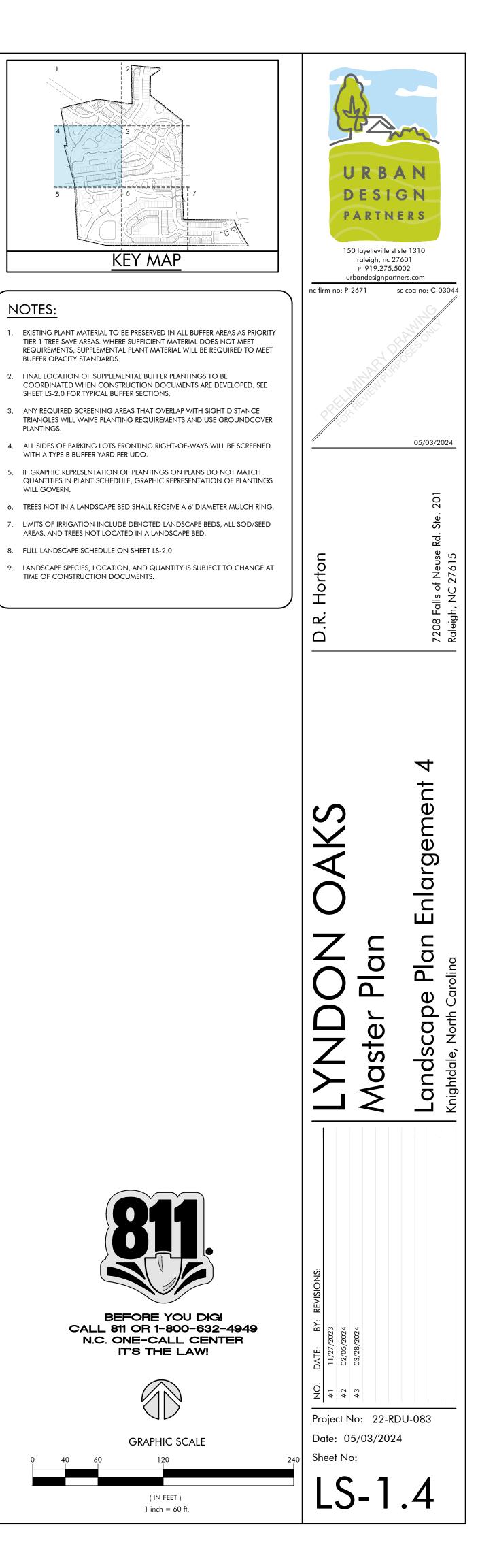
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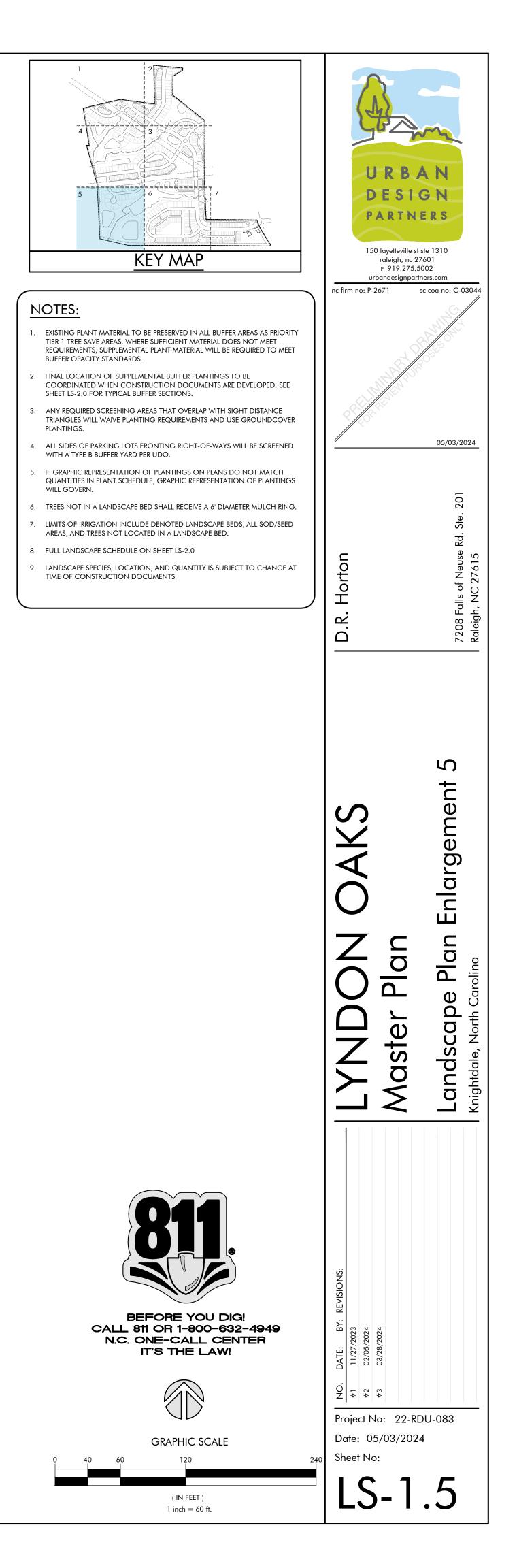
GRAPHIC SCALE 120

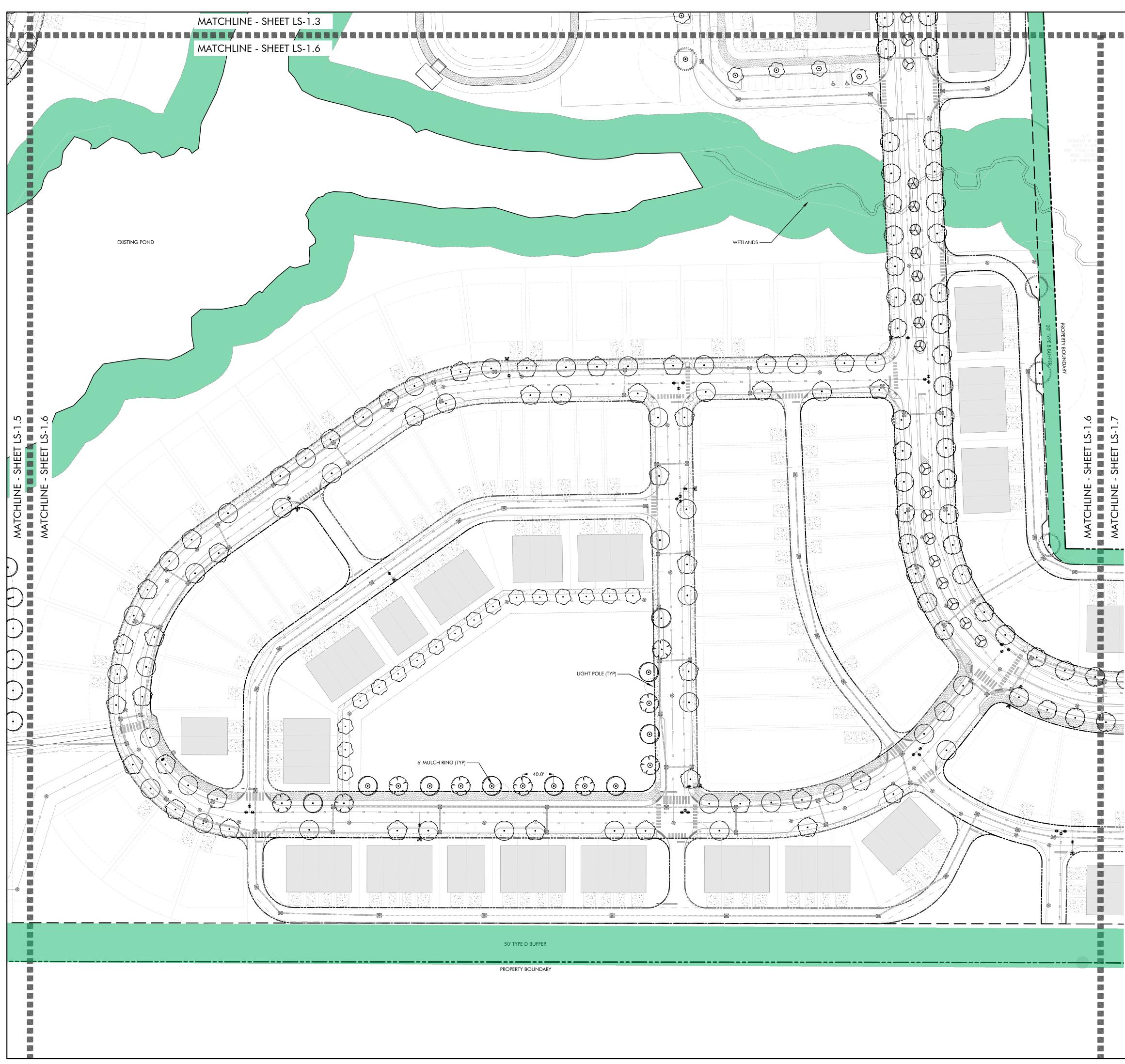
> (IN FEET) 1 inch = 60 ft.

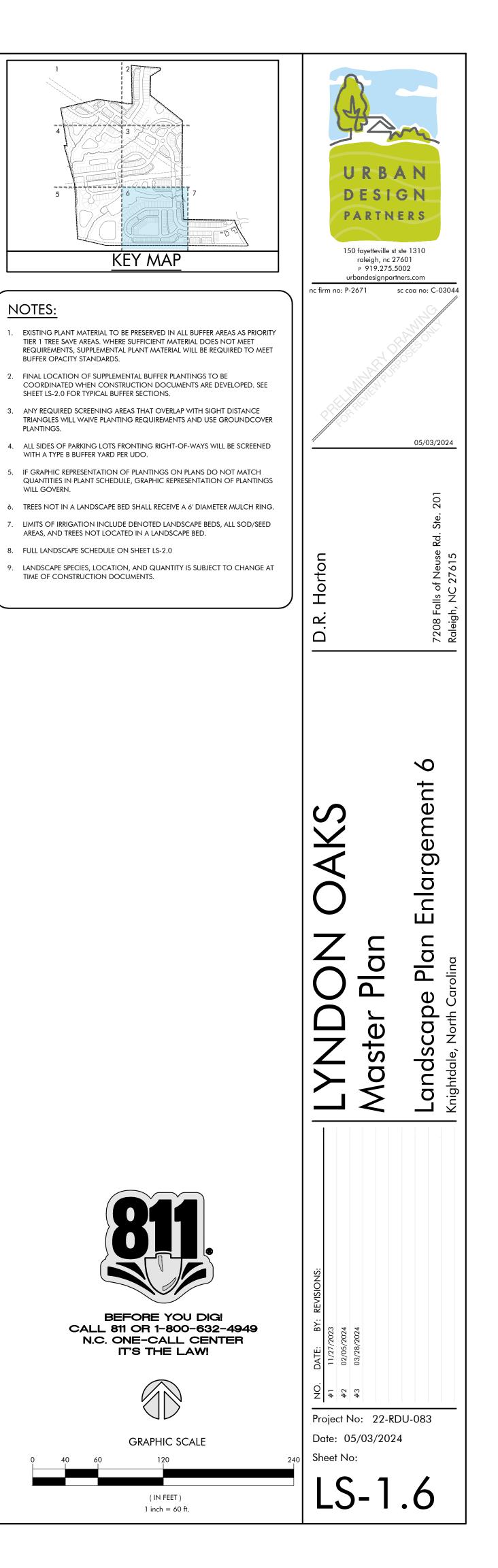




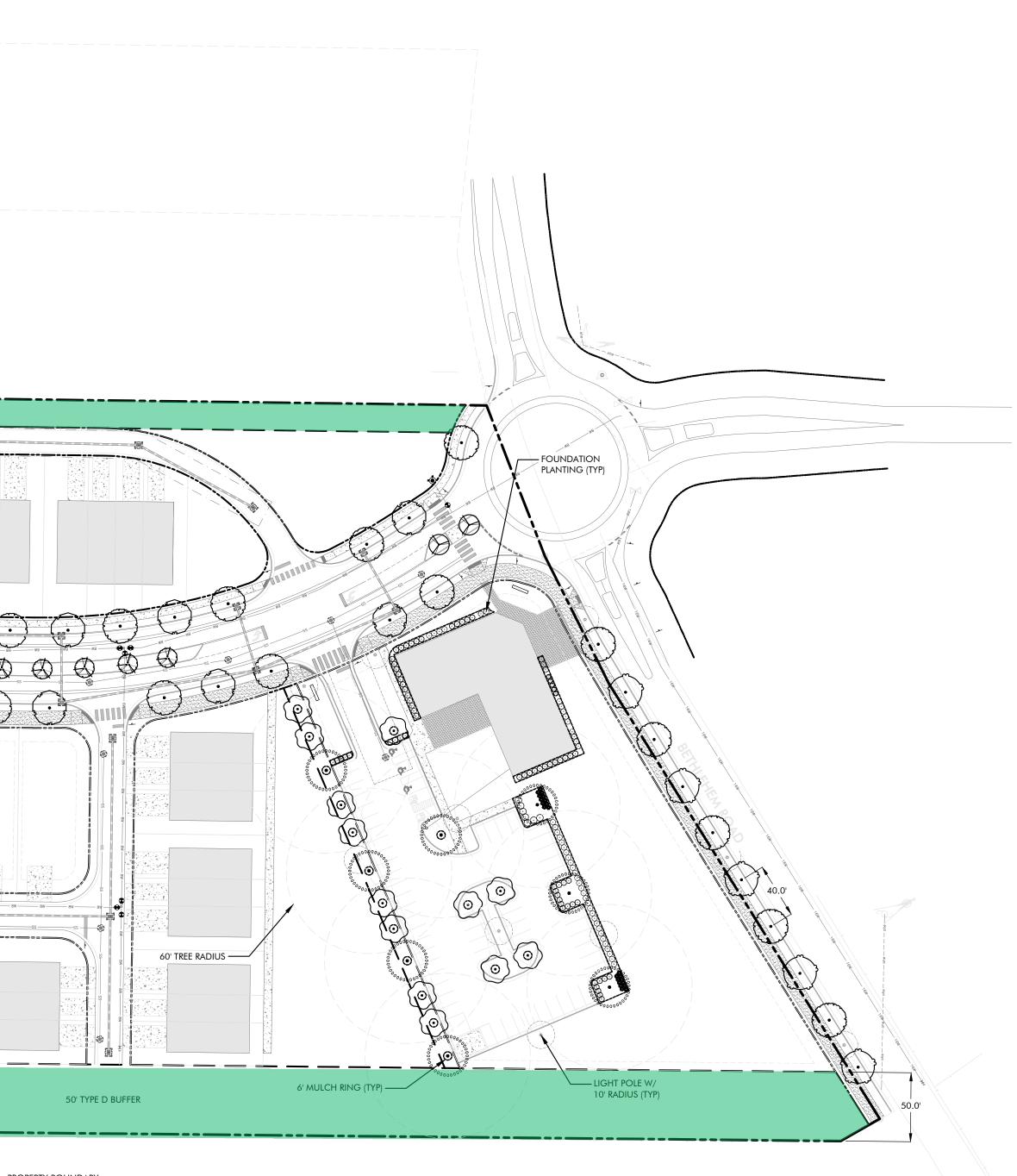






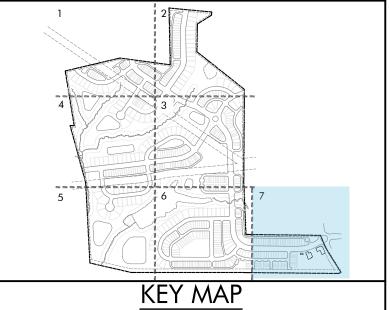


N/F ALD W. K 1Y S. KA 753-15- 2866/72							
E - SHEET LS-1.6	ET LS-1.7						
MATCHLINE	WATCHLIN				 AY 2326 1548 724 TYPE B BUFFER		
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- PROPERTY BOUNDARY

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NOTES:

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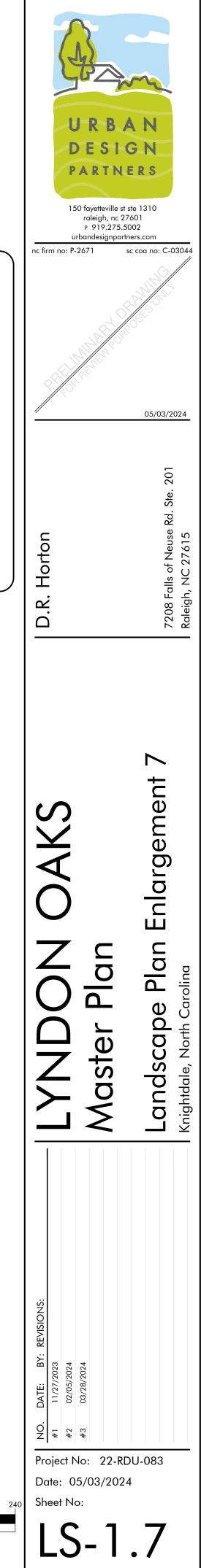
BEFORE YOU DIG! CALL 811 OR 1-800-632-4949 N.C. ONE-CALL CENTER IT'S THE LAW!

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GRAPHIC SCALE

(IN FEET) 1 inch = 60 ft.

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GENERAL PLANTING NOTES

PLANT MATERIAL

1. REQUIRED PLANTINGS SHALL MEET ALL REQUIREMENTS SET FORTH IN THE

	TOWN OF KNIGHTDALE UDO.
2.	ALL NEW TREES MUST HAVE <u>STRAIGHT TRUNKS WITH STRONG CENTRAL</u> <u>LEADERS INTACT TO THE TOP OF THE CROWN UNLESS MULTI-STEM TREES ARE</u> SPECIFIED. ALL REQUIRED TREES SHALL BE TYPICAL OF THEIR SPECIES AND VARIETY, HAVE NORMAL GROWTH HABITS, HAVE WELL-DEVELOPED BRANCHES BE VIGOROUS AND HAVE FIBROUS ROOT SYSTEMS. TREES WITH MAJOR GIRDLING ROOTS WILL NOT BE ACCEPTED. TREES WITH CO-DOMINANT BRANCHING WILL NOT BE ACCEPTED. TREES THAT HAVE BEEN SHEARED, TOPPED OR CUT BACK TO MULTIPLY THE BRANCHING STRUCTURE WILL NOT BE ACCEPTED. TREES SHALL BE FREE OF ABRASIONS, DAMAGE, DISEASE, PESTS AND CRACKS. ALL PRUNING CUTS GREATER THAN ½ INCH DIAMETER SHALL HAVE CALLUS TISSUE FORMED PRIOR TO PLANTING. NO PRUNING CUT ON THE TRUNK SHALL BE MORE THAN ONE-HALF THE DIAMETER OF THE CENTRAL LEADER AT THE HEIGHT WHERE THE CUT WAS MADE. ROOT FLARES SHALL BE LOCATED AT GRADE. TREES WITH MORE THAN 2" OF SOIL COVERING THE ROOT BALL/FLARE FROM WILL NOT BE ACCEPTED.
3.	SIZE OF REQUIRED PLANTS, SPREAD OF ROOTS AND SIZE OF BALLS SHALL BE IN ACCORDANCE WITH ANSI Z60.1 (LATEST EDITION) AS PUBLISHED BY THE AMERICAN NURSERY & LANDSCAPE ASSOCIATION, EXCEPT WHERE SPECIFIED/AUTHORIZED BY THE UDO.
4.	ALL REQUIRED TREES OF A PARTICULAR SPECIES AND VARIETY SHALL BE UNIFORM IN SIZE AND CONFIGURATION.
5.	A MINIMUM OF 50% OF NEW TREES MUST BE NATIVE SPECIES, AND SITES WITH MORE THAN 20 TREES REQUIRED WILL HAVE TO INSTALL MULTIPLE (3 OR MORE) SPECIES PURSUANT TO THE TREE ORDINANCE GUIDELINES.
6.	75% OF REQUIRED TREES MUST BE LARGE MATURE SPECIES EXCEPT IN SITUATIONS WITH OVERHEAD POWER LINE CONFLICTS.
7.	ALL STRAPPING, AND TOP 1/3 OF WIRE BASKET AND BURLAP MUST BE CUT AWAY AND REMOVED FROM ROOT BALL WHEN PLANTING.
8.	TREES PLANTED ON PUBLIC PROPERTY WILL NEED APPROVAL FROM THE TOWN ARBORIST AND/OR NCDOT.
TOW	VN OF KNIGHTDALE RESIDENTIAL LANDSCAPING & PLAT NOTES (UDO 7.4.K.)
1.	EACH SINGLE FAMILY OR DUPLEX LOT SHALL CONTAIN A MINIMUM OF 1 CANOPY TREE FOR EVERY 2,000 SQUARE FEET OF LOT AREA OR FRACTION THEREOF UP TO 20,000 SF IN LOT AREA. ANY PORTION OF THE RESIDENTIAL LOT OCCUPIED BY A RECORDED UTILITY EASEMENT SHALL NOT BE INCLUDED AS PART OF THE TOTAL LOT AREA. THE LOCATION OF PLANTING TO ACCOUNT FOR PHYSICAL CONDITIONS MAY BE ADJUSTED BY THE LAND USE ADMINISTRATOR.
2.	THE USE OF EXISTING TREES MEETING THE FOLLOWING STANDARDS TO SATISFY THIS REQUIREMENT IS ENCOURAGED. EXISTING LARGE SHADE TREES MEASURING MORE THAN 6 INCHES IN DBH MAY BE COUNTED TOWARDS FULFILLING THIS REQUIREMENT.
3.	REQUIRED STREET TREES MAY NOT BE COUNTED TOWARDS THE FULFILLMENT OF THE RESIDENTIAL LANDSCAPING REQUIREMENT. APART FROM REQUIRED STREET TREES, ALL OTHER TREES REQUIRED UNDER THIS CHAPTER SHALL BE PLANTED WITHIN THE PRIVATE LOT.
4.	FOUNDATION PLANTINGS CONSISTING OF EVERGREEN SHRUBS SHALL BE INSTALLED ALONG THE ENTIRE FOUNDATION WALL OF THE BUILDING. PLANT INSTALLATION SHALL BE A MINIMUM OF 2 FEET IN HEIGHT PLANTED AT 4 FOOT INTERVALS.
TOW	VN OF KNIGHTDALE INSTALLATION AND MAINTENANCE STANDARDS
1.	LANDSCAPING SHOULD BE OF SUFFICIENT SIZE SO THAT MATURE APPEARANCE WILL BE ACHIEVED WITHIN THREE (3) YEARS OF INSTALLATION FOR SHRUBS AND WITHIN FIVE (5) YEARS OF INSTALLATION FOR TREES.
2.	MINIMUM SIZE OF PLANTINGS AS FOLLOWING:
	EVERGREEN TREES:6' HEIGHT MIN. & 2" CAL. MIN.MULTI-STEMMED TREES:8' HEIGHT MIN. & 3 STALK MIN.CANOPY TREES:8' HEIGHT MIN. & 2" CAL. MIN.UNDERSTORY TREES:6' HEIGHT MIN. & 1.25" CAL. MIN.SHRUBS:18" HEIGHT MIN. & 12" SPREAD MIN. (3 GAL)GROUNDCOVERS:4" SPREAD MIN. (1.5"-2.5" POTS)
3.	AT A MINIMUM, THE SPECIES OF EVERY OTHER TREE ALONG THE STREET FRONTAGE SHALL ALTERNATE IN ORDER TO MAXIMIZE DIVERSITY AS DEEMED APPROPRIATE BY THE LAND USE ADMINISTRATOR.
4.	A MINIMUM OF 75% OF THE LANDSCAPE FEATURES UTILIZED ON A PARCEL THAT IS GREATER THAN 5 ACRES SHALL BE DROUGHT AND SALT TOLERANT NATIVE SPECIES.
5.	TOTAL LANDSCAPE FEATURES, EXCLUDING TURF, SHALL NOT BE COMPRISED OF MORE THAN 20% OF ANY SINGLE SPECIES OR 25% OF ANY GENUS.
6.	ALL NEW TREES SHALL BE PROPERLY GUYED AND STAKED AT THE TIME OF PLANTING.
<u>UTILI</u> 1.	ITY & EASEMENTS WHERE A CANOPY TREE IS REQUIRED AND OVERHEAD UTILITY LINES EXIST, TWO (2) UNDERSTORY TREES SHALL BE SUBSTITUTED WITH THE APPROVAL OF THE LAND USE ADMINSTRATOR.
2.	IF ANY UTILITY IS BEING INSTALLED IN OR NEAR ANY REQUIRED TREE(S) OR TREE SAVE AREA(S), CALL URBAN FORESTRY SPECIALIST TO RESOLVE PRIOR TO UTILITY INSTALLATION.
3.	IF TREES CONFLICT WITH ANY UTILITIES OR SIGNS; CALL URBAN FORESTER TO RESOLVE BEFORE PLANTING.
4.	ADJUST TREE PLANTING LOCATIONS TO AVOID EXISTING OR PROPOSED UNDERGROUND UTILITIES. CANOPY TREES SHALL BE PLACED AT LEAST 10 FEET FROM LIGHT POLES, AND 12 FEET FROM ELECTRICAL TRANSFORMERS IN ORDER TO ALLOW THESE UTILITIES TO BE SAFELY SERVICED. UNDERSTORY TREES MAY BE PLACED WITHIN 5 FEET OF SUCH DEVICES.
5.	NOTHING SHALL BE PLANTED OR INSTALLED WITHIN AN UNDERGROUND OR OVERHEAD UTILITY EASEMENT WITHOUT CONSENT OF THE TOWN.
6.	ALL UNDERGROUND UTILITIES SHALL BE LOCATED BEFORE DIGGING. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ALL DAMAGE OF

BUFFER INFORMATION

BUFFER NOTES:

- SHRUBS:

- 1. EXISTING PLANT MATERIAL TO BE PRESERVED IN ALL BUFFER AREAS AS PRIORITY TIER 1 TREE SAVE AREAS. WHERE SUFFICIENT MATERIAL DOES NOT MEET REQUIREMENTS, SUPPLEMENTAL PLANT MATERIAL WILL BE REQUIRED TO MEET BUFFER OPACITY STANDARDS.
- 2. FINAL LOCATION OF SUPPLEMENTAL BUFFER PLANTINGS TO BE COORDINATED WHEN CONSTRUCTION DOCUMENTS ARE DEVELOPED.
- 3. ALL SIDES OF PARKING LOTS FRONTING RIGHT-OF-WAYS WILL BE SCREENED WITH A TYPE B BUFFER YARD PER UDO.
- 4. TYPICAL SECTIONS SHOWN BELOW ARE GRAPHIC IN NATURE AND SUBJECT TO CHANGE AT THE TIME OF CONSTRUCTION DOCUMENTS. PLANT LAYOUT AND QUANTITIES WILL BE DETERMINED WHEN CONSTRUCTION DOCUMENTS ARE DEVELOPED.

EVERGREEN VS. DECIDUOUS BUFFER REQUIREMENTS - CANOPY TREES: 40% MIN. - 6 40% MIN. - 60% MAX. MUST BE EVERGREEN UNDERSTORY TREES:

40% MIN. - 60% MAX. MUST BE EVERGREEN 80% MIN. MUST BE EVERGREEN

TYPE B BUFFER YARD STANDARDS (UDO SEC. 7.4.1.2) 0' MIN • HEIGHT/OPACITY:

UNDERGROUND OR OVERHEAD UTILITY LINES.

SEMI-OPAQUE SCREEN INTERMITTENT VISUAL OBSTRUCTION

• REQUIRED PLANTINGS: →CANOPY TREES: →UNDERSTORY TREES: →REQUIRED SHRUBS:

3 TREES/100 LF 5 TREES/100 LF 20 SHRUBS/100 LF

TYPE D BUFFER YARD STANDARDS (UDO SEC. 7.4.I.2) WIDTH 50' MIN.

OPAQUE SCREEN EARTHEN BERM W/ LANDSCAPING

 REQUIRED PLANTINGS: →CANOPY TREES: →UNDERSTORY TREES: →REQUIRED SHRUBS:

→GROUND TO 30'

→GROUND TO 6"

→GROUND TO 6'

→6'-30'

HEIGHT/OPACITY:

5 TREES/100 LF

8 TREES/100 LF 35 SHRUBS/100 LF TOPSOIL/PLANTING MIX - MINIMUM REQUIREMENTS: 1. WHERE PAVEMENT CUTOUTS ON RENOVATED SITES ARE REQUIRED AND/OR WHERE NEW PLANTING STRIPS OR ISLANDS ARE REQUIRED, ALL PAVEMENT, CONSTRUCTION DEBRIS AND GRAVEL SUB-BASE MUST BE REMOVED BEFORE PREPARING SOIL AND PLANTING TREES. EXISTING COMPACTED SOIL MUST BE REMOVED AND REPLACED WITH 24" OF TOPSOIL/PLANTING MIX -OR-EXISTING SOIL MAY BE UNCOMPACTED TO A DEPTH OF 24" AND AMENDED TO MEET TOPSOIL STANDARDS FOR THE ENTIRE PLANTING AREA.

2. SOIL IN ALL PLANTING STRIPS OR ISLANDS, WHETHER EXISTING OR NEW(ON NEW OR RENOVATED SITES), MUST MEET THE MINIMUM TOPSOIL/PLANTING MIX SPECIFICATIONS. SOIL AMENDMENTS OR FRESH TOPSOIL/PLANTING MIX ARE OFTEN NEEDED FOR PLANTING AREAS AT SITES WHERE ORIGINAL TOPSOIL IS OF POOR QUALITY, HEAVILY COMPACTED OR WHERE TOPSOIL HAS BEEN COMPLETELY REMOVED DURING GRADING.

3. TOPSOIL/PLANTING MIX SHOULD BE NATURAL, FERTILE, AGRICULTURAL SOIL CAPABLE OF SUSTAINING VIGOROUS PLANT GROWTH. IT SHOULD BE UNIFORM COMPOSITION THROUGHOUT, WITH ADMIXTURE OF SUBSOIL, IT SHOULD BE FREE OF STONES, LUMPS, LIVE PLANTS AND THEIR ROOTS, STICKS AND OTHER EXTRANEOUS MATTER. TOPSOIL SHOULD NOT BE USED WHILE IN A FROZEN OR MUDDY CONDITION.

4. TOPSOIL/PLANTING MIX SHALL HAVE AN ACIDITY RANGE OF PH 5.5-7.0 AND THE FOLLOWING COMPOSITION: •CLAY (RED CLAY, WELL PULVERIZED) MIN 10%; MAX 35% •COMPOST*/ORGANIC MIN 5%; MAX 10% • SILT MINIMUM 30%: MAX 50%

> •COARSE SAND (FREE OF ROCKS, 0.5 TO 1.0 MM F) MIN 30%; MAX 45% *ORGANIC MATERIAL SUCH AS SAWDUST OR LEAF MOLD THAT HAS COMPLETED THE DECOMPOSITION PROCESS.

5. ALL PLANTING AREAS SHOULD BE TESTED FOR PROPER DRAINAGE. DRAINAGE SHOULD BE CORRECTED AS NECESSARY TO INSURE PROPER TREE GROWTH AND SURVIVAL. THE FOLLOWING LEVEL OF NUTRIENT ELEMENTS IS RECOMMENDED FOR PROPER GROWTH:

> •MAGNESIUM 10 - 30% • POTASSIUM 5 - 8%

•CALCIUM 55 - 80%

GENERAL PLANTING NOTES:

1. QUANTITIES NECESSARY TO COMPLETE THE WORK ON THE DRAWINGS SHALL BE FURNISHED BY THE CONTRACTOR. QUANTITY ESTIMATES HAVE BEEN MADE CAREFULLY, BUT THE LANDSCAPE ARCHITECT ASSUMES NO LIABILITY FOR ERRORS OR OMISSIONS. HIS ESTIMATES ARE ONLY AN AID FOR CLARIFICATION OF UNITS AND A CHECK FOR THE CONTRACTOR TO COMPARE WITH HIS OWN ESTIMATES. DIFFERENCES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT. NO EXTRA COMPENSATION SHALL BE ALLOWED FOR EXTRA QUANTITIES NECESSARY TO COMPLETE THE WORK.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF PLANT MATERIALS ACCORDING TO THE DRAWINGS AND PLANT SCHEDULE. CONTRACTOR SHALL PROVIDE SPECIFIC CULTIVARS AND/OR VARIETIES AS INDICATED ON THE PLANT SCHEDULE. ANY SUBSTITUTIONS INSTALLED WITHOUT PRIOR APPROVAL OF LANDSCAPE ARCHITECT WILL BE REJECTED AND SHALL BE REPLACED BY THE CONTRACTOR AT NO EXTRA COST TO THE OWNER.

3. PLANTING PLANS INDICATE DIAGRAMMATIC LOCATIONS ONLY. SITE ADJUSTMENTS OF PLANTING DESIGN AND RELOCATION OF PLANT MATERIALS DUE TO ON SITE CONDITIONS SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. PLANTS INSTALLED PRIOR TO LANDSCAPE ARCHITECT'S APPROVAL ARE SUBJECT TO RELOCATION BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

4. PLANTS SHALL BE SPECIMEN QUALITY AND SHALL BE SOUND, HEALTHY AND VIGOROUS, WELL-BRANCHED, AND DENSELY FOLIATED WHEN IN LEAF. PLANT MATERIAL SHALL BE FIRST QUALITY STOCK AND SHALL CONFORM TO THE CODE OF STANDARDS SET FORTH IN THE CURRENT EDITION OF THE AMERICAN STANDARDS FOR NURSERY STOCK SPONSORED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC.

HEIGHT AND SPREAD DIMENSION SPECIFIED REFER TO THE MAIN BODY OF THE PLANT AND NOT FROM BRANCH TIP TO TIP. IF A RANGE OF SIZE IS GIVEN, NO PLANT SHALL BE LESS THAN THE MINIMUM SIZE AND NOT LESS THAN 50% OF THE PLANTS SHALL BE AS LARGE AS THE MAXIMUM SIZE

6. SHADE TREES SHALL HAVE A STRONG CENTRAL LEADER UNLESS OTHERWISE SPECIFIED.

7. LEAVES MUST BE OF MEDIUM FOLIAGE, ALL GOOD LEAVES, MAXIMUM OF 10% CHLOROSIS ALLOWED, WITH NO EXTREME SUCCULENCE PLACE PLANTS UPRIGHT AND TURNED SO THAT THE MOST ATTRACTIVE SIDE IS VIEWED.

8. ROOTS MUST BE STURDILY ESTABLISHED IN BALL THAT HAS BEEN TIGHTLY WRAPPED AND SECURELY TIED WITH TWINE OR WIRE, OR PINNED.

9. PROVIDE 4" THICKNESS MULCH AT ALL PLANTS AND PLANTING BEDS. MULCH SHALL BE SINGLE HAMMERED HARDWOOD MULCH (UNLESS NOTED OTHERWISE). IT SHALL BE CLEAN, FRESH, AND FREE OF STICKS, BRANCHES, SOIL OR OTHER FOREIGN MATERIAL.

10. BACKFILL PLANTING MIXTURE SHALL BE ONE PART APPROVED PLANTING SOIL MIXED WITH ONE PART NATIVE SOIL FROM THE TREE PIT OR SHRUB BED AREA. LANDSCAPE CONTRACTOR SHALL SUBMIT SAMPLES OF PLANTING SOIL TO BE USED TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO PLANTING.

11. PLANTS SHALL BE SUBJECT TO REVIEW BY LANDSCAPE ARCHITECT AT NURSERY OR ON SITE PRIOR TO PLANTING. LANDSCAPE ARCHITECT WILL BE THE SOLE JUDGE OF THE QUALITY AND ACCEPTABILITY OF MATERIALS AND PLACEMENT CONTRACTOR SHALL SUBMIT PHOTOS OF ALL TREES WITH BID SUBMITTAL IF REQUESTED BY LANDSCAPE ARCHITECT OR OWNER.

12. THE LANDSCAPE CONTRACTOR SHALL TAKE SOIL SAMPLES FROM ALL PARTS OF THE SITE AND SHALL HAVE THEM TESTED BY THE LOCAL COUNTY AGENT. THE CONTRACTOR SHALL PROVIDE ONE COPY OF THE TEST RESULTS TO THE LANDSCAPE ARCHITECT PRIOR TO ORDERING PLANT MATERIALS OR MAKING ANY AMENDMENTS TO THE ON SITE SOIL. ANY SOIL AMENDMENTS REQUIRED AS INDICATED BY THE SOIL TEST SHALL BE PROVIDED BY THE LANDSCAPE CONTRACTOR. THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT OF AMENDMENTS AND OBTAIN A WRITTEN APPROVAL

FOR PROPOSED AMENDMENTS. 13. FERTILIZER SHALL BE A COMPLETE FERTILIZER; 50% OF NITROGEN OF WHICH IS DERIVED FROM NATURAL ORGANIC SOURCES OR UREAFORM. FERTILIZER

SHALL BE DELIVERED TO THE SITE IN STANDARD SIZE UNOPENED CONTAINERS WHICH SHOW THE WEIGHT, CHEMICAL ANALYSIS, AND MANUFACTURER. IT SHALL BE STORED IN A DRY LOCATION UNTIL ITS USE. FERTILIZER FOR TREES, SHRUBS, AND GROUNDCOVER AREAS SHALL BE A SLOW RELEASE TYPE AND SHALL BE APPLIED AS FOLLOWS:

TREES AND SHRUBS MARCH-MAY 10-10-10 JUNE-OCTOBER 6-10-10 NOVEMBER-FEBRUARY 6-12-12 SHRUBS: 1/2 LB / INCH HEIGHT TREES: 1 LB / INCH OF CALIPER

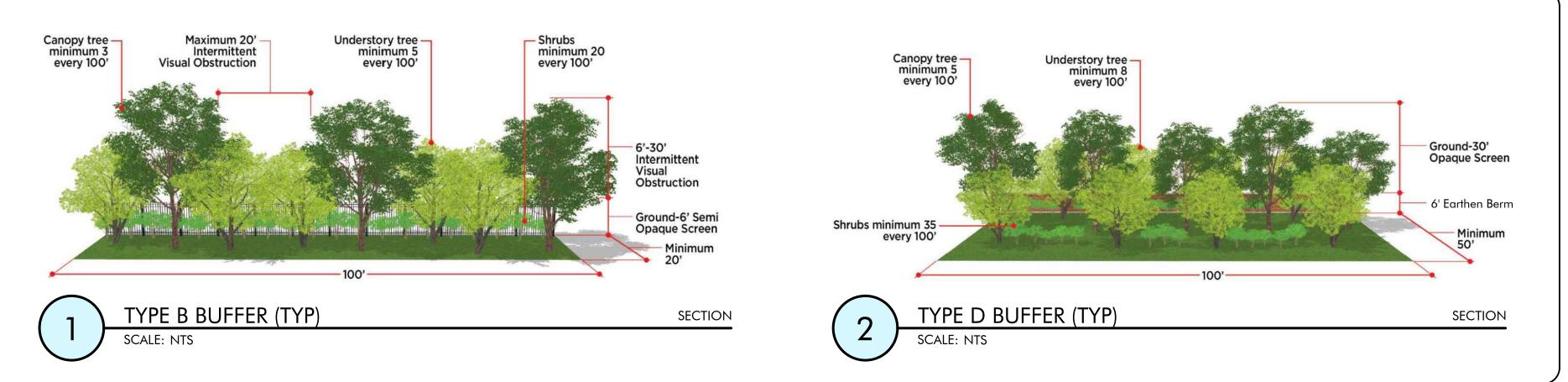
14. LANDSCAPE CONTRACTOR SHALL PERFORM PERCOLATION TESTS IN ALL TREE PITS. IF PITS DO NOT DRAIN WITHIN 30 MINUTES, CONTACT LANDSCAPE ARCHITECT AND DO NOT PLANT THE TREE WITHOUT ON SITE INSPECTION OF DRAINAGE. LANDSCAPE ARCHITECT MAY REQUIRE ADDITIONAL SUBSURFACE DRAIN LINES FROM THE TREE PITS.

15. IF SURFACE DRAINAGE IS NOT SUFFICIENT (STANDING WATER) NOTIFY LANDSCAPE ARCHITECT IN WRITING BEFORE INSTALLING THE PLANTS, OTHERWISE CONTRACTOR SHALL BE TOTALLY REPONSIBLE FOR THE GUARANTEE AND LIVABILITY OF THE PLANTS.

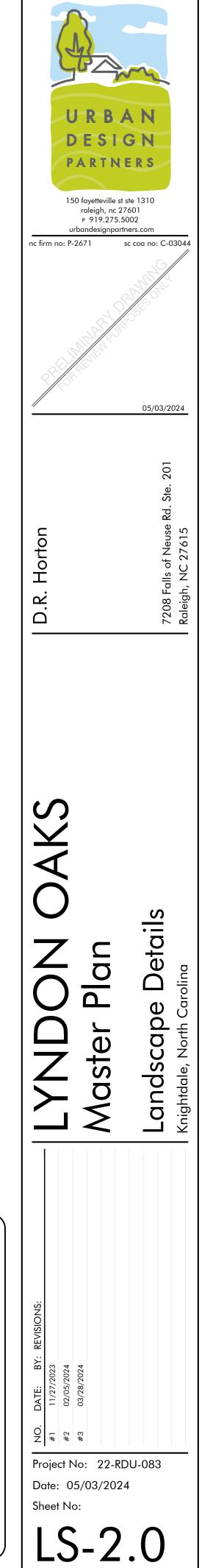
- 16. CERTIFICATE OF INSPECTION AS MAY BE REQUIRED BY LAW FOR TRANSPORTATION OF PLANT MATERIALS SHALL ACCOMPANY EACH INVOICE FOR EACH SHIPMENT OF PLANTS. CERTIFICATES SHALL BE FILED WITH LANDSCAPE ARCHITECT PRIOR TO ACCEPTANCE OF MATERIAL. INSPECTION BY STATE OR FEDERAL AUTHORITIES AT THE PLACE OF GROWTH DOES NOT PRECLUDE REJECTION OF THE MATERIAL BY THE LANDSCAPE ARCHITECT.
- 17. ALL PLANT MATERIALS AND INSTALLED LANDSCAPE SUPPLIES SHALL BE WARRANTED FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE OF THIS PROJECT.
- 18. CONTRACTOR'S PRICES SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY TO COMPLETE THE WORK (i.e. MULCH, PLANTING, SOIL MIX, WOOD AND WIRE STAKING MATERIAL, ETC.).
- 19. THE COMPLETION OF THE CONTRACT WILL BE ACCEPTED AND NOTICE OF COMPLETION RECORDED ONLY WHEN THE ENTIRE CONTRACT IS COMPLETED TO THE SATISFACTION OF THE LANDSCAPE ARCHITECT, OWNER, AND THE OWNER'S CONSTRUCTION REPRESENTATIVE. WITHIN TEN DAYS NOTICE BY THE CONTRACTOR OF SUBSTANTIAL COMPLETION THE LANDSCAPE ARCHITECT WILL INSPECT THE PROPERTY. HE WILL EITHER APPROVE THE WORK FOR THE OWNER'S ACCEPTANCE OR WILL ISSUE A "PUNCH LIST" OF ITEMS TO BE COMPLETED OR CORRECTED. IF A PUNCH LIST IS ISSUED, FINAL ACCEPTANCE WILL BE DONE AS SOON AS THE CONTRACTOR COMPLETES ALL PUNCH LIST ITEMS.
- AMENDED SOIL MEDIA REQUIREMENTS*: A PLANTING MIX MAY BE DEVELOPED HAT WILL BE AN ACCEPTABLE PLANTING MEDIA BY AMENDING THE EXISTING SOIL OR BY REMOVING THE EXISTING SOIL AND REPLACING IT WITH NEW PLANTING MIX. THE PLANTING MIX SHALL HAVE UNIFORM COMPOSITION THROUGHOUT, WITH A MIXTURE OF SUBSOIL. IT SHALL BE FREE OF STONES, LUMPS, LIVE PLANTS AND THEIR ROOTS, STICKS, AND OTHER EXTRANEOUS MATTER. IT SHALL CONTAIN NO MANMADE MATERIALS UNLESS OTHERWISE SPECIFIED. PLANTING MIX SHALL NOT BE USED WHILE IN A FROZEN OR MUDDY CONDITION.
- *NOTE: CONTRACTOR TO PROVIDE TEST SAMPLES OF AMENDED SOIL WITH TESTING DATA FOR ALL BED AREAS AMENDED ON SITE. TEST SAMPLES SHALL FALL WITHIN TOLERANCES SHOWN ABOVE, PLANTING SHALL NOT BEGIN UNTIL SOIL HAS BEEN AMENDED AND SOIL TEST SAMPLES HAVE BEEN REVIEWED AND APPROVED BY OWNER AND LANDSCAPE ARCHITECT.

PLANT SCHEDULE

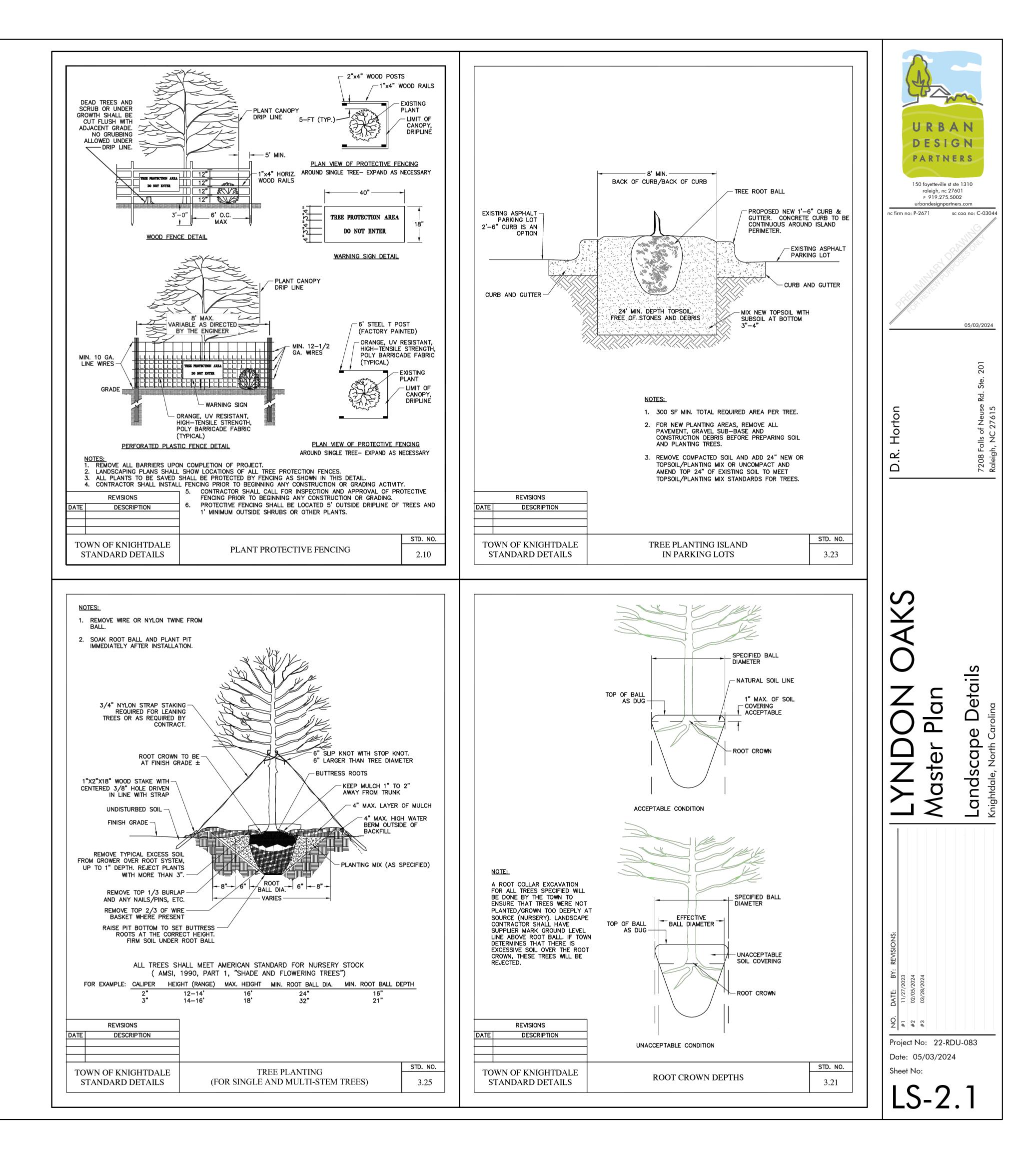
SYMBOL	CODE	BOTANICAL / COMMON NAME
CANOPY T	REES	
\odot	AO	ACER RUBRUM 'OCTOBER GLORY' / OCTOBER
\bigcirc	AB	ACER SACCHARUM 'BONFIRE' / BONFIRE SUG.
\bigcirc	СА	CARPINUS CAROLINIANA / AMERICAN HORN
00000000000000000000000000000000000000	GK	GYMNOCLADUS DIOICA / KENTUCKY COFFEE
\odot	LA	LIRIODENDRON TULIPIFERA 'ARNOLD' / ARNOL
\bigcirc	QA	QUERCUS ACUTISSIMA / SAWTOOTH OAK
\odot	UF	ulmus parvifolia 'bosque' tm / bosque la
\odot	ZG	ZELKOVA SERRATA 'GREEN VASE' / GREEN VA
UNDERSTO	RY TREES	
	AS2	ACER BUERGERIANUM 'STREETWISE' / STREETW
\bigotimes	CS	CORNUS KOUSA 'SATOMI' / SATOMI RED KOUS
\bigotimes	LW	LAGERSTROEMIA INDICA 'WHIT III' / PINK VELO
\bigotimes	LY	LAGERSTROEMIA X 'YUMA' / YUMA CRAPE MY
SYMBOL	CODE	BOTANICAL / COMMON NAMI
SHRUBS		
\odot	BG	BUXUS X 'GREEN GEM' / GREEN GEM BOXWO
E	CS2	Calamagrostis X acutiflora 'stricta' / K
Constant of the second se	CA2	CALLICARPA AMERICANA / AMERICAN BEAU
$\langle \cdot \rangle$	FG	FOTHERGILLA GARDENII / DWARF FOTHERGILL

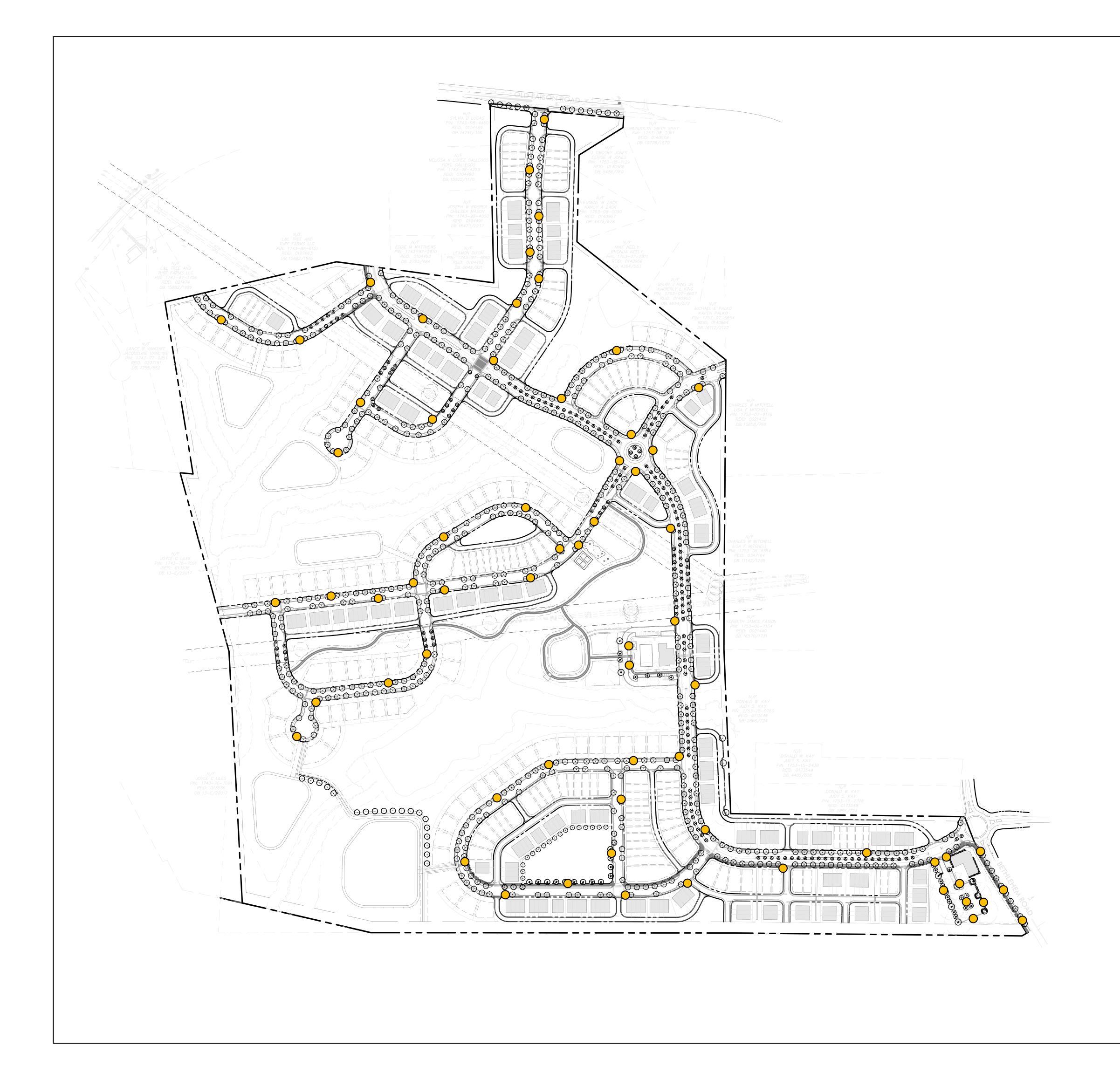


E	DULE							
	BOTANICAL / COMMON NAME	QTY	SITE PLANTING	STREET TREES	CONT	CAL	SIZE	MATURE HEIGH
	ACER RUBRUM 'OCTOBER GLORY' / OCTOBER GLORY RED MAPLE	34	19	15	B & B	2"CAL	8` HT	25 - ' ht.
	ACER SACCHARUM 'BONFIRE' / BONFIRE SUGAR MAPLE	149		149	B & B	2'CAL	8` HT	
	CARPINUS CAROLINIANA / AMERICAN HORNBEAM	36	19	17	B & B	2"CAL	8` HT	15 - ' ht.
	GYMNOCLADUS DIOICA / KENTUCKY COFFEETREE	13	13		B & B	2"CAL	8` HT	40 - f' ht.
	LIRIODENDRON TULIPIFERA 'ARNOLD' / ARNOLD TULIP POPLAR	9		9	B & B	2"CAL	8` HT	40 - 65ft. ht.
	QUERCUS ACUTISSIMA / SAWTOOTH OAK	128		128	B & B	2'CAL	8` HT	40 - 65ft. ht.
	ulmus parvifolia 'bosque' Tm / bosque lacebark elm	134		134	B & B	2"CAL	8` HT	
	ZELKOVA SERRATA 'GREEN VASE' / GREEN VASE JAPANESE ZELKOVA	144		144	B & B	2'CAL	8` HT	> 65ft. ht.
<u>s</u>								
	ACER BUERGERIANUM 'STREETWISE' / STREETWISE® TRIDENT MAPLE	31		31	B & B	1.25"CAL	6` HT	15 - ' ht.
	CORNUS KOUSA 'SATOMI' / SATOMI RED KOUSA DOGWOOD	19		19	B & B	1.25"CAL	6` HT	15 - 25ft. ht.
	LAGERSTROEMIA INDICA 'WHIT III' / PINK VELOUR® CRAPE MYRTLE	104		104	B & B	MULTI-STEM (3 STALKS MIN.)	8` HT	6 - ' ht.
	LAGERSTROEMIA X 'YUMA' / YUMA CRAPE MYRTLE	17		17	B & B	MULTI-STEM (3 STALKS MIN.)	8` HT	15 - 25ft. ht.
	BOTANICAL / COMMON NAME	QTY	SITE PLANTING	STREET TREES	SIZE			MATURE HEIGH
	BUXUS X 'GREEN GEM' / GREEN GEM BOXWOOD	82	39	43	3 GAL			3 - 6ft. ht.
	CALAMAGROSTIS X ACUTIFLORA 'STRICTA' / KARL FOERSTER FEATHER REED GRASS	22	22		3 GAL			18 - 6' ht.
	CALLICARPA AMERICANA / AMERICAN BEAUTYBERRY	5	5		3 GAL			3 - 6ft. ht.
	FOTHERGILLA GARDENII / DWARF FOTHERGILLA	14	14		3 GAL			18 - 36in. ht.
	ILEX CRENATA 'GREEN LUSTRE' / GREEN LUSTER JAPANESE HOLLY	59	59		3 GAL			6 - ' ht.
_	PICEA PUNGENS 'GLOBOSA' / DWARF GLOBE BLUE SPRUCE	7	7		3 GAL			3 - 6ft. ht.









LIGHTING LEGEND

LIGHT POLE

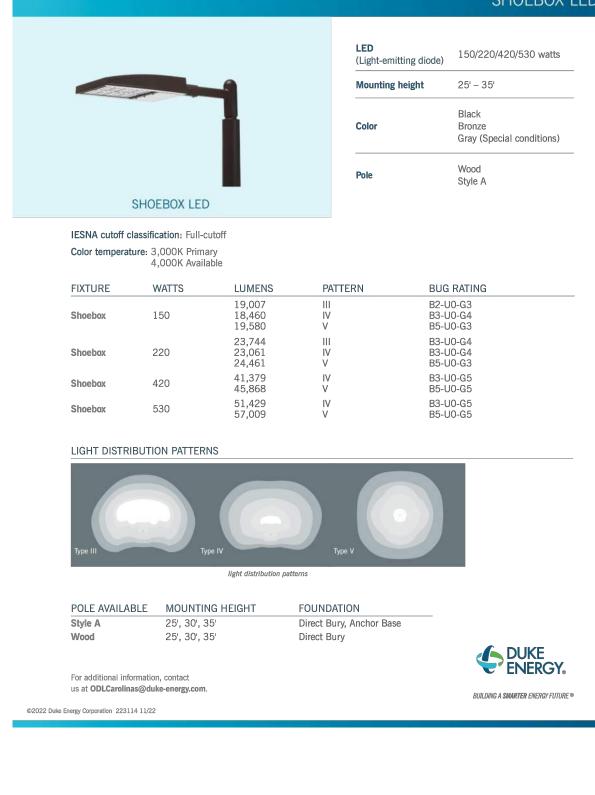
* LIGHTING PLAN IS CONCEPTUAL IN NATURE & SUBJECT TO CHANGE AT THE TIME OF CONSTRUCTION DOCUMENTS.

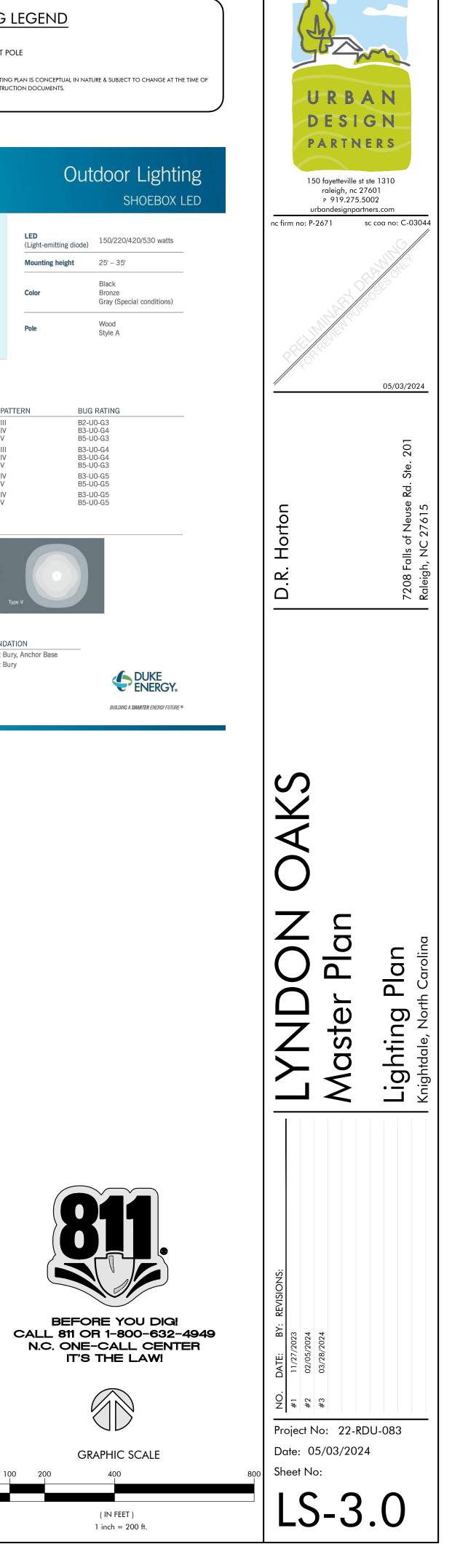
Outdoor Lighting SHOEBOX LED

GRAPHIC SCALE

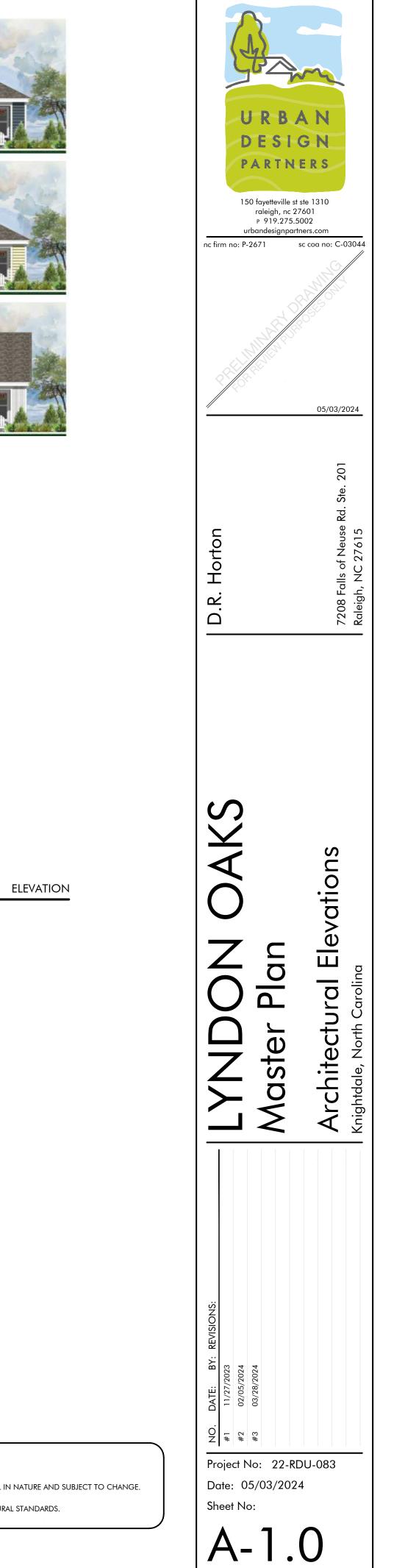
400

(IN FEET) 1 inch = 200 ft.









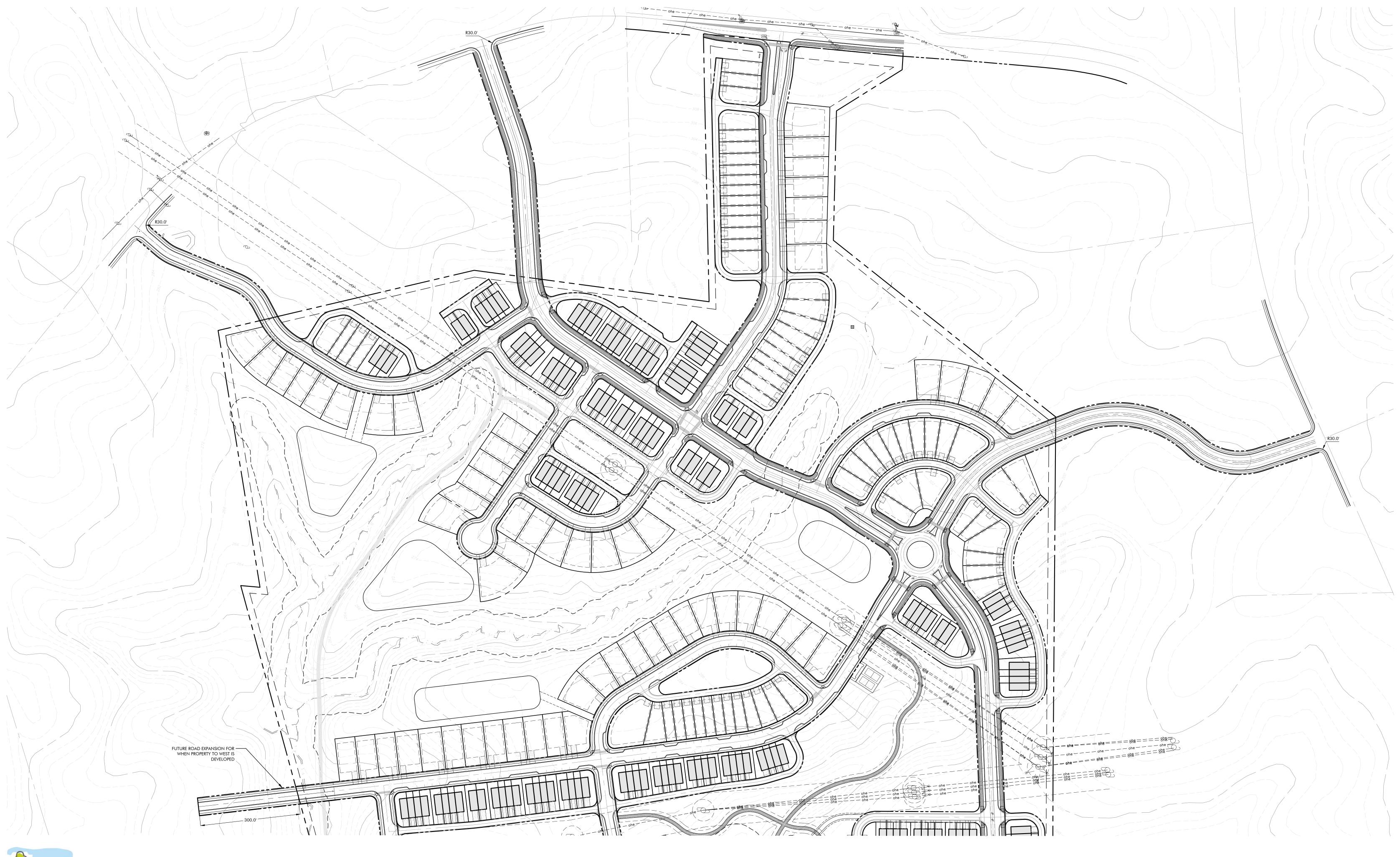




NOTES:

ELEVATIONS SHOWN ARE CONCEPTUAL IN NATURE AND SUBJECT TO CHANGE.

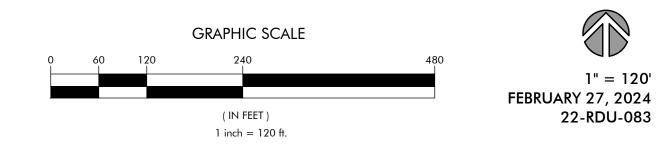
SEE ZMA-2-23 FOR LIST OF ARCHITECTURAL STANDARDS.





LYNDON OAKS FUTURE ROAD CONNECTION EXHIBIT

KNIGHTDALE, NC





LYNDON OAKS

RMX PLANNED UNIT DEVELOPMENT

The Town of Knightdale Case Number: ZMA-2-23 May 3, 2024

U R B A N D E S I G N P A R T N E R S

-

LYNDON OAKS

RMX PLANNED UNIT DEVELOPMENT

PREPARED FOR

The Town of Knightdale

<u>DEVELOPER</u>

DR Horton 7208 Falls of Neuse Road Suite 201 Raleigh, NC 27615

PROJECT TEAM

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

> Parker Poe Land Use Attorney

Ramey Kemp & Associates Traffic Engineers

Bateman Civil Survey Company Surveyors

Sage Ecological Services, Inc. Environmental Consultant

> SUBMITTAL DATE May 3, 2024

> > URBAN DESIGN PAR



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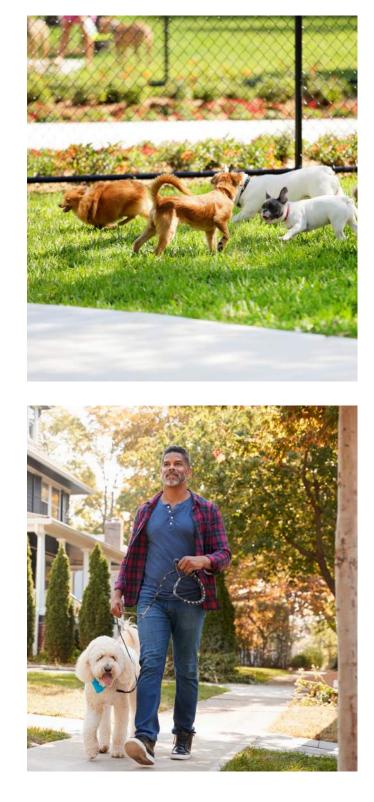
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Community Vision

Lyndon Oaks 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. Lyndon Oaks 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.







NOISION

Community Intent

Section 2.4.C. of the Town of Knightdale Unified Development Ordinance states that, "the Planned » Archaeological, Historical, or Cultural Impact 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." These developments bring "tangible benefits" to the Town, including "exceptional amenities, outstanding environmental, landscape, architectural, or site design, or conservation of special man-made or natural features of the site."

Lyndon Oaks 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

• Lyndon Oaks conforms to the planning policies of the Town as laid out in the KnightdaleNext2035 Comprehensive Plan. The site is designated as a Mixed-Density Neighborhood place type, in a Target Investment Area, and the planned variety of residential densities and neighborhood-serving commercial meet the Town's future planned growth. In addition, Lyndon Oaks is a neighborhood that exemplifies many of the Guiding Principles for growth and development in Knightdale (Guiding Principles found on page 9).

» Public Welfare

• Lyndon Oaks is maintaining the riparian buffer that bisects the site and large existing pond to allow for maximized preservation of natural features that will be not only preserved, but amenitized through walking trails and greenways to be enjoyed by residents and the surrounding community on public greenways and sidepaths. The supply of light and air to adjacent properties will not be negatively impacted due to the tree preservation, preserved open space, and buffer plantings around the perimeter of the site. There will be no increased danger of fire to current or future residents in the area, and the public health, safety, and welfare will not only be protected but will increase through the new pedestrian and vehicular connectivity, intersection design and improvements that prioritize safety, ample behind-the-curb multi-use paths for cyclists, fountains in the SCMs to keep water aerated, and new public utilities being brought to the area.

» Impact on Other Property

• Lyndon Oaks is primarily a mixed-density residential community. The adjacent land uses consist of existing single family residences and vacant wooded lots. Lyndon Oaks consists of like uses and helps to provide increased connectivity and access to amenities like the greenway trail and a future neighborhood-serving commercial amenity on Bethlehem Road.

» Impact on Public Facilities & Resources

• Lyndon Oaks will provide adequate utilities, road access, drainage, and other necessary facilities to properly serve residents of the site. The project will dedicate a large section of the planned Widewaters Parkway extension to the Town, and plans to provide the greenway connectivity as well.

• Lyndon Oaks is maintaining the riparian buffer that bisects the site and large existing pond to allow for preservation of natural features on the property. No archaeological, historical, or cultural utilizes the greenway.

» Parking & Traffic

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. There is ample guest parking through the use of on-street parking. Traffic impacts from Lyndon Oaks have been studied and will be mitigated through TIA recommended improvements that will benefit the entire area and alleviate some existing congestion issues. Furthermore, the public roads running through the site will create public and private trails also provide a safe public pedestrian connection throughout Lyndon Oaks.

» Appropriate Buffering

- A 20' Type B Buffer is proposed along the perimeter of Lyndon Oaks to provide visual and acoustical privacy between Lyndon Oaks and the surrounding neighbors. A Type B Buffer is also provided between the parking lot at the commercial parcel and Bethlehem Rd. per requirements set forth in the UDO.
- A 50' Type D Buffer with a 6' earthen berm and dense plantings is proposed along I-87 to provide visual and acoustical privacy between Lyndon Oaks and the adjacent interstate. The maintained riparian buffers 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 and a sense of place, such that each section of the neighborhood, each home, is a stone's throw from the natural environment and open space.

» Performance

have a proven track record of building successful residential neighborhoods in surrounding communities, as well as in Knightdale, most recently with the Haywood Glen community. The D.R. Horton team is excited to bring a new neighborhood to the Town that reflects the Town's plans and aligns with the Town's and D.R. Horton's shared vision for great neighborhoods.

resources will be adversely impacted in the development. Lyndon Oaks will preserve and enhance existing natural resources on site for the benefit of the residents and surrounding community that

• Lyndon Oaks is a pedestrian friendly community. The mix of housing types and rear-loaded units additional connectivity and routes on local, multimodal streets to existing roads in the area. The

• D.R. Horton is America's largest homebuilder, and the local team that have proposed this project



KNIGHTDALENEXT 2035

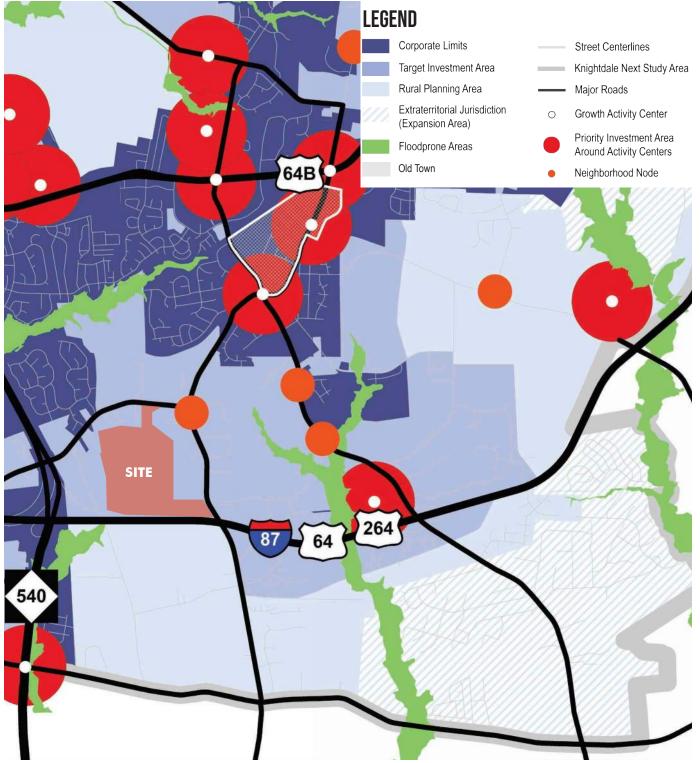


Figure 1: Growth Framework Map from KnightdaleNext2035 Comprehensive Plan

Growth Framework

This PUD request is proposing a **rezoning from RT to RMX-PUD** to better meet the desired outcome laid out in the KnightdaleNext2035 Comprehensive Plan.

On the Growth Framework Map, Lyndon Oaks is located near a Neighborhood Node at the intersection of Old Faison and Bethlehem Roads, and the site is within a Target Investment Area as identified in the Growth Framework Plan. Target Investment Areas are areas with existing or relatively easy potential access to water and sewer, where growth is supported, and the development will bring additional water and gravity sewer lines to this area to support continued growth and development. The plan says growth in these areas should encourage active living with a complete and comprehensive network of walkable streets in a general grid pattern. It also says that growth in these areas should be guided into more compact and efficient development patterns to justify infrastructure investments. Thus, Lyndon Oaks, which proposes compact residential growth at less than 3 units per acre and neighborhood-oriented commercial uses, in an area that will only continue to feel more growth pressure with the forthcoming I-540 extension, is supported by the Growth Framework Map.

Lyndon Oaks aligns with Knightdale's vision of neighborhoods throughout the Town feeling a sense of connection. A public greenway trail will be added throughout the site. This aligns with the Sidepaths & Greenways Plan plan found in UDO Appendix B and incorporated into the comprehensive plan. Sidewalks and greenway trails promote pedestrian walkability and connection for the community.

The proposed plan for Lyndon Oaks 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 a community-serving commercial outparcel

Comprehensive Plan - Guiding Principles

- 1. Natural Environment: Lyndon Oaks promotes and expands opportunities for community residents to enjoy Knightdale's greenways and activates the site's many streams, wetlands, and natural features by preserving them and giving residents access to enjoy those resources.
- 2. Parks and Recreation: Lyndon Oaks will provide the Town's planned pedestrian and cyclist public greenway connectivity from Old Faison Road to Bethlehem Road.
- 3. Transportation: Lyndon Oaks will provide a significant portion of the planned Widewaters Parkway extension, which will eventually provide an important connection from US-64 Business to Bethlehem Road and Crosscut Place. In addition, all of the streets in the neighborhood have been designed with multiple modes of transportation in mindthe project will provide ample bicycle and pedestrian facilities for destination - and recreation- focused trips.
- 4. Compact Development Patterns: The proposed community provides appropriate residential density and neighborhood-serving commercial in a Target Investment Area, near I-87 and I-540, which will become an even more convenient regional access route when the I-540 extension is built.
- 5. Community Design: Lyndon Oaks is a significant private investment that incorporates the distinctive elements of Knightdale. Roundabouts at intersections, strict architectural standards and commitments to beautiful and quality homes, pedestrian prioritization, preservation of open space and unique public and private recreational amenities dominate the community design.
- 6. Great Neighborhoods and Expanded Home Choices: Lyndon Oaks offers a wide variety of housing choices and lot sizes, mixed throughout the neighborhood, and not segregated to certain portions. This will provide opportunities for people and families at all ages and stages, with many different housing price-points, to find a place in this beautiful, heavily-amenitized community.





Growth and Conservation Map

On the Growth and Conservation Map, Lyndon Oaks is designated as a "Mixed-Density" Neighborhood." These are described as "subdivisions or communities with a mix of housing types and densities." These Neighborhoods should "incorporate a comprehensive network of open space throughout to accommodate small parks, gathering places and community gardens; preserve tree stands; and help reduce stormwater runoff."

Lyndon Oaks is consistent with this vision. The community will have a variety of housing options and price points, with six different lot sizes for single-family detached homes, both front and rear loaded, as well as three lot sizes for rear-loaded townhomes. These housing types are not segregated to their own distinct sections of the neighborhood; rather, they have been mixed in throughout the design. Beautiful gathering spaces and amenities will be programmed throughout the community, and the most sensitive natural areas will be preserved and activated.

It is also close to and will help support the planned desired land uses around the subject site. The retail and commercial amenities desired at the "Neighborhood Node" located at the intersection of Bethlehem and Old Faison Road will be much more viable with a new residential community so close, and the road improvements that will come with the project will help support desired development patterns in this area as well.

PLACETYPE CATEGORIES



Mixed-Use Center (Suburban Retrofit) Transit-Oriented Development (BRT) Regional Mixed-Use Center

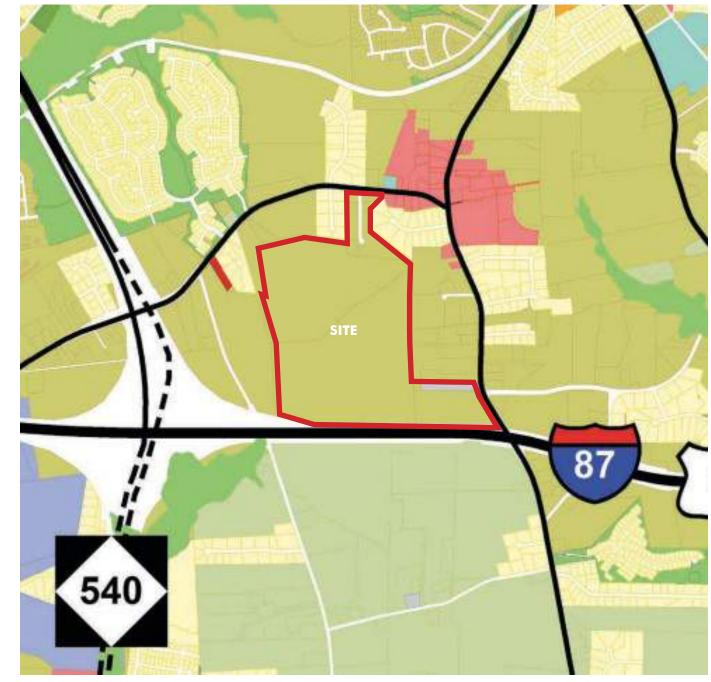


Figure 2: Growth and Conservation Map from KnightdaleNext2035 Comprehensive Plan

Transportation

Lyndon Oaks furthers the goals of **Knightdale's Comprehensive Transportation Plan (CTP)** in several ways.

First, with this project, an additional road connection will be made between Old Faison Road (at Tart Farm Road) and Bethlehem Road (at Crosscut Place), creating instant additional connectivity in the area. Additional road connections create more routes for drivers and ease congestion at nearby intersections, and create local streets that are safer for walking and biking, making these more viable forms of transportation. These are just a few of the reasons the CTP encourages additional local connector streets like those planned in Lyndon Oaks.

Second, Lyndon Oaks will construct ± 0.8 miles of the planned Widewaters Parkway extension through the project area, which is a key part of a larger planned connection of Widewaters Parkway to Cross Cut Place on the Roadway Network Plan. When completed across Old Faison Road to the north, this road will make it much easier for residents traveling to and from US 64. The Master Plan has placed the Widewaters Parkway stub in a location that will make it easy to angle in a way that will sync with the alignment of the extension to the north.

Lyndon Oaks also supports the CTP goal of making new streets multimodal and accessible for pedestrians and cyclists. Sidewalks will line both sides of every planned street to enhance pedestrian safety and connectivity in the neighborhood, many of them wider 6' and 10' sidewalks. Buffered bike lanes will line both sides of Widewaters Parkway and additional pedestrian safety infrastructure will be provided at pedestrian crossings across Widewaters Parkway. Lyndon Oaks will also make pedestrian crossings on Widewaters Parkway safer by providing Rectangular Rapid Flash Beacons (RRFBs) at the private trail crossing and the entrance road (Tart Farm Road) intersection.

Finally, Lyndon Oaks has studied the projected transportation impact of the development on numerous roads and intersections, and will implement recommended improvements to mitigate those impacts and improve area roads, consistent with the CTP policy of "account[ing] for broader impacts of development on the surrounding mobility networks." See TIA summary in the Infrastructure section of this document.

Legend

Comprehensive Trans	portation Plan Planning Area
Street Type & Status: Freeway, Existing Freeway, Proposed Boulevard, Existing	Avenue, Existing Avenue, Proposed Urban Main Street, Existing
Boulevard,	Urban Main Street,
Proposed	Proposed
Urban Avenue,	Main Street,
Existing	Existing
Urban Avenue,	Main Street,
Proposed	Proposed

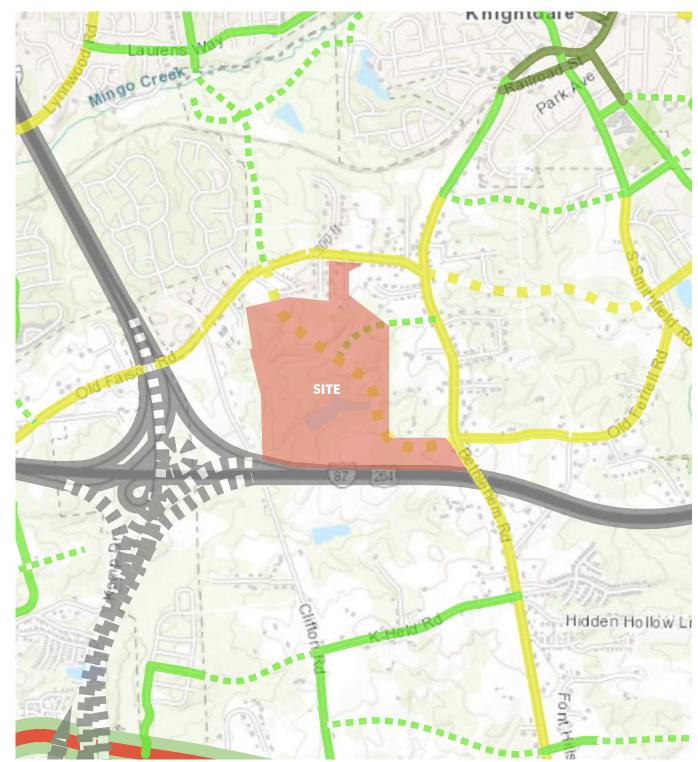
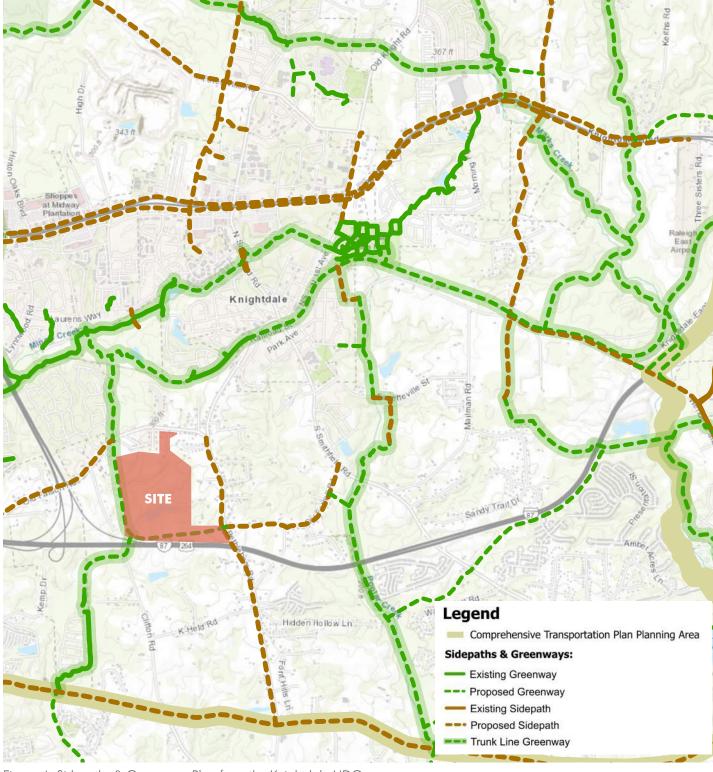


Figure 3: Roadway Network Plan from the Knightdale UDO



Trails & Greenways

Lyndon Oaks will provide a network of public greenways and private trails in its open space, as well as 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, buffered bike lanes on both sides of Widewaters Parkway, and 10' sidewalks on Tart Farm Road as well, and public and private trails in the natural areas to connect the neighborhood's residential sections.

Pet waste stations and benches will be provided along public greenways and private greenways with public access easements every 2,000 linear feet. Signage shall be provided where the public greenway intersects with other greenways. Signage, bench design, and pet waste station design shall adhere to applicable Town Standard Specifications.

Environmental Impacts and Permitting: The Town of Knightdale has planned substantial street and public greenway improvements on a site with many environmentally-sensitive streams and wetlands that will require extensive permitting through state and federal agencies at the next stage of development, and developer will provide the Town's desired public improvements to enhance vehicular and pedestrian connectivity in this area. Developer will provide and will facilitate environmental permitting for the stream and wetlands impacts of the planned Widewaters Parkway extension. Developer will also pursue environmental permitting for a greenway alignment that is substantially similar to the "Option" A" alignment of the greenway shown on the Master Plan. If the US Army Corps of Engineers (USACE) defines the "project" in such a way that the project will cause a cumulative stream and wetland impact of 0.5 acres or more, the developer may adjust plans to reduce stream and wetlands impacts by the following:

- Providing the greenway alignment shown in Option B
- Providing boardwalks instead of paved bridges over streams and wetlands
- Removing the turn lane and narrowing the Widewaters Parkway section in the areas where it crosses streams and wetlands
- residential areas of the neighborhood
- residential lots.



Figure 4: Sidepaths & Greenways Plan from the Knightdale UDO

Providing the planned public greenway connection from Old Faison Road to Bethlehem Road as a side path on Widewaters Parkway, with private natural trails in the natural areas that connect

Any other minor plan adjustments approved by Town staff that do not include impacts to planned



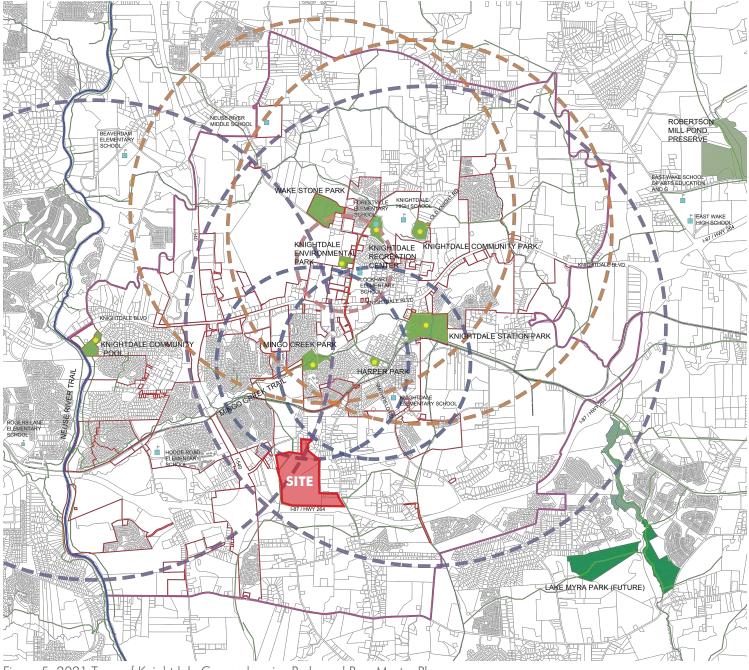


Figure 5: 2021 Town of Knightdale Comprehensive Parks and Rec. Master Plan

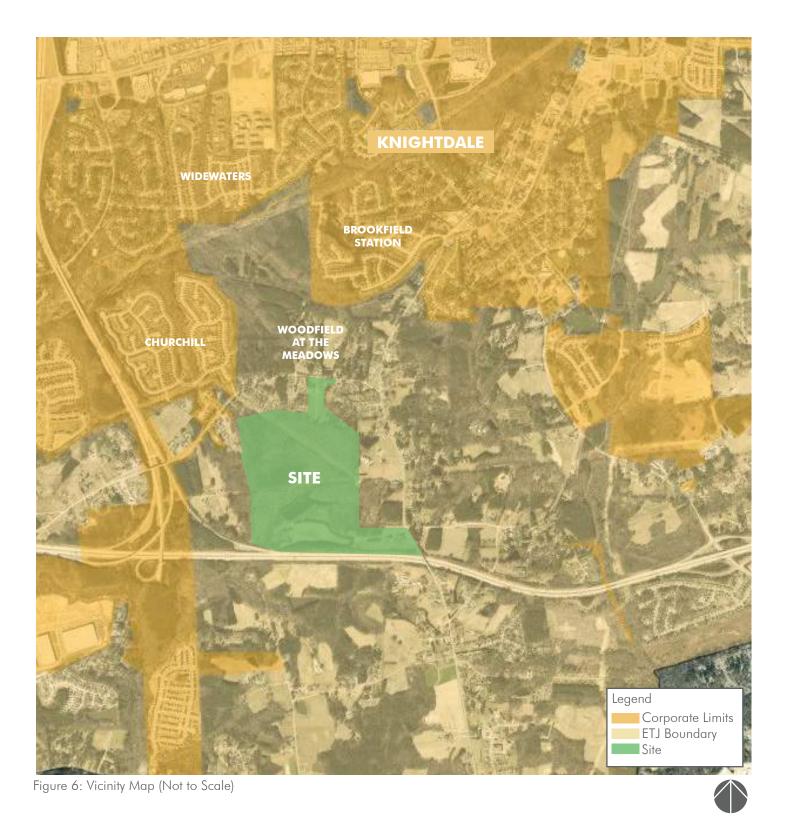
Parks and Recreation

Consistent with the **Comprehensive Parks and Recreation Master Plan**, Lyndon Oaks is within the two-and-a-half mile service area of Knightdale Station Park, and part of the neighborhood will be in the one-mile service area of Mingo Creek Park. When the Widewaters Parkway extension is completed to the north, Lyndon Oaks residents will be able to easily walk or bike to this park. The ample amenities, open space, and approximately \pm 6.5 miles of trails and sidewalks within the planned community will also provide recreational opportunities for residents.



EXISTING CONDITIONS

Vicinity Map

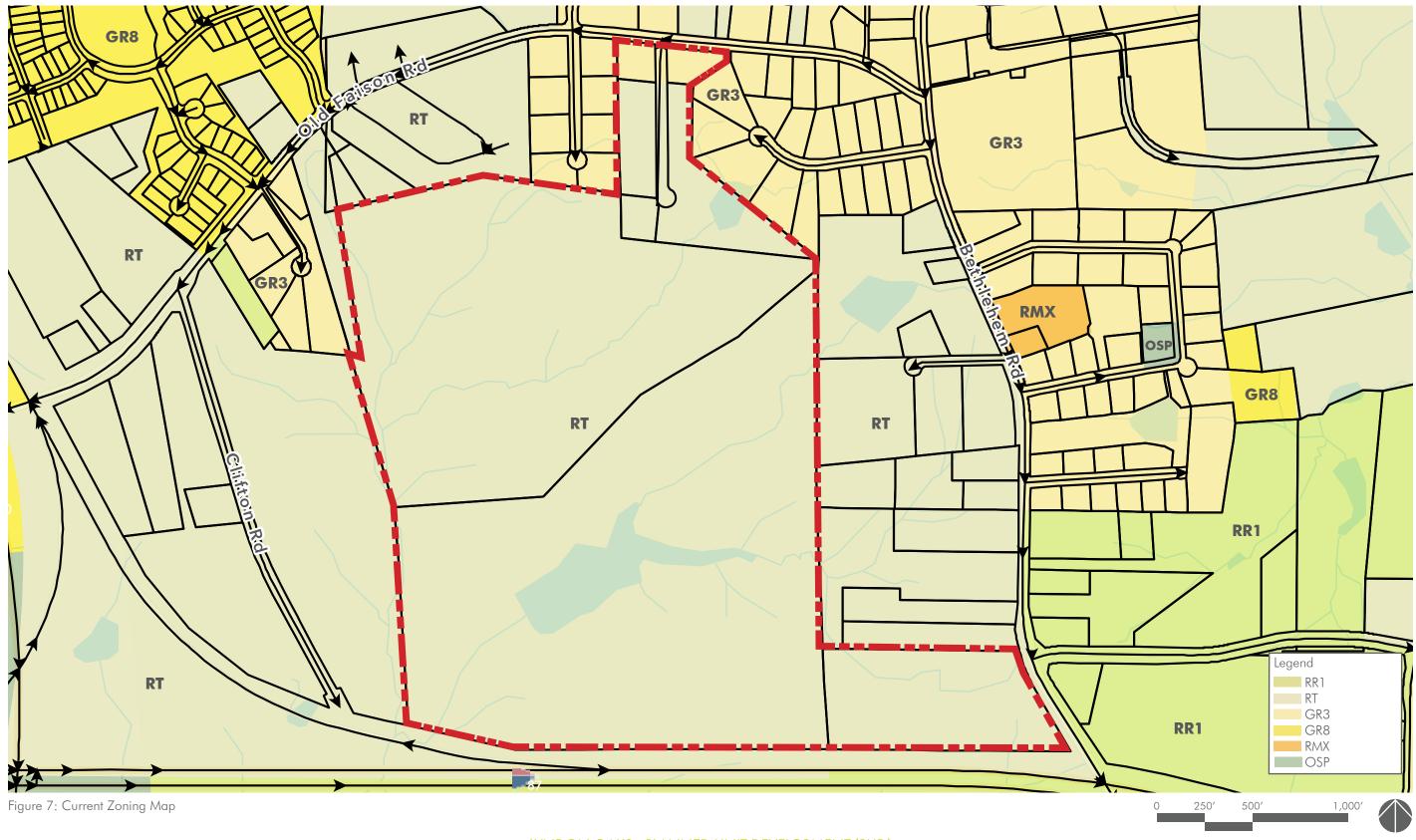


Vicinity Map

The site is within **Knightale's ETJ**, and approximately 150 feet from the primary corporate limits at the northwest corner. Most of the site is undeveloped, except for a few larger homes on the portions of the site that front Old Faison Road and Bethlehem Road. The largest portion of the property is bisected by multiple streams and wetlands, and features a large natural pond. Two overhead utility easements also run from east to west through the property.

Uses in the vicinity are almost exclusively residential, as is the current Knightdale ETJ zoning. Residential uses vary in size and housing type. Immediately to the north on Bethlehem Road is a mobile home park. Very large residential lots lie to the to the east, and the parcel immediately to the west on Clifton Road is vacant. Churchill, an established Knightdale neighborhood, is located to the northwest of the site across Old Faison Road, and it is zoned GR8.

Current Zoning Map



Current Uses

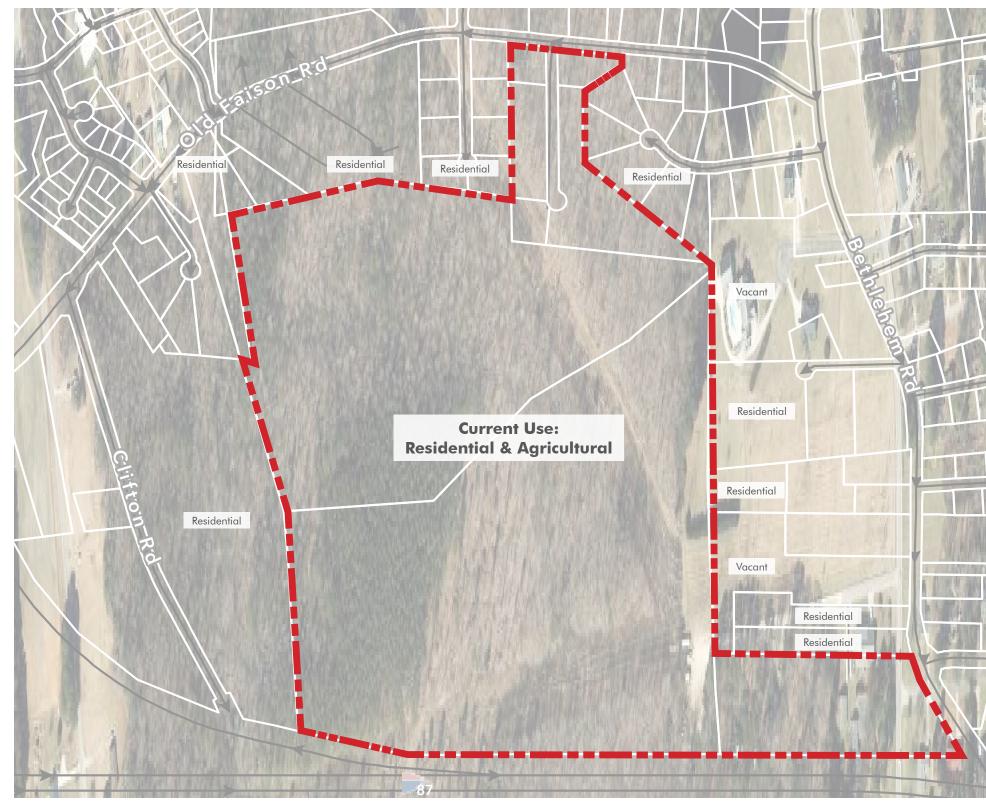


Figure 8: Current Uses Map

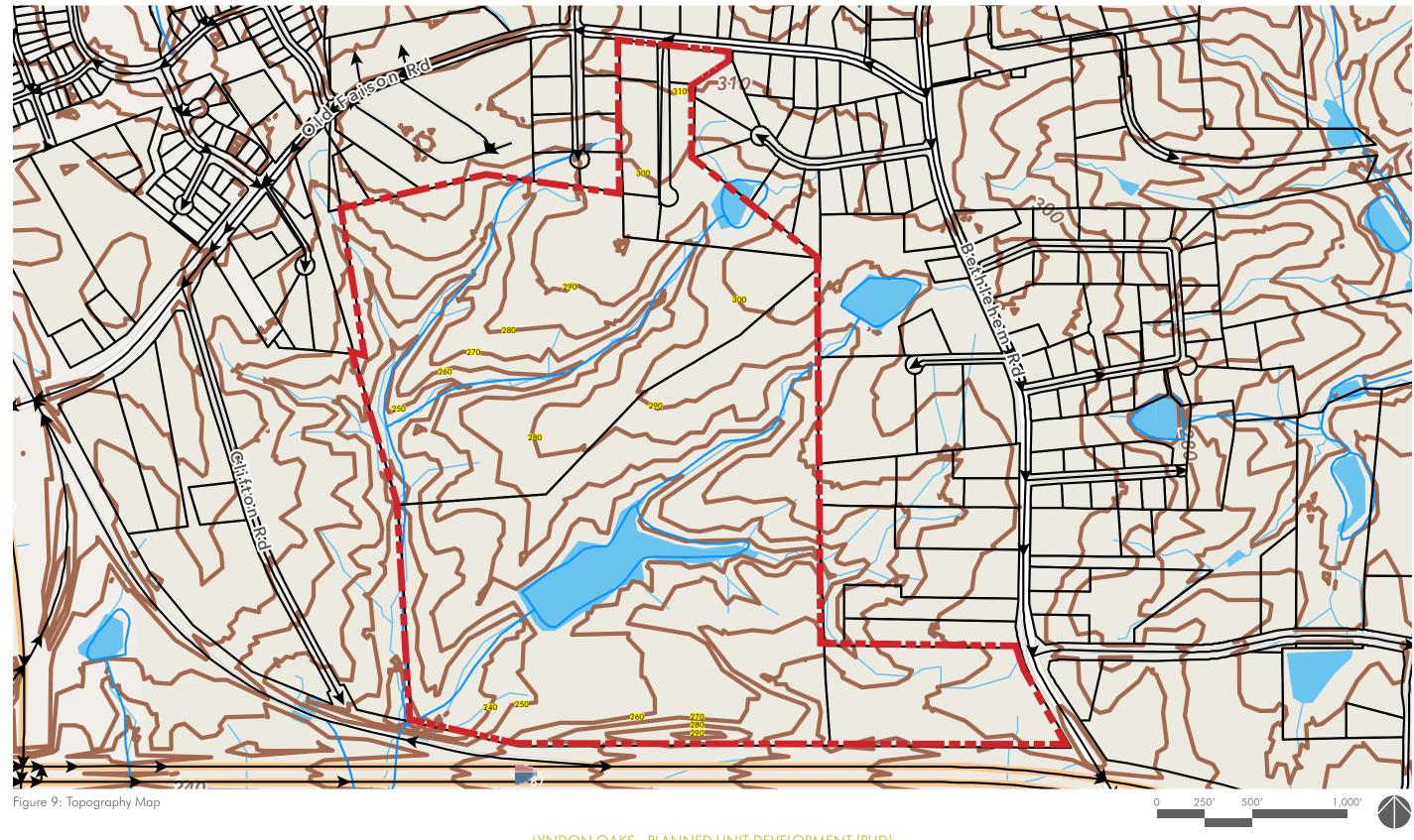




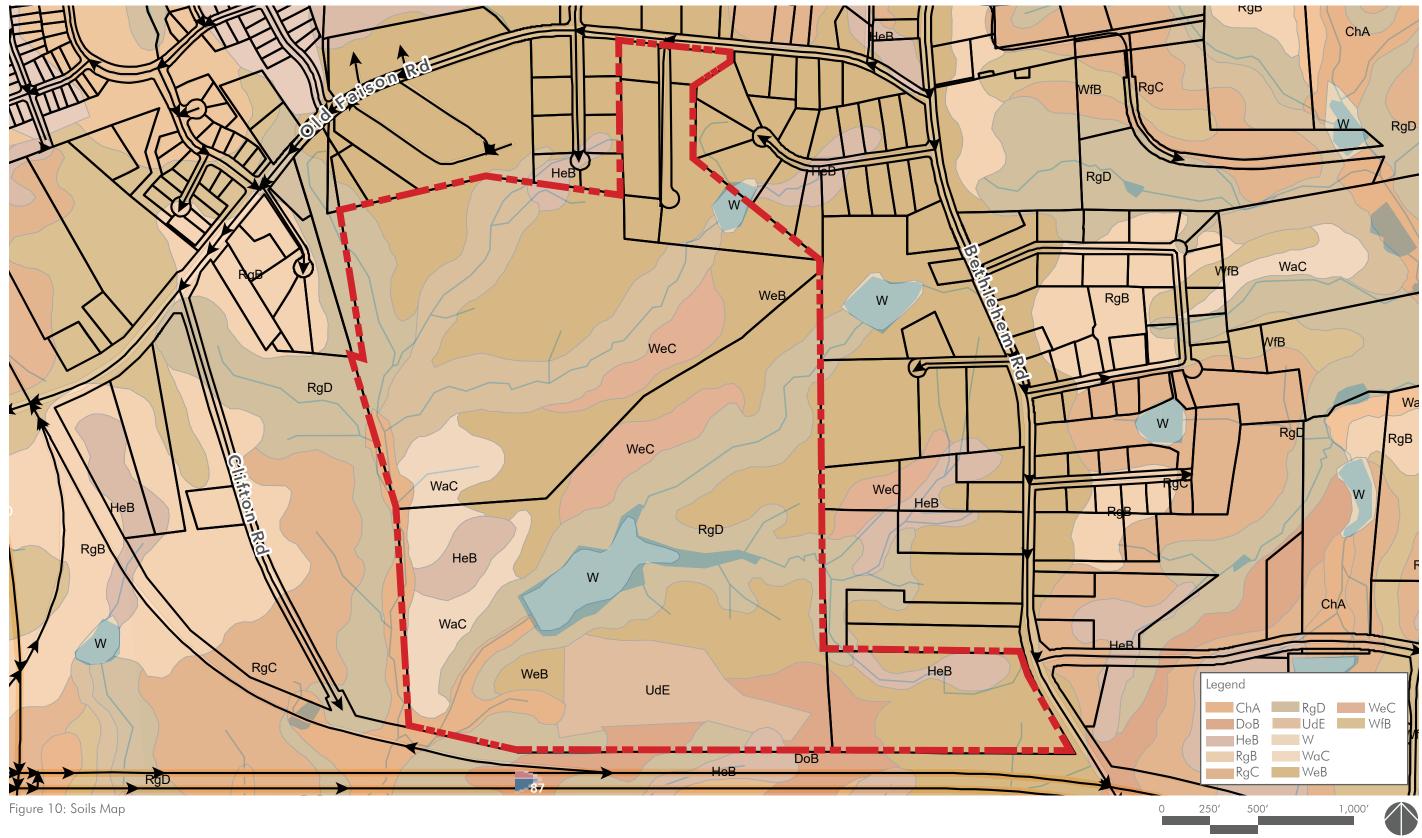




Topography & Boundary Map



Soils Map



LYNDON OAKS - PLANNED UNIT DEVELOPMENT (PUD)

Vegetation Map



Figure 11: Vegetation Map

The site currently consists of mainly vacant land, two existing ponds, four perennial streams, two large electric easements, and several single family homes.



Preliminary Wetland & Stream Map

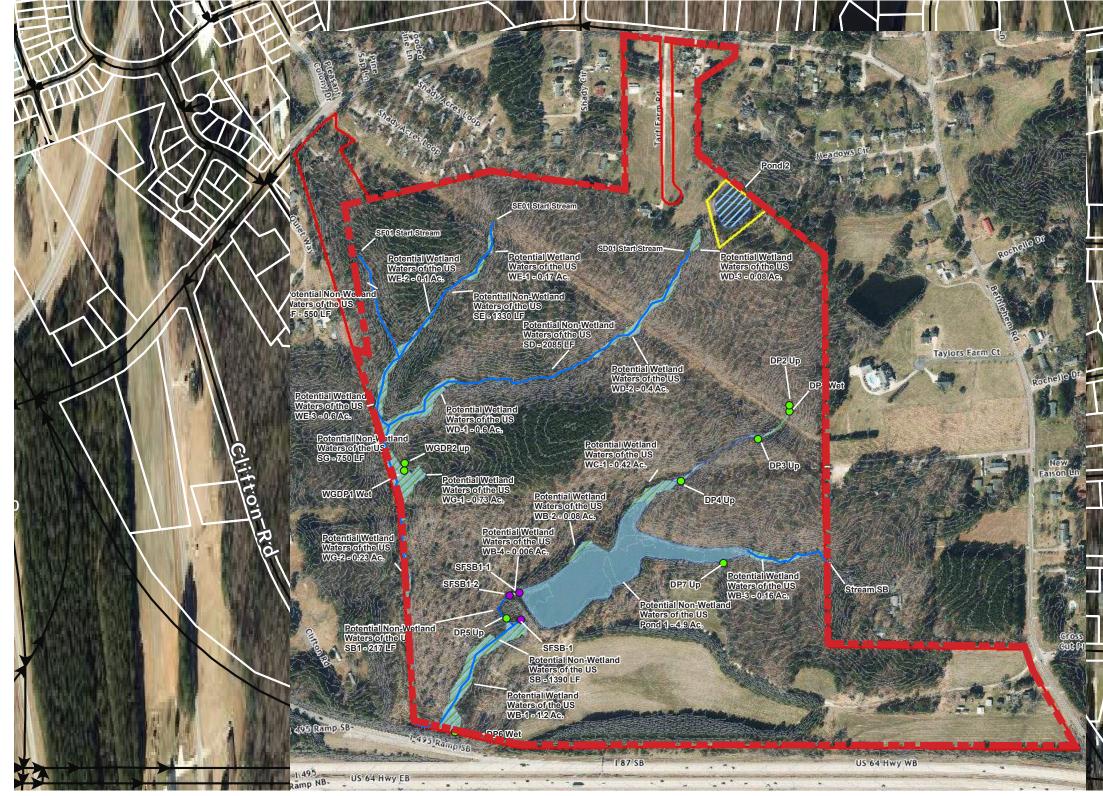


Figure 12: Wetland Sketch Map from Sage Ecological Services



egend

Lege	enu
	Project Study Area
	Too Thick Too Evaluate
	2' Contour
\circ	Data Point
	50-Foot Neuse River Riparian Stream Buffer
	Non-Buffered Intermittent Stream - Jurisdictional Waters of the US
	Perennial Stream - Jurisdictional Waters of the US; Subject to 50-Foot Neuse River Riparian Buffers
///	Wetlands - Jurisdictional Waters of the US
	Non-Jurisdictional Pond - Pond Built In High Ground
	Pond - Jurisdictional Waters of the US; Subject to 50-Foot Neuse River Riparian Buffer

Detailed Delineation of Waters of the US Suitable for Preliminary Planning Only

S&EC reserves the right to modify this map based on more fieldwork, and any other additional information. Approximations were mapped using topographic maps, air photos and ground truthing. If the site is going to be disturbed, S&EC's detailed delineation should be approved and permitted by the U.S. Army Corps of Engineers as required. If the user of this work desires an accurate map of the regulated features flagged by S&EC, they should retain a NC Registered Professional Land Surveyor to locate S&EC's flagging.



Figure 3

Drawn By: David Gainey

Sage Ecological Services, Inc. Office: 919-335-6757 Cell: 919-559-1537

NOTE: Location, shape and size of depicted features on the evaluated site are approximate and should be surveyed by a licensed NC surveyor for final site planning.



0







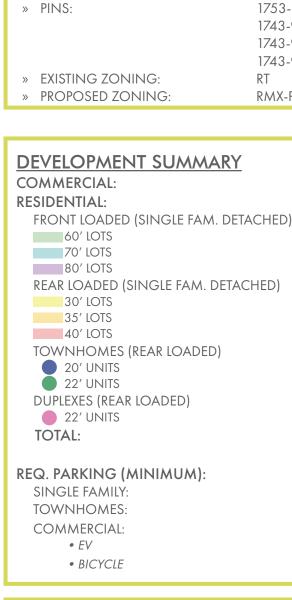






Lyndon Oaks - Master Plan





SITE DATA » ACRES:

NOTES:

- PLANS, AERIAL IMAGERY, AND LAND RECORDS.
- **REVIEW AGENCIES.**
- 4 PARTNERS, PLLC.

Figure 13: Lyndon Oaks Master Plan

± 171.88 AC TOTAL 1753-15-2116; 1743-95-3683; 1743-97-1085; 1743-98-6356; 1743-98-9384; 1753-07-1583; 1743-97-6575 RT RMX-PUD

± 15,000 SF

- 66 DU 24 DU 10 DU 46 DU
 - 39 DU 24 DU

117 DU 130 DU

26 DU 482 DU(UP TO 500 DU)

627 SPACES 819 SPACES 27 SPACES 2 SPACES 3 SPACES

1. THIS PLAN IS CONCEPTUAL IN NATURE AND IS SUBJECT TO CHANGE.

2. THIS EXHIBIT WAS PREPARED USING AVAILABLE RECORD INFORMATION, ALTA SURVEY, GIS MAPS, RECORD

3. THIS PLAN WILL BE SUBJECT TO REVIEW AND APPROVAL BY LOCAL AND STATE PLANNING AND ENGINEERING

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



USE AREAS				
USE TYPE	TYP. LOT SIZE (SF)	# OF LOTS	TOTAL AREA (SF)	ACRES
SINGLE FAMILY				
30' LOT	3,600	46	165,600	
35' LOT	4,200	39	163,800	
40' LOT	4,800	24	115,200	
60' LOT	7,200	66	475,200	
70' LOT	8,400	24	201,600	
80' LOT	9,600	10	96,000	
			1,217,400	27.9
DUPLEX / TOWNHOUSE				
20' TH	1,800	117	210,600	
22' TH	1,980	130	257,400	
22' DUPLEX	2,160	26	56,160	
· · ·		524,160	12.0	
COMM/RETAIL*			25,689	0.6
	DISTRIBU		OF USES	
				ACRES
GROSS SITE AREA (P	ER SURVEY)			171.8
DEDICATED RECREA	TIONAL OPEN S	PACE		21.53
PUBLIC R/W				28.3
NET AREA**				121.97
		PROP. (AC)	MINMAX. DISTRIBUTION(%)	PROV. DIST. (%)
SINGLE FAMILY 27.9		15%-60%	22.9%	
DUPLEX / TOWNHOUSE 12.0		12.0	10%-40% 9.9%	
COMMERCIAL / RETAIL			5%-20%	0.5%

Lyndon Oaks is proposing a development density of ± 3 dwelling units per acre. The maximum density for RMX zoning is 18 dwelling units per acre. Density is calculated by dividing the amount of dwelling units by the total site area. Knightdale requires use distribution minimum and maximum percentages (based on use areas) for subdivisions with both residential and non residential uses (Section 11.1.B of the UDO). The distribution of uses is calculated by dividing the use areas by the net site area. In this PUD, we are proposing an allowance on the distribution of uses for both duplex/townhomes, and retail. See site allowances page for more information.

*Note: Retail is not required in Lyndon Oaks because there are no multi-family units being proposed. **Note: Net area is calculated by removing the area of open space (required amount) and rights-of-way from the total site area. The Town of Knightdale UDO Sec. 11.1.B states that the required distribution of uses shall be calculated as the net development area which excludes street rights-of-way and dedicated open space.

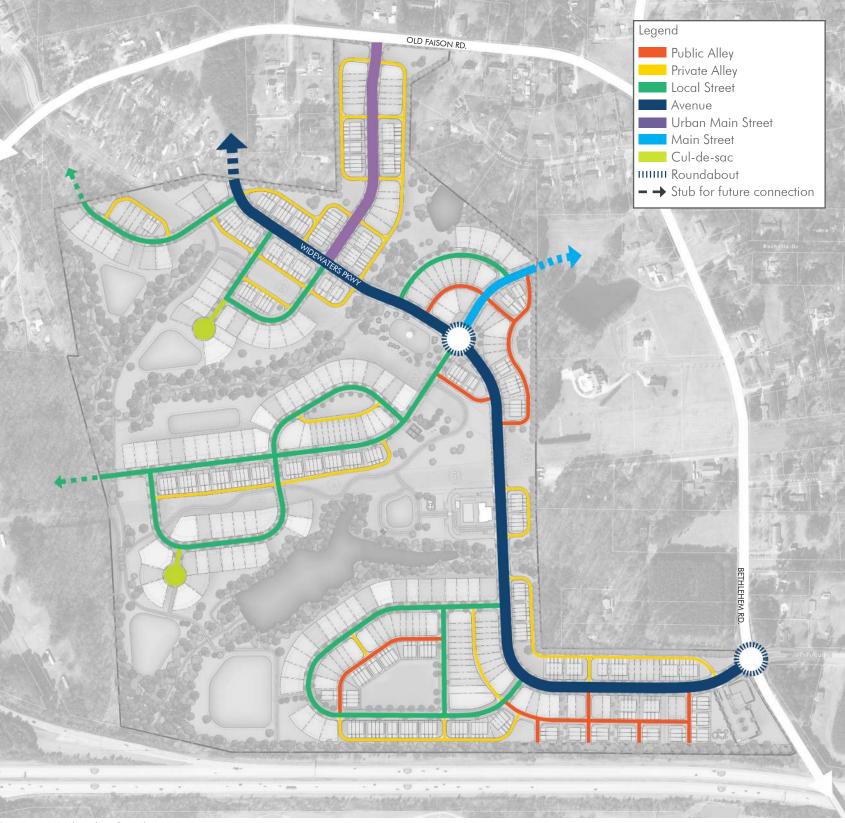
*** Note: See page 43 for more information on Commercial Outparcel

MASTER PLAN





Street Plan



PRIVATE ALLEY

- » RIGHT OF WAY:
- » STREET WIDTH:
- » DESIGN SPEED:

PUBLIC ALLEY

- » RIGHT OF WAY:
- » STREET WIDTH:
- » DESIGN SPEED:

LOCAL STREET

- » RIGHT OF WAY:
- » STREET WIDTH:
- » DESIGN SPEED:

URBAN MAIN STREET

- » RIGHT OF WAY:
- » STREET WIDTH:
- » DESIGN SPEED:

CUL-DE-SAC

- » RIGHT OF WAY:
- » STREET WIDTH:
- » DESIGN SPEED:

MAIN STREET

- » RIGHT OF WAY:
- » STREET WIDTH:
- » DESIGN SPEED:

- » RIGHT OF WAY:
- » STREET WIDTH:
- » DESIGN SPEED:

Figure 14: Vehicular Circulation

TOWN OF KNIGHTDALE STREET TYPES

20′ 20′ 10 MPH 32′ 18' (FOC-FOC) 10 MPH 54'-60' 28'- 41' (FOC-FOC) 20 - 25 MPH 72′ 48' (BOC-BOC) 20 - 25 MPH 61.5′ 48' RADIUS 20 - 25 MPH 70′ 47′ 20 - 25 MPH WIDEWATERS PARKWAY AVENUE (3 LANE - SIDEPATHS) 75′-80′ VARIES 30 - 35 MPH



Connectivity Index



TOWN OF KNIGHT REQUIRED SCORE: PROVIDED SCORE:

LINKS:
 NODES:
 <u>28 LINKS</u>
 19 NODES

*Connectivity index is calculated according to Town of Knightdale UDO Sec. 11.3.E.7 ** Block lengths shown are the lengths of the links. Block lengths are all under 800 LF when alleys are included. See Master Plan ZMA-2-23.

Figure 15: Connectivity Index for Lyndon Oaks

INFRASTRUCTURE

TOWN OF KNIGHTDALE CONNECTIVITY INDEX*

1.40 MIN. 1.47

28 LINKS

19 NODES

=

1.47 CONNECTIVITY INDEX SCORE



Pedestrian Circulation Plan



PEDESTRIAN CIRCULATION

Lyndon Oaks is proposing a connected network of amenity spaces and dwelling units through the use of sidewalks, sidepaths, and greenway trails to create a walkable, pedestrian-friendly community as seen in Figure 16.

time of site plan.

SIDEWALK NETWORK

» WIDTH:

SIDE PATH » WIDTH:

GREENWAY TRAIL » WIDTH:

PLAZA » PROVIDED SIZE:

AMENITY SPACES » See Open Space Plan

Easement for future pedestrian bridge over I-87: Prior to approval of construction drawings for the first phase of development, the applicant will offer a minimum of 100 square feet of site area as a non-exclusive, permanent easement area to be dedicated to the Town for construction, maintenance, and repair of footings for a future pedestrian bridge over 1-87, together with such temporary construction easements as are necessary for completion of such work. If accepted by the Town Transportation Director, such easement area shall be shown on the construction drawings and subdivision plat and granted to the Town pursuant to a recorded Deed of Easement.

Figure 16: Pedestrian Network for Lyndon Oaks

» The plan shown is preliminary and subject to change at the

5'-6' wide

10' wide

10' pavement width (30' easement)

± 2,000 SF



Urban Main St (Tart Farm Rd) & Widewaters Parkway Intersection Design



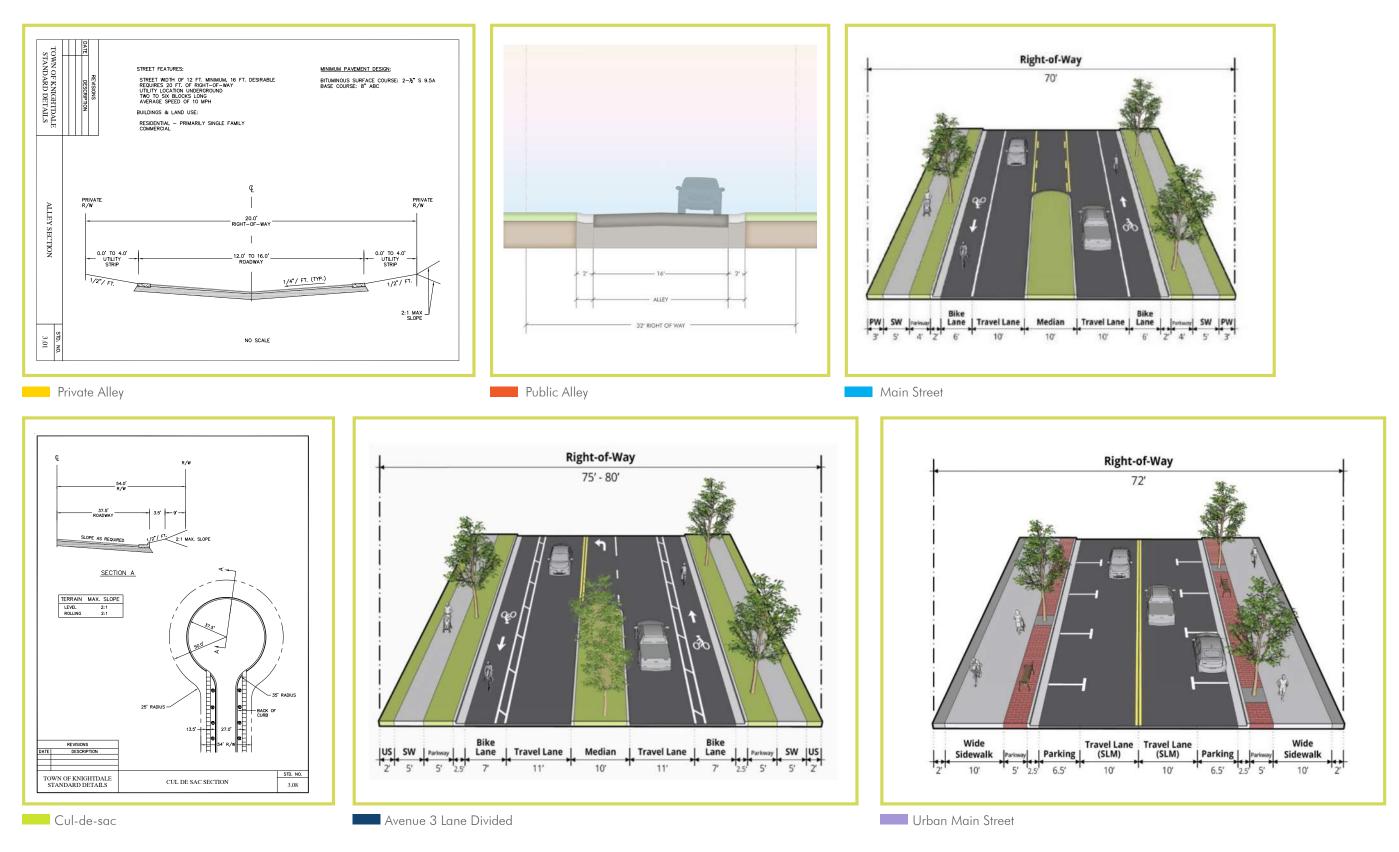
LYNDON OAKS - PLANNED UNIT DEVELOPMENT (PUD)

PEDESTRIAN CIRCULATION

Lyndon Oaks proposes a four-way stop with traffic calming measures, including high-visibility crosswalks, stamped concrete, Rectangular Rapid Flash Beacons (RRFBs), and pedestrian refuges in the Widewaters Parkway median at the intersection of the Urban Main Street and Widewaters Parkway.

INFRASTRUCTURE

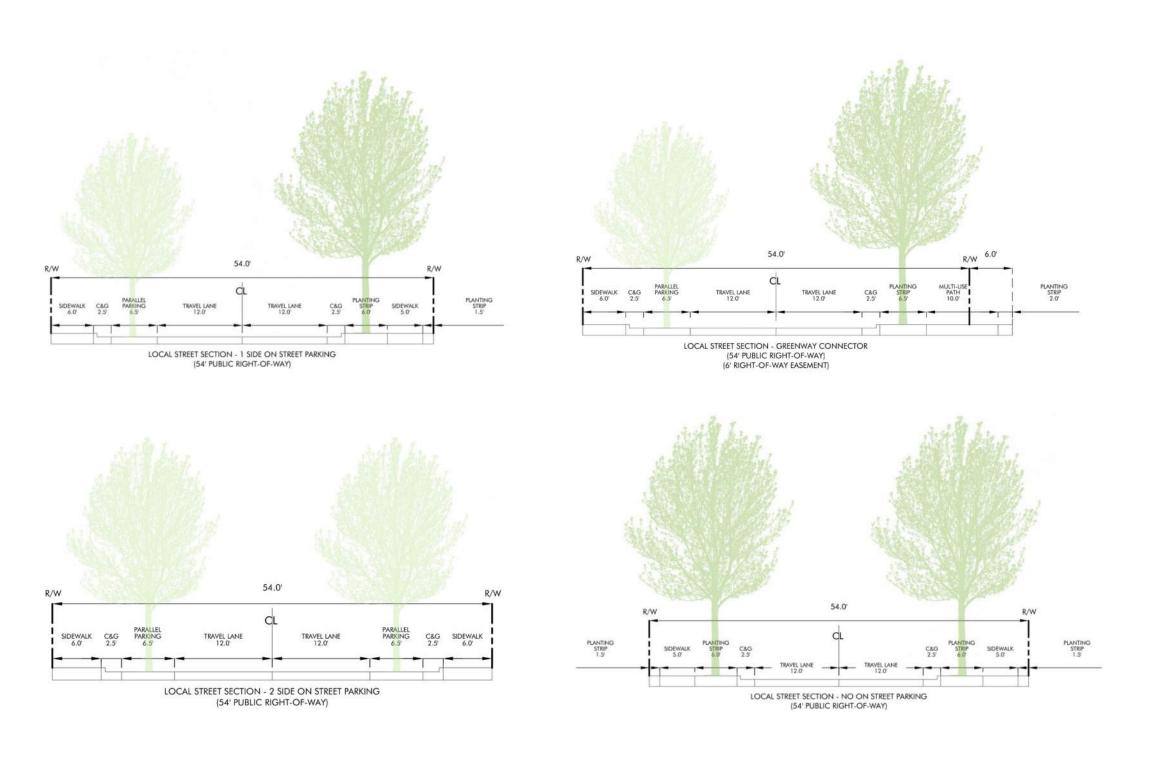
Street Sections



INFRASTRUCTURE

*Note: Staff is developing updated sections and details. Sections to be updated once updates received from Town of Knightdale

Additional Sections & Details



LYNDON OAKS - PLANNED UNIT DEVELOPMENT (PUD)

INFRASTRUCTURE

Preliminary Stormwater Plan



STORMWATER

The property is located within the Neuse River Basin. The site consists of two existing ponds, and 4 perennial streams which create four unique drainage areas. Stormwater runoff within these areas will be controlled by multiple SCMs as seen in Figure 17a. The outfall is located at the southwest corner of the property. 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 in the center of the site and near the central roundabout will have a fountain installed to create a water amenity. See Figure 17b for an example of a pond fountain.

The developer will work will Town staff during the construction drawing phase on SCM design if any "additional safety structures such as fences, vegetative buffers, landscaping elements, or any combination of the three" are needed, pursuant to UDO Sec. 7.3.J.

» The plan shown is preliminary Knightdale staff.



Figure 17a: Stormwater Plan for Lyndon Oaks

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



Figure 17b: SCM fountain example



Preliminary Utility Plan



WATER & SEWER

Lyndon Oaks will design all water and sewer to meet the standards of the City of Raleigh. Water allocation points will be met for the Major Subdivision through the use of many site elements that listed in the tables below. Precedent images of these elements can be found in the Site Programming section of this PUD.

staff.

WATER ALLOCATION POLICY

Required amount: 50 pts.

MAJOR SUBDIVISION	
Major Subdivision (Base points)	15 pts.
Conservation of Natural Habitat	7 pts.
Construct a fountain within the SCM	4 pts.
On Street Parking	4 pts.
Residential Architectural Standards	15 pts.
3,000' or more of 6-foot wide path	3 pts.
Resort Style Pool	2 pts.
Deck/Patio (2,000 SF minimum)	2 pts.
Clubhouse (No Meeting Space, bathrooms and changing rooms only)	3 pts.
Outdoor display of public art	4 pts
IPEMA Certified Playground Equipment	4 pts.
TOTAL PROVIDED	63 pts.
TOTAL MIN. REQUIRED	50 pts.
SINGLE-USE RETAIL	
Single Use Retail Base Points	41 pts.
Construction of Gateway Landscaping	5 pts.
Deck/Patio (2,000 SF minimum)	
Outdoor Display of Public Art	4 pts.
TOTAL PROVIDED	52 pts.
TOTAL MIN. REQUIRED	50 pts.

submits a site plan.

Figure 18: Utility Plan for Lyndon Oaks

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

Note: Any combination of features listed above can be used to meet the 50 point minimum requirement. Single-Use Retail Water Allocation Policy points are preliminary and subject to change when the developer of the commercial outparce



A Traffic Impact Analysis (TIA) was conducted by Ramey Kemp Associates in accordance with the Knightdale Unified Development Ordinance (UDO) and the North Carolina Department of Transportation (NCDOT) capacity analysis guidelines. A full copy of the TIA was submitted for review and approval with the PUD submittal. The listed recommended improvements are subject to further review and final approval by NCDOT, and shall be phased with the development.

Study Area

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

- » Old Faison Road & Bethlehem Road
- Old Faison Road & Tart Farm Road >>
- Old Faison Road & Pleasant Colony Drive >>
- Old Faison Road & Quiet Way >>
- Bethlehem Road & Crosscut Place
- US 64 EB Ramps & Hodge Road
- » US 64 WB Ramps & Old Faison Road
- Smithfield Road & Old Ferrell Road >>
- Bethlehem Road & Poole Road

Recommended Improvements

Based on the analysis of the TIA (including improvements to be installed by the Lyndon Oaks development), the following improvements have been recommended to be constructed to mitigate traffic impacts by the proposed development.

Westbound I-87 Ramps & Hodge Road (Improvements by STIP W-5705AK)

- Construct a westbound right turn lane with 100 feet of storage and appropriate decel and taper.
- Construct a westbound left turn lane with 100 feet of storage and appropriate decel and taper.
- Modify signal timings and signal phasing.

Old Faison Road & Bethlehem Road (Improvements by Developer)

- Construct a signal
- Construct a northbound left turn lane with 250 feet of storage
- Construct a westbound right turn lane with 250 feet of storage
- Construct a westbound left turn lane with 175 feet of storage
- Roundabout improvement may be provided in lieu of the signal and turn lanes recommended by the TIA if later requested by the Town, sufficient right-of-way is available, and this improvement is approved by NCDOT.

Old Faison Road & Tart Farm Road / Site Access A (Improvements by Developer)

- Construct an eastbound right turn lane with 75 feet of storage and appropriate decel and taper.
- Construct exclusive northbound left turn lane with full storage.
- Provide stop control for northbound approach.

Bethlehem Road & Crosscut Place / Site Access B (Improvements by Developer)

- Construct a single-lane roundabout.
- Construct eastbound approach with one ingress and one egress lane.
- Provide yield control for eastbound approach.

Westbound I-87 Ramps & Hodge Road (Improvements by Developer)

- Extend westbound left turn lane to contain 175 feet of storage and appropriate decel and taper.
- Extend southbound left turn lane to contain 275 feet of storage and appropriate decel and taper.
- Extend eastbound left-through lane to contain 275 feet of storage and appropriate decel and taper.

Bethlehem Road & Poole Road (Improvements by Developer)

Construct left turn lanes with 100 feet of storage.





Site Programming







Lyndon Oaks 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 network of ± 20 acres of open space and recreational amenities. The proposed amenities may include but are not limited to the following:

1 Greenway Trail



3 Playground

4 Dog Park

dogs run.

5 SCM Fountains

»

6 Neighborhood Serving Commercial

»









» Public and private greenway trails will be located throughout Lyndon Oaks and will be 10' wide asphalt paths. In addition to the 10' multi-use paths along Widewaters Parkway, there are many pedestrian routes through the community.

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

» The IPEMA certified playground will be located in two open spaces to allow for greater access for families in Lyndon Oaks

» The playground will be located in one of the active open space areas and will provide a place for residents to let their

The pond fountains will amenitize the stormwater ponds located in both the center of the site, and near the central roundabout active open space.

The commercial outparcel will be low-intensity, and will meet the needs of nearby residents.

Two Pickleball courts will allow for additional active recreational opportunities for the neighborhood

Site Programming



















1) Pocket Park

- opportunities.
- 2) Bench Swing Park for people of all ages.
- 3 Hammock Park
- 4 Pollinator Garden
 - in the community.
- **5** Overlook with Gazebo

6 Benches

7 Public Display of Art

» Pocket parks will be located in several places throughout Lyndon Oaks and may include benches, open play lawn, landscaping, exercise equipment, and other recreational

» A bench Swing Park will be located in one of the open spaces for the community and will provide a fun seating alternative

» A Hammock Park will be located in Lyndon Oaks to add an additional type of open space that will allow residents of all ages to relax and unwind.

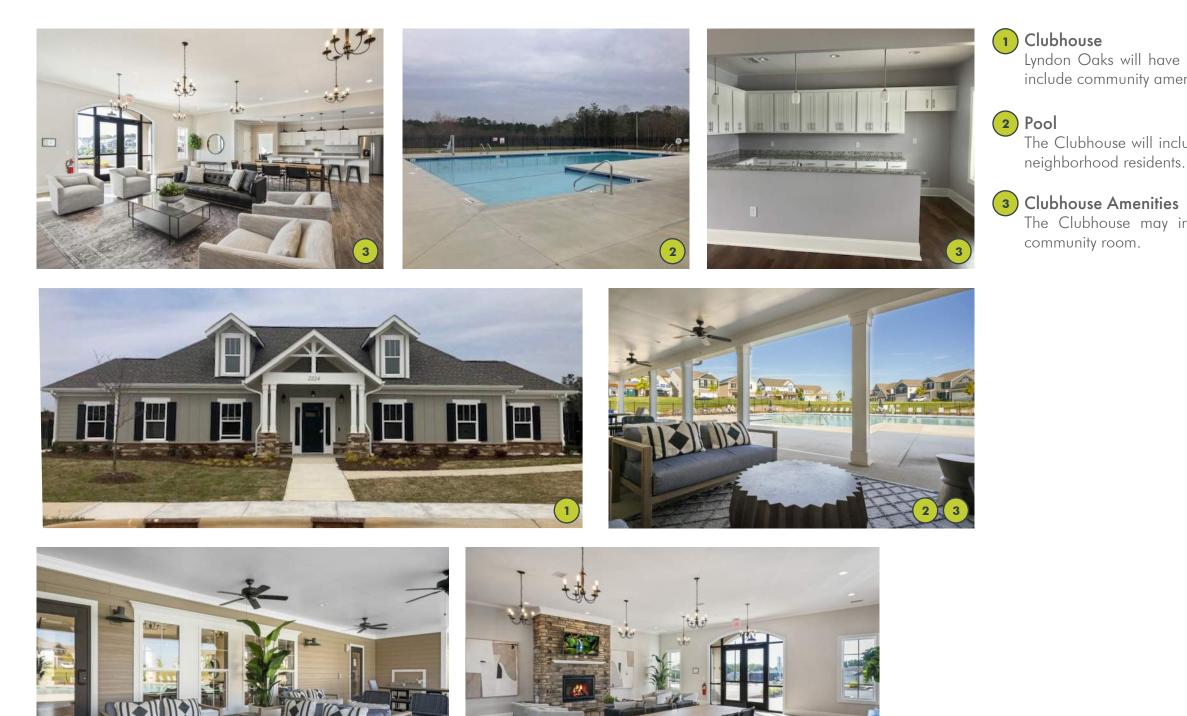
» A pollinator garden will be provided around the SCM nearest to the central roundabout to create a habitat for pollinators

» The central pond will have an overlook plaza and gazebo to allow for a community gathering focal point.

» Benches will be provided in open spaces around Lyndon Oaks to provide spaces for the community to relax & rest.

» An art installation and roadside landscaping may be provided near the central roundabout for enjoyment from both vehicular and pedestrian users of the site.

Clubhouse Programming



LYNDON OAKS - PLANNED UNIT DEVELOPMENT (PUD)

Lyndon Oaks will have a Clubhouse for the residents that will include community amenities and a resort-style pool.

The Clubhouse will include an outdoor resort-style pool for the

The Clubhouse may include a kitchen, outdoor area, and

Open Space Plan



Lyndon Oaks 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 network of public Greenway Trails and private trails create additional connection opportunities between all of the provided open spaces.

Active open space areas may include but are not limited to the following uses: A Clubhouse, Resort-style Pool, (2) Playgrounds, (2) Pickleball courts, a Bench Swing Park, a Hammock Park, Greenway Trails, and additional pocket parks with exercise equipment.

Passive open space areas may include but are not limited to the following uses: Village Green, Pollinator Gardens, Public Display of Art, Paths & Benches, Private Greenway Trails, Open Lawns and entry landscaping and hardscaping.

Enhanced landscaping, hardscaping, and unique signage will be provided at both neighborhood entrances.

Please see Site programming page for example imagery.

RECREATIONAL OPEN SPACE STANDARDS*

PROXIMITY ZONE:

REQ. OPEN SPACE:

- » REQ. ACTIVE SPACE (5
- » REQ. PASSIVE SPACE (5

PROP. OPEN SPACE:

- » PROP. ACTIVE SPACE:
- » PROP. PASSIVE SPACE:

* Open space is calculated according to Town of Knightdale UDO Sec. 11.2.c. **According to Town of Knightdale UDO Sec. 11.2.A, Recreational Open Space can not include areas covered by buildings, structures, parking lots, dry ponds, required setbacks, or public R/W.

Legend	
Active Open Space	
Passive Open Spa	се
Sidepath (in R/W)	

Figure 19: Open Space Plan for Lyndon Oaks

All outside 1/2 mile distance

	± 751,920 sf (17.26 ac)		
50%):	\pm 8.63 ac (50% of req.)		
50%):	\pm 8.63 ac (50% of req.)		

± 21.53 ac total ± 8.77 ac (0.14 ac over req.) ± 12.76 ac (4.13 ac over req.)







Preliminary Landscape Plan



Lyndon Oaks 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 7.4.1.1. of the UDO. The preliminary plan only shows typical buffer plantings and street tree plantings as seen in Figure 20. The riparian buffer will consist of tree preservation to maintain the natural qualities of the site.

- from Town of Knightdale staff.
- Town of Knightdale Staff.
- to change.

Legend

Stream Buffer Trees Type B Buffer Yard

Type D Buffer Yard

Figure 20: Landscape Plan for Lyndon Oaks

» The plan shown is preliminary and subject to change per direction

» 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

» Location and amounts of trees are conceptual in nature and subject



Landscape Buffers

The perimeter Lyndon Oaks contains a Type B Buffer Yard per Town of Knightdale Unified Development Ordinance Chapter 7. Figure 21 shows a typical 100' section of the Type B buffer for Lyndon Oaks.

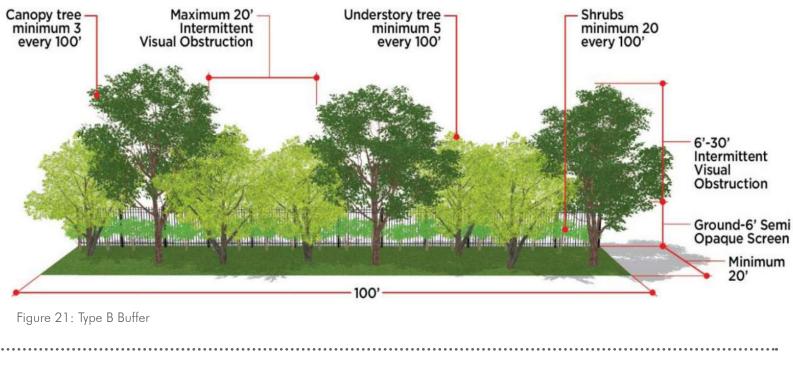
TYPE B BUFFER YARD STANDARDS (UDO Sec. 7.4.1.3)

Minimum width:	20'
Minimum landscape heigh	nt/opacity:
» Ground to 6'	Semi-opaque screen
» 6′ - 30′	Intermittent visual obstruction
Maximum landscape horiz	zontal 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. deciduou	JS
. ,	A minimum of 40% / maximum 60% must be evergreen A minimum of 40% / maximum 60% must be evergreen At least 80% must be evergreen

The southern property line of Lyndon Oaks contains a Type D Buffer Yard per Town of Knightdale Unified Development Ordinance Chapter 7. Figure 22 shows a typical 100' section of the Type D buffer for Lyndon Oaks.

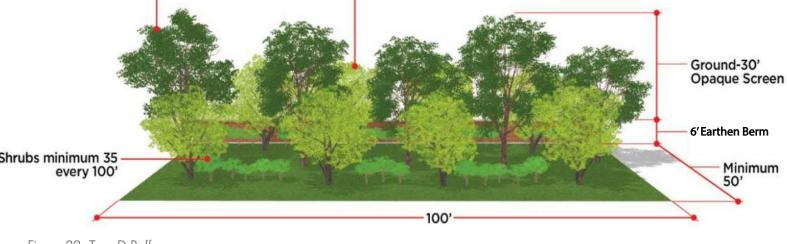
TYPE D BUFFER YARD STANDARDS (UDO Sec. 7.4.1.5)

Minimum width:	50'	minimum 5 every 100'
Minimum landscape heig	ght/opacity:	
» Ground to 30'	Opaque Screen	
» Ground to 6'	Earthen Berm	S Same
Maximum landscape hor » None permitted	izontal openings:	
Required plantings:		
» Canopy Trees	5 per 100 linear feet	and the second se
» Understory Trees	8 per 100 linear feet	- Thomas
» Shrubs	35 per 100 linear feet	Shrubs minimum 35 every 100'
» Evergreen vs. deciduo	DUS	every loo
1	A minimum of 40% / maximum 60% must be evergreen A minimum of 40% / maximum 60% must be evergreen	
• Shrubs:	At least 80% must be evergreen	Figure 22: Type D Buffer





Canopy tree -



Understory tree minimum 8

every 100'

42





Architectural Elevations - Single Family Detached





Note: Elevations shown are conceptual in nature and subject to change. See page 45 for list of architectural standards.



Architectural Elevations - Single Family Attached (Townhomes)







Elevations shown are conceptual in nature and subject to change. Individual townhome units will be combined into duplexes, triplexes, and quadplexes. (See images in upper middle and upper right.) See page 45 for list of architectural standards.

Architectural Design Standards

STANDARDS FOR ALL HOMES

- 1. All homes will have a combination of two or more of the following materials on the front facade (not including foundation) unless the home is only stone or brick:
 - » stone
 - brick >>
 - lap siding
 - Shakes
 - board and batten
 - window pediments
 - recessed windows
 - side and/or front window box bays
 - roof gables
 - roof dormers
 - roofline cornices
 - metal roofing as accent
 - column
 - shutters »
 - fiber cement siding »
- 2. The exterior siding material on the side and rear facades will be fiber cement. When two materials are used, the materials shall be different but complimentary colors.
- 3. Vinyl is prohibited except for window trim, soffits, fascia, and/or corner boards.
- 4. Main roof pitches (excluding porches) will be at least 6:12
- 5. 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 a fireplace, side porch, wall offsets could be used as an alternative to windows.
- 6. Anti-monotony provisions: in order to promote variation in home appearances,

no home located adjacent, across the street, or diagonal shall have the same elevation and color combination.

- 7. All front doors shall have glass inserts, transoms, or glazing.
- 8. There shall be a minimum 12" overhang on every gable end.
- 9. Each front entrance shall contain a covered stoop or porch.
- 10. Foundation shall be raised to a minimum height of 18 inches above finished yard grade in the front and shall contain a minimum of 2 stair risers up to the front porch. Foundations will be wrapped in brick or stone on all sides. Areas under front porches may be enclosed with lattice or other decorative form of screening to match architectural style.

STANDARDS FOR SINGLE-FAMILY DETACHED FRONT-LOADED HOMES

- 1. Single-family 2 story homes will have a minimum heated area of 1,900 square feet.
- 2. Single-family 1 or 1.5 story homes will have a minimum heated area of 1,600 square feet.
- 3. All homes will have a front porch with a minimum depth of 6 feet, which may encroach up to 6 feet in the front setback. Front porch posts will be at least 6"x6".
- 4. Garages will not protrude more than 6 feet from the front porch stoop, unless an alternative is approved by staff.
- 5. All garage doors shall contain window inserts and decorative hardware.
- 6. Garages will not exceed 50% of the front façade width or will be split into two bays.
- 7. All homes shall have a minimum 100 square foot patio, deck, terrace, or courtyard

Architectural Design Standards (cont.)

STANDARDS FOR SINGLE-FAMILY DETACHED REAR-LOADED HOMES

- 1. Homes will have a minimum heated area of 1,500 square feet, except up to 50% of rear-loaded single-family detached homes may have a minimum heated area of 800 square feet.
- 2. All homes will have a front porch with a minimum depth of 5 feet, which may encroach up to 6 feet in the front setback. Front porch posts will be at least 6"x6".

STANDARDS FOR TOWNHOMES AND DUPLEXES

- 1. Townhomes shall be at least 2 stories with rear loaded garages and a with a minimum heated area of 1,100 square feet.
- 2. All townhouse units shall provide detailed design elements using at least one (1) of the features from each of the four categories below:
 - a. Entrance
 - i. Recessed entry with 6" minimum width door trim
 - ii. Covered porch with 6" minimum width pillars/posts/columns
 - b. Building Offset
 - i. Facade offset
 - ii. Roofline offset

- c. Roof
- i. Dormer
- ii. Gable
- iii. Cupola/Tower/Chimney
- iv. Decorative cornice of roof line (flat roof only)
- d. At least two (2) of the following facade elements:
 - v. Bay window
 - vi. Balcony
 - vii. Porch
 - viii. Shutters
 - ix. Window trim with 4" minimum width
 - x. Patterned finish (scales, shakes, wainscoting, brick, or stone)
- 3. Townhomes shall have a front porch with a minimum depth of 4 feet.

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.
 - »
 - not permitted.
 - permitted by-right:

 - Personal Services
 - Professional Services
 - Medical Services

 - Allowed RMX district accessory uses
 - Bar/Tavern/Microbrewery Studio (Arts, dance, martial arts, music)
- outparcel prior to plat recordation.
- outparcel prior to plat recordation.
- 5. Developer is responsible for maintaining the commercial outparcel in a manner consistent with Lyndon Oaks Homeowners Association properties, until the commercial property is developed and/or sold by developer.
- recordation.
- 8. Buildings shall be permitted up to two (2) stories.
- to accommodate a two story commercial building.

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

» Vape, Tobacco, and CBD Stores, or businesses that sell these products are

» The following principal uses shall be the only allowable uses, and shall be

Child/Adult Day Care Center (6 or more people)

Neighborhood Retail/Restaurant (2,000 sf or less)

2. Developer shall stub potable water, sanitary sewer, and storm drainage to commercial

3. Developer shall construct curb, gutter, and sidewalk improvements along commercial

4. The commercial outparcel shall not be owned by the Homeowners Association.

6. A 10' landscape buffer shall be planted adjacent to residential lots prior to plat

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

9. Buildings shall meet the design standards for mixed-use buildings in UDO Sec 6.8.

10. All infrastructure on the residential portion of the project shall be sized appropriately





Lyndon Oaks - Site Development Allowances

The proposed zoning for Lyndon Oaks is RMX-PUD. Lyndon Oaks meets all standards set forth in the Town of Knightdale's Unified Development Ordinance with the exception of a few conditions. Due to primarily environmental and other site constraints, and in order to provide more landscape conservation and beneficial common open space for an overall better-integrated design, 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 single-family lot is 80', and the minimum lot width for an alley-loaded single-family lot is 30'.
 - » In order to create a variety of housing types and price-points, and a more walkable community, we are proposing single family detached front-loaded homes with lot widths of less than 80', and single family attached alley-loaded homes with lot widths of less than 30'.
- Driveway length
 - » In the RMX base district, the minimum required driveway length is 35' for a residential lot.
 - » For front-loaded residential types, we are proposing a 25' minimum driveway length, and a 20' minimum driveway length for rear-loaded. This is mitigated by ample on-street guest parking, and the proposed driveway lengths allow for homeowners or quests to park a car in the driveways without blocking pedestrian facilities.
- Setbacks
 - » For the House building type, the minimum required rear setback is 25' and the side setbacks can be a minimum of 20% of the lot width (to a minimum of 5' for lots over 60' wide and 3' for lots less than 60' wide).

Standard Street Sections (UDO Sec. 10.4.A.1.b & Town Standard Details)

- Local Street Section Two Way
 - » The standard detail calls for a 54.0' right-of-way, and allows for informal parking.
 - » Lyndon Oaks 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 onstreet parking on streets with front-loaded units to avoid any potential sight triangle conflicts as residents exit their driveways.

Proposed Distribution (UDO Sec. 11.1.B)

• Lyndon Oaks is providing residential uses and nonresidential space, and thus has a required distribution of uses listed in Knightdale's UDO Sec. 11.1.B. Lyndon Oaks will meet the required distribution ranges for single-family homes, but will not be providing a multifamily component, and the commercial component, which is not at a planned Neighborhood Node and will likely be small-scale neighborhood-serving commercial or office use(s), is smaller than the minimum 5%. The proposed distribution range for townhomes is also smaller than the minimum of 10%. The proposed use distribution is as follows:

- » Dwelling Single Family
- » Dwelling Townhouse
- » Retail/Restaurant/Entertainment/Office/Service

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

- Lyndon Oaks will require a site development allowance pertaining to Residential Clearing and infrastructure and effective stormwater design.
 - » Currently, mass grading is prohibited on lots 60' in width or greater.

Street Section for Neighborhood Streets (UDO Sec. 11.3.B.3.)

• The project places residential development in pods to avoid additional impacts to the site's many neighborhood-friendly, slower street section is more appropriate.

22.9%
9.9%
0.5%

Grading as specified in Section 9.3.B of the UDO in order to provide more efficient utility

» Lyndon Oaks requests to mass grade 60' and 70' single-family lots (an additional 96 lots, 19.2% of the lots being developed). Any lot 80' in width or greater shall not be mass graded.

streams and wetlands, and the pod at the center of the site is greater than 20 acres and can only be accessed by the street to the west of the Widewaters Parkway roundabout without creating additional undue environmental impacts. Because the street provides access from Widewaters Parkway to a residential area of over 20 acres, UDO 11.3.B.3 would require a Main Street section; however, Lyndon Oaks proposes a modified Local Street Section - Two Way, which is 16' feet narrower than the Main Street section, and will allow for more green space on the site. The proposed modified Local Street Section - Two Way would not require a median, which would cause the residential sections to the north and south of the road to be disconnected and makes pedestrian crossings more difficult. The project does not wish to build a larger street section than what is needed to access this pod of residential development, and that will not be needed to connect to what is planned to be Mixed Density Residential development on the approximately 20 vacant acres to the east on Clifton Road, which is a dead-end road and is not planned to connect over I-87 on the Roadway Network Plan. Thus, this future street connection will likely only serve to connect two residential neighborhoods and will not collect regional trips, so a more

<u>Rear-Loaded Homes that Front a Public Green with Pedestrian Facilities (UDO</u> <u>Sec. 11.2.C.11)</u>

• In order to provide flexibility for the proposed neighborhood design that includes small groups of rear-loaded townhomes that front passive open space areas with pedestrian facilities to encourage community gathering and use of alternative forms of transportation, Lyndon Oaks requests a site development allowance for open space areas that have a minimum of 34' of frontage on either a public street or alley, rather than 50' of frontage.

Public Alleys for Utilities (UDO Sec. 10.4.A.1.b)

• Lyndon Oaks requests 32' public rights-of-way (alleys), as shown in the Master Plan, in order to provide utilities to rear-loaded homes that either front public open space rather than a public right-of-way, or do not directly front a public right-of-way, and alley access provides a more-direct route to connect homes to public utilities (particularly around the Widewaters Parkway roundabout).

Modified Avenue (currently called Tart Farm Rd) and Widewaters Parkway Intersection Design (UDO 11.3.B.4)

• Lyndon Oaks proposes a four-way stop with traffic calming measures, including high-visibility crosswalks, stamped concrete, Rectangular Rapid Flash Beacons (RRFBs), and pedestrian refuges in the Widewaters Parkway median at the intersection of the Urban Main Street, and Widewaters Parkway. These measures will slow down traffic and ensure pedestrian safety at this intersection, which is very close to the intersection of Widewaters Parkway and the Roadway Network Plan's planned Main Street connection to a future Neighborhood Node at the intersection of Bethlehem and Old Faison Roads, where the development will be providing a roundabout to calm traffic as well.

SITE DEVELOPMENT ALLOWANCES





NEIGHBORHOOD MEETING

Meeting Information



Figure 23: Hampton Inn & Suites Knightdale Vicinity Map (Not to scale)

A neighborhood meeting was held on November 14th, 2023 at 6:00 pm at the Hampton Inn & Suites Knightdale. See Figure 23 for a map of the meeting location. There were approximately 40 neighbors in attendance, along with a member of the development team, four members of the design team, and one Senior Planner from the Town of Knightdale.

AL.	Date of meeting:	Tueso
1	Time of meeting:	6:00
	Meeting address:	Ham 405 Knigł
	Developer: » DR Horton:	Reese Cam
	Design consultants: » Urban Design Partners: » Ramey Kemp Associates: » Parker Poe:	Brian Caro Ashle
	Town of Knightdale:	Gide

sday Nov. 14, 2023

0 pm EST

npton Inn & Suites Knightdale 5 Hinton Oaks Blvd. ghtdale, NC 27545

se Bridges, PE, Entitlements Manager neron Jones

an Richards, PLA roline Cheeves, PE ley Honeycutt Terrazas, Land Use Attorney

Gideon Smith, AICP, Senior Planner

Neighborhood Meeting Questions

At the neighborhood meeting for Lyndon Oaks, the neighbors had guestions about stormwater, density, renter vs. owner housing, traffic, number of new children in schools, forced annexation, construction timeline, target price for homes, quality of residents moving, wildlife habitat, and property values. Their questions are as follows:

» Question/Concern #1: Stormwater, Runoff, and Grading

- Applicant clarified that grading is not complete but the goal is for the site to be balanced (no import, no export dirt) but ultimately the site will tie into the grade along the perimeter of the site. Stormwater runoff is state-regulated and cannot be increased on adjacent properties. SCMs are monitored yearly.
- » Question/Concern #2: How Is Density Calculated?
 - Applicant clarified that density is calculated based on total gross acreage, it does not exclude amenity areas, thus residential density on the site is less than 3 units/acre.
- » Question/Concern #3: Renter vs. Owner-Occupied Housing
 - Applicant clarified that North Carolina law prohibits regulating occupancy in a zoning ordinance.
- » Question/Concern #4: Traffic on Bethlehem Road & Roundabouts Being Dangerous for Large Emergency Vehicles
 - Applicant clarified that roundabouts are designed such that emergency vehicles can drive over the center island. Roundabouts are safer because they eliminated left turns which are the most dangerous at an intersection. Knightdale UDO has been prioritizing roundabouts to improve community safety.

» Question/Concern #5: Traffic in General, TIA Process, Intersections Studied

- Applicant's transportation engineer clarified the Traffic Impact Analysis be submitted with the application.
- » Question/Concern #6: Number of New Children in Schools & Strain on **Emergency Services**
 - Schools and emergency services.
- » Question/Concern #7: Taking Neighbors Land, Forced Annexation
 - Applicant clarifies that it is giving land to Knightdale to make roadway requires voluntary annexation.
- » Question/Concern #8: Timeline of Construction of Development
 - Applicant clarified estimated timing: Zoning process through Spring and at end of 2026; Early 2027 moving first customers into first phase

process and highlighted that focus is on weekday peak hours, 7AM-9AM and 4PM-6PM. She clarified that all of the traffic counts and turning movements are taken into account. She listed the intersections that would be studied. She clarified that the goal of TIA is to determine worst-case scenario (maximum trip generation at buildout). Town requires study of roadway network considering compounded growth until 2042. TIA would

• Applicant clarified information will be submitted to Wake County Public

improvements. Applicant clarified that roadway improvements will be within the already existing public right of way, but if property needed to be acquired to make an improvement, the Town and NCDOT cannot use eminent domain to take property for a private development. NC law now

Summer of 2024; Design drawings (water, sewer, grading, traffic) 12 months later (end of 2024); At least a year to a year and a half to develop the first phase (end of 2025, beginning 2026); begin wrapping up houses

Neighborhood Meeting Questions (Continued)

» Question/Concern #9: Target Price for the Homes

• Applicant clarified that sizes ranged from 1,500 square feet for townhouses and smaller houses to 3,000+ square feet for single family homes; in today's terms, pricing would range from \$200,000 to \$600,000+, but could not commit to pricing for future market rates.

» Question/Concern #10: Quality of Residents Moving

• Town is strict about architectural standards, and the plan is to provide a high quality product.

» Question/Concern #11: Wildlife and Native Habitat

• Applicant clarified that natural vegetation will be retained around pond, lake, and streams and there will be a walking trail as a natural amenity onsite and they are doing their homework to develop consistently with the history of the land. Approximately 17 acres of preserved area.

» Question/Concern #12: Decrease in Property Values

• Applicant clarified they have never seen property values decrease due to development with exception of some industrial projects.

NEIGHBORHOOD MEETING

Attendance Sheet

Neighborhood Meeting for Lyndon Oaks Planned Unit Development

Hampton Inn & Suites, 405 Hinton Oaks Blvd, Knightdale, NC 27545

Name	Address	Name	Address
Karen Palke	121 Meadows Cr Knightdale	Kenny Holley	307 Rochelle Dr. Knightdale
Leamon Dixon	107 Shady Circle Knightdale	Donald Kay	932 Bethlehem Rd Knightdale
Eddie Matthews	106 Shady Circle Knightdale	Barbara & Dick Sossomon	1124 Poplar Circle Knightdale
Joyce Liles (Gayle)	4040 Clifton Rd	Brad Pope	1008 Bethlehem Rd. Knightdale
Tim Ferrell	3033 Churchill Road	Carrie Gray	1940 Bethlehem Rd. Raleigh
Kristin Trent	5309 Crosscut Pl	Michael & Karen Palko	121 Meadows Circle Knightdale
Don Curtis Jr.	5309 Crosscut Pl	Laurie Pope	116 Bethlehem Rd Knightdale
Carole & Kenny Faison	802 Bethlehem Rd Knightdale	Sam Maise	203 Robertson St. Knightdale
Chris Posh	4308 Old Faison Rd Knightdale	Patricia Loftin	1044 Stone Eagle Lane Raleigh 27610
Trey Tart	106 Tart Farm Rd Knightdale	Sara Hauser	4228 K Held Rd Knightdale
EC Tart	4325 Old Faison Rd		
Sonya Debnam	4521 Old Faison Rd		
Wesley Knapp	919-740-9955 Churchill HOA		
Nanay & Gene Zack	133 Meadows Circle Knightdale		
Caster Kennemer			
Gwen Gray	4275 Old Faison Rd Knightdale		
Don & Doris Curtis	5309 Cross Cut Place Knightdale		
Annette Miltz	128 Meadows Circle Knightdale		
Trudy Guffey	5101 Woodfield Ln Knightdale		
Rhonda Neely	129 Meadows Circle Knightdale		
Brian & Kim King	125 Meadows Circle Knightdale		
Tim & Denise Jones	132 Meadows Circle Knightdale		
Jack & Angela Worden	4407 Omaha Dr. Knightdale		
Gerald & Ann Akland	112 Old Ferrell Rd		

Date: November 14, 2023

URBAN DESIGN PARTNERS

ANDSCAPE ARCHITECTURE + CIVIL ENGINEERING



November 3, 2023

Dear Knightdale Area Property Owner:

You are invited to a neighborhood meeting to learn more about a proposed project adjacent to or near your property. A Neighborhood Meeting is required by the Town of Knightdale Unified Development Ordinance and all property owners within 200 feet of the proposed development must receive notification of the meeting. The meeting will be an opportunity for residents and property owners to learn more about the project and provide feedback. This is the very beginning of the rezoning process prior to submitting an application to the Town. Following this meeting, the next steps include possible revisions to the plan based on comments received, application submittal, a Town Council Joint Public Hearing, a Land Use Review Board meeting, and finally the Town Council decision.

Meeting Date: November 14, 2023 Meeting Time: 6:00 – 7:00 pm

Meeting Location: The Hampton Inn & Suites Knightdale 405 Hinton Oaks Blvd., Knightdale, NC 27545

Application Type: Planned Unit Development rezoning

Approving Authority: Town Council Legislative Approval

Address/PIN: 0 Bethlehem Road (PIN 1743953683) 940 Bethlehem Road (PIN 1753152116) 0 Old Faison Road (PIN 1743971085) 0 Old Faison Road (PIN 1753071583) 4313 Old Faison Road (PIN 1743989384) 4325 Old Faison Road (PIN 1743986356) 106 Old Tart Farm Road (PIN 1743976575)

<u>Description of Proposal</u>: The applicant is requesting to rezone 7 parcels of land in order to build a primarily residential community with a small amount of neighborhood-serving commercial space. The land is currently zoned Rural Transition (RT) and is proposed to be rezoned to General Residential Low Density (GR3) or Medium Density (GR8) and Residential Mixed Use (RMX) or Neighborhood Mixed Use (NMX), with a Planned Unit Development overlay (PUD). The proposed uses are front and rear-loaded single-family detached homes, duplexes, townhomes, and commercial uses.

Estimated Submittal Date: November 27, 2023

Enclosed is a map showing the location of the property being considered for this proposal. Additional materials and information may be available at the meeting. Please see the Development Services 2023 Meeting and Submittal Schedule for future public meetings dates



(https://www.knightdalenc.gov/sites/default/files/uploads/DevelopmentServices/submittal_and_meeting_schedule_2023.pdf).

If you have any questions, comments, or concerns about the proposal prior to the meeting you may contact me at (919) 835-4043 or via email at <u>ashleyterrazas@parkerpoe.com</u>. These will be recorded as part of the meeting summary, which is submitted to Town staff and elected officials. You may also contact the Town of Knightdale Development Services Department at (919) 217-2243.

Thank you,

Ashley Honeycutt Terrazas

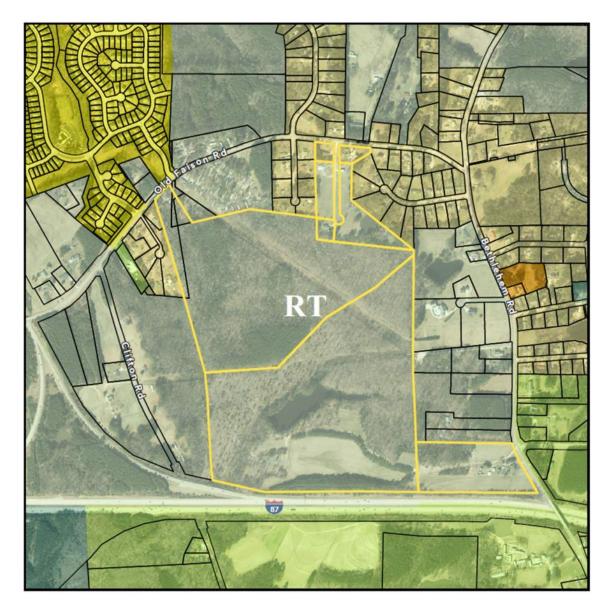
Cc: Town of Knightdale Development Services Department



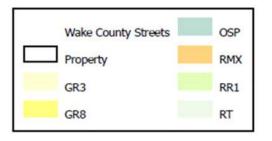
Meeting Agenda

- 1. Applicant presentation: applicant will describe the nature of this rezoning request.
- 2. Public questions: applicant will field any questions from the public.





Vicinity Map w/ Current Knightdale Zoning





	1		
1" = 1,600'	<u>SIIE DAIA</u>		
	ACRES:	± 171.88 AC TOTAL	٩L
XWZ	ï	1753-15-2116, 1743-97-1085, 1743-98-9384, 1743-97-6575	1743-95-3683, 1743-98-6356, 1753-07-1583,
	EXISTING ZONING:	RT	
GR3	PROPOSED ZONING:	PUD	
RR1	BASE DISTRICT:	Ċ	
	DEVELOPMENT SUM COMMERCIAL:	IMARY	± 15,000 SF
	RESIDENTIAL: FRONT-LOADED (SING)	LE FAM DETACHED	
	60' LOTS		75 DU (15.0%)
B			DU
	REAR-LOADED (SINGLE		26 DU (5.2%)
AL IN NATURE AND IS	30' LOTS		77 DU (15.4%)
			DU
, ALIA SUKVEY, GIS MAPS, IMAGERY, AND LAND	TOWNHOMES (REAP.1)		50 DU (10.0%)
ect to review and Id state planning and Gencies.	20' UNITS	OAUEUJ	84 DU (16.8%)
DUCT IS THE PROPERTY NERS, PLLC. NO USE THIS PLAN IS PERMITTED			DU
HORIZATION FROM \$\$, PLLC.	24' UNITS		20 DU (4.0%)
	TOTAL:		500 DU
	reg. parking (mini	:(WUW)	
	 SINGLE FAMILY 		616 SPACES
	<u> </u>		384 SPACES
	COMMERCIAL		53 SPACES
	» BICYCLE		2 SPACES
	REQ. OPEN SPACE:		± 20.9 AC
	500 DU × 3.5 BED 1,750 BEDS × 520	S = 1,750 BED sf = 910,000sf	S (20.9 AC)
			200 400
	150 Fayetteville St. Suite 1310	Raleigh, NC 27601	OCTOBER 13, 2023 22-RDU-083 urbandesignpartners.com



PLAN T () ⊢ ⊔ 乂 S



U R B A N D E S I G N PARTNERS

AKS Ζ Ζ



Project Contact Information

Project Name: Lyndon Oaks		Proposed Zonin	ng:	PUD
a 1 1 11 1				
Property PIN(s): See attached addendum	•	_Acreage/Square	e Feet:	See attached addendum
Property Owner: See attached addendur				
Address: See attached addendum				
City:				
Phone:		_Email:		
Developer: D.R. Horton				
Address: 7208 Falls of Neuse Road, S	uite 20	1		
City: Raleigh				
Phone: (984) 247-9614				
Address: 150 Fayetteville Street, Suite	1310			
City: Raleigh	State:	NC	Zip:	27601
Phone: (919) 275-5002		_Email:		
Builder (if known): Same as Developer				
Address:				
City:	State:		Zip:	
Phone:		_Email:		

Lyndon Oaks Ownership Addendum

Owner Information

Parcel 1

Site Address:
Pin:
Deed Reference (book/page):
Acreage:
Owner:
Acreage:

0 Bethlehem Road 1743953683 15657/540 81.31 ac Terry Lance Ferrell, Randall Hutchins Ferrell, and Timothy Clarence Ferrell 26 Saint Julians Court, Pawleys Island, SC 29585-6309

Owner Address:

Parcel 2

Site Address: Pin: Deed Reference (book/page): Acreage: Owner:

Owner Address:

Parcel 3

Site Address: Pin: Deed Reference (book/page): Acreage: Owner: Owner Address:

Parcel 4

Site Address: Pin: Deed Reference (book/page): Acreage: Owner: Owner Address: 940 Bethlehem Road 1753152116 15657/540 14.18 ac Terry Lance Ferrell, Randall Hutchins Ferrell, and Timothy Clarence Ferrell 26 Saint Julians Court, Pawleys Island, SC 29585-6309

0 Old Faison Road 1743971085 6075/504 65.43 ac Wayne L. Harper and Eugene J. Harper 4113 Brewster Drive, Raleigh, NC 7606-1711

0 Old Faison Road 1753071583 (Not Listed) 8.83 ac Deborah Jane Tart and Melton E. Tart, Jr. 4325 Old Faison Road, Knightdale, NC 27545-9179

Parcel 5

Site Address: Pin: Deed Reference (book/page): Acreage: Owner: Owner Address:

Parcel 6

Site Address: Pin: Deed Reference (book/page): Acreage: Owner: Owner Address:

Parcel 7

Site Address: Pin: Deed Reference (book/page): Acreage: Owner: Owner Address: 4313 Old Faison Road 1743989384 15474/755 1.08 ac Lee T. Alford 4313 Old Faison Road, Knightdale, NC 27545-9179

4325 Old Faison Road 1743986356 2253/285 1.05 ac Milton E. Tart, Jr. and Patsy P .Tart 4325 Old Faison Road, Knightdale, NC 27545-9179

106 Tart Farm Road
1743976575
9018/621
1.0 ac
Milton Edward Tart, III and Janet Stanley Tart
106 Tart Farm Road, Knightdale, NC 27545-8134



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March 22, 2024

Dear Knightdale Area Property Owner:

You are invited to a second neighborhood meeting to learn more about a pending project adjacent to or near your property. This is a voluntary meeting and will be an opportunity for the applicant to provide nearby residents and property owners updates and information about the case, and give them a chance to provide additional feedback. Following this meeting, the next steps include possible revisions to the plan based on comments received, a Town Council Joint Public Hearing, a Land Use Review Board meeting, and finally the Town Council decision.

Meeting Date: April 4, 2024

Meeting Time: 7:00 - 8:00 pm

Meeting Location: The Knightdale Recreation Center 101 Lawson Ridge Road, Knightdale, NC 27545

Application Type: Planned Unit Development rezoning

Approving Authority: Town Council Legislative Approval

Address/PIN: 0 Bethlehem Road (PIN 1743953683) 940 Bethlehem Road (PIN 1753152116) 0 Old Faison Road (PIN 1743971085) 0 Old Faison Road (PIN 1753071583) 4313 Old Faison Road (PIN 1743989384) 4325 Old Faison Road (PIN 1743986356) 106 Old Tart Farm Road (PIN 1743976575)

<u>Description of Proposal</u>: The applicant is requesting to rezone 7 parcels of land in order to build a primarily residential community with a small amount of neighborhood-serving commercial space. The land is currently zoned Rural Transition (RT) and is proposed to be rezoned to Residential Mixed Use (RMX) with a Planned Unit Development overlay (PUD). The proposed uses are front and rear-loaded single-family detached homes, duplexes, townhomes, and +\- 15,000 square feet commercial uses.

Submittal Date: Application was submitted on November 27, 2023

Enclosed is a map showing the location of the property being considered for this proposal. Additional materials and information may be available at the meeting. Please see the Development Services 2023 Meeting and Submittal Schedule for future public meetings dates (https://www.knightdalenc.gov/sites/default/files/uploads/DevelopmentServices/submittal_and_meeting_schedule_2023.pdf).



If you have any questions, comments, or concerns about the proposal prior to the meeting you may contact me at (919) 835-4043 or via email at <u>ashleyterrazas@parkerpoe.com</u>. These will be recorded as part of the meeting summary, which is submitted to Town staff and elected officials. You may also contact the Town of Knightdale Development Services Department at (919) 217-2243.

Thank you,

Ashley Honeycutt Terrazas

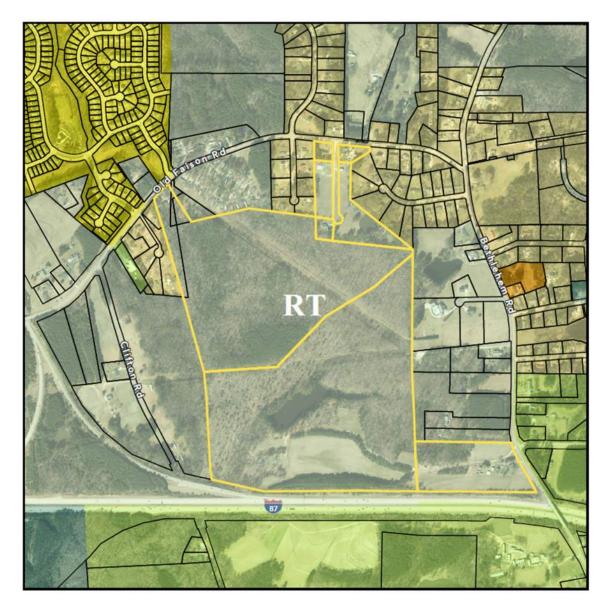
Cc: Town of Knightdale Development Services Department



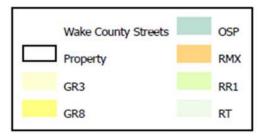
Meeting Agenda

- 1. Applicant presentation: applicant will describe the nature of this rezoning request.
- 2. Public questions: applicant will field any questions from the public.





Vicinity Map w/ Current Knightdale Zoning





LYNDOAKS



KNIGHTDALE, NC



	TI		·	·	,
SITE DATA	» ACRES:	» PINS:			

1753-15-2116; 1743-95-3683; 1743-97-1085; 1743-98-6356; 1743-98-9384; 1753-07-1583; ± 171.88 AC TOTAL 1743-97-6575

RMX-PUD RT » PROPOSED ZONING: » EXISTING ZONING:

± 15,000 SF **DEVELOPMENT SUMMARY** COMMERCIAL:

FRONT LOADED (SINGLE FAM. DETACHED) REAR LOADED (SINGLE FAM. DETACHED) 49 DU 25 DU 11 DU 53 DU 71 DU 71 DU 35' LOTS 70' LOTS 80' LOTS 40' LOTS 60' LOTS 30' LOTS **RESIDENTIAL:**

106 DU 96 DU TOWNHOMES (REAR LOADED) 20' UNITS 22' UNITS

18 DU 24' DUPLEX UNITS TOTAL:

500 DU

REQ. PARKING (MINIMUM):

SINGLE FAMILY:	00
TOWNHOMES:	\$
COMMERCIAL:	2
$\bullet EV$	\sim
• BICYCLE	\mathbb{C}

60 SPACES 340 SPACES 27 SPACES 2 SPACES

3 SPACES

NOTES: 1. THIS PLAN IS CONCEPTUAL IN NATURE AND IS SUBJECT TO CHANGE. 2. THIS EXHIBIT WAS PREPARED USING AVAILABLE RECORD INFORMATION, ALTA SURVEY, 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.

22-RDU-083 MARCH 11, 2024

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





Project Contact Information

Project Name: Lyndon Oaks		Proposed Zonin	ig:	PUD
C				
Property PIN(s): See attached addendum				
Property Owner: See attached addendur				
Address: See attached addendum				
City:				
Phone:		_Email:		
Developer: D.R. Horton				
Address: 7208 Falls of Neuse Road, S	uite 20	1		
City:Raleigh	State:	NC	Zip:2	27615
Phone: (984) 247-9614				
Address: 150 Fayetteville Street, Suite	1310			
City: Raleigh	State:	NC	Zip:	27601
Phone: (919) 275-5002				
Builder (if known): Same as Developer				
Address:				
City:	State:		Zip:	
Phone:		_Email:		

Lyndon Oaks Ownership Addendum

Owner Information

Parcel 1

Site Address: Pin: Deed Reference (book/page): Acreage: Owner: 0 Bethlehem Road 1743953683 15657/540 81.31 ac Terry Lance Ferrell, Randall Hutchins Ferrell, and Timothy Clarence Ferrell 26 Saint Julians Court, Pawleys Island, SC 29585-6309

Owner Address:

Parcel 2

Site Address: Pin: Deed Reference (book/page): Acreage: Owner:

Owner Address:

Parcel 3

Site Address: Pin: Deed Reference (book/page): Acreage: Owner: Owner Address:

Parcel 4

Site Address: Pin: Deed Reference (book/page): Acreage: Owner: Owner Address: 940 Bethlehem Road 1753152116 15657/540 14.18 ac Terry Lance Ferrell, Randall Hutchins Ferrell, and Timothy Clarence Ferrell 26 Saint Julians Court, Pawleys Island, SC 29585-6309

0 Old Faison Road 1743971085 6075/504 65.43 ac Wayne L. Harper and Eugene J. Harper 4113 Brewster Drive, Raleigh, NC 7606-1711

0 Old Faison Road 1753071583 (Not Listed) 8.83 ac Deborah Jane Tart and Melton E. Tart, Jr. 4325 Old Faison Road, Knightdale, NC 27545-9179

Parcel 5

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NEIGHBORHOOD MEETING MINUTES Lyndon Oaks – Amendment to PUD / Master Plan

Meeting Date/Time:	Thursday, April 4, 2024 from 7:00 pm to 8:00 pm
Meeting Location:	Knightdale Recreation Center, 101 Lawson Ridge Rd, Knightdale, NC 27545
Development Team:	D.R. Horton – Reese Bridges, Anne Oakley
	Parker Poe - Ashley Honeycutt Terrazas
	Urban Design Partners - Brian Richards, Lexi Chacalos
	Ramey Kemp - Caroline Cheeves
Town of Knightdale:	-
Community Members:	12

Introduction: The Development Team explained the rezoning and PUD process, the purpose of the neighborhood meeting, housing types, anticipated rezoning schedule, Comprehensive Plan Consistency, housing types and trails, planned amenities, potential commercial uses on Bethlehem Rd.

Caroline Cheeves discussed the findings of the TIA and the recommended improvements that would be phased in with the project.

Question/Concern #1: Will Bethlehem Rd need to be widened for Old Faison/Bethlehem Rd improvement?

Transportation engineer clarified that the improvement had not been designed yet, and that design would happen later. Typically, there is enough existing right-of-way for at least one additional turn lane.

Question/Concern #2: Concerns about tractor trailers and heavy equipment driving over roundabouts on Bethlehem Rd

Transportation engineer clarified that roundabouts are constructed with mountable curb that trailers and heavy equipment can be driven over safely. Applicant clarified that Town preferred roundabouts and wants roundabouts at Crosscut/Bethlehem, and was also performing an additional study with respect to a roundabout at Old Faison/Bethlehem Rd. Applicant clarified that the TIA showed that a signal and turn lanes would operate better at Old Faison/Bethlehem Rd. That the project would be bringing at least a signal to that intersection, but the Town has made some indications that they still wanted a roundabout, so cannot guarantee it would not be a roundabout.

Question/Concern #3: Level of Service at Old Faison/Bethlehem Rd intersection

Transportation engineer clarified that this intersection currently has an LOS F, but that, even with the traffic from the proposed development, with a signal and turn lanes, it would operate at an LOS C.

Question/Concern #4: Queuing at future traffic signal on Old Faison/Bethlehem Rd blocking entrances to existing subdivisions on Old Faison Rd.

Transportation engineer clarified that, at three leg intersections, there are typically shorter cycle lengths and at the projected level of service, the waiting cars would clear with each cycle, so there should not be queuing in front of the Meadow Circle entrance. There would be breaks in traffic with the signal.

Question/ Concern #5: Concern about growth from other development in Knightdale and traffic

Applicant clarified that this background growth was taken into account for the TIA and that Applicant would be providing transportation improvements to mitigate impacts from other development that had already been approved and/or built. These improvements are not in NCDOT's nor the Town's budget, and will come much more quickly when applicant installs them.

Question/Concern #6: When would traffic improvements be installed? After neighborhood is built?

Transportation engineer clarified that NCDOT would require all improvements before neighborhood built out. After rezoning, improvement design and phasing for project is finalized, and then, typically, applicant submits a phasing plan to NCDOT to determine at which point during buildout improvements need to be installed.

Question/Concern #7: Where will sewer be coming from?

Applicant clarified that it is still working with City of Raleigh on the route of utilities. The most likely scenario is that it will be all gravity sewer, coming from under I-87. Based on feedback from CORPUD, a pump station is unlikely, but even if there were a pump station, it would be discreet and would be unlikely to impact surrounding neighbors.

Question/Concern #8: Who do neighbors contact if there are runoff or construction traffic issues during buildout?

There will be a sign on the site with a development manager's phone number for someone to call with any issues or concerns during construction.

Question/Concern #9: Which series/product type would be provided in the neighborhood?

Town is strict about architectural standards, and the plan is to provide a high-quality product. Exact product is not known at this time.

In today's terms, pricing would range from \$200,000 to \$600,000+, but could not commit to pricing for future market rates.

Question/Concern #10: How is density calculated? Which areas are being conserved?

Density is about 2.91 units/acre, based on the site's total acreage. Applicant clarified that trees in the stream buffers would be preserved and that it would preserve trees in perimeter buffers where possible.

Question/Concern #11: Buffers

Applicant clarified that a 20' perimeter buffer with landscaping or existing vegetation between lots and adjacent properties would be provided and a 50' buffer with a berm on I-87.

Question/Concern #12: Where did project name come from?

"Lyndon" is the first name of one of the engineers that was originally working on the project, and the marketing department liked the name. They wanted to incorporate it into the project name.

Attendance List

Name	Address
Michael & Karen Palko	121 Meadows Cir
Leamon Dixon	107 Shady Cir
Brian & Kim King	125 Meadows Cir
Jerry & Gayle Liles	4040 Clifton Rd
Rhonda Neely	129 Meadows Cir
Janet Starly	
Barbara Sossomon	1124 Poplar Cir

RAMEY KEMP ASSOCIATES

TOGETHER WE ARE LIMITLESS



Lyndon Oaks **Traffic Impact Analysis Knightdale, North Carolina**



rameykemp.com

TRAFFIC IMPACT ANALYSIS

FOR

LYNDON OAKS

LOCATED

ΙN

KNIGHTDALE, NC

Prepared For: Urban Design Partners 1318 Central Avenue, Suite E6 Charlotte, NC 28205

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

NOVEMBER 2023



11-29-2023

RKA Project No. 22584

Prepared By: <u>CDS</u>

Reviewed By: CTS

TRAFFIC IMPACT ANALYSIS LYNDON OAKS KNIGHTDALE, NORTH CAROLINA

EXECUTIVE SUMMARY

1. Development Overview

A Traffic Impact Analysis (TIA) was conducted for the proposed Lyndon Oaks subdivision 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 on the west side of Bethlehem Road between Interstate 87 and Old Faison Road in Knightdale, North Carolina. The proposed development, anticipated to be completed in 2031, is proposed to consist of 308 single-family homes, 192 townhomes, and 15,000 square feet of commercial space. Site access is proposed via one (1) full-movement driveway on Old Faison Road at the existing location of Tart Farm Road and one roundabout at the existing intersection of Bethlehem Road and Crosscut Place.

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

- 2023 Existing Traffic Conditions
- 2031+1 No-Build Traffic Conditions
- 2031+10 No-Build Traffic Conditions
- 2031+1 Build Traffic Conditions
- 2031+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:

- Old Faison Road and Bethlehem Road
- Old Faison Road and Tart Farm Road
- Old Faison Road and Pleasant Colony Drive
- Old Faison Road and Quiet Way



RAMEY KEMP ASSOCIATES

- Bethlehem Road and Crosscut Place
- US 64 EB Ramps and Hodge Road
- US 64 WB Ramps and Old Faison Road
- Smithfield Road and Old Ferrell Road
- Bethlehem Road and Poole Road

Existing peak hour traffic volumes were determined based on traffic counts conducted at the study intersection listed below, in April of 2023 by Quality Counts during a typical weekday AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak periods:

- Old Faison Road and Bethlehem Road
- Old Faison Road and Tart Farm Road
- Old Faison Road and Pleasant Colony Drive
- Old Faison Road and Quiet Way
- Bethlehem Road and Crosscut Place
- US 64 EB Ramps and Hodge Road
- US 64 WB Ramps and Old Faison Road
- Smithfield Road and Old Ferrell Road
- Bethlehem Road and Poole Road

Traffic volumes were balanced between study intersections, where appropriate.

3. Site Trip Generation

The proposed development is assumed to consist of 308 single-family homes, 192 townhomes, and 15,000 square feet of commercial space. 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 E-1 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)	Weel AM F Hour (vp	Peak Trips h)	Hour (∨p	Peak Trips ph)
			Enter	Exit	Enter	Exit
Single-Family Detached 308 DU 2		2,840	52	155	180	106
Townhomes (215) 192 DU		1,414	24	70	66	45
Strip Retail Plaza (822) 10 KSF		652	17	12	39	39
High-Turnover Restaurant (932)	5 KSF	536	26	22	28	17
Total Trips 5,442			119	259	313	207
Internal Capture (7% AM & 6% PM)*			-9	-17	-20	-13
Total External Trips			110	242	293	194
Pass-By Trips			-0	-0	-19	-19
Total Primary (New) Trips			110	242	274	175

Table E-1: Site Trip Generation

4. Future Traffic Conditions

Through coordination with NCDOT and the Town, it was determined that an annual growth rate of 3% would be used to generate 2032 projected weekday AM and PM peak hour traffic volumes. For the 2041 future analysis, a 1% growth rate was applied each year after the build +1 year analysis. The following adjacent developments were identified to be considered under future conditions:

- Riverview Commons
- Widewaters Expansion

5. Capacity Analysis Summary

The analysis considered weekday AM and PM peak hour traffic for 2023 existing, 2032 no-build, 2032 build, 2041 no-build, and 2041 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.

Recommended Improvements by STIP W-5705AK Westbound I-87 Ramps and Hodge Road

- Construct westbound right turn lane with 100 feet of storage and appropriate decel and taper.
- Construct westbound left turn lane with 100 feet of storage and appropriate decel and taper.
- Modify signal timings and signal phasing

Recommended Improvements by Developer Old Faison Road and Bethlehem Road

• Coordinate with Town on desired improvements. Provide fee in lieu contribution as necessary

Old Faison Road and Tart Farm Road/Site Access A

- Construct an eastbound right turn lane with 75 feet of storage and appropriate decel and taper.
- Construct exclusive northbound left turn lane with full storage.
- Provide stop control for northbound approach.

Bethlehem Road and Crosscut Place/Site Access B

- Construct a single-lane roundabout.
- Construct eastbound approach with one ingress and one egress lane.
- Provide yield control for eastbound approach.

Westbound I-87 Ramps and Hodge Road

- Extend westbound left turn lane to contain 175 feet of storage and appropriate decel and taper.
- Extend southbound left turn lane to contain 275 feet of storage and appropriate decel and taper.



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• Extend eastbound left-through lane to contain 275 feet of storage and appropriate decel and taper.



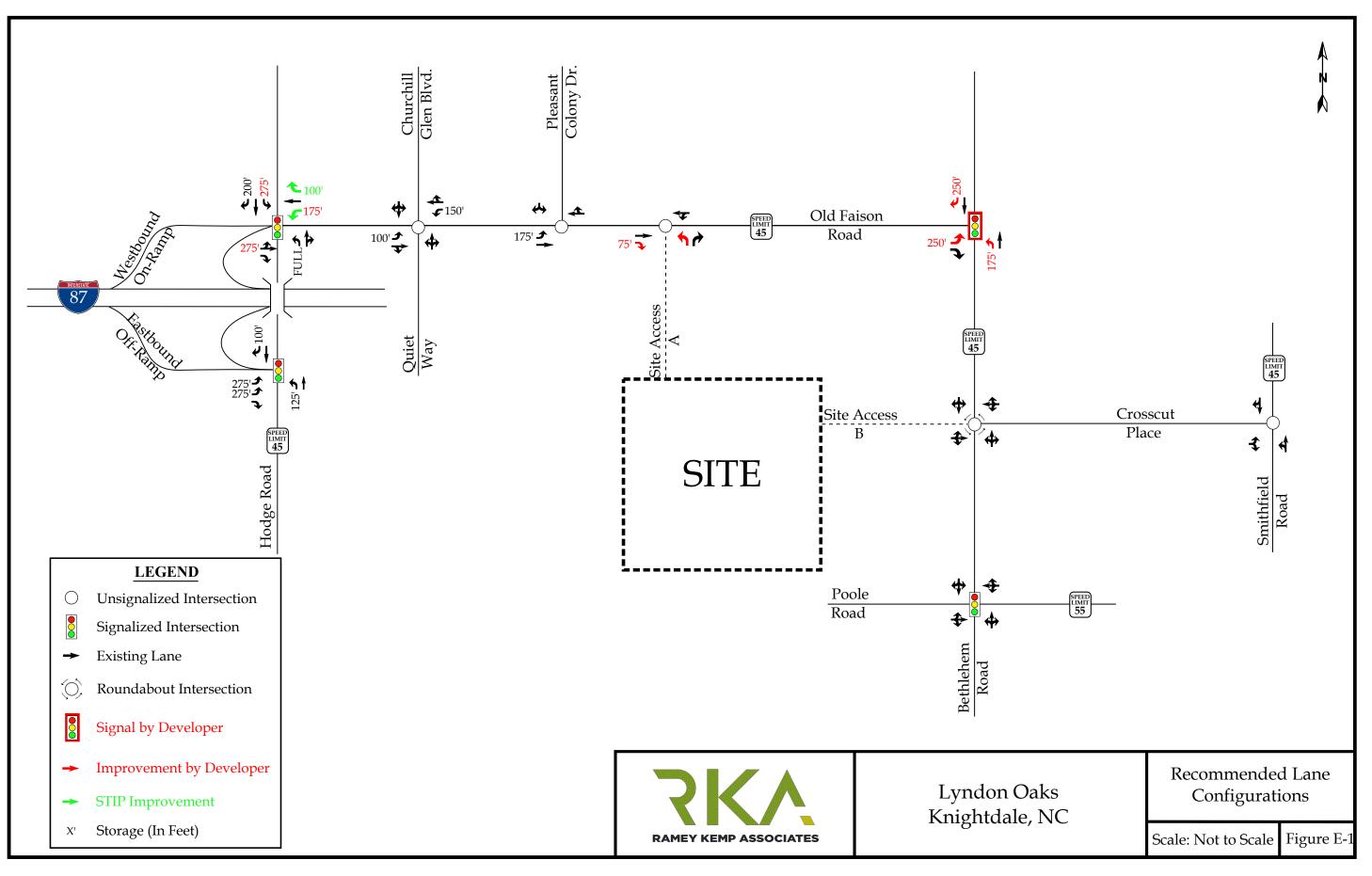




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Scoping Documentation Appendix A: Appendix B: **Traffic Counts** Appendix C: Signal Plans Appendix D: Adjacent Development Information Capacity Calculations – Old Faison Road and Bethlehem Road Appendix E: Capacity Calculations - Old Faison Road and Tart Farm Road/Site Access A Appendix F: Appendix G: Capacity Calculations - Old Faison Road and Pleasant Colony Drive Capacity Calculations - Old Faison Road and Churchill Glen Appendix H: Boulevard/Quiet Way Appendix I: Capacity Calculations – Bethlehem Road and Crosscut Place/Site Access B Appendix J: Capacity Calculations – I-87 Eastbound Ramps and Hodge Road Appendix K: Capacity Calculations – I-87 Westbound Ramps and Hodge Road Appendix L: Capacity Calculations – Smithfield Road and Old Ferrell Road Appendix M: Capacity Calculations – Bethlehem Road and Poole Road Appendix N: SimTraffic Queuing Reports Appendix O: Signal Warrant Analysis Appendix P: Turn Lane Warrant Analysis



TRAFFIC IMPACT ANALYSIS LYNDON OAKS KNIGHTDALE, NORTH CAROLINA

1. INTRODUCTION

The contents of this report present the findings of the Traffic Impact Analysis (TIA) conducted for the proposed Lyndon Oaks subdivision development to be located on the west side of Bethlehem Road between Interstate 87 and Old Faison 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 2031, is proposed to consist of 308 single-family homes, 192 townhomes, and 15,000 square feet of commercial space. At the time that this TIA was completed, the commercial uses were unknown; however, for a conservative approach to the analysis, 10,000 square feet of strip retail and 5,000 square feet of high-turnover restaurant were assumed.

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:

- 2023 Existing Traffic Conditions
- 2031+1 No-Build Traffic Conditions
- 2031+10 No-Build Traffic Conditions
- 2031+1 Build Traffic Conditions
- 2031+10 Build Traffic Conditions



1.1. Site Location and Study Area

The development is proposed to be located on the west side of Bethlehem Road between Interstate 87 and Old Faison 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:

- Old Faison Road and Bethlehem Road
- Old Faison Road and Tart Farm Road
- Old Faison Road and Pleasant Colony Drive
- Old Faison Road and Quiet Way
- Bethlehem Road and Crosscut Place
- US 64 EB Ramps and Hodge Road
- US 64 WB Ramps and Old Faison Road
- Smithfield Road and Old Ferrell Road
- Bethlehem Road and Poole Road

Refer to Appendix A for the approved scoping documentation.

1.2. Proposed Land Use and Site Access

The proposed development is assumed to consist of the following uses:

- 308 single-family detached homes
- 192 townhomes
- 10,000 square feet (s.f.) of strip retail
- 5,000 s.f. of high-turnover restaurant

Site access is proposed via one (1) full-movement driveway on Old Faison Road at the existing location of Tart Farm Road and one roundabout at the existing intersection of Bethlehem Road and Crosscut Place. This roundabout is in concordance with the Town's code. Refer to Figure 2 for a copy of the preliminary site plan.



1.3. Adjacent Land Uses

The proposed development is located in an area consisting primarily of 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.



Road Name	Route Number	Typical Cross Section	Speed Limit	2019 AADT (vpd)	
I-495	I-495	8-lane divided	65 mph	88,500	
Old Faison Road	SR 2515	2-lane undivided	45 mph	4,100**	
Bethlehem Road	SR 5270	2-lane undivided	45 mph	6,400	
Crosscut Place/Old Ferrell Road	SR 2512	2-lane undivided	45 mph	760**	
Tart Farm Road	N/A	2-lane undivided	Not Posted	40***	
Pleasant Colony Drive	N/A	2-lane undivided	25 mph	1,010***	
Quiet Way	N/A	2-lane undivided	Not Posted	90***	
Hodge Road	SR 2516	2-lane undivided	Not Posted	9,900	
Poole Road	SR 1007	2-lane undivided	55 mph	4,600	
Smithfield Road	SR 2233	2-lane undivided	45 mph	8,200	

Table 1: Existing Roadway Inventory

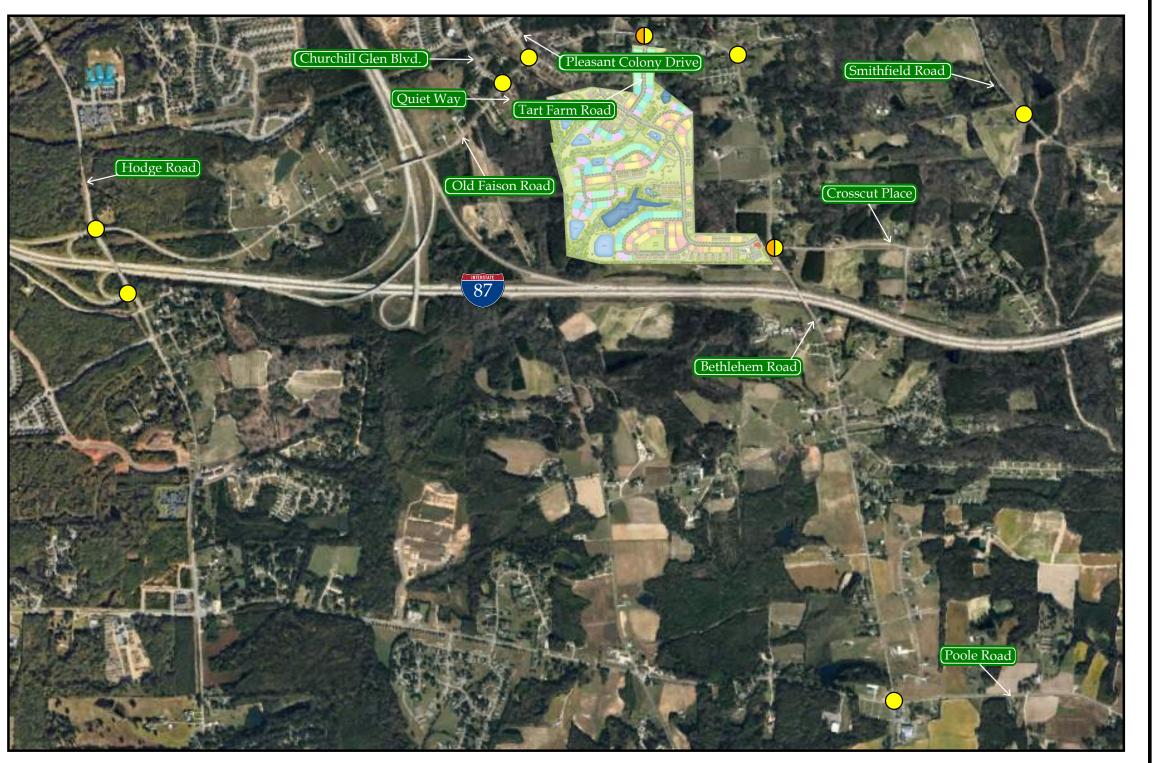
*ADT from 2021

**ADT from 2015

***ADT based on the traffic counts from 2023 and assuming the weekday PM peak hour volume is 10% of the average daily traffic.







LEGEND

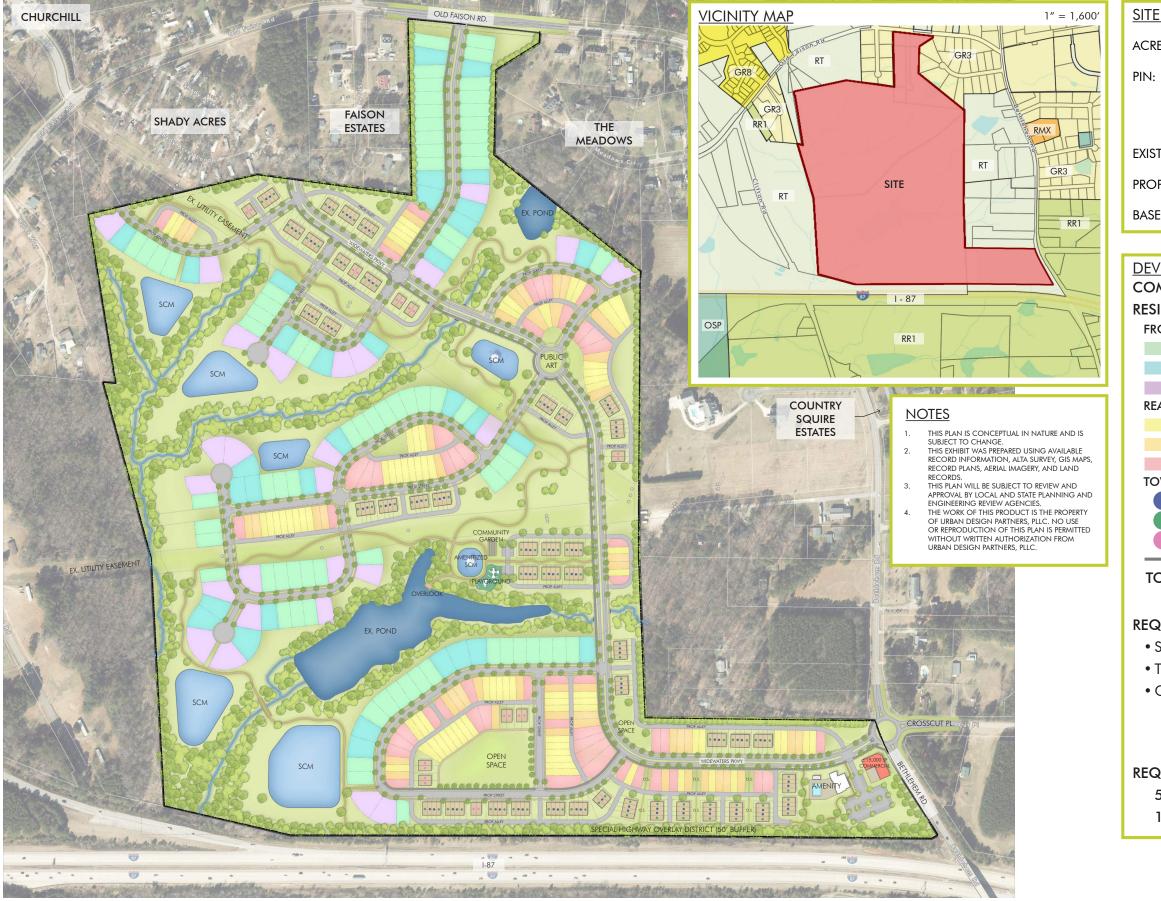
- Study Intersection \bigcirc
- Proposed Site Access
- Proposed Sit



Lyndon Oaks Knightdale, NC

Site Location Map

Scale: Not to Scale Figure 1





URBA

DATA

RES:	± 171.88 AC TOTAL
:	1753-15-2116, 1743-95-3683, 1743-97-1085, 1743-98-6356, 1743-98-9384, 1753-07-1583, 1743-97-6575
STING ZONING:	RT
DPOSED ZONING:	PUD
E DISTRICT:	GR8

VELC	VELOPMENT SUMMARY					
MM	MMERCIAL: ± 15,000 SF					
SIDE	IDENTIAL:					
RONT-LOADED (SINGLE FAM. DETACHED)						
	60' LOTS	75 DU (15.0%)				
	70' LOTS	33 DU (6.6%)				
	80' LOTS	26 DU (5.2%)				
EAR-LOADED (SINGLE FAM. DETACHED)						
	30' LOTS	77 DU (15.4%)				
	35' LOTS	47 DU (9.4%)				
	40' LOTS	50 DU (10.0%)				
OWN	HOMES (REAR-LOADED)					
	20' UNITS	84 DU (16.8%)				
	22' UNITS	88 DU (17.6%)				
	24' UNITS	20 DU (4.0%)				

TOTAL:

Q. PARKING (MINIMUM):	
SINGLE FAMILY	
TOWNHOMES	
COMMERCIAL	

- » EV
- » BICYCLE

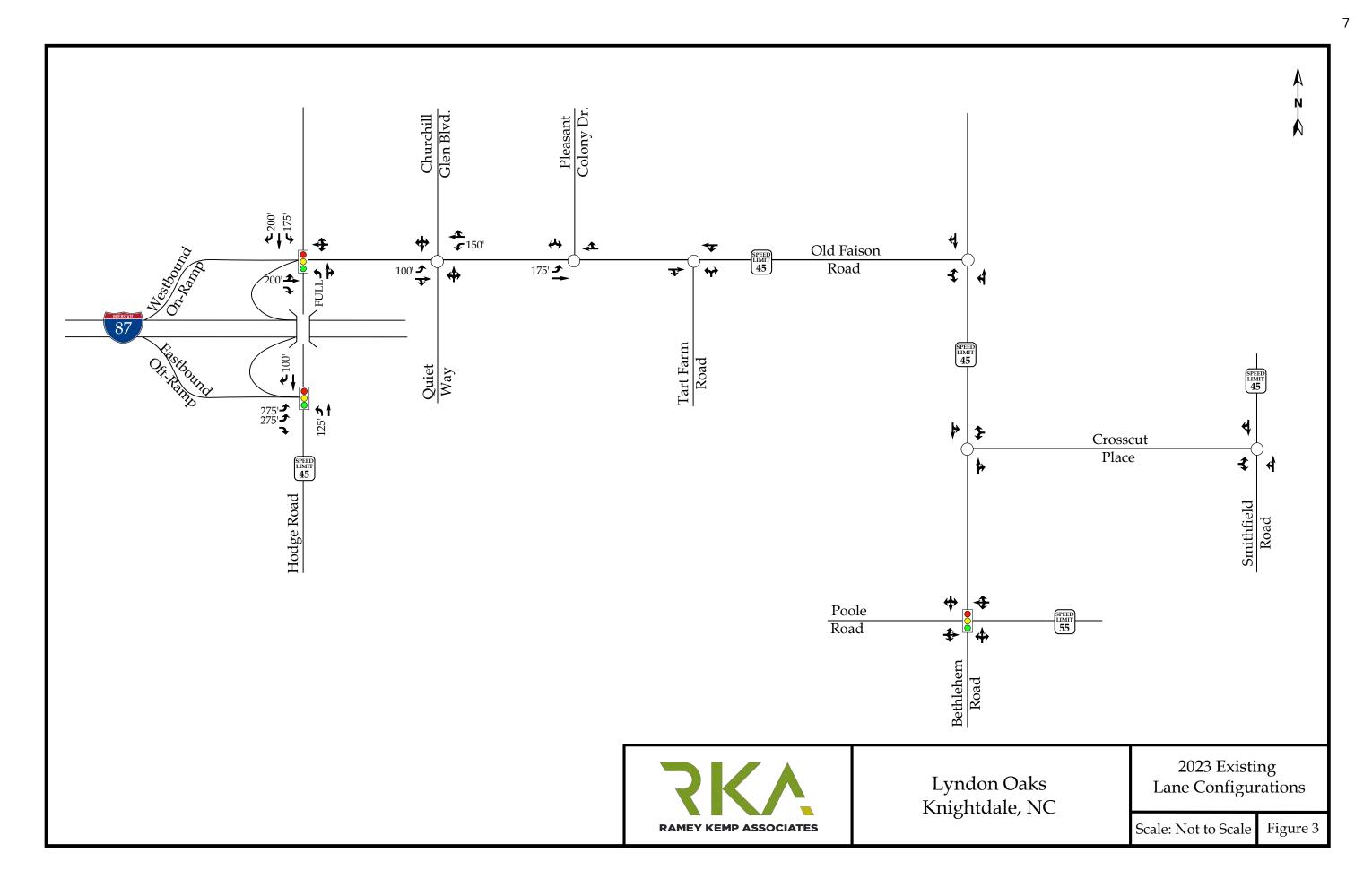
REQ. OPEN SPACE: 500 DU x 3.5 BEDS = 1,750 BEDS1,750 BEDS x 520 sf = 910,000 sf (20.9 AC)



616 SPACES 384 SPACES 53 SPACES 2 SPACES 2 SPACES

± 20.9 AC





2. 2023 EXISTING PEAK HOUR CONDITIONS

2.1. 2023 Existing Peak Hour Traffic Volumes

Existing peak hour traffic volumes were determined based on traffic counts conducted at the study intersections listed below, in April of 2023 by Quality Counts 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:

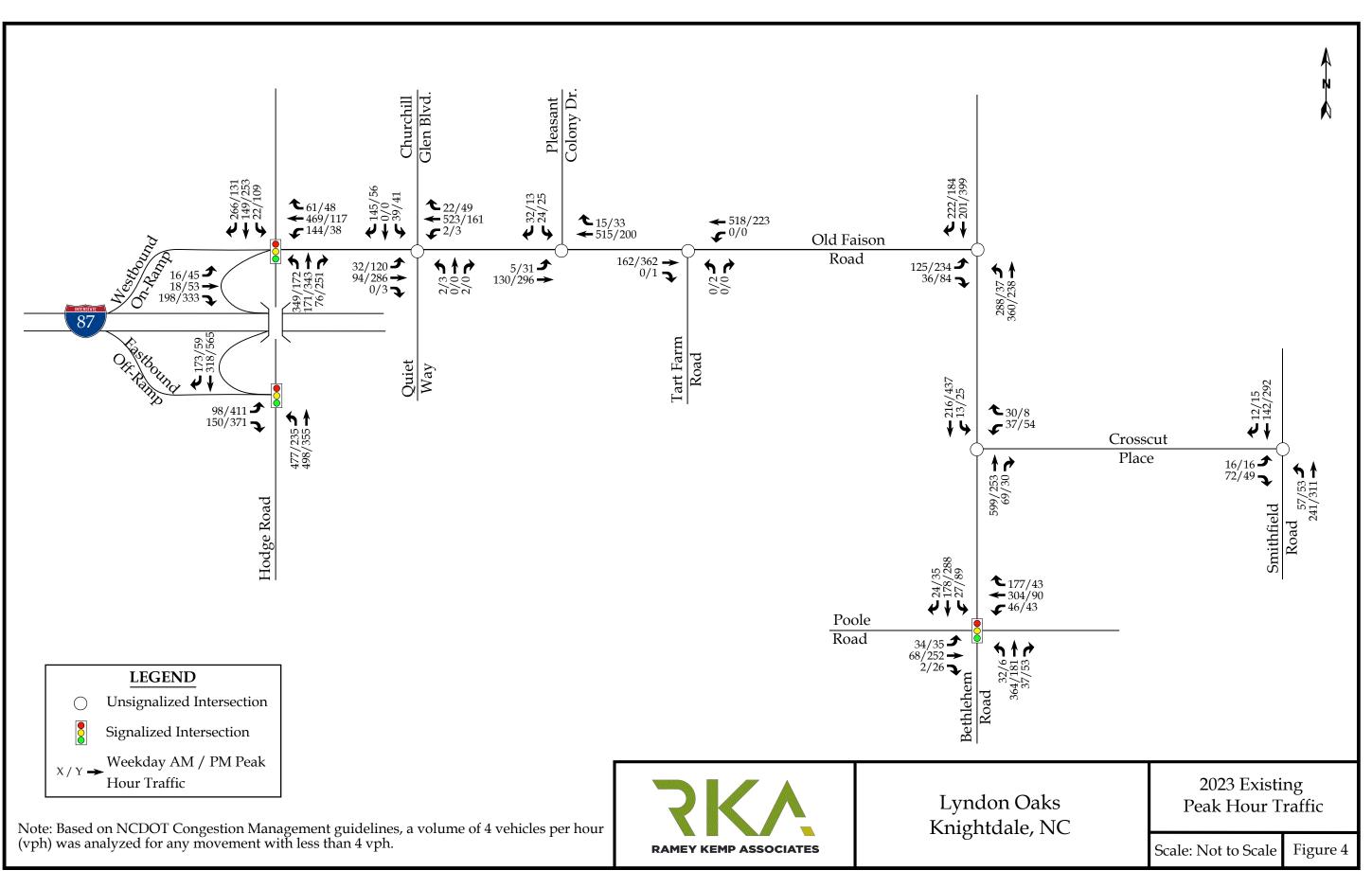
- Old Faison Road and Bethlehem Road
- Old Faison Road and Tart Farm Road
- Old Faison Road and Pleasant Colony Drive
- Old Faison Road and Quiet Way
- Bethlehem Road and Crosscut Place
- US 64 EB Ramps and Hodge Road
- US 64 WB Ramps and Old Faison Road
- Smithfield Road and Old Ferrell Road
- Bethlehem Road and Poole Road

Weekday AM and PM traffic volumes were balanced between study intersections, where appropriate. Refer to Figure 4 for 2023 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 2023 Existing Peak Hour Traffic Conditions

The 2023 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.





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3. NO-BUILD PEAK HOUR CONDITIONS

In order to account for growth of traffic and subsequent traffic conditions at a future year, nobuild 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 NCDOT and the Town, it was determined that an annual growth rate of 3% would be used to generate 2032 projected weekday AM and PM peak hour traffic volumes. For the 2041 future analysis, a 1% growth rate was applied each year after the build +1 year analysis. Refer to Figure 5a for 2032 projected peak hour traffic and Figure 5b for 2041 projected peak hour traffic.

3.2. Adjacent Development Traffic

Through coordination with NCDOT and the Town, Riverview Commons should be considered as an approved adjacent development in this study. A residential development located near the Widewaters expansion that is not yet approved by NCDOT was also to be considered in the analysis. Site trips for this development were generated based off of methodology contained in the ITE *Trip Generation Manual*, 11th Edition then distributed based on the regional distributions for the proposed site., Table 2, on the following page, provides a summary of the adjacent developments.



Development Name	Location	Build- Out Year	Land Use / Intensity	TIA Performed
Riverview Commons	North of Poole Road, west of Hodge Road	2023	364 dwelling units of apartments and 30 townhomes	Davenport
Widewaters Expansion	North of Old Faison Road, West of Woodfield Lane	Before 2032	257 single-family attached, 98 single- family attached	N/A

Table 2: Adjacent Development Information

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 NCDOT and the Town. Adjacent development trips are shown in Figure 6. Additional adjacent development information can be found in Appendix D.

3.3. Future Roadway Improvements

Based on coordination with NCDOT and the Town, State Transportation Improvement Program (STIP) project W-5705AK was to be included in all future analyses. STIP W-5705AK is expected to widen the westbound approach of Old Faison Road (at Hodge Road) to provide exclusive left and right turn lanes. Updated signal plans for the intersection of Hodge Road and Old Faison Road can be found in Appendix C showing the improvements proposed by W-5705AK.

3.4. No-Build Peak Hour Traffic Volumes

The no-build traffic volumes were determined by projecting the 2023 existing peak hour traffic to the respective build year as discussed in section 3.1 and adding the adjacent

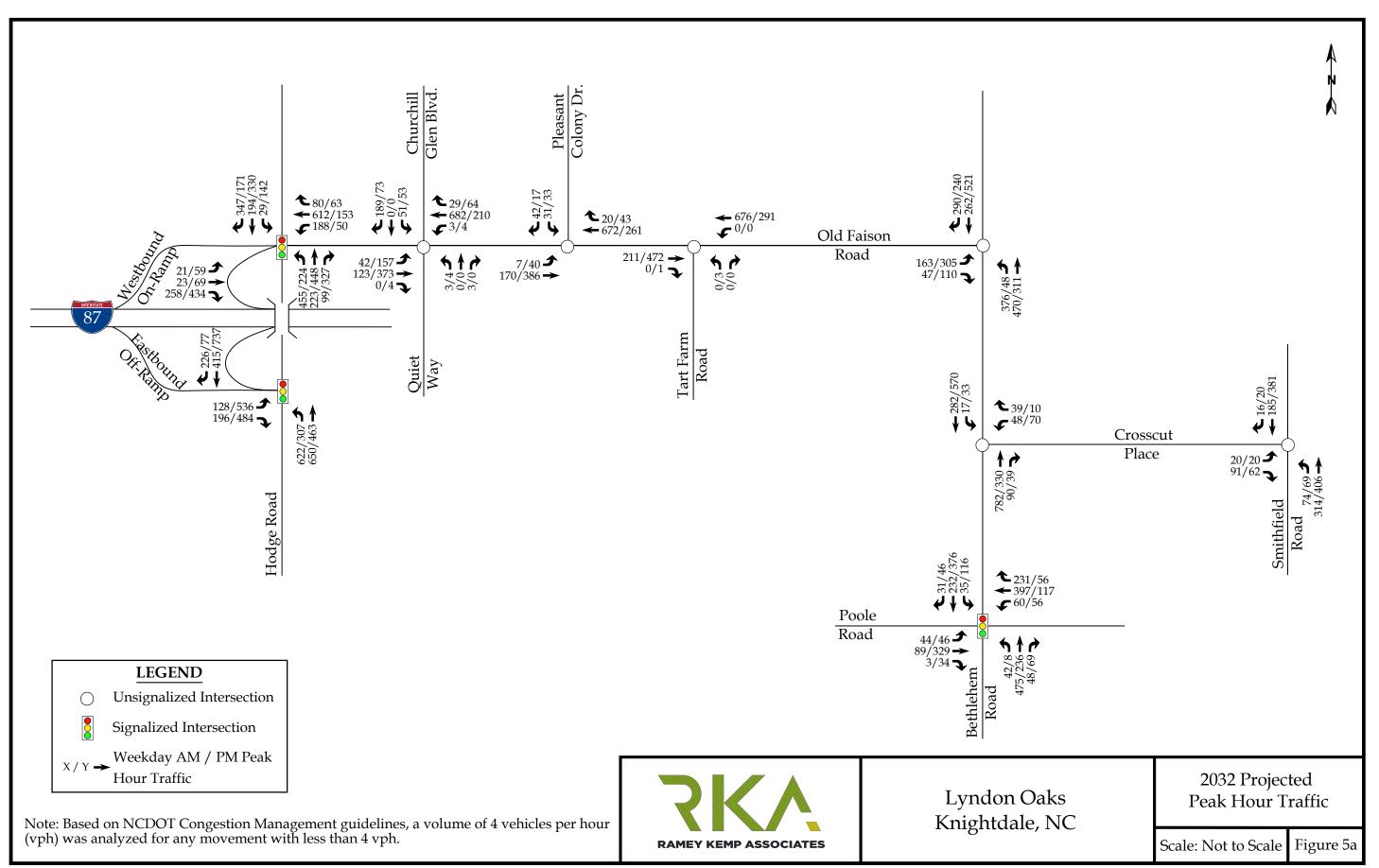


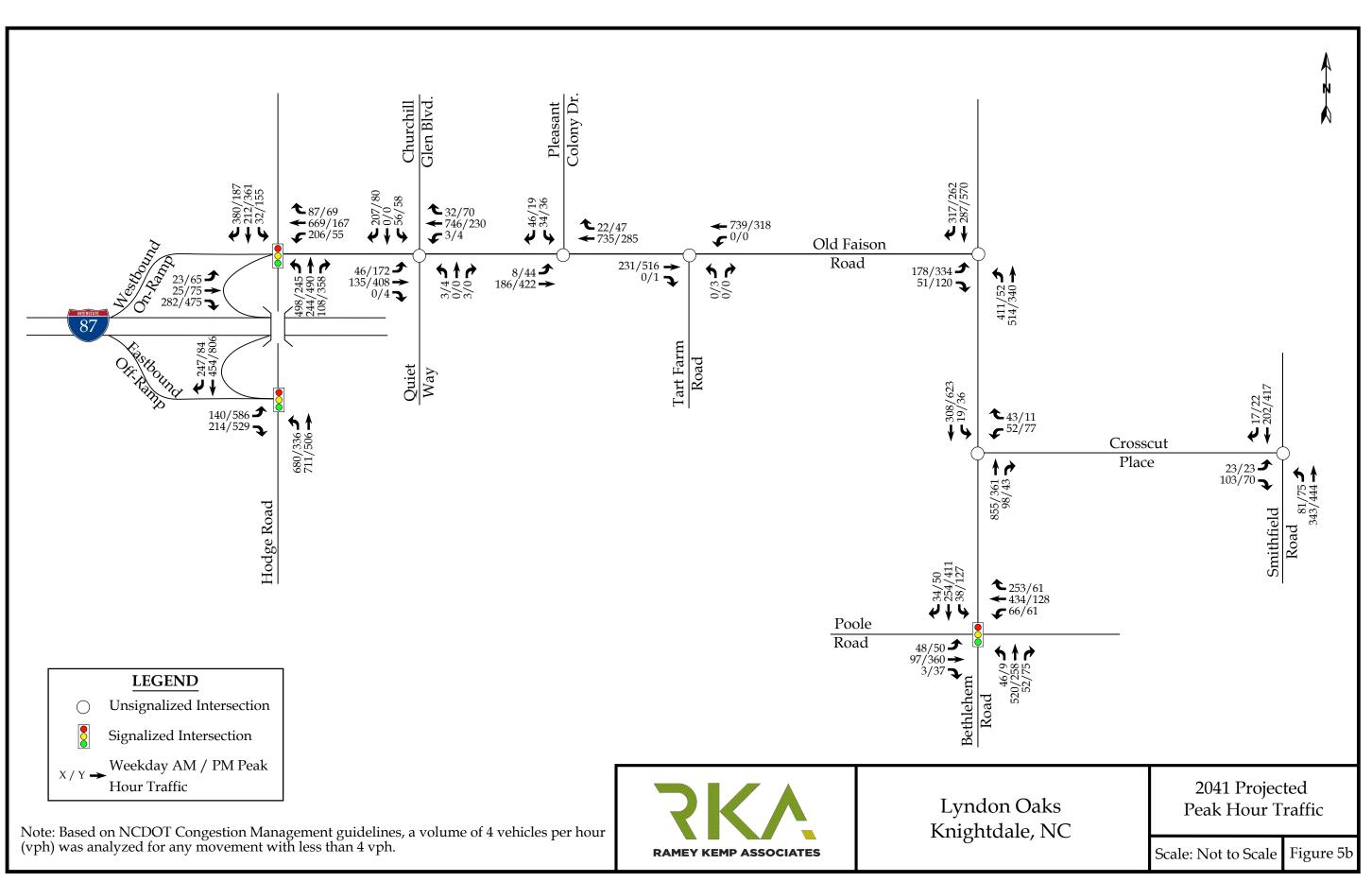
development trips. Refer to Figure 7a for an illustration of the 2032 no-build peak hour traffic volumes 7b for an illustration of the 2041 no-build peak hour traffic.

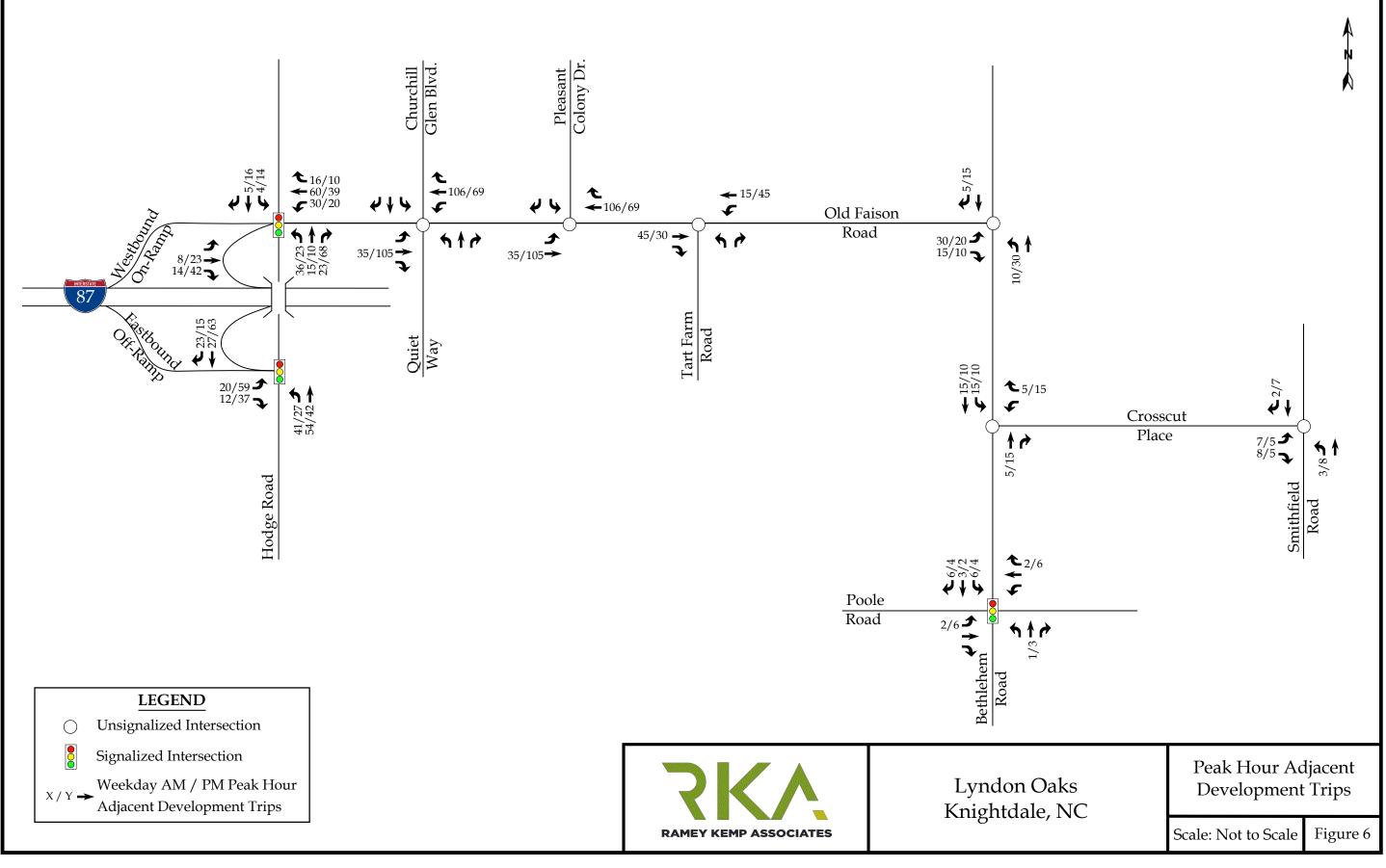
3.5. Analysis of- No-Build Peak Hour Traffic Conditions

The 2032 and 2041 no-build AM and PM peak hour traffic volumes at the study intersections were analyzed with future geometric roadway conditions and traffic control, including improvements required to be provided by the aforementioned adjacent developments, as well as STIP W-5705AK. The analysis results are presented in Section 7 of this report.

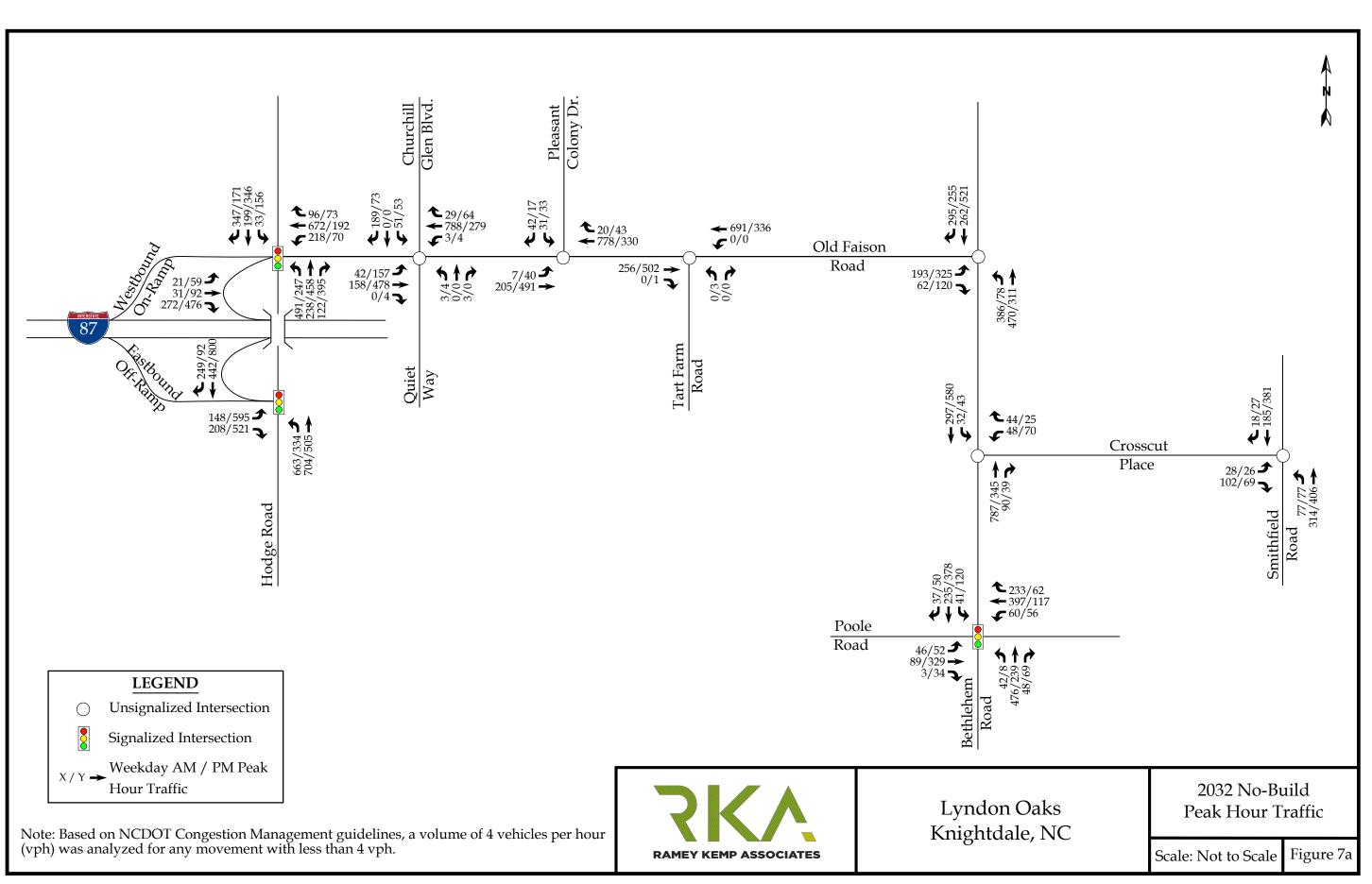


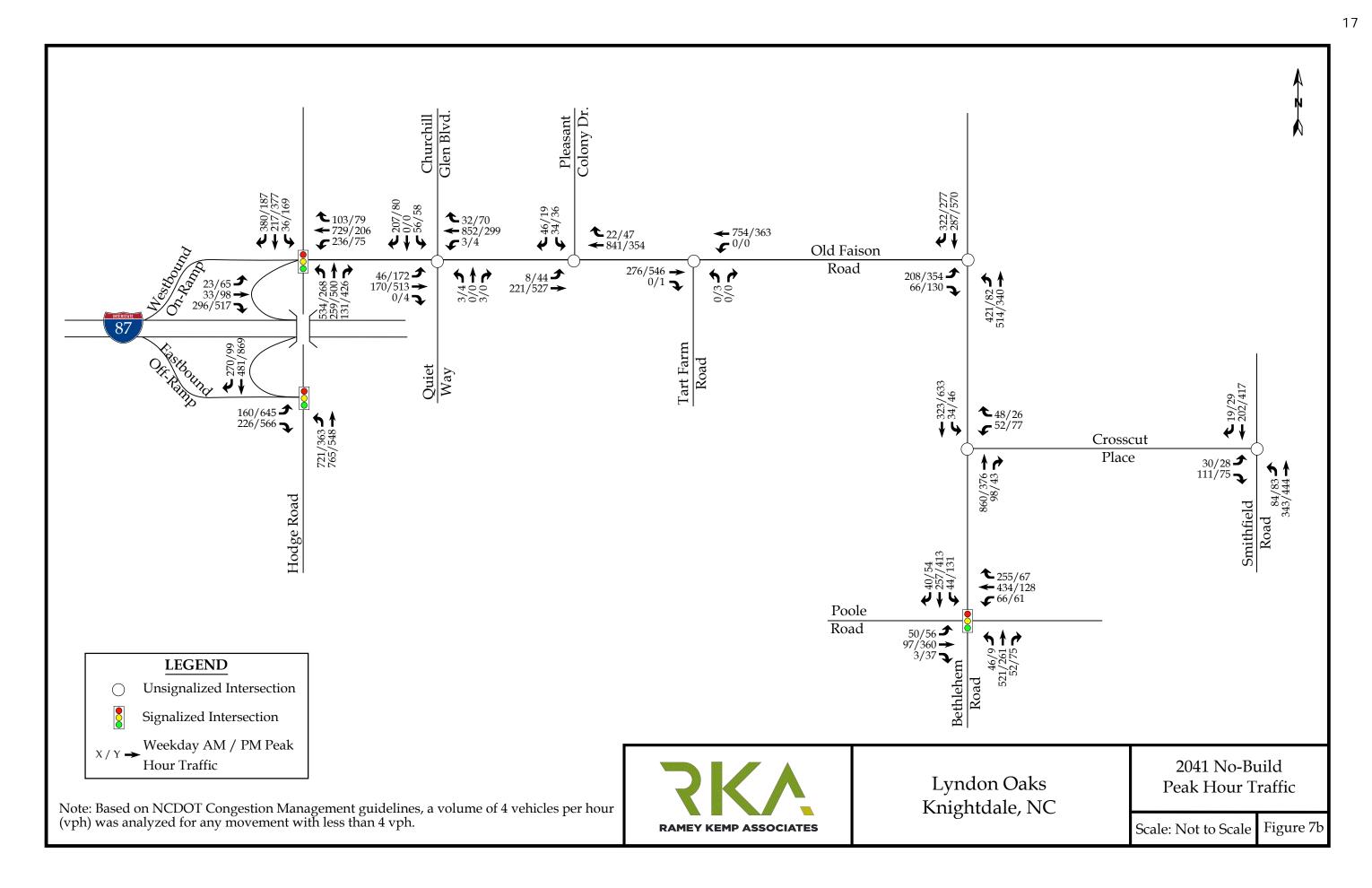












4. SITE TRIP GENERATION AND DISTRIBUTION

4.1. Trip Generation

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.

	-		-			
Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph) Enter Exit		Weekday PM Peak Hour Trips (vph) Enter Exit	
Single-Family Detached (210)	308 DU	2,840	52	155	180	106
Townhomes (215)	192 DU	1,414	24	70	66	45
Strip Retail Plaza (822)	10 KSF	652	17	12	39	39
High-Turnover Restaurant (932)	5 KSF	536	26	22	28	17
Total Trips 5,442			119	259	313	207
Internal Capture (7% AM & 6% PM)*			-9	-17	-20	-13
Total External Trips			110	242	293	194
Pass-By Trips			-0	-0	-19	-19
Total Primary (New) Trips			110	242	274	175

*Utilizing methodology contained in the NCHRP Report 684.

It is estimated that the proposed development will generate approximately 5,442 total site trips during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that 378 trips (119 entering and 259 exiting) will occur during the weekday AM peak hour and 520 (313 entering and 207 exiting) will occur during the weekday PM peak hour. However, not all trips generated are expected to be 'new' trips. A portion of the trips are expected to be captured internally (i.e. internal capture), while some trips are expected to be pulled from traffic that is already utilizing the adjacent roadway network (i.e. pass-by).



Internal capture of trips between the residential, retail, and restaurant 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. Based on the National Collaborative Highway Research Program (NCHRP) Report 684 methodology under full build conditions, a weekday AM peak hour internal capture rate of 7% and a weekday PM peak hour internal capture rate of 6% was applied to the total trips. The internal capture reductions are expected to account for approximately 26 trips (9 entering and 17 exiting) during the weekday AM peak hour. Refer to Appendix A for scoping documentation containing the NCHRP 684 sheets for each 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 38 trips (19 entering and 19 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 (new) site trips are the calculated site trips after the reduction for internal capture and pass-by trips. Primary site trips are expected to account for approximately 352 trips (110 entering and 242 exiting) during the weekday AM peak hour and 449 trips (274 entering and 175 exiting) during the weekday PM peak hour under full build conditions.

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, adjacent development traffic studies, and engineering judgment.

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



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- 40% to/from the west via I-87
- 15% to/from the east via I-87
- 10% to/from the north via Hodge Road
- 10% to/from the north via Bethlehem Road
- 5% to/from the north via Smithfield Road
- 5% to/from the south via Smithfield Road
- 5% to/from the south via Hodge Road
- 4% to/from the west via Poole Road
- 4% to/from the east via Poole Road
- 2% to/from the south via Bethlehem Road

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

- 25% to/from the north via Bethlehem Road
- 20% to/from the west via I-87
- 15% to/from the east via I-87
- 10% to/from the north via Hodge Road
- 10% to/from the north via Smithfield Road
- 10% to/from the south via Smithfield Road
- 5% to/from the south via Hodge Road
- 2% to/from the west via Poole Road
- 2% to/from the east via Poole Road
- 1% to/from the south via Bethlehem Road

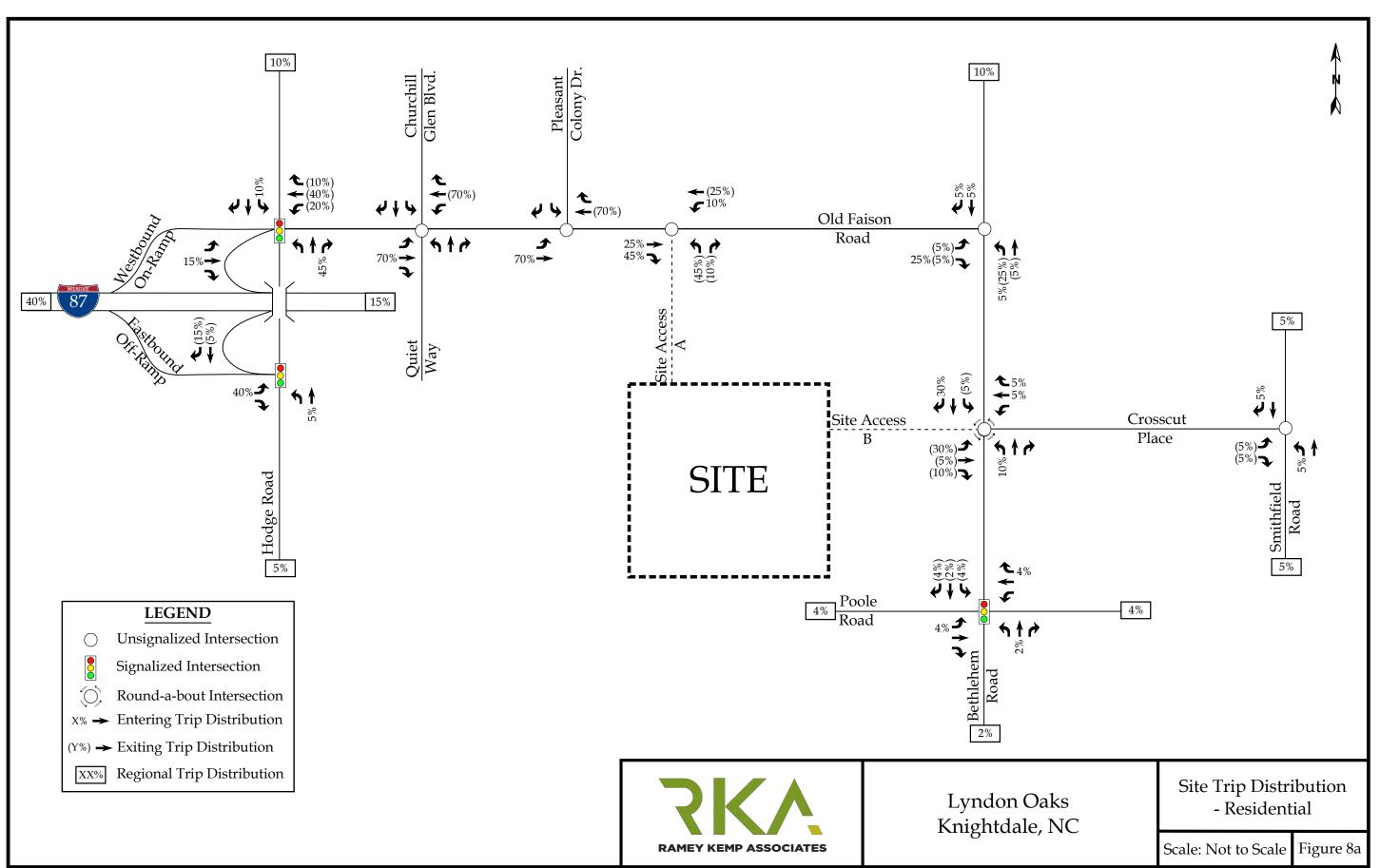
The residential site trip distribution is shown in Figure 8a, and the commercial site trip distribution is shown in Figure 8b. Refer to Figure 9a for the residential site trip assignment and Figure 9b for commercial site trip assignment.

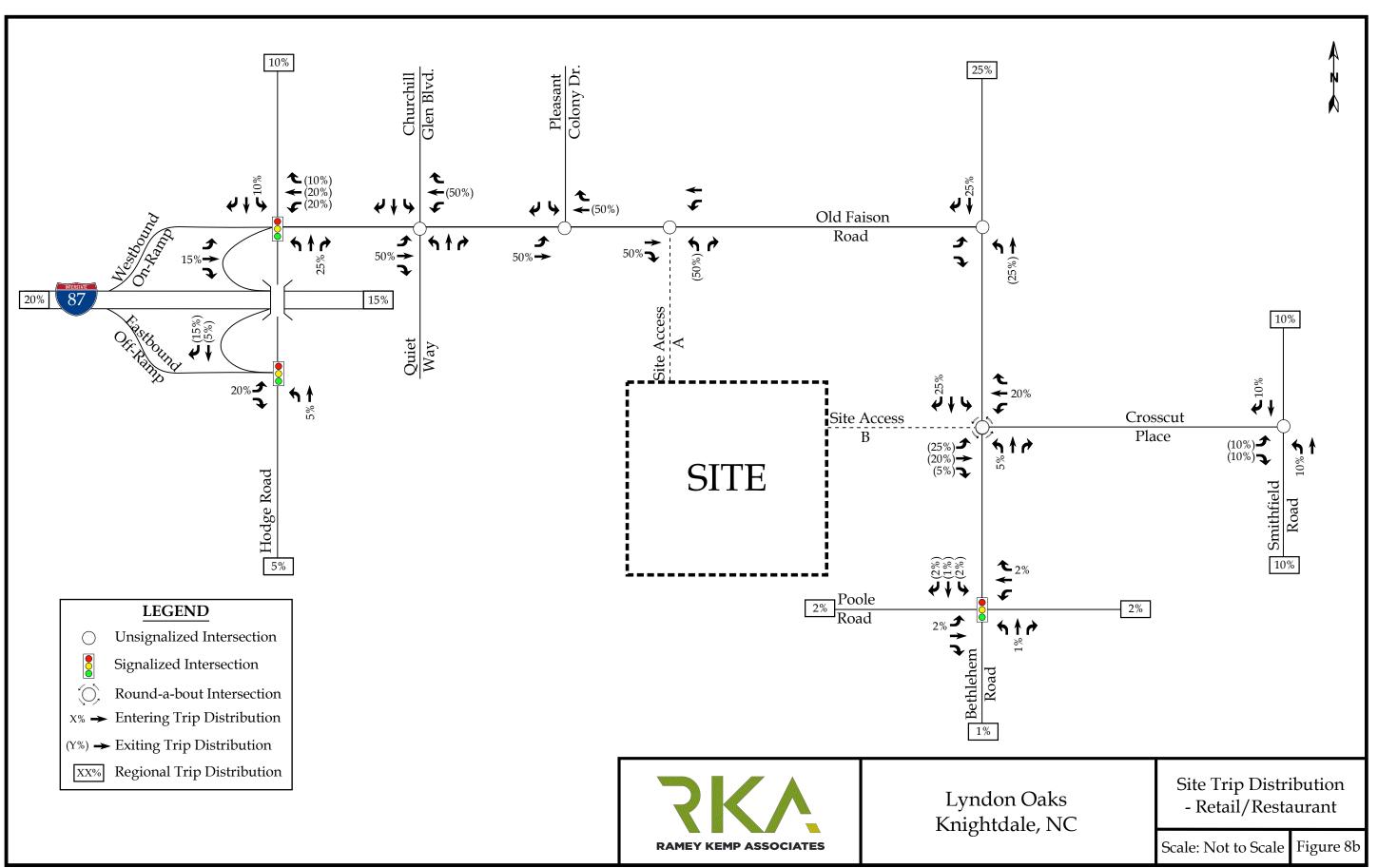
The pass-by site trips were distributed based on existing traffic patterns with consideration given to the proposed driveway access and site layout. Refer to Figure 10 for the pass-by site trip distribution. Pass-by site trips are shown in Figure 11.

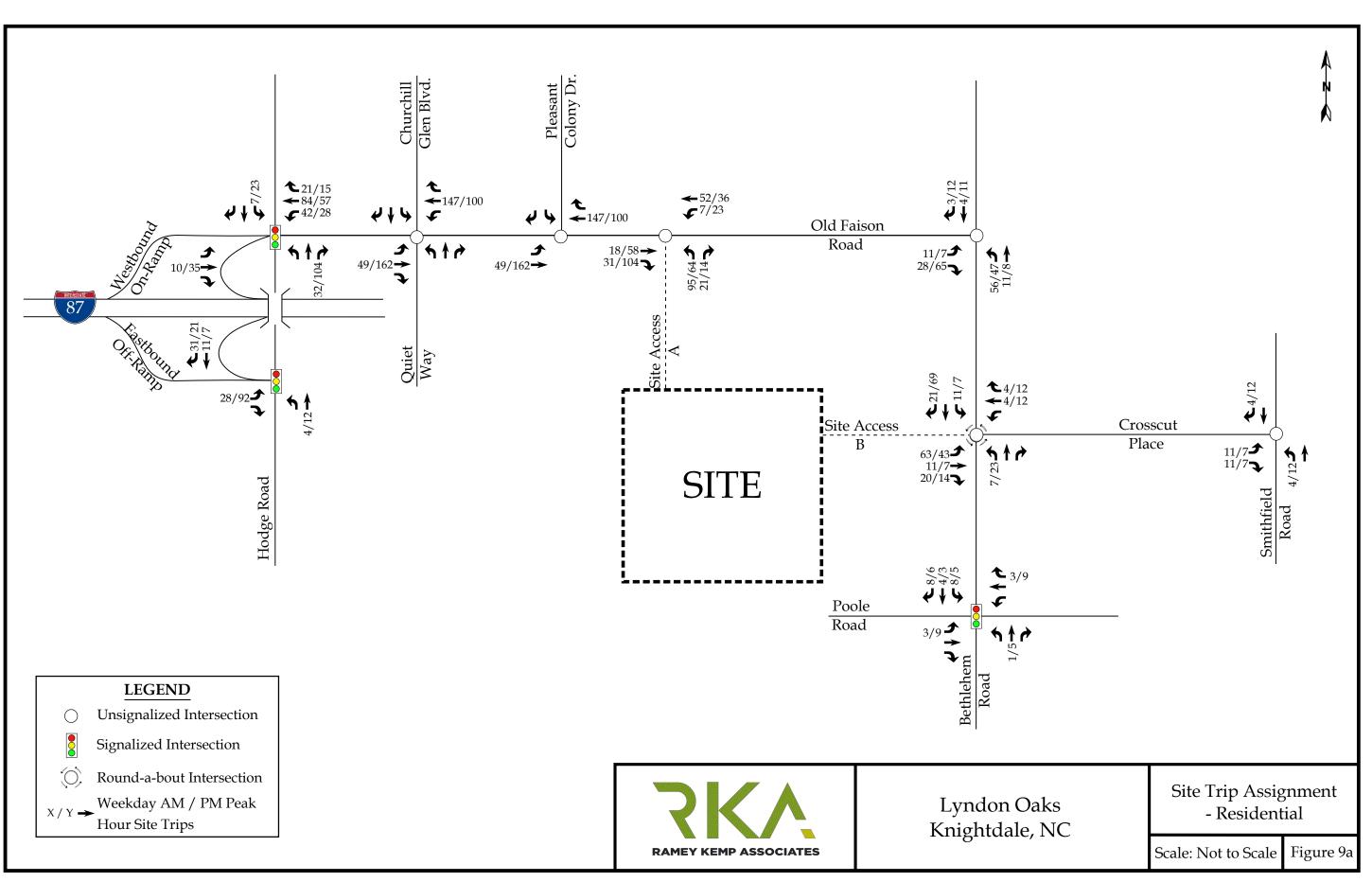


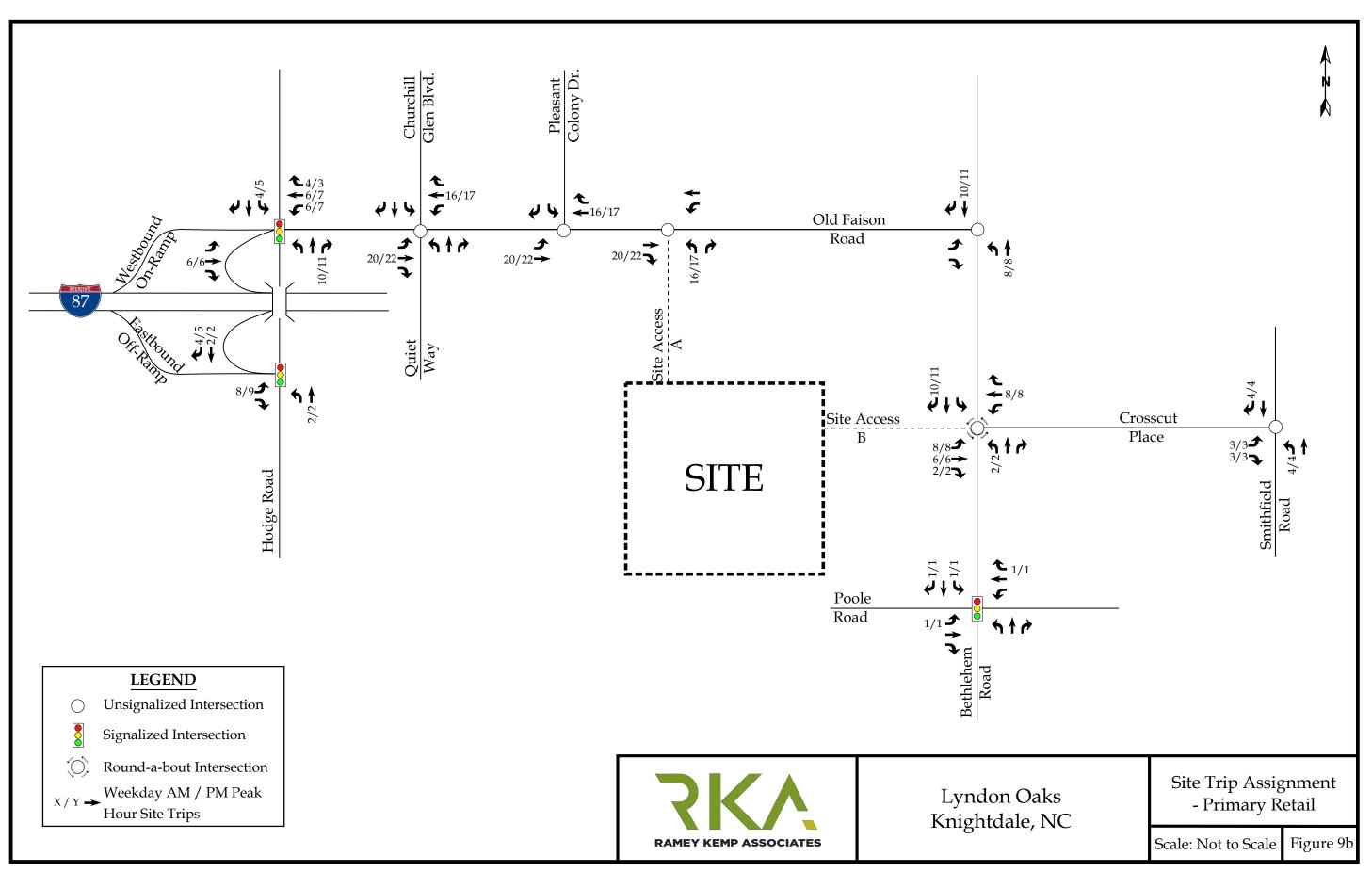
The total site trips were determined by adding the primary site trips and the pass-by site trips. Refer to Figure 12 for the total peak hour site trips at the study intersections.

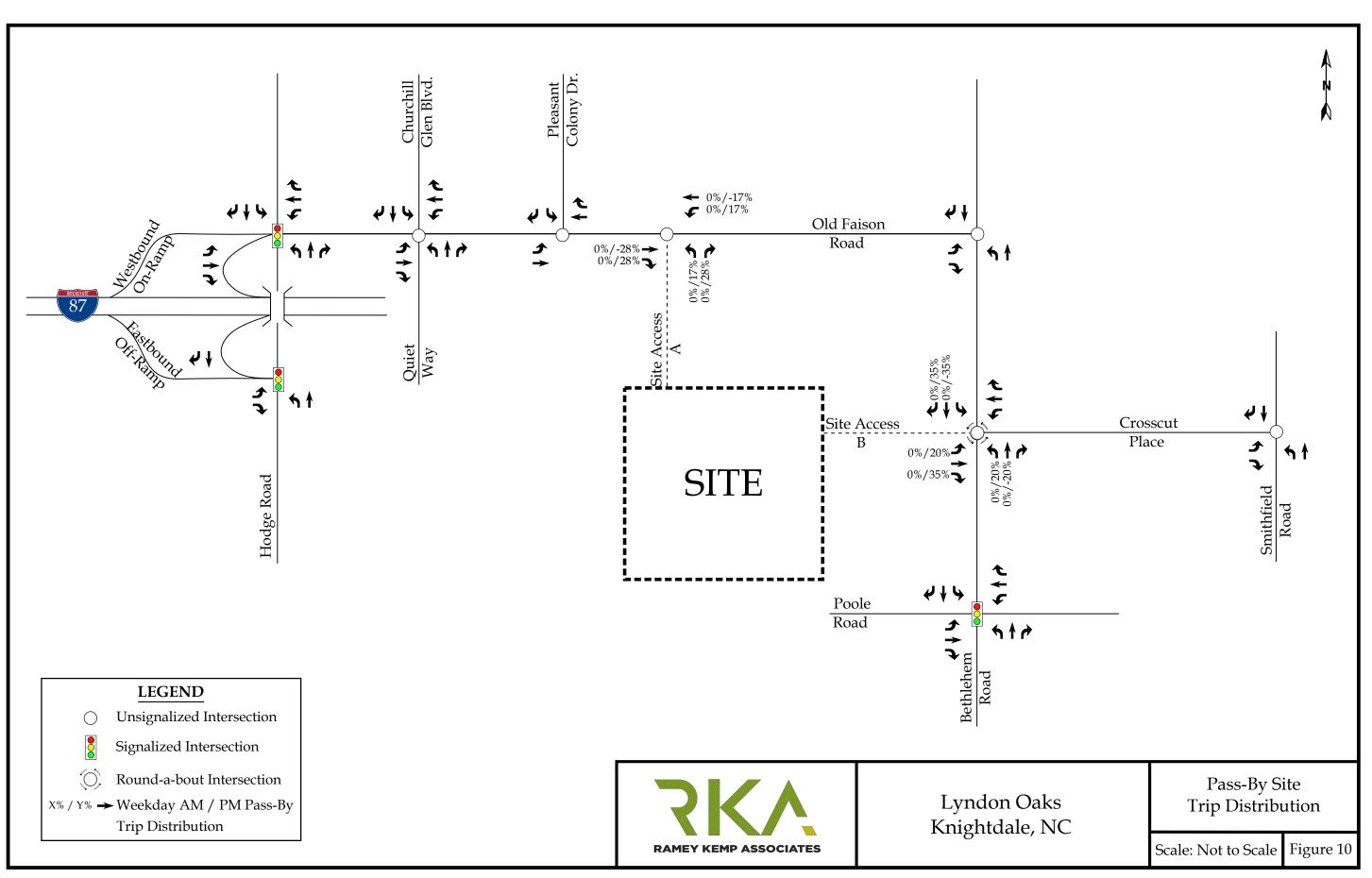


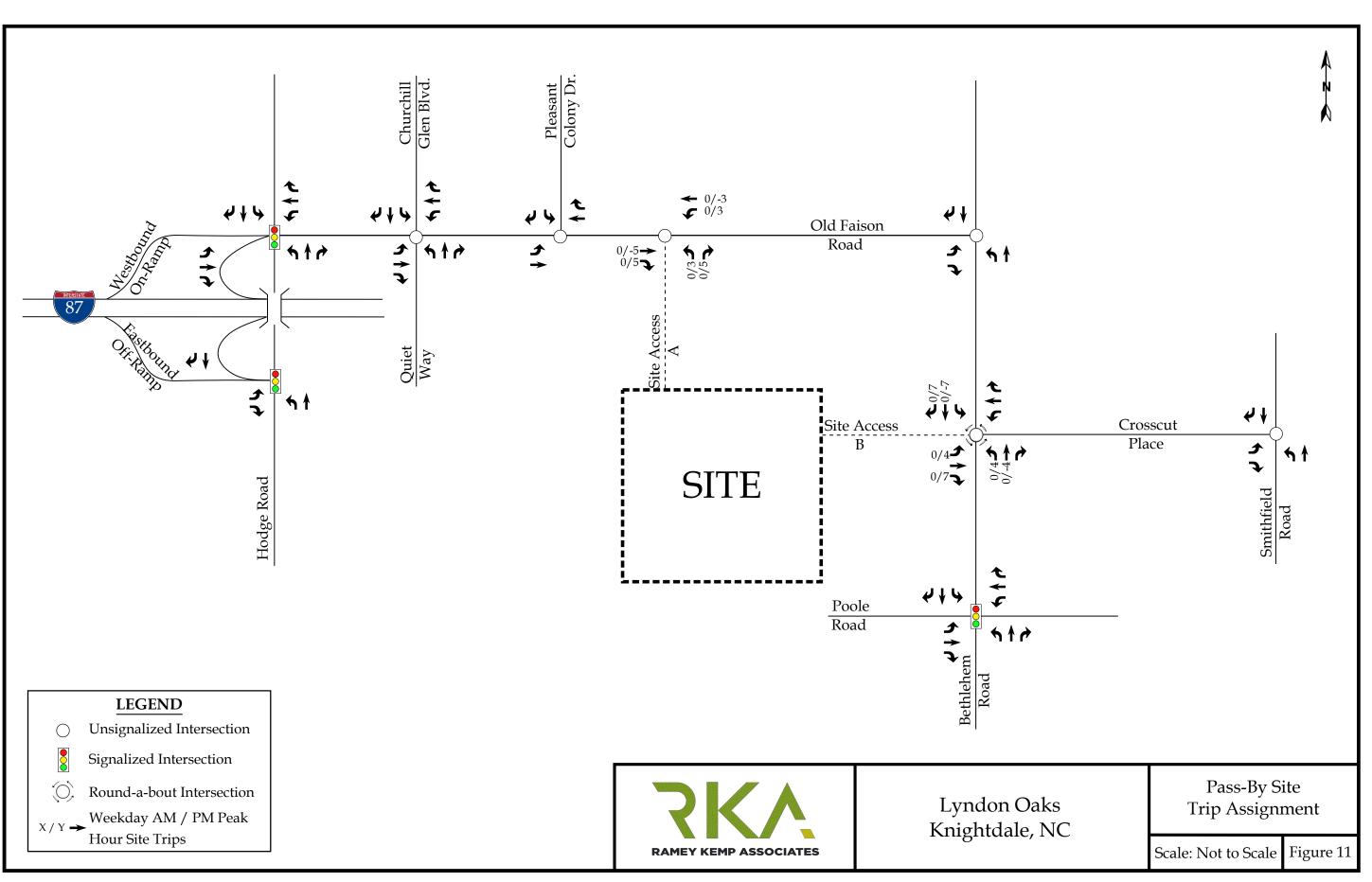


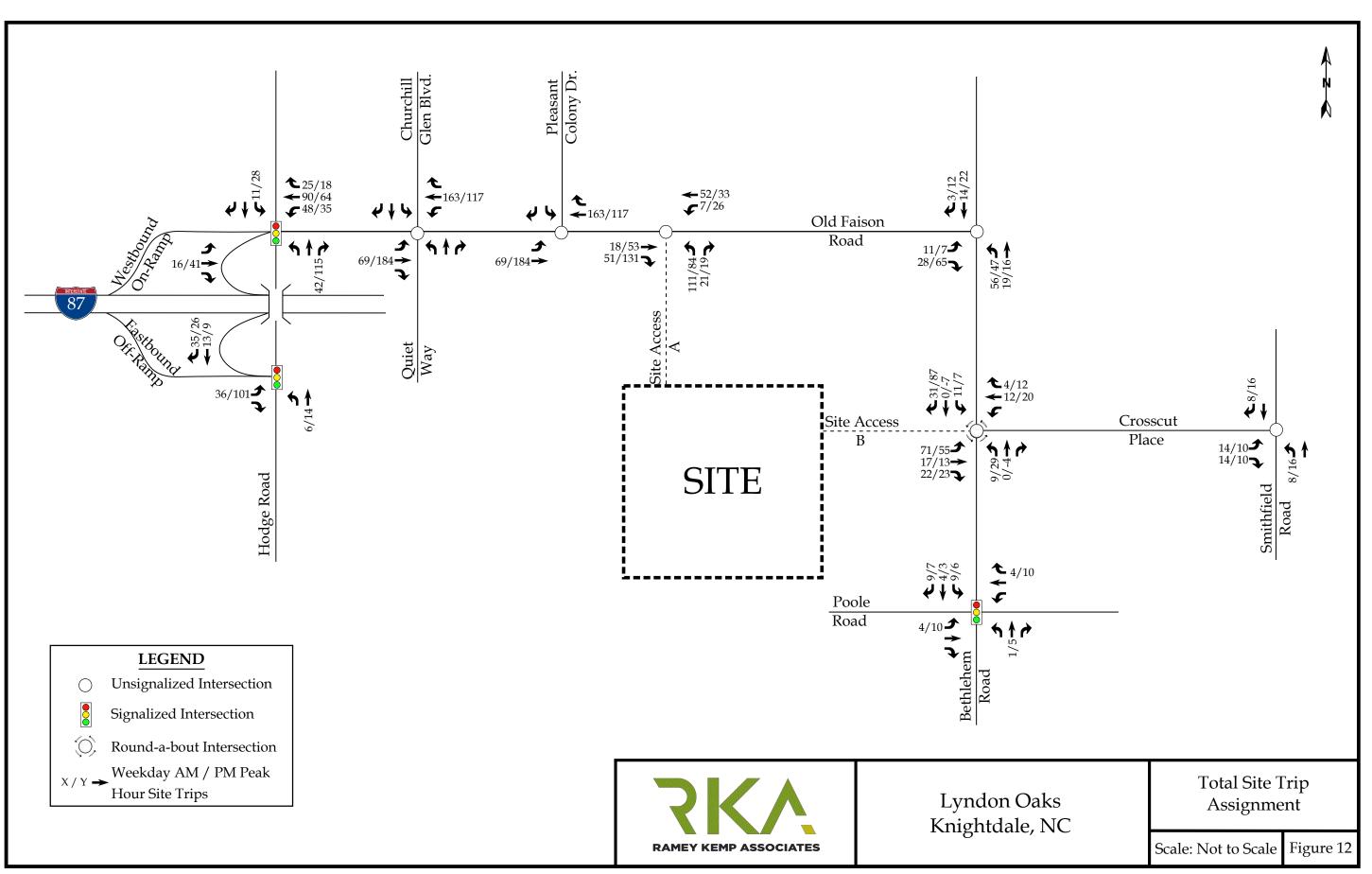












5. BUILD TRAFFIC CONDITIONS

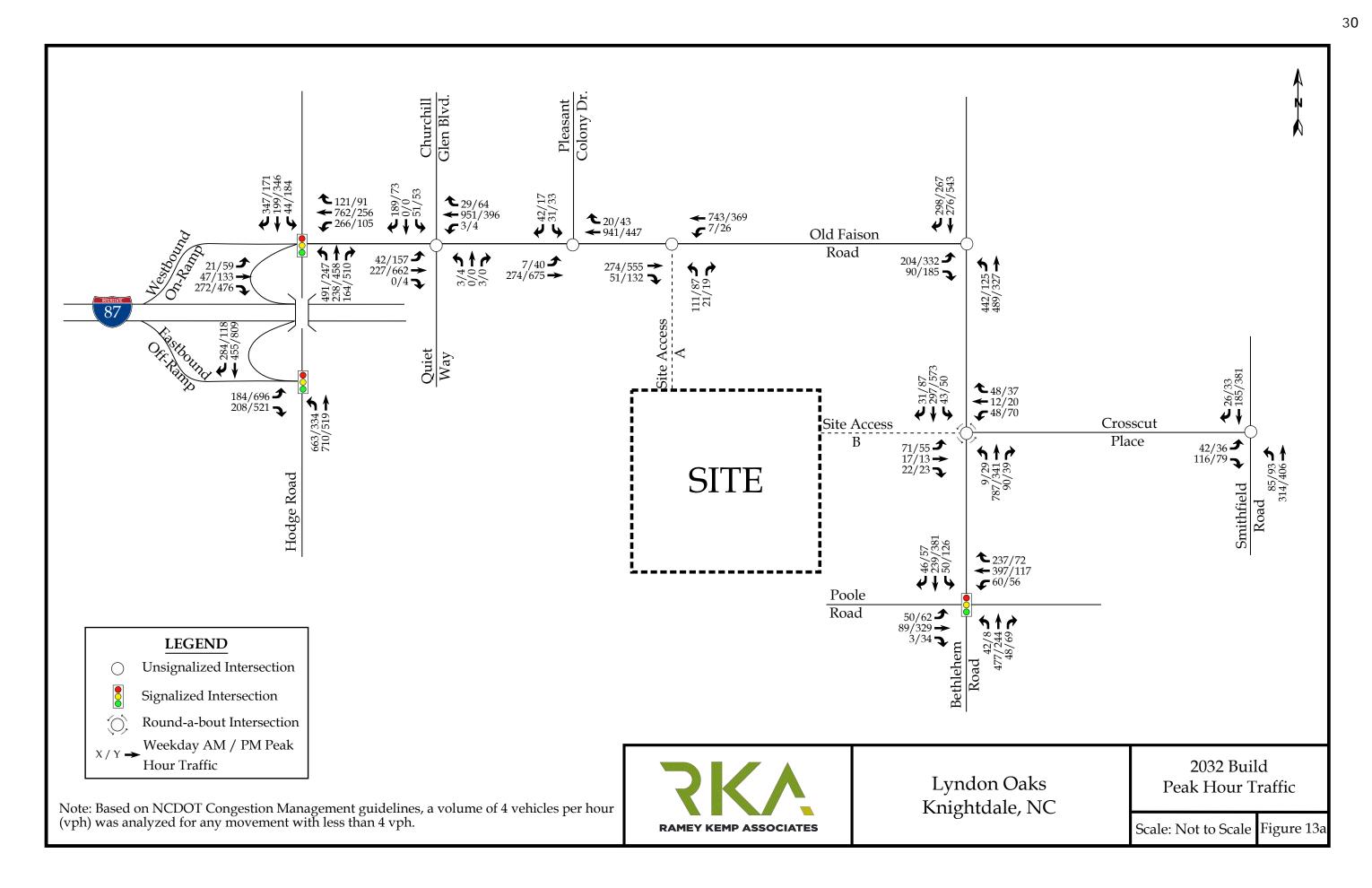
5.1. Build Peak Hour Traffic Volumes

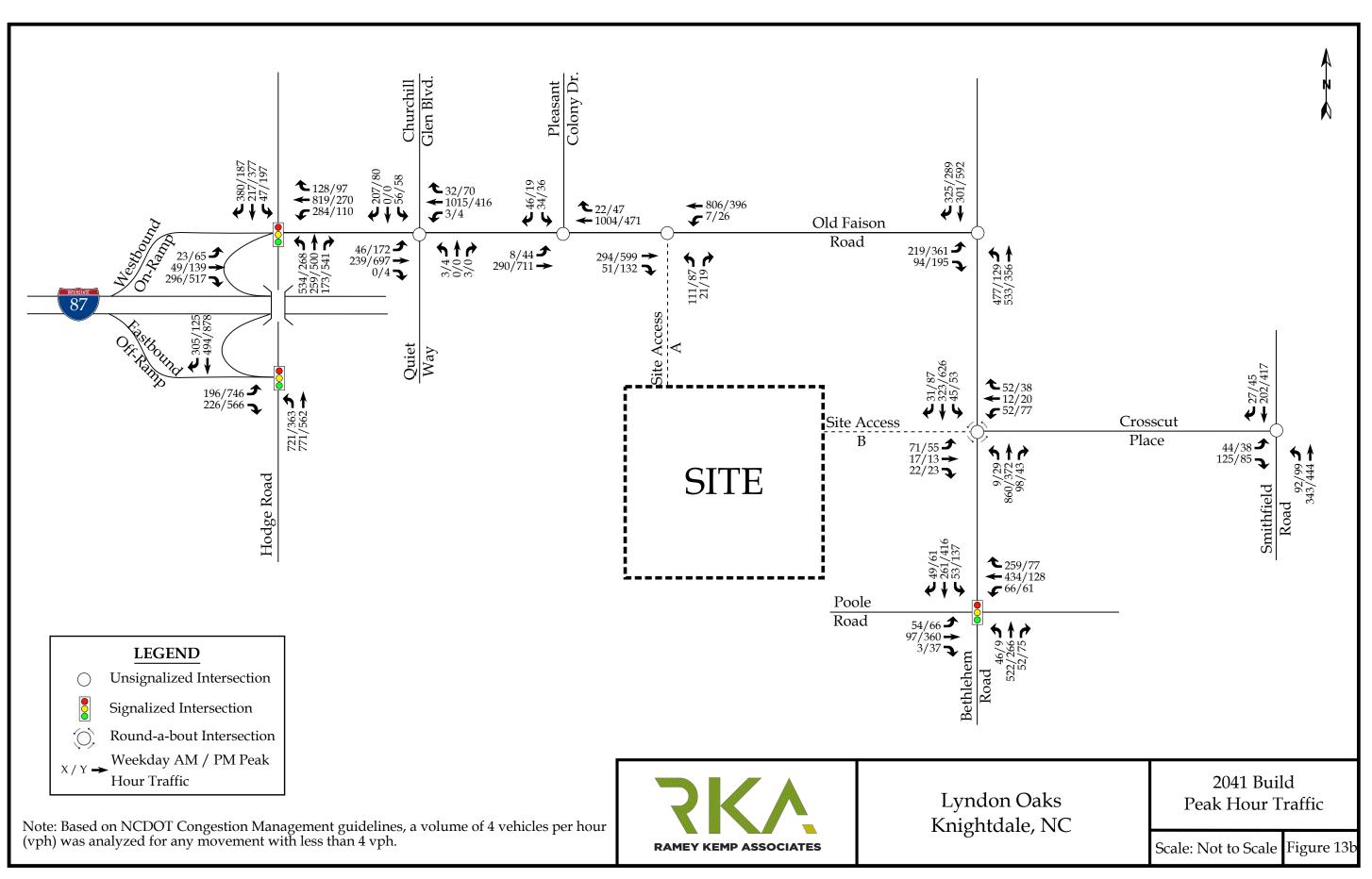
To estimate traffic conditions with the site fully built-out, the total site trips were added to the 2032 no-build traffic volumes and the 2041 no-build traffic volumes, respectively. Refer to Figure 13a for an illustration of the 2032 build peak hour traffic volumes with the proposed site fully developed and Figure 13b for an illustration of the 2041 build peak hour traffic volumes.

5.2. Analysis of Build Peak Hour Traffic Conditions

Study intersections were analyzed with the 2032/2041 build traffic volumes using the same methodology previously discussed for the 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.







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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 software package SIDRA INTERSECTION 9 was utilized for all roundabout analysis. For roundabout intersections, Sidra provides LOS calculations for all approaches and an overall resulting LOS. Synchro capacity analysis results for unsignalized intersections do not provide an overall LOS, but rather a LOS for movements approaches that have 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.



UNSIGNALIZED/ROUNDABOUT INTERSECTION		SI GNALI ZED INTERSECTI ON			
LEVEL OF SERVICE	AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)	LEVEL OF SERVICE	AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)		
А	0-10	А	0-10		
В	10-15	В	10-20		
С	15-25	С	20-35		
D	25-35	D	35-55		
E	35-50	E	55-80		
F	>50	F	>80		

Table 1. Liebway	(Capacity Manual	- Levels-of-Servio	co and Dolay
	/ Capacity Manual	- Levels-01-3el VI	Le anu Delay

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. Old Faison Road and Bethlehem Road

The existing unsignalized intersection was analyzed under all traffic conditions with the 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 Old Faison Road and Bethlehem Road

ANALYSIS	A P P R	LANE	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE		
SCENARIO C	O A C H	CONFIGURATIONS	Approach	Overall (seconds)	Approach	Overall (seconds)	
2023 Existing	EB NB	1 LT-RT 1 LT-TH	F ² A ¹	N/A	F ² A ¹	N/A	
5	SB	1 TH-RT					
	EB	1 LT-RT	F ²		F ²		
2032 No-Build	NB	1 LT-TH	B1	N/A	B ¹	N/A	
	SB	1 TH-RT					
	EB	1 LT-RT	F ²		F ²		
2032 Build	NB	1 LT-TH	B1	N/A	B1	N/A	
	SB	1 TH-RT					
2032 Build –	EB	1 LT-RT	A ³	D	B ³	В	
Scenario A	NB	1 LT-TH	E ³	(29)	B ³	(14)	
	SB	1 TH-RT	C ³	(27)	C ³	(17)	
2032 Build –	EB	1 LT, 1 RT	D	С	D	С	
Scenario B	NB	1 LT, 1 TH	C D	(29)	B C	(29)	
	SB EB	1 TH, 1 RT 1 LT-RT	D F ²	()	F ²	(= /)	
2041 No-Build	ЕВ NB	1 LT-RT	F ² B ¹	N/A	F ² B ¹	N/A	
2041 NO-Bullu	SB	1 TH-RT		N/A	 	N/A	
	EB	1 LT-RT	F ²		F2		
2041 Build	NB	1 LT-TH	B ¹	N/A	B ¹	N/A	
2011 Build	SB	1 TH-RT		1.177.1			
0044.5	EB	1 LT-RT	A ³	Г	E ³	0	
2041 Build – Scenario A	NB	1 LT-TH	F ³	E	B ³	C	
	SB	1 TH-RT	D ³	(46)	C ³	(24)	
2041 Puild	EB	1 LT, 1 RT	D	С	D	С	
2041 Build – Scenario B	NB	1 LT, 1 TH	С	-	С	_	
	SB to to Lo	1 TH, 1 RT	D	(33)	С	(30)	

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.

3. Level of service for approaching a roundabout.



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Capacity analysis of all traffic conditions (with the existing lane geometry and traffic control) indicates the major street left-turn movement on Bethlehem Road is expected to operate at LOS B or better during both weekday AM and PM peak hours. The minor-street approach of Old Faison Road is expected to operate at LOS F under all analysis scenarios during the AM and PM peak hours. Significant queuing is expected at the intersection on all approaches. Refer to Appendix O for SimTraffic queuing reports.

Based on information provided by the Town, the Town of Knightdale's Comprehensive Transportation Plan (CTP) calls for a roundabout at this intersection. Under Scenario A improvements, the intersection is modeled as a single-lane roundabout. Under 2032 build conditions, the roundabout is expected to operate at an overall LOS D during the AM peak hour and LOS B during the PM peak hour. All approaches are expected to operate at LOS D or better, except for the northbound approach during the AM peak hour. It should be noted that the v/c ratio of the roundabout is expected to have a vehicle to capacity ratio of 0.968 during the AM peak hour under 2032 build conditions. Under 2041 build conditions, the roundabout is expected to operate at an overall LOS E during the AM peak hour and LOS C during the PM peak hour. Increased approach delays are expected with the additional increase in traffic.

The intersection was also analyzed as a signalized intersection (under Scenario B) to compare the efficiency of the installation of signal to that of a roundabout. A peak hour signal warrant was analyzed to determine if a signal is warranted. The peak hour signal warrant is met under existing, no-build, and build conditions. Refer to Appendix O for additional signal warrant data. Under this scenario, lane configuration improvements are also necessary to accommodate queuing due to the stopping of movements on Bethlehem Road that are currently free-flow. An exclusive northbound left, southbound right, and eastbound left are considered in the analysis. Under Scenario B, the signalized intersection is expected to operate at an overall LOS C under 2032 build and 2041 build conditions.

Since the intersection operates at a lower delay and manageable queues with a signal, signalizing the intersection is recommended over the roundabout alternative. A fee-in-lieu



contribution towards improvements at this intersection is recommended by the developer as NCDOT turn lane warrants are met for both right and left turn lanes without the proposed development traffic and the intersection meets the peak hour signal warrants under existing conditions.



7.2. Old Faison Road and Tart Farm Road/Site Access A

The existing unsignalized intersection was analyzed under all traffic conditions with the lane configurations and traffic control shown in Table 6. 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 Old Faison Road and Tart Farm Road/Site

ANALYSIS	A P P R LANE		PEAK	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
SCENARIO	O A C H	CONFIGURATIONS	Approach	Overall (seconds)	Approach	Overall (seconds)	
	EB	1 TH-RT					
2023 Existing	WB	1 LT-TH	A ¹	N/A	A ¹	N/A	
_	NB	1 LT-RT	B ²		B ²		
2032 No-	EB	1 TH-RT					
	WB	1 LT-TH	A ¹	N/A	A ¹	N/A	
Build	NB	1 LT-RT	B ²		B ²		
	EB	1 TH, 1 RT					
2032 Build	WB	1 LT-TH	A ¹	N/A	A ¹	N/A	
	NB	1 LT, 1 RT	E ²		D ²		
2041 No-	EB	1 TH-RT					
	WB	1 LT-TH	A ¹	N/A	A ¹	N/A	
Build	NB	1 LT-RT	C ²		C ²		
	EB	1 TH, 1 RT					
2041 Build	WB	1 LT-TH	A ¹	N/A	A ¹	N/A	
	NB	1 LT, 1 RT	E ²		D ²		

Access 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 all traffic conditions indicates the major street left-turn movement on Old Faison Road is expected to operate at LOS A during both weekday AM and PM peak hours. With a two-lane egress, the minor-street approach of existing Tart Farm Road (future Site Access A) is expected to operate at LOS D or better under all future build traffic conditions during the PM peak hour. The minor street approach is expected to operate at LOS E or better during the AM under 2032 and 2041 build conditions. No significant queuing is expected at the intersection.



Turn lane warrants on Old Faison Road were analyzed using the Policy On Street and Driveway Access to North Carolina Highways to determine if exclusive turn lanes were warranted. An eastbound right turn lane with 75 feet of storage and appropriate decel and taper is warranted at this intersection. Refer to Appendix P for the turn lane warrant charts.

No other improvements are recommended by the developer.



7.3. Old Faison Road and Pleasant Colony Drive

The existing unsignalized intersection was analyzed under all traffic conditions with the existing 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.

ANALYSIS	A P P R	LANE	PEAK	DAY AM HOUR SERVICE	WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
SCENARIO	Ο Ϛ ∪ Ι	CONFIGURATIONS	Approach	Overall (seconds)	Approach	Overall (seconds)
	EB	1 LT, 1 TH	A ¹		A ¹	
2023 Existing	WB	1 TH-RT		N/A		N/A
	SB	1 LT-RT	B ²		B ²	
	EB	1 LT, 1 TH	A ¹		A ¹	
2032 No-Build	WB	1 TH-RT		N/A		N/A
	SB	1 LT-RT	C ²		C ²	
	EB	1 LT, 1 TH	B1		A ¹	
2032 Build	WB	1 TH-RT		N/A		N/A
	SB	1 LT-RT	D ²		D ²	
	EB	1 LT, 1 TH	B1		A ¹	
2041 No-Build	WB	1 TH-RT		N/A		N/A
	SB	1 LT-RT	D ²		C ²	
	EB	1 LT, 1 TH	B1		A ¹	
2041 Build	WB	1 TH-RT		N/A		N/A
	SB	1 LT-RT	E ²		D ²	

		and Discount Calance Dates
Table 7: Analysis Summar	y of UId Falson Road a	and Pleasant Colony Drive

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

2. Level of service for minor-street approach.

Capacity analysis of all traffic conditions indicates the major street left-turn movement on Old Faison Road is expected to operate at LOS B or better during both weekday AM and PM peak hours. The minor-street approach is expected to operate at LOS D or better with the exception of the AM peak hour under 2041 build conditions.

The proposed site is only expected to contribute trips to the major-street through volumes along Old Faison Road at the intersection. Due to the minimal impacts of the proposed development on the intersection, no improvements are recommended by the developer.



7.4. Old Faison Road and Churchill Glen Boulevard/Quiet Way

The existing unsignalized intersection was analyzed under all traffic conditions with the existing lane configurations and traffic control shown in Table 8. 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 Old Faison Road and Churchill Glen Boulevard/Quiet Way

ANALYSIS R SCENARIO O A C	P P		PEAK	DAY AM HOUR SERVICE	WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
	А	CONFIGURATIONS	Approach	Overall (seconds)	Approach	Overall (seconds)
	EB	1 LT, 1 TH-RT	A ¹		A ¹	
2023 Existing	WB	1 LT, 1 TH-RT	A ¹	N/A	A ¹	N/A
2025 Existing	NB	1 LT-TH-RT	C ²		C ²	IN/A
	SB	1 LT-TH-RT	C ²		C ²	
	EB	1 LT, 1 TH-RT	B1	N/A	A ¹	
2032 No-Build	WB	1 LT, 1 TH-RT	A ¹		A ¹	N/A
2032 100-Dunu	NB	1 LT-TH-RT	E ²		D ²	
	SB	1 LT-TH-RT	F ²		E ²	
	EB	1 LT, 1 TH-RT	B1		A ¹	
2032 Build	WB	1 LT, 1 TH-RT	A ¹	N/A	A ¹	N/A
2032 Dulla	NB	1 LT-TH-RT	F ²		E ²	
	SB	1 LT-TH-RT	F ²		F ²	
	EB	1 LT, 1 TH-RT	B1		A ¹	
2041 No-Build	WB	1 LT, 1 TH-RT	A ¹	N/A	A ¹	N/A
2041 N0-Dullu	NB	1 LT-TH-RT	F ²		D ²	N/A
	SB	1 LT-TH-RT	F ²		F ²	
	EB	1 LT, 1 TH-RT	B1		A ¹	
2041 Build	WB	1 LT, 1 TH-RT	A ¹	N/A	A ¹	N/A
2041 Dullu	NB	1 LT-TH-RT	F ²		F ²	
	SB	1 LT-TH-RT	F ²		F ²	

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

2. Level of service for minor-street approach.

Capacity analysis of all traffic conditions indicates the major street left-turn movements on Old Faison Road are expected to operate at LOS B or better during both weekday AM and PM peak hours. The minor-street approaches are expected to experience heavier delays under all future traffic conditions, even without the proposed development. It should be noted that it is not uncommon for minor-street approaches at unsignalized intersections to experience



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high delays, especially during the peak times of the day when mainline volumes are the heaviest.

The proposed site is only expected to contribute trips to the major-street through volumes at the intersection. Congestion management requires all turning movements to have a minimum of four vehicles. For this intersection, this rule was applied for several movements including the northbound and southbound through movements crossing from Churchill Glen Boulevard to Quiet Way and vice versa. This leads to inflated delays due to the difficulty of these movements (that are not currently being made)_z- Additionally, exclusive turn lanes are already provided on Old Faison Road at this intersection. Due to the minimal impacts of the proposed development on the intersection, no improvements are recommended by the developer.



7.5. Bethlehem Road and Crosscut Place/Site Access B

The existing unsignalized intersection was analyzed under existing and no-build traffic conditions with the existing lane configurations and traffic control shown in Table 9. With the additional proposed Site Access B as the fourth leg to the intersection, the Town is requiring the installation of a roundabout if any improvements are necessary. Therefore, the intersection was analyzed as a single lane roundabout under the build with improvements and future scenarios. Refer to Table 9 for a summary of the analysis results. Refer to Appendix I for the Synchro capacity analysis reports.

A P ANALYSIS R		LANE	PEAK	DAY AM HOUR SERVICE	WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
SCENARIO	O A C H	CONFIGURATIONS	Approach	Overall (seconds)	Approach	Overall (seconds)
2023 Existing	WB NB SB	1 LT-RT 1 TH-RT 1 LT-TH	C ² A ¹	N/A	C ² A ¹	N/A
2032 No-Build	WB NB SB	1 LT-RT 1 TH-RT 1 LT-TH	E ² B ¹	N/A	D² A¹	N/A
2032 Build	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT	F ² F ² A ¹ B ¹	N/A	F ² F ² A ¹ A ¹	N/A
2032 Build Roundabout	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT	A ³ B ³ C ³ A ³	C (16)	A ³ A ³ A ³ B ³	A (10)
2041 No-Build	WB NB SB	1 LT-RT 1 TH-RT 1 LT-TH	F ² B ¹	N/A	E ² A ¹	N/A
2041 Build Roundabout	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT	A ³ B ³ D ³ A ³	C (22)	A ³ A ³ A ³ B ³	B (11)

Table 9: Analysis Summary of Bethlehem Road/Crosscut Place (Site Access B)

Improvements to lane configurations and traffic control are shown in bold.

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

2. Level of service for minor-street approach.

3. Level of service for approaching the proposed roundabout improvement.



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Capacity analysis of existing and no-build conditions indicates the major street left-turn movement on Bethlehem Road is expected to operate at LOS B or better during both weekday AM and PM peak hours. Under 2032 build conditions, with the addition of the proposed Site Access B as the fourth leg to the intersection, and with no improvements the minor street approaches are expected to operate at LOS F during the AM and PM peak hours.

As mentioned previously, through coordination with NCDOT and the Town, a roundabout intersection is required to be constructed with the addition of proposed Site Access B. Under build conditions with the roundabout, the intersection is expected to operate at an overall LOS C or better during the AM and PM peak hours.

Other than the installation of a single lane roundabout, no other improvements are recommended by the developer.



7.6. I-87 Eastbound Ramps and Hodge Road

The existing signalized intersection was analyzed under all traffic conditions with the existing lane configurations and traffic control shown in Table 10. 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 I-87 Eastbound Ramps and Hodge

ANALYSIS	A P P R	LANE	WEEKDA PEAK H LEVEL OF S		PEAK	WEEKDAY PM PEAK HOUR EVEL OF SERVICE	
SCENARIO	O A C H	CONFIGURATIONS	Approach	Overall (seconds)	Approach	Overall (seconds)	
2023 Existing	EB NB SB	2 LT, 1 RT 1 LT, 1 TH 1 TH, 1 RT	A A B	A (10)	B B C	B (17)	
2032 No-Build	EB NB SB	2 LT, 1 RT 1 LT, 1 TH 1 TH, 1 RT	C C C	C (27)	D D E	D (49)	
2032 Build	EB NB SB	2 LT, 1 RT 1 LT, 1 TH 1 TH, 1 RT	C C C	C (29)	E D E	E (57)	
2032 Build – Field Conditions	EB NB SB	2 LT, 1 RT 1 LT, 1 TH 1 TH, 1 RT	C B C	C (23)	D D D	D (50)	
2041 No-Build	EB NB SB	2 LT, 1 RT 1 LT, 1 TH 1 TH, 1 RT	C C D	C (32)	E D E	E (62)	
2041 Build	EB NB SB	2 LT, 1 RT 1 LT, 1 TH 1 TH, 1 RT	D C D	C (34)	E E F	E (72)	
2041 Build – Field Conditions	EB NB SB	2 LT, 1 RT 1 LT, 1 TH 1 TH, 1 RT	C C D	C (28)	E E E	E (64)	

Road

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

2. Level of service for minor-street approach.

Capacity analysis of all future traffic conditions indicates the signalized intersection is expected to operate at an overall LOS C during the weekday AM peak hour and LOS E during



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and the weekday PM peak hour. Significant queuing is expected at the intersection under all future traffic conditions.

Congestion Management capacity analysis guidelines require all permitted/protected phases to be changed to protected only which results in a higher delay at the study intersection. An alternative analysis showing how the intersection operates in the field was performed to better simulate how the intersection functions. The protected phase was changed back to permitted/protected and signal splits were optimized for the intersection. Right-turn-on-red (RTOR) was also permitted in the field conditions analysis.

Due to the proposed site's minimal impacts on the intersection, no improvements are recommended.



7.7. I-87 Westbound Ramps/Old Faison Road and Hodge Road

The existing signalized intersection was analyzed under all 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 I-87 Westbound Ramps/Old Faison
Road and Hodge Road

ANALYSIS	A P P R	LANE	PEAK	DAY AM HOUR SERVICE	WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
SCENARIO	O A C H	CONFIGURATIONS	Approach	Overall (seconds)	Approach	Overall (seconds)
2023 Existing	EB WB NB SB	1 LT-TH, 1 RT 1 LT-TH-RT 1 LT, 1 TH-RT 1 LT, 1 TH, 1 RT	A D C B	C (29)	B C C B	B (19)
2032 No-Build	EB WB NB SB	1 LT-TH, 1 RT <u>1 LT</u> , <u>1 TH</u> , <u>1 RT</u> 1 LT, 1 TH-RT 1 LT, 1 TH, 1 RT	B E E B	E (56)	D D D D	D (40)
2032 Build	EB WB NB SB	1 LT-TH, 1 RT <u>1 LT, 1 TH</u> , <u>1 RT</u> 1 LT, 1 TH-RT 1 LT, 1 TH, 1 RT	B F E C	E (71)	D D F D	E (67)
2032 Build – Field Conditions	EB WB NB SB	1 LT-TH, 1 RT <u>1 LT</u> , <u>1 TH</u> , <u>1 RT</u> 1 LT, 1 TH-RT 1 LT, 1 TH, 1 RT	A E D B	D (47)	C D E D	D (47)
2041 No-Build	EB WB NB SB	1 LT-TH, 1 RT <u>1 LT</u> , <u>1 TH</u> , <u>1 RT</u> 1 LT, 1 TH-RT 1 LT, 1 TH, 1 RT	B F F B	E (76)	C D D F	E (71)
2041 Build	EB WB NB SB	1 LT-TH, 1 RT <u>1 LT, 1 TH</u> , <u>1 RT</u> 1 LT, 1 TH-RT 1 LT, 1 TH, 1 RT	B F F C	F (91)	D D F F	F (112)
2041 Build – Field Conditions	EB WB NB SB	1 LT-TH, 1 RT <u>1 LT, 1 TH, 1 RT</u> 1 LT, 1 TH-RT 1 LT, 1 TH, 1 RT	B F D B	E (60)	C D F D	E (61)

Lane modifications by STIP W-5705AK are underlined.



Even with the improvements associated with NCDOT STIP W-5705AK, capacity analysis of all future traffic conditions indicates that the intersection is expected to operate at an overall E or better, with the exception of the 2041 build conditions. Significant queuing is expected under all future scenarios.

As mentioned previously, Congestion Management capacity analysis guidelines, require all permitted/protected movements at future intersections to be changed to protected phasing only. This would change some of the signal improvements installed by the STIP. An alternative analysis was performed to include the improvements by the STIP and more accurately model field conditions. RTOR was also permitted under the field conditions analysis. Signal timings were optimized for the purposes of this analysis.

Under the field conditions scenario, the intersection is expected to operate at LOS D or better under 2032 build conditions. To mitigate queue lengths exceeding storage lengths, turn lane extensions are recommended by the developer based on 95th percentile queuing. The westbound left-turn lane should be extended to contain 175 feet of storage with appropriate decel and taper. The eastbound left-through lane should be extended to contain 275 feet of storage. The southbound left turn lane should be extended to contain 275 feet of storage.



7.8. Smithfield Road and Old Ferrell Road

The existing unsignalized intersection was analyzed under all traffic conditions with existing lane configurations and traffic control shown in Table 12. Refer to Table 12 for a summary of the analysis results. Refer to Appendix L for the Synchro capacity analysis reports.

Road							
ANALYSIS	A P P R	LANE	PEAK	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
SCENARIO	O A C H	CONFIGURATIONS	Approach	Overall (seconds)	Approach	Overall (seconds)	
2023 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	
2032 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	
2032 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	
2041 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	
2041 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	

Table 12: Analysis Summary of Smithfield Road and Old Ferrell
Poad

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

2. Level of service for minor-street approach.

Capacity analysis of all traffic conditions indicates that the major street left turn movement on Smithfield Road is expected to operate at LOS A during the AM and PM peak hour. The minor street approach is expected to operate at LOS C or better during the AM and PM peak hour under all conditions. No significant queuing is expected.

No improvements are recommended by the developer.



7.9. Bethlehem Road and Poole Road

The existing signalized intersection was analyzed under all traffic conditions with the existing lane configurations and traffic control shown in Table 13. Refer to Table 13 for a summary of the analysis results. Refer to Appendix M for the Synchro capacity analysis reports.

ANALYSIS	A P P R	LANE	PEAK	DAY AM HOUR SERVICE	WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
SCENARIO	Oくいエ	CONFIGURATIONS	Approach	Overall (seconds)	Approach	Overall (seconds)
2023 Existing	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT	A B E C	D (36)	A A B E	C (34)
2032 No-Build	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT	A B F F	F (152)	B A C F	F (104)
2032 Build	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT	A B F F	F (168)	B A C F	F (115)
2041 No-Build	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT	A B F F	F (226)	B A C F	F (142)
2041 Build	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT	A B F F	F (246)	B A C F	F (156)

Table 13: Analysis Summary of Bethlehem Road and Poole Road

Capacity analysis of all future traffic conditions indicates that the intersection is expected to operate at LOS F during the AM and PM peak hour. Significant queuing is expected under all future traffic conditions.

The proposed development is expected to account for less than 2 percent of the total traffic at the intersection during the AM peak hour and less than 3 percent during the PM peak hour. Therefore, due to the proposed site's minimal impacts on the intersection, no improvements are recommended by the developer.



8. CONCLUSIONS

The contents of this report present the findings of the Traffic Impact Analysis (TIA) conducted for the proposed Lyndon Oaks subdivision development to be located south of Old Faison Road and to the west of Bethlehem Road in Knightdale, North Carolina. The proposed development is proposed to consist of 308 single-family homes, 192 townhomes, and 15,000 square feet of commercial space and be built out in 2031. Site access is proposed via one (1) full-movement driveway at the existing location of Old Faison Road and Tart Farm Road and one roundabout at the existing intersection of Bethlehem Road and Crosscut Place.

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

- 2023 Existing Traffic Conditions
- 2031+1 No-Build Traffic Conditions
- 2031+1 Build Traffic Conditions
- 2031+10 No-Build Traffic Conditions
- 2031+10 Build Traffic Conditions

Trip Generation

It is estimated that the proposed development will generate approximately 5,442 total site trips during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that 378 trips (119 entering and 259 exiting) will occur during the weekday AM peak hour and 520 trips (313 entering and 207 exiting) will occur during the weekday PM peak hour. Not all trips are expected to occur as new trips as some are expected to be captured internally to the site, while others are expected to be drawn from traffic that is already on the adjacent roadway network.

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.



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.

Recommended Improvements by STIP W-5705AK

Westbound I-87 Ramps and Hodge Road

- Construct westbound right turn lane with 100 feet of storage and appropriate decel and taper.
- Construct westbound left turn lane with 100 feet of storage and appropriate decel and taper.
- Modify signal timings and signal phasing

Recommended Improvements by Developer

Old Faison Road and Bethlehem Road

• Coordinate with Town on desired improvements. Provide fee in lieu contribution as necessary

Old Faison Road and Tart Farm Road/Site Access A

- Construct an eastbound right turn lane with 75 feet of storage and appropriate decel and taper.
- Construct exclusive northbound left turn lane with full storage.
- Provide stop control for northbound approach.

Bethlehem Road and Crosscut Place/Site Access B

- Construct a single-lane roundabout.
- Construct eastbound approach with one ingress and one egress lane.
- Provide yield control for eastbound approach.



Westbound I-87 Ramps and Hodge Road

- Extend westbound left turn lane to contain 175 feet of storage and appropriate decel and taper.
- Extend southbound left turn lane to contain 275 feet of storage and appropriate decel and taper.
- Extend eastbound left-through lane to contain 275 feet of storage and appropriate decel and taper.



